

**BOARD OF VISITORS BUILDINGS AND GROUNDS COMMITTEE
MINUTES**

November 15, 2020

The Buildings and Grounds Committee of the Board of Visitors of Virginia Polytechnic Institute and State University met on Sunday, November 15, 2020, at 2:30 p.m. A quorum of the Buildings and Grounds Committee was present.

Buildings and Grounds Committee Members

Present:

Mr. Horacio Valeiras (Rector)
Mr. C.T. Hill
Ms. Sharon Brickhouse Martin
Ms. Shelly Butler Barlow
Mr. Mehul Sanghani

Absent:

Ms. Tish Long (Vice Rector)

Other Board Members Present:

Mr. Ed Baine
Ms. Carrie Chenery
Ms. Greta Harris
Ms. Anna James
Dr. Melissa Nelson
Mr. Chris Petersen
Mr. Jeff Veatch

Constituent Representatives Present:

Dr. Eric Kaufman (Faculty Representative)
Ms. Camellia Pastore (Undergraduate Student Representative)
Ms. Tamarah Smith (Staff Representative)
Ms. Sabrina Sturgeon (Graduate Student Representative)

Also present were the following Virginia Tech staff members:

President Timothy Sands, Ms. Kim O'Rourke (Secretary to the Board), Mr. Mac Babb, Mr. Eric Brooks, Mr. Bob Broyden, Dr. Cyril Clarke, Mr. Denny Cochrane, Mr. Al Cooper, Dr. Lance Collins, Dr. Kristy Daniels, Mr. Corey Earles, Ms. Kari Evans, Mr. Kevin Foust, Major General Randal Fullhart, Mr. Bryan Garey, Mr. Mark Gess, Dr. Alan Grant, Ms. Wendy Halsey, Ms. Kay Heidbreder, Ms. Elizabeth Hooper, Ms. Mary-Ann Ibeziako, Dr. Frances Keene, Dr. Chris Kiwus, Ms. Sharon Kurek, Ms. Jamie Lau, Mr. Jack Leff, Mr. Ken Miller, Ms. Liza Morris, Dr. Saied Mostaghimi, Ms. Heidi Myers, Mr. Bob Muse, Mr. Justin Noble, Mr. Mark Owczarski, Dr. Dwayne Pinkney, Ms. Katie Polidoro, Dr. John Randolph, Dr. Emily Satterwhite, Dr. Todd Schenk, Mr. John Tarter, Dr. Don Taylor, Mr. Dwyn Taylor, Mr. Jon Clark Teglas, Ms. Tracy Vosburgh, Dr. Robin White, Mr. Chris Yianilos

Also present were the following guests:
Mr. Henri Gendreau

Open Session

1. **Welcome:** The Committee Chair convened the meeting and provided welcoming remarks. Dr. Dwayne Pinkney introduced new Assistant Vice President for Facilities Operations, Wendy Halsey, and also detailed the launch of a new high-performance team to facilitate strategic, enterprise-wide long-range physical planning; advancement of the capital outlay program; space and land use; and real estate activities. Bob Broyden, Associate Vice President for Campus Planning and Capital Assets was introduced as the leader of this team. Bob Broyden will report dually to Chris Kiwus, Vice President for Campus Planning, Infrastructure, and Facilities and Ken Miller, Vice President for Finance.
2. **Consent Agenda:** The Committee approved and accepted the items listed on the Consent Agenda:
 - a. **Approval of the Minutes from the August 25, 2020 Meeting:** The Committee approved the minutes from the August 25, 2020 meeting.
 - b. **Acceptance of the Sustainability Annual Report:** The Committee accepted the sustainability annual report. Virginia Tech serves as a model community for a sustainable society and is committed to advancing sustainability in academics (curriculum & research), engagement, operations, planning, and administration. The university maintains a gold rating from the Association for Advancement of Sustainability in Higher Education (AASHE) using the Sustainability Tracking, Assessment, and Rating System (STARS).
 - c. **Acceptance of the Capital Project Status Report:** The Committee accepted the quarterly capital project status report.
3. **Virginia Tech 2020 Climate Action Commitment:** The Committee received a presentation on the Virginia Tech 2020 Climate Action Commitment. Approved initially in 2009 by the Board of Visitors and revised in 2013, the Virginia Tech Climate Action Commitment serves as the university's guiding framework around sustainability and energy efficiency in campus operations, facilities, curriculum, and research. In late 2019, President Sands called for its renewal and revision to ensure the most stringent climate and sustainability standards are implemented as the university continues to grow and seeks to be a leader in environmental stewardship. The mission of the revised commitment is to achieve carbon neutrality by changing our physical infrastructure, collective and individual behaviors, and educational mission; to engage everyone in creating a culture of sustainability; and to achieve these objectives through just and equitable means. A working group of faculty experts, governance representatives, students,

operations professionals, and community members led this charge and crafted the revision. Through participation in working group and subcommittee meetings, brainstorming sessions, and community engagement events, students involved in the revision process had countless opportunities to gain practical sustainability experience. Senior vice president and chief business officer, Dwayne Pinkney, sponsored the initiative. The work group was chaired by John Randolph, professor emeritus of urban affairs and planning, and co-chaired by Todd Schenk, assistant professor of urban affairs and planning and member of the Commission on Faculty Affairs. On an aggressive timeline, the revision moved through university governance this fall, receiving approval from the Energy and Sustainability Committee, Commission on University Support, and the University Council. It was endorsed by the Faculty and Staff Senates, the Student Government Association, and the Graduate Student Assembly. Dr. Pinkney's team is crafting a comprehensive financial model based on the pathways and outcomes prescribed by the commitment. It is anticipated that the Board will receive a resolution to approve the commitment at the March meeting.

4. **Update on Utilities and Energy Management Initiatives:** The Committee received a presentation regarding campus utilities and energy management initiatives from Assistant Vice President for Infrastructure, Mary-Ann Ibeziako. Mary-Ann highlighted the university's commitment to providing an effectively managed and operated infrastructure to support the institution's learning, discovery, and engagement missions. In support of this, the Division of Campus Planning, Infrastructure, and Facilities is responsible for the production, delivery, and management of safe, reliable, and efficient utility and energy systems, while effectively stewarding university resources and the environment. In support of the Virginia Tech Climate Action Commitment, the university also strives to become a leader in environmental excellence. As a strategic driver, the university has proactively established programming to champion tangible reduction in energy consumption on campus.
- * 5. **Resolution to Approve the Virginia Tech Crisis and Emergency Management Plan and Addendum:** The Committee reviewed for approval a resolution to adopt the university's Crisis and Emergency Plan and addendum in accordance with Code of Virginia. The Code requires that every four years a public institution of higher education conduct a comprehensive review and revision of its Crisis and Emergency Management Plan to ensure that it remains current, and the plan shall be adopted formally by the Board of Visitors. The plan has been reviewed by the Safety and Security Policy Committee and was promulgated by President Sands in June 2019. The Committee recommended the Resolution to Approve the Virginia Tech Crisis and Emergency Management Plan and Addendum to the full Board for approval.
6. **Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistic Act Report:** The Committee received the annual campus security and fire safety report for Virginia Tech that is compiled and published by the Virginia

Tech Police Department. This annual report is required by the Higher Education Opportunity Act and the Jeanne Clery Disclosure of Campus Security Policy and Campus Crimes Statistics Act. The purpose of the report is to provide information about security on campus, to include: campus and community crime statistics, fire statistics and safety information, policy information, safety tips, resource phone numbers, and a brief overview of the many services the university provides. This item was presented by Mac Babb, Chief of Police and Director of Security.

7. **Update on Agricultural Facilities Planning and Construction:** The Committee received an update from Alan Grant, Dean of the College of Agriculture and Life Sciences, on agricultural facilities planning and construction. Dr. Grant was joined by associate professors Robin White and Kristy Daniels to discuss the Metabolic Research Laboratory and its impact on their work.
8. **Design Review for the Corps Leadership and Military Science Building:** The Committee approved the design review for the Corps Leadership and Military Science Building.
9. **Future Agenda Items and Closing Remarks:** The Committee discussed potential topics for inclusion on future meeting agendas.

There being no further business, the meeting adjourned at 4:30 p.m.

* * * * *

The Buildings and Grounds Committee and Finance and Resource Management Committee of the Board of Visitors of Virginia Polytechnic Institute and State University met in Joint Open Session on Sunday, November 15, 2020, at 4:30 p.m. A quorum was present.

Joint Committee Members

Present:

Mr. Horacio Valeiras (Rector)
Mr. Ed Baine
Mr. C.T. Hill
Ms. Sharon Brickhouse Martin
Ms. Shelly Butler Barlow
Ms. Anna James
Mr. Mehul Sanghani

Absent:

Ms. Tish Long (Vice Rector)
Mr. Preston White

Other Board Members Present:

Ms. Carrie Chenery
Ms. Greta Harris
Dr. Melissa Nelson
Mr. Chris Petersen

Mr. Jeff Veatch

Constituent Representatives Present:

Dr. Eric Kaufman (Faculty Representative)

Ms. Camellia Pastore (Undergraduate Student Representative)

Ms. Tamarah Smith (Staff Representative)

Ms. Sabrina Sturgeon (Graduate Student Representative)

Also present were the following Virginia Tech staff members:

President Timothy Sands, Ms. Kim O'Rourke (Secretary to the Board), Mr. Mac Babb, Mr. Eric Brooks, Mr. Bob Broyden, Dr. Cyril Clarke, Mr. Al Cooper, Mr. Corey Earles, Ms. Kari Evans, Mr. Kevin Foust, Major General Randal Fullhart, Mr. Bryan Garey, Mr. Mark Gess, Ms. Wendy Halsey, Ms. Kay Heidbreder, Ms. Mary-Ann Ibeziako, Dr. Frances Keene, Dr. Chris Kiwus, Ms. Sharon Kurek, Ms. Jamie Lau, Mr. Ken Miller, Ms. Liza Morris, Ms. Heidi Myers, Mr. Bob Muse, Mr. Justin Noble, Mr. Mark Owczarski, Dr. Dwayne Pinkney, Mr. John Tarter, Mr. Dwyn Taylor, Mr. Jon Clark Teglas, Ms. Tracy Vosburgh, Mr. Chris Yianilos

Joint Open Session with the Finance and Resource Management Committee

- * 1. **Approval of Resolution for a Capital Lease for the 3200 Commerce Street Property:** The Committees reviewed for approval a resolution for a capital lease for the 3200 Commerce Street property. The acquisition of 3.29 acres of property with 10,434 square feet of additional office and garage space at 3200 Commerce Street is an essential asset for growth by housing VTTI's technical support operations and facilitate vehicle repairs and modifications, streamlining access to research vehicles, and promoting the expedient staging of research props and fixtures. This space also provides a conditioned area for sponsors and researchers to interact with vehicle systems and is a critical staging area for modified vehicles and equipment that are not fully weather rated. The Virginia Tech Foundation (Foundation) acquired the property on behalf of the university for \$1.52 million on May 29, 2020. The funding plan calls for the university to enter a lease with the Foundation at a rate sufficient to retire the acquisition costs, normal operating costs, and property carrying costs. VTTI will fund the lease costs from its returned overhead revenues. The university and VTTI are ready to enter a lease with the Foundation and have developed an entirely nongeneral fund resource plan sufficient to cover the \$1.52 million property acquisition costs, future property carrying, and maintenance costs. The Committees recommended the Resolution for a Capital Lease for the 3200 Commerce Street Property to the full Board for approval.
- * 2. **Approval of Resolution to Supplement the New Upper Quad Residence Hall:** The Committees reviewed for approval a resolution to supplement the New Upper Quad Residence Hall project. The Board of Visitors approved the New Upper Quad Residence Hall project at its June 3, 2019 meeting. This approved project will be located on the corner of Stanger Street and Old Turner Street adjacent to the New Corps Leadership and Military Sciences Building. The project includes a program of

300 beds to support the enrollment growth plans for the Corps of Cadets to reach 1,400 students. The original project authorization includes a \$33 million budget which is based on a university residential cost model of \$110,000 per bed. The project scope includes razing Femoyer Hall and the design, construction, and furnishings for the new residential facility. Subcontractor pricing at the completion of preliminary designs show the costs for the project are \$133,000 per bed, or \$40 million. The primary drivers that push the cost over \$110,000 per bed are associated with the site, a necessary feature for the Corps of Cadets, including the complexity and extensiveness of utility relocations, volume of contaminated soils remediation and hazardous materials handling for the demolition of Femoyer Hall, extensive grade changes to address ADA compliance, and market pricing. The costs above reflect the acceptance of value engineering alternatives. This request is for authorization to move forward with a \$7 million supplement to adjust the total project authorization for the New Upper Quad Residence Hall project to \$40 million and to complete the project. The Committees recommended the Resolution to Supplement the New Upper Quad Residence Hall to the full Board for approval.

There being no further business, the joint meeting adjourned at 4:43 p.m.

* * * * *

The Buildings and Grounds Committee of the Board of Visitors of Virginia Polytechnic Institute and State University reconvened on Sunday, November 15, 2020, at 4:45 p.m. for a tour of the university's Power Plant. A quorum of the Buildings and Grounds Committee was present.

Buildings and Grounds Committee Members

Present:

Mr. Horacio Valeiras (Rector)
Mr. C.T. Hill
Ms. Shelly Butler Barlow
Mr. Mehul Sanghani

Absent:

Ms. Tish Long (Vice Rector)

Other Board Members Present:

Mr. Ed Baine
Mr. Chris Petersen

Constituent Representatives Present:

Dr. Eric Kaufman (Faculty Representative)
Ms. Camellia Pastore (Undergraduate Student Representative)
Ms. Tamarah Smith (Staff Representative)
Ms. Sabrina Sturgeon (Graduate Student Representative)

Also present were the following Virginia Tech staff members:

Ms. Kim O'Rourke (Secretary to the Board), Mr. Ted Acord, Mr. Billy Dudding, Mr. Bryan Garey, Mr. Mark Hayes, Ms. Mary-Ann Ibeziako, Dr. Chris Kiwus, Mr. Todd Robertson, Mr. John Tarter, Mr. Dwyn Taylor, Mr. Jon Clark Teglas

Open Session

1. **Tour:** The Committee toured the university's Power Plant. The plant plays an integral role in the university's infrastructure and provides campus buildings with a portion of their heat, hot water, and electricity needs.

There being no further business, the meeting adjourned at 5:49 p.m.

* * * * *

* Requires full Board approval.

Welcome

BUILDINGS AND GROUNDS COMMITTEE

November 15, 2020

The Buildings and Grounds Committee Chair will open with welcoming remarks.

Consent Agenda
BUILDINGS AND GROUNDS COMMITTEE

November 15, 2020

The Committee will consider for approval and acceptance the items listed on the Consent Agenda.

Consent Agenda

- a. Approval of the Minutes from the August 25, 2020 Meeting
- b. Acceptance of the Sustainability Annual Report
- c. Acceptance of the Capital Project Status Report

**BOARD OF VISITORS BUILDINGS AND GROUNDS COMMITTEE
MINUTES**

August 25, 2020

The Buildings and Grounds Committee of the Board of Visitors of Virginia Polytechnic Institute and State University met on Tuesday, August 25, 2020, at 9:30 a.m. A quorum of the Buildings and Grounds Committee was present.

Buildings and Grounds Committee Members

Present:

Mr. Horacio Valeiras (Rector)
Mr. C.T. Hill (Chair)
Ms. Tish Long (Vice Rector)
Ms. Sharon Brickhouse Martin
Ms. Shelly Butler Barlow
Mr. Mehul Sanghani

Absent:

Other Board Members Present:

Ms. Carrie Chenery
Ms. Greta Harris

Constituent Representatives Present:

Ms. Camellia Pastore (Undergraduate Student Representative)

Also present were the following Virginia Tech staff members:

President Timothy Sands, Ms. Kim O'Rourke (Secretary to the Board), Mr. Mac Babb, Mr. Van Coble, Mr. Corey Earles, Mr. Kevin Foust, Dr. Lance Franklin, Major General Randal Fullhart, Ms. Elaine Gall, Mr. Mark Gess, Dr. Alan Grant, Mr. Tony Haga, Ms. Kay Heibredner, Mr. Patrick Hilt, Ms. Mary-Ann Ibeziako, Dr. Frances Keene, Dr. Chris Kiwus, Mr. Brian Kubecki, Dr. Saied Mostaghimi, Ms. Liza Morris, Ms. Heidi Myers, Dr. Ken Smith, Mr. Rick Sparks, Mr. Dwyn Taylor, Mr. Jon Clark Teglas

* * * * *

Open Session

- 1. Welcome:** The Committee Chair convened the meeting and provided welcoming remarks. Dr. Chris Kiwus introduced university staff members in attendance who work closely with the Committee.
- 2. Consent Agenda:** The Committee approved and accepted the items listed on the Consent Agenda:

- a. **Approval of the Minutes from the May 14, 2020 Meeting:** The Committee approved the minutes from the May 14, 2020 meeting.
- b. **Approval of the Minutes from the May 27, 2020 Meeting:** The Committee approved the minutes from the May 27, 2020 meeting.
- c. **Resolution on the Demolition of a University Greenhouse:** The Committee approved a resolution to demolish a university Greenhouse (Building No. 0433C). This facility is a 1,014 gross square foot frame and fiberglass plant pathology greenhouse. It is located in the Glade Road area of Virginia Tech's Blacksburg campus. Constructed in 1965, the building was used as a greenhouse, and then for agricultural service storage. Currently vacant, the building suffered wind damage and has fallen into disrepair. The university seeks to demolish the structure to remove safety and environmental concerns. This structure no longer supports the research mission of the university and its demolition will improve the campus environment as well as advance the future Glade Road portion of the Master Plan. The university will also obtain approval from the Department of Historic Resources and the Art and Architecture Review Board prior to the demolition of this structure.
- d. **Resolution to Amend the Guidelines for Projects under the Public-Private Education Facilities and Infrastructure Act of 2002:** The Committee approved a resolution revising the Guidelines for Projects under the Public-Private Education Facilities and Infrastructure Act ("PPEA") of 2002. These revisions update titles and format consistency.
- * e. **Resolution for Approval of an Update to the Capital Construction Delivery Method Approval Process:** The Committee approved a resolution updating the university's capital construction delivery method approval process.
- * f. **Resolution on Appointment to the Virginia Tech Montgomery Regional Airport Authority:** The Committee approved a resolution appointing a joint, at-large member to the Virginia Tech/Montgomery Regional Airport Authority to replace the current at-large member who is retiring.
- g. **Acceptance of the Capital Project Status Report:** The Committee accepted the quarterly capital project status report. At the request of the Committee Chair, Dr. Chris Kiwus offered a summary update on the following specific capital projects: Student Wellness Improvements, Dietrick First Floor Enclosure and Spirit Plaza, Hitt Hall/New Dining, and Global Business and Analytics Complex Residence Halls.

3. **Panel Discussion on COVID-19 Buildings and Grounds Considerations:** The Committee received a comprehensive update on preparations to mitigate impacts of COVID-19 to the physical campus.
 - Dr. Chris Kiwus moderated the panel and centered the discussion around strategic and tactical actions undertaken to create and maintain healthy environments for the entire campus community.
 - Dr. Lance Franklin spoke on health and safety standards, guidelines, and best practices foundational to the university's efforts.
 - Mr. Rick Sparks discussed impacts, planning, and actions associated with classrooms and other academic spaces for the fall semester.
 - Dr. Frances Keene offered details on modifications made to on-campus housing and residence life, dining services, student centers, and recreational sports.
 - Ms. Liza Morris provided context on how the pandemic might impact the built environment moving forward.
4. **Update on Agricultural Facilities Planning and Construction:** The Committee received an update from Alan Grant, Dean of the College of Agriculture and Life Sciences, on agricultural facilities planning and construction.
- * 5. **Resolution on the Partial Demolition of the Art and Design Learning Center:** The Committee approved a resolution to partially demolish the Art and Design Learning Center (Building No. 0196). This facility is a 22,532 gross square foot academic building. Constructed in 1931, the brick and concrete building was originally a mechanical engineering laboratory. The basement and sub-structure portion of the facility houses the Boiler Plant water treatment facility; this portion of the building will remain intact and in use. The university seeks to partially demolish the structure to allow for the growth, expansion, and support of the university's Corps of Cadets and ROTC programs. The university will also obtain approval from the Department of Historic Resources and the Art and Architecture Review Board prior to the demolition of this structure.
- * 6. **Resolution on the Demolition of Femoyer Hall:** The Committee approved a resolution to demolish Femoyer Hall (Building No. 0013). This facility is a 35,500 gross square foot academic building. Constructed in 1949, the brick building originally served as a residence hall. When the facility became obsolete as a residence hall, it was transitioned to academic and program office space through minimal renovations. Overall, the structure has received very few improvements since original construction and without major renovation will continue to require significant, sustained maintenance investment. The university seeks to demolish the structure and replace it with a residential facility. The university will also obtain approval from the Department of Historic Resources and the Art and Architecture Review Board prior to the demolition of this structure.
7. **Design Review of the Data and Decision Sciences Building:** The Committee approved the design review for the Data and Decision Sciences Building. The

building will directly support the commonwealth's Technology Talent Pipeline initiative for growth in computer science and computer engineering sectors as well as other technology-based and cyber security industries, providing 115,600 gross square feet of instructional, departmental, student study, and support space. Specialty spaces include the Deloitte Analytics and Trading Lab and a multi-story common area which will serve as a gathering space and as a connector to the future Pamplin College of Business.

- 8. Future Agenda Items and Closing Remarks:** The Committee discussed potential topics for inclusion on future meeting agendas. Anticipated items include the sustainability annual report, the Clery report, and other business as appropriate.

There being no further business, the meeting adjourned at 11:00 a.m.

* * * * *

Joint Open Session with the Finance and Resource Management Committee

The Buildings and Grounds Committee and Finance and Resource Management Committee of the Board of Visitors of Virginia Polytechnic Institute and State University met in Joint Open Session on Tuesday, August 25, 2020, at 11:00 a.m. A quorum was present.

Joint Committee Members

Present:

Mr. Horacio Valeiras (Rector)
Ms. Tish Long (Vice Rector)
Mr. Ed Baine
Mr. C.T. Hill
Ms. Sharon Brickhouse Martin
Ms. Shelly Butler Barlow
Ms. Anna James
Mr. Mehul Sanghani
Mr. Preston White

Absent:

Other Board Members Present:

Ms. Carrie Chenery
Ms. Greta Harris
Dr. Melissa Nelson

Constituent Representatives Present:

Dr. Eric Kaufman (Faculty Representative)
Ms. Camellia Pastore (Undergraduate Student Representative)
Ms. Tamarah Smith (Staff Representative)
Ms. Sabrina Sturgeon (Graduate Student Representative)

Also present were the following Virginia Tech staff members:

President Timothy Sands, Ms. Kim O'Rourke (Secretary to the Board), Ms. Callan Bartel, Mr. Bob Broyden, Dr. Cyril Clarke, Mr. Al Cooper, Mr. John Cusimano, Mr. Corey Earles, Mr. Kevin Foust, Ms. Kay Heidbreder, Mr. Tim Hodge, Dr. Chris Kiwus, Ms. Nancy Meacham, Mr. Ken Miller, Ms. Liza Morris, Mr. Justin Noble, Mr. Mark Owczarski, Mr. Charlie Phlegar, Dr. Dwayne Pinkney, Dr. Menah Pratt-Clarke, Mr. Dwyn Taylor, Mr. Jon Clark Teglas, Ms. Tracy Vosburgh

Also present were the following guests:

Mr. Henri Gendreau

- * 1. **Approval of Resolution for Temporary Supplement for Planning the Undergraduate Science Laboratory Building:** The Committees reviewed for approval a resolution for a temporary supplement for planning the Undergraduate Science Laboratory Building. The university infused \$3.084 million of temporary nongeneral funds to complete preliminary designs in September 2017; these designs were completed and the funds were exhausted by January 2020. During fiscal year 2020, the university infused \$2.432 million of additional temporary funds to ensure continuity of the A/E design team and to complete working drawings, bringing the adjusted total budget to complete planning to \$5.516 million. The state has requested that Virginia Tech hold the \$2.432 million supplement authorization locally using its restructuring authority. The entire \$5.516 million of temporary resources will be reimbursed by General Fund resources when the state appropriates construction funding for this project. This request is for a capital planning authorization to hold a \$2.432 million supplement to adjust the temporary budget and funding for the Undergraduate Science Laboratory Building project to \$5.516 million. The Committees recommended the Resolution for Temporary Supplement for Planning the Undergraduate Science Laboratory Building to the full Board for approval.

There being no further business, the meeting adjourned at 11:24 a.m.

* * * * *

* **Requires full Board approval.**



SUSTAINABILITY

2019-20 ANNUAL REPORT





CONTENT

Executive Summary	3
Overview	5
Introduction	
Energy and Sustainability Committee	
Virginia Tech Climate Action Commitment	
Sustainability Plan	
Office of Sustainability	
Office of Sustainability Partners	
2019-2020 Sustainability Progress	7
Virginia Tech 2020 Climate Action Commitment Working Group	36
Conclusion	38
Acknowledgments	39
Appendix	39



EXECUTIVE SUMMARY

For the past 11 years Virginia Tech has made considerable progress in implementing its 2009 Climate Action Commitment and Sustainability Plan. The 2009 Virginia Tech Climate Action Commitment was unanimously approved by the Virginia Tech Board of Visitors on June 1, 2009, and it was a cutting-edge effort for its time. On May 9, 2013, the University Council approved Revision 1 which made adjustments based on four years of implementation.

Today, Virginia Tech is a recognized leader in campus sustainability with a Sustainability Tracking and Rating System (STARS) Gold score that is highest among Virginia and ACC peer institutions. Virginia Tech has won numerous awards and recognitions since 2010, including Princeton Review's top 50 Green Colleges (#12 in 2019); the Governor's Environmental Excellence Award (seven times); Best Workplaces for Commuters (every year; Gold in 2019-20); Bicycle Friendly Campus (every year; Silver in 2019); Tree Campus USA certification (every year); and many others.

The university has reduced greenhouse gas (GHG) emissions by 24 percent from 2006-19, despite 22 percent growth in campus building size and enrollment. This reduction is faster than the 2009 Climate Action Commitment target trajectory. It resulted from investments in energy efficiency in existing and new buildings, and most importantly from replacing steam plant coal with natural gas enabled by a new gas pipeline. Virginia Tech now has 36 LEED-certified buildings constructed or in progress, amounting to 30 percent of campus space, and from 2015-20, Virginia Tech invested \$14 million in energy efficiency improvements resulting in energy and dollar savings with a 5-year payback.

Virginia Tech has done much to develop alternative transportation choices, from bike racks and dual use trails; to bike share, rideshare, car share programs; to increased ridership on partner Blacksburg Transit; to innovative plans to boost campus mobility. For Calendar Year 2019, Virginia Tech achieved an 80 percent waste diversion rate (waste diverted from landfill) and a 40 percent recycling rate. In April 2020, the Procurement Department unveiled a Sustainable Procurement Policy, and in May, the Division of Campus Planning, Infrastructure, and Facilities produced new Design and Construction Building Standards, both of which reflect the ideals of the Climate Action Commitment.

There is an enviable array of sustainability-related academic programs, majors, coursework, and research in green engineering, natural resources, energy systems, environmental policy, and many others. In the STARS rating system, Virginia Tech scores 89 percent of possible points in academic categories. It also scores 95 percent of possible points in campus engagement. Virginia Tech has a rich campus life for students with a wide array of opportunities, including strong environmental student organizations. Indeed, these student groups have pushed the university to move forward on climate action.

The Division of Campus Planning, Infrastructure, and Facilities has embraced sustainability and climate action as part of its mission. The university has a one-of-a-kind Virginia Tech Electric Service (VTES), a university-owned independent utility that serves not only campus, but also 6,000 Blacksburg customers.

The Virginia Tech 2019-20 Sustainability Annual Report begins with a broad overview of the university's sustainability program, presents the 14 points contained in the 2013 Virginia Tech Climate Action Commitment, and showcases sustainability highlights for each point.

In late 2019 – prompted by the demands of students and other community members involved in Climate Strikes and resolutions from the Faculty and Staff Senates, Student Government Association, and Graduate Student Assembly – President Tim Sands and Senior Vice President and Chief Business Officer Dwayne Pinkney established a Climate Action Commitment Working Group comprised of 26 faculty, students, staff, and community members. They selected Professor Emeritus John Randolph to serve as chair of the Working Group and he was ideal for this role having spearheaded the 2009/2013 Climate Action Commitment.

In announcing the creation of the Working Group, President Sands stated, “Climate change presents one of the world’s most pressing problems...and Virginia Tech has a duty to respond.” The Working Group was charged to assess the university’s progress in implementing the 2009/2013 Climate Action Commitment, compare Virginia Tech’s experience to peer institutions, and develop a new commitment. While the university has made tremendous strides with advancing sustainability on campus, a decade later it fails to prescribe what climate scientists recognize as necessary actions and also falls short of many peer universities’ recent initiatives.

From January to June 2020, the Virginia Tech Climate Action Commitment Working Group executed its charge to evaluate the university’s current position and future role in addressing climate change. During this same period, the global pandemic COVID-19 brought unprecedented hardship and suffering, particularly for the most vulnerable. Nevertheless, this unique time is engendering a tremendous spirit of innovation and collaboration. Around the world, people are coming together to address historic challenges, becoming bolder and more creative. Every aspect of our livelihoods is being reimagined.

In order to engage a broad range of expertise and perspectives from across the university and wider community and conduct an ambitious work program, the Climate Action Commitment Working Group established 12 subcommittees to include a total of 130 faculty, students, community members, and staff to investigate and discuss specific issues relevant to the commitment. Most of the subcommittees met weekly from early February through the end of May. The subcommittees included:

- Agriculture, Forestry, and Land Use
- Budget and Finance
- Buildings Opportunities
- Climate Justice
- Community Engagement
- Energy Opportunities
- Greenhouse Gas (GHG) Inventory
- Peer Institutions Comparison
- Renewables Opportunities
- Structuring Sustainable Choices
- Transportation Opportunities
- Waste-Recycling-Composting and Procurement

The Working Group developed several mechanisms to expand community involvement in the process, including a website and email address for comment and two online surveys. Plans for face-to-face town hall meetings and conference sessions had to be reimagined when the university shut down after spring break. In place of the in-person events, the Working Group hosted 12 Zoom Convening sessions in April, attended by over 220 participants who provided excellent feedback. In anticipation of the Convening sessions, the Working Group and its subcommittees also developed ten creative videos that described the new Climate Action Commitment proposals.

The Working Group focused on developing effective strategies the university can advance to achieve meaningful climate action. Throughout the multitude of Working Group, subcommittee, and community Zoom meetings, discussions reflected on the important opportunity for Virginia Tech to reinvent itself, not only in its commitment to climate action, but also in its responsiveness to the needs of the world around us, in the spirit of Virginia Tech’s motto, *Ut Prosim - That I May Serve*.

The Working Group developed the draft Virginia Tech 2020 Climate Action Commitment recommending a new vision and mission statement, 15 goals, and potential pathways to achieve those goals. Their recommendations are bold, aggressive, and comprehensive. Its goals range from necessary upgrades to the campus physical plant to reduce GHG emissions, to integrating those improvements into the educational mission through a Climate Action Living Laboratory, to engaging everyone in creating a culture of sustainability - all to position Virginia Tech as a leader as the clean energy economy evolves in the Commonwealth and the world.

On July 15, 2020, the Virginia Tech 2020 Climate Action Commitment Working Group Final Report - 2020 was successfully presented by Professor Emeritus John Randolph to Senior Vice President and Chief Business Officer Dr. Dwayne Pinkney. The recommendation was placed in resolution format. The Commission on University Support Resolution 2020-21A, Resolution to Approve the Virginia Tech 2020 Climate Action Commitment is currently under review by university governance for presentation (and approval) to the Virginia Tech Board of Visitors in November 2020.

OVERVIEW

Introduction

Virginia Tech's Climate Action Commitment defines sustainability as the simultaneous pursuit of environmental quality, economic prosperity, and social justice and equity, through action, education, and engagement to address current needs without compromising the capacity and needs of future generations.

Virginia Tech's sustainability vision is to serve 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. The university's strategic plan includes references to these expectations and efforts. The pursuit of sustainability is achieved through Virginia Tech's administration; physical environment and operations; student life and experience; campus culture and behavior; and academic learning, discovery, and engagement.

Virginia Tech is a member of the Association for the Advancement of Sustainability in Higher Education (AASHE). AASHE is an association of colleges and universities that are working to create a sustainable future. AASHE's mission is to empower higher education to lead the sustainability transformation. It provides resources, professional development, and a network of support to enable institutions of higher education to model and advance sustainability in everything they do, from governance and operations to education and research.

Virginia Tech is also a member of the Virginia Association for the Advancement of Sustainability in Higher Education (VASHE). VASHE is a consortium of colleges and universities that work collaboratively to advance sustainability within the Commonwealth of Virginia, and its mission is similar and compliments AASHE.

Energy and Sustainability Committee

The university established the Energy and Sustainability Committee on April 30, 2007. It is one of 16 committees within the university governance system. The Energy and Sustainability Committee's charge 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."

The Energy and Sustainability Committee has 20 members and includes faculty, staff, and student representation. It is unique in that it is the only committee in the university governance system that has four student representatives (two graduate students and two undergraduate students). The other committees have a total of two student representatives. Please refer to governance.vt.edu/assets/esc-roster.pdf for more information.

The Energy and Sustainability Committee reports to the Commission on University Support who reports to the University Council. Refer to governance.vt.edu/cc.html to learn more.

Virginia Tech Climate Action Commitment

During Earth Week in April 2008, former university President Charles W. Steger charged the Energy and Sustainability Committee to develop a climate commitment and accompanying sustainability plan that was unique to Virginia Tech, and to have the commitment placed in resolution format for review and action by the University Council in the 2009 spring semester. The Energy and Sustainability Committee developed the draft Virginia Tech Climate Action Commitment and Sustainability Plan (Climate Action Commitment and Sustainability Plan) and spearheaded the review process.

On April 22, 2009 (Earth Day) the University Council voted to recommend approval of the Virginia Tech Climate Action Commitment and accepted the accompanying Sustainability Plan. On June 1, 2009, at their regularly scheduled meeting, the Virginia Tech Board of Visitors unanimously approved the Virginia Tech Climate Action Commitment and it became Presidential Policy Memorandum 262. Containing 14 points, the commitment includes sustainability goals, objectives, and aspirations. In academic year 2012-13, the Energy and Sustainability Committee revised the commitment and added a Sustainability Definition, Vision, and Mission. On May 6, 2013, the University Council approved the revision. Visit facilities.vt.edu/content/dam/facilities_vt_edu/sustainability/climate-action-commitment.pdf to view the Climate Action Commitment.

As discussed in the Executive Summary, the Climate Action Commitment revision process is currently underway. Further discussions on this topic can be found in Point 10 and in the section titled “Virginia Tech 2020 Climate Action Commitment Working Group.”

Sustainability Plan

Virginia Tech has adopted the Association for the Advancement of Sustainability in Higher Education’s (AASHE) Sustainability Tracking, Assessment and Rating System (STARS) protocol as the foundation of the Sustainability Plan. The STARS protocol consists of over 60 topical areas (called credits) that are placed in one of four categories: Academics, Engagement, Operations, and Planning and Administration. Additional credit is earned for unique initiatives implemented that are not covered in STARS. Data and information submitted is measured against a national standard. Points are earned for each credit. Total points (score) yields an overall rating, Platinum, Gold, Silver, or Bronze.

Virginia Tech has received 4 STARS ratings (2011: Silver; 2013: Silver; 2014: Gold; and 2017: Gold). For the 2017 Gold rating, Virginia Tech earned 71.94 points which at that time represented the highest achieved for any college or university in the Commonwealth of Virginia, and the highest achieved by peer institutions in the Atlantic Coast Conference. The STARS Gold Rating is good for three years and the Office of Sustainability is currently preparing their 2020 submission. Virginia Tech’s STARS report is publicly available on the STARS website at stars.aashe.org/institutions/virginia-tech-va/report/2017-12-19.

Office of Sustainability

On June 1, 2009, following the approval of the Virginia Tech Climate Action Commitment by the Virginia Tech Board of Visitors, the university established the Office of Sustainability. Recognized as the university clearing house for sustainability matters, the Office of Sustainability has the following duties and responsibilities:

- a. Coordinate programs for campus sustainability;
- b. Oversee the implementation of the Climate Action Commitment and Sustainability Plan;
- c. Monitor annual electricity and other energy use and GHG emissions;
- d. Manage a campus-wide student internship and undergraduate research program using the campus as a sustainability laboratory; and
- e. Coordinate communication regarding campus sustainability initiatives and programs to the university community and external audiences.

Office of Sustainability Partners

UNIVERSITY COLLEGES, DEPARTMENTS, AND UNITS

The Office of Sustainability collaborates with faculty and staff in virtually all of the colleges at Virginia Tech to include College of Agriculture and Life Sciences, College of Architecture and Urban Studies, College of Business, College of Engineering, College of Liberal Arts and Human Sciences, College of Natural Resources and Environment, College of Science, and the Virginia-Maryland College of Veterinary Medicine.

STUDENT GROUPS

The Office of Sustainability works with many student groups to include the Student Government Association, Residence Hall Federation, Environmental Coalition, Environmental Student Organization, Food Justice at Virginia Tech, Galileo Living Learning Community, Hypatia Living Learning Community, Society of Renewable Resources, Stroubles Creek Restoration Initiative, Student Chapter of the American Water Resources Association, Students for Sustainable Practice, Sustainable Food Corps, Campus Kitchen at Virginia Tech, and The Green Program - Study Abroad at Virginia Tech.

COMMUNITY GROUPS

The Office of Sustainability collaborates often with the Town of Blacksburg, the local citizens group Sustainable Blacksburg, and the Blacksburg Farmers Market.



2019-2020 SUSTAINABILITY PROGRESS

POINT 1: Leader in Campus Sustainability

"Virginia Tech will be a Leader in Campus Sustainability. 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."

Awards and Recognition

Virginia Tech has consistently demonstrated its commitment to being a leader in campus sustainability and has received awards and recognition at both the state and national levels.

SOLAR DECATHLON AWARDS

Two Virginia Tech teams won awards at the U.S. Department of Energy Solar Decathlon Design Challenge. The challenge requires teams to design highly energy efficient buildings that are powered by renewable energy. They often represent the pinnacle of environmentally responsible design and could be eligible to achieve LEED Platinum certification. For more information visit:

vtnews.vt.edu/articles/2020/06/solar-decathlon-team-awards.

IN THE TOP
5 UNIVERSITIES WITH THE
BEST CAMPUS FOOD
The Travel

#2 BEST CAMPUS FOOD
Niche

#5 BEST CAMPUS FOOD
"Best of 384 Colleges: 2019 Edition," *The Princeton Review*

GOLD ADDY® AWARD FOR
SHIKI FOOD PHOTOGRAPHY
Western Virginia American Advertising Awards

GOLD ADDY® AWARD FOR
SHIKI SPECIAL EVENT MENU
Western Virginia American Advertising Awards

SILVER ADDY® AWARD
FOR CHILI
CHALLENGE VIDEO SERIES
Western Virginia American Advertising Awards

VIRGINIA TECH DINING SERVICES AWARDS
Dining Services boasts a tradition of award-winning programming, venues, and service. Dining Services is committed to being the leader of college and university food service and a leader in sustainability and has received numerous awards for their efforts. Learn more at dining.vt.edu/about/awards_honors

2019

#1 BEST
CAMPUS
FOOD
Niche

#1 SALES VOLUME
COLLEGE AND
UNIVERSITY
Freshens

#2 JERK
CHICKEN
WINGS
*Tyson Foods' College and
University Wings Contest*

#3 BEST
CAMPUS
FOOD
The Princeton Review

#3 PHOTO
ESSAY "PLANT
FORWARD"
*University Photographers'
Association of America*

#3 PERSONAL
VISION "CREAM
AND SUGAR"
*University Photographers'
Association of America*

#4 COLLEGE
POWER
PLAYERS
Food Management

IN THE TOP
15 COLLEGE DINING
HALLS IN AMERICA
*According to Students,
Business Insider*

SILVER
ADDY® AWARD FOR DEET'S
PLACE COMPOSTABLE CUPS
Western Virginia American Advertising Awards

SILVER
ADDY® AWARD FOR PLANT
FORWARD FOOD PHOTOGRAPHY
Western Virginia American Advertising Awards

WINNER
OF MENU MADNESS
TOURNAMENT
Food Management

BEST
COLLEGE FOOD
TRUCK OF THE YEAR
Mobile Cuisine

BEST
SANDWICHES WITH
GLOBAL FLAVORS
Food Management



PRINCETON REVIEW GUIDE TO GREEN COLLEGES, 2019 EDITION

The Guide to Green Colleges 2019 Edition profiles colleges with the most exceptional commitments to sustainability based on their academics and career preparation for students, campus policies, initiatives, and activities. The Guide uses the STARS protocol. Virginia Tech has been selected every year since 2008 and was most recently ranked #12 in the top 50 Green Colleges, earning a rating of 97 out of a possible 99 points. This is the 10th consecutive year Virginia Tech has received a Green College recognition.



An Arbor Day Foundation Program

2020 TREE CAMPUS USA REACCREDITATION

For the 12th consecutive year, Virginia Tech has been recognized for its best practices in campus community forestry through the Arbor Day Foundation's Tree Campus USA program. Launched in 2008, Tree Campus USA is a national program that honors colleges and universities for effective campus forest management and for engaging students, faculty, and staff in conservation goals. Virginia Tech achieved Tree Campus USA recognition by meeting five national standards, which include maintaining a tree advisory committee, operating a campus tree-care plan, dedicating annual expenditures toward trees, organizing an Arbor Day observance, and executing student service-learning projects. More than 700 trees have been planted across campus since 2008. Trees are among the most visible representations of Virginia Tech's commitment to environmental stewardship, as demonstrated by two recent projects.

Virginia Tech has made its urban forest canopy a priority and hired the first university arborist in 2019. Development of an urban forest master plan has begun and this plan will institute management of the more than 10,000 trees on Virginia Tech's core campus. This new program will optimize the environmental benefits provided by campus trees and provide wildlife habitat in an urban area where habitat is often scarce.

SIERRA CLUB COOL SCHOOLS FOR 2020

The Sierra Club's Cool Schools for 2020 ranked Virginia Tech No. 74 out of a total list of 312 select institutions. Cool Schools uses data and information from the most recent STARS rating for its publication.

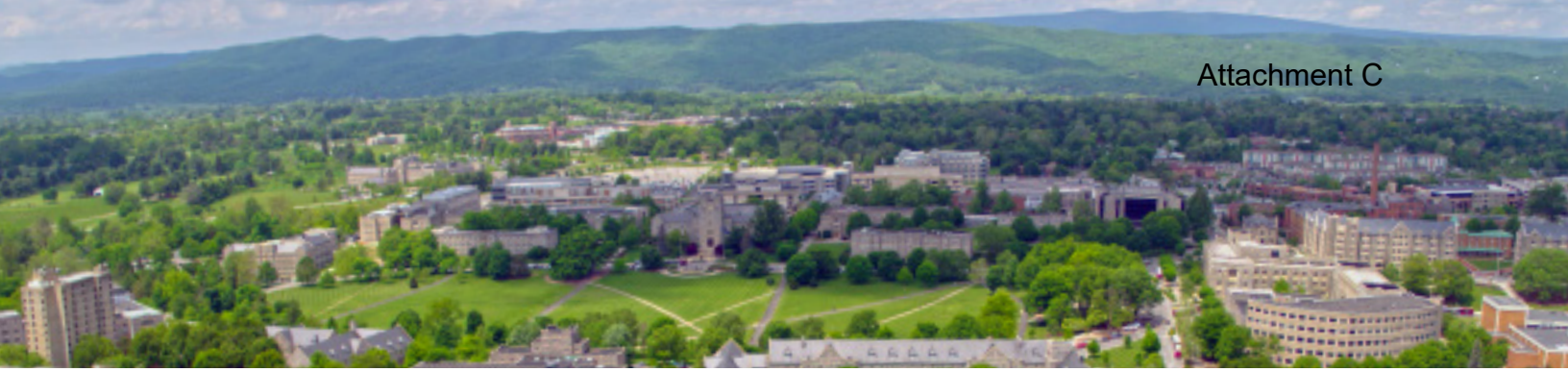


VIRGINIA TECH ALTERNATIVE TRANSPORTATION AWARDS

The Alternative Transportation Department seeks to meet all the travel needs of students, faculty, and staff in healthy and environmentally friendly ways.

- Blacksburg Transit was named the 2019 Outstanding Transit System for North America by the American Public Transportation Association in 2019. Learn more at vtnews.vt.edu/articles/2019/07/ops-BTAward.
- Virginia Tech was awarded a Silver ranking as a Bicycle Friendly University by the League of American Bicyclists for the period of 2019-2023. This is an improvement from our previous Bronze rating. Virginia Tech has been recognized as a Bicycle Friendly University since 2013. Learn more at vtnews.vt.edu/articles/2019/10/ops-bikefriendly.
- Virginia Tech has been named one of the 2020 Best Workplaces for Commuters. View the story at vtnews.vt.edu/articles/2020/01/ops-commuterworkplace.
- Excellence in Planning for an Existing Campus: In August 2019, Virginia Tech and consulting partner Sasaki were honored with the Society for College and University Planning Excellence in Planning for an Existing Campus Merit Award for the Virginia Tech 2018 Campus Master Plan. More information on the award and Beyond Boundaries 2047: The Campus Plan can be found at vtnews.vt.edu/articles/2019/08/ops-masterplanaward.





Point 2: Virginia Tech Climate Action Commitment and Sustainability Plan represented in the Strategic Plan

"Virginia Tech will represent the Virginia Tech Climate Action Commitment and Sustainability Plan in the university's Strategic Plan."

The new Virginia Tech Strategic Plan, the Virginia Tech Difference: Advancing Beyond Boundaries was approved by the Virginia Tech Board of Visitors on June 2, 2019. The Strategic Plan can be viewed at strategicaffairs.vt.edu/StrategicPlanning/the-vt-difference-advancing-beyond-boundaries.

STRATEGIC PRIORITY 4 (ENSURE INSTITUTIONAL EXCELLENCE) HIGHLIGHTS THE VIRGINIA TECH CLIMATE ACTION COMMITMENT BY STATING THE FOLLOWING:

"Approved by the Board of Visitors on June 1, 2009, the Virginia Tech Climate Action Commitment envisions Virginia Tech as a model community for a sustainable society. The Virginia Tech Climate Action Commitment affirms that Virginia Tech will be a leader in campus sustainability and outlines several goals and milestones for improving sustainability. Areas of focus include reducing emissions, improving the sustainability of the built environment, minimizing waste, and improving electricity, heating, and transportation efficiency. Virginia Tech engages and involves the university community in these efforts through multiple activities including the development and implementation of sustainability-related academic programs and innovative strategies for efficient and sustainable use of energy, water, and materials in all university-owned facilities."

Beyond Boundaries 2047: The Campus Plan, approved by the Virginia Tech Board of Visitors in November 2018, integrates the facilities and infrastructure required to support Virginia Tech's new strategic plan. It includes a network of amenities and services designed to improve the student experience; an integrated approach to accessibility and mobility; and a series of mixed-use districts featuring new cross-disciplinary academic, research, and partnership facilities. The plan reinforces the academic, research, and outreach mission across Virginia Tech's three campuses and numerous agricultural stations. **In doing so, it responds to five overarching goals:** (1) enhance learning and research environments; (2) expand strategic partnerships; (3) protect the land grant legacy; (4) facilitate accessibility and mobility; and (5) foster an inclusive campus experience. Beyond Boundaries 2047 can be viewed at bit.ly/VTBeyondBoundaries2047.

SUSTAINABILITY OUTCOMES ARE FEATURED ON PAGES 322-31. THE INTENT IS TO:

- Minimize consumption of natural land, and reduce vehicular emissions, via a land use strategy focusing on infill development rather than sprawl (including a growth boundary established by the proposed Western Perimeter Road);
- Reduce vehicular emissions via an alternative transportation-focused mobility system (e.g. transit, walking, bicycles), the relocation of parking to the perimeter of campus, and the construction of a transit hub at the academic core;
- Advance green stormwater and carbon sequestration efforts through strategic reforestation along major campus corridors and the integration of substantial landscape elements into the proposed accessible pathway system (particularly the Green Links); and
- Conserve energy by promoting energy-efficient building siting and design, as well as conversion to alternative energy sources (in keeping with the university's Climate Action Commitment).

Over the 2019-20 academic year, the 2018 Campus Master Plan has continued to be adopted and implemented across campus. Throughout the year, collaborative, partnership-driven continuous planning processes were launched, including the development of unit-level strategic plans and feasibility studies to inform prioritization and implementation of Beyond Boundaries 2047.

Another plan which is currently being written and that will help Virginia Tech reach its sustainability goals is the Campus Urban Forest Master Plan. This plan is being created by University Arborist Jamie King and will set the tone for how the Division of Campus Planning, Infrastructure, and Facilities will manage campus natural resources and care for Virginia Tech's trees. Among the goals that this plan hopes to lay out is to preserve valuable and safe trees on campus; institute an urban tree canopy goal; institute a campus tree policy; and provide opportunities for teaching and research on a campus that is safe and beautiful. Questions regarding urban forestry at Virginia Tech can be directed to Jamie King at campusarborist@vt.edu.

The university's newly updated Design and Construction Standards Manual (facilities.vt.edu/planning-construction/design-and-construction-standards) outlines the philosophy, standards, recommendations, and requirements for the design and construction of campus buildings. More information on the Design and Construction Standards Manual can be found in Point 7: Electricity and Heating Efficiency.

Point 3: Reduction of Campus GHG Emissions

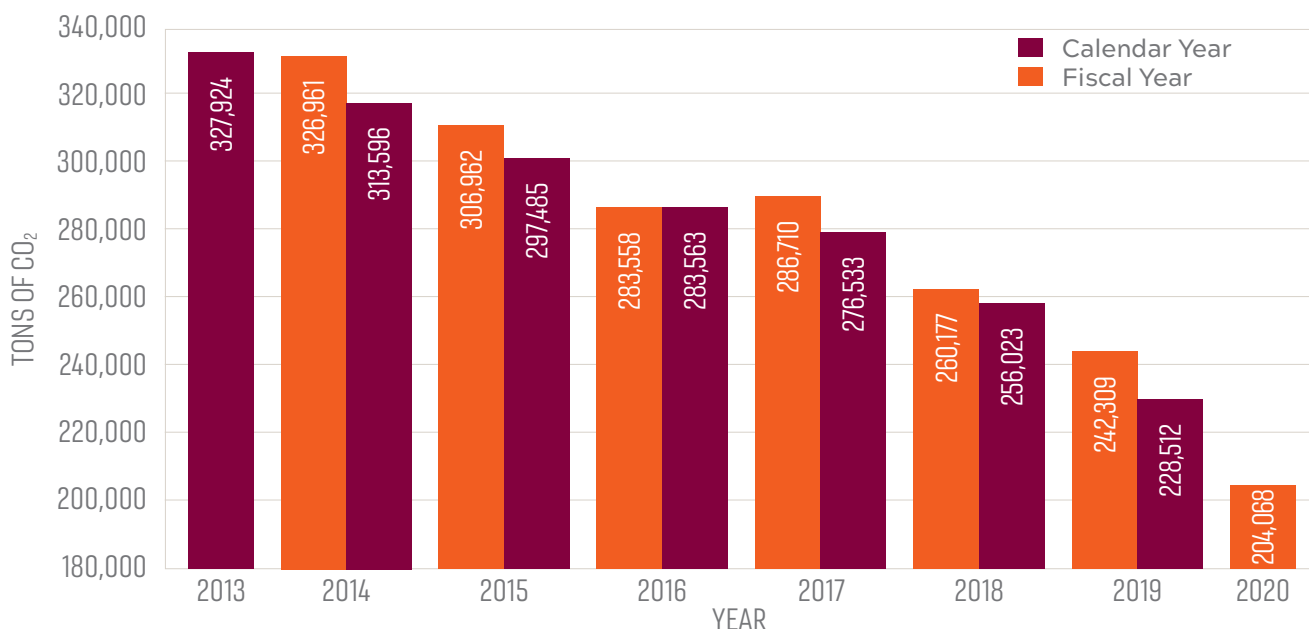
"Virginia Tech will establish a target for reduction of campus GHG emissions to 80% below 1990 emission level of 188,000 tons by 2050. Interim targets from 2006 emissions of 316,000 tons will be: for 2012, 295,000 tons (on path to 2025 target); for 2025, 255,000 tons (2000 emission level); and for 2050, 38,000 tons (80 percent below 1990 emission level)."

Virginia Tech has continued achieving steady progress in reducing GHG emissions while at the same time having a robust construction program. Much of that reduction is attributable to the increased use of natural gas as the university's primary fuel source and the introduction of boiler pollution reduction initiatives, and many energy conservation measures.

Figure 1 shows the decline in GHGs both from a calendar year and fiscal year perspective. FY2020 shows a 15.8 percent decrease in total emissions compared to FY2019. This is a great improvement as the decrease in total emissions between FY2019 and 2018 was only 5 percent. **There were three main reasons for this large decrease in total emissions:**

1. Virginia Tech Electric Service (VTES) purchased RECs for CY2019 and CY2020. RECs, or Renewable Energy Credits, can be purchased by utilities to increase the amount of renewable energy used in the energy mix their electricity comes from. For example, the typical fuel mix from American Electric Power (AEP) for this region is made up of about 10 percent renewable sources. By purchasing RECs, VTES increased their renewable sources by 10 percent in CY2019 and 20 percent in CY2020. Thus, the resulting renewable mix for CY2019 was around 20 percent while in CY2020 it was around 30 percent. This increase in renewable sources significantly decreased campus emissions due to purchased electricity.

FIGURE 1: VIRGINIA TECH ANNUAL CO₂ EMISSIONS



- The COVID-19 pandemic caused an abrupt shift to online learning during spring 2020. Most campus buildings were limited to certain personnel and students stopped coming to campus. This resulted in less electricity use, along with a reduced heating and cooling load during the spring and summer months. In addition to the reduction of other sources of emissions such as commuting and air travel, emissions fell sharply in FY2020 Q4 compared to previous years.
- The campus steam plant used more natural gas and less coal than ever. The shift to natural gas provided more GHG savings compared to previous years due to cleaner emissions provided by its usage. A new gas-fired boiler was recently brought into commission and will enable the steam plant to use even less coal in future years.

FIGURE 2: VIRGINIA TECH GHG EMISSIONS PROGRESS

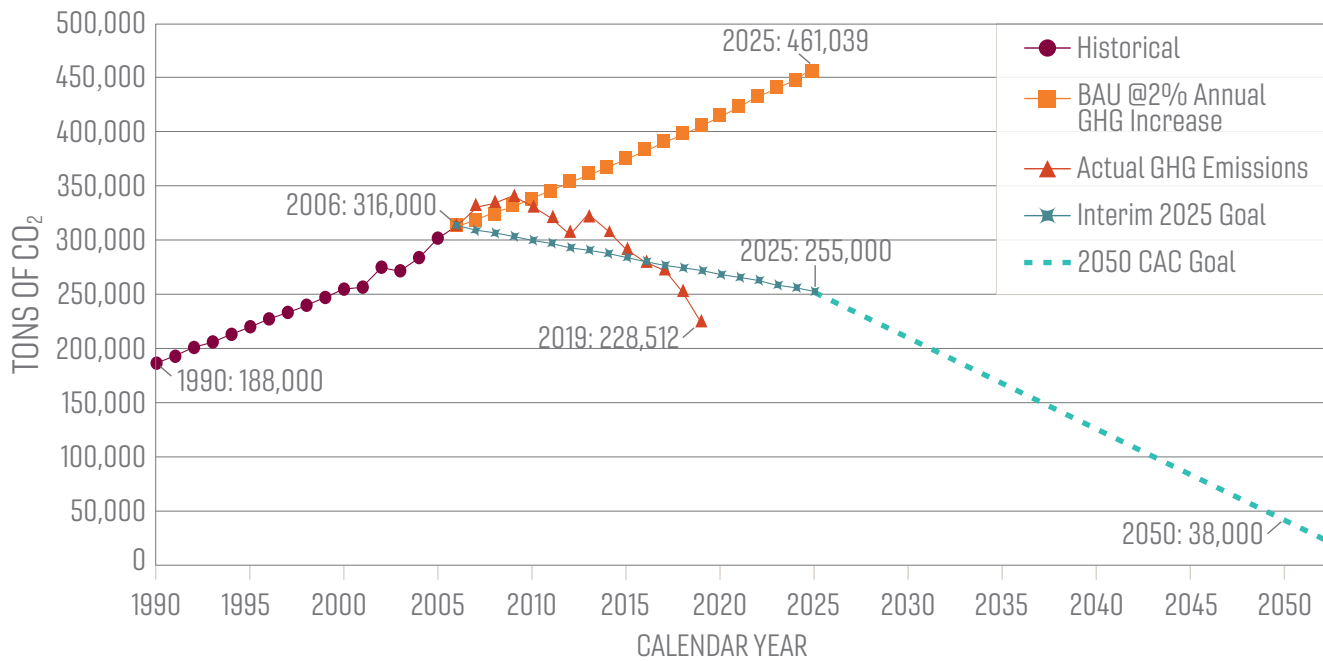
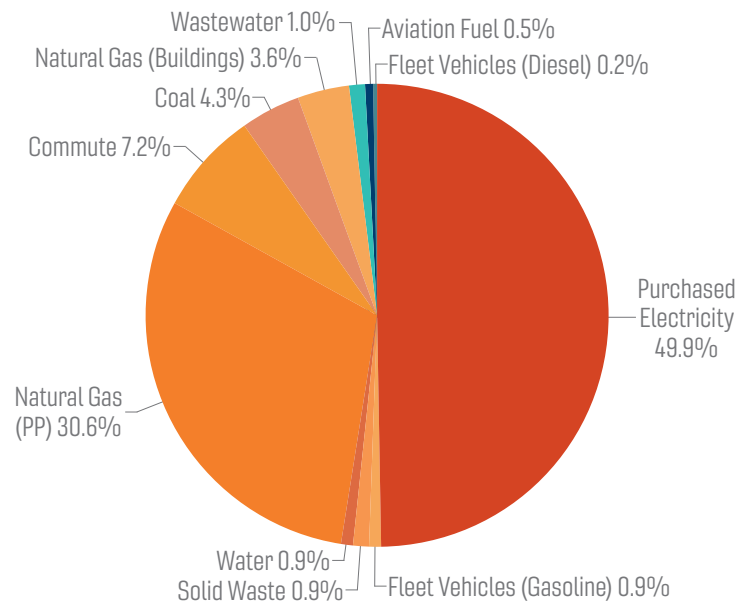


Figure 2 depicts the university's GHG emissions from 1990 to 2006. At that point, if the university had taken a business as usual (BAU) approach the GHG emissions would have continued on an upward trajectory as shown by the orange square dotted line. However, at that point, Virginia Tech began to introduce its Boiler Pollution Reduction initiatives and energy conservation measures. The university established reduction targets for 2025 (teal diamond dotted line) and 2050 (dashed turquoise line). The red dotted line depicts the university's actual GHG emissions which is on a downward trend line. During CY2019, the university achieved emissions below the interim 2025 goal for the first time, and 5 years early. Due to the impacts of COVID-19, increased campus efficiency, and VTES RECs purchases, the Office of Energy Management projects that CY2020 emissions will continue on this downward trend. Reaching the 2050 goal will require a considerable investment in renewable energy.

FIGURE 3: GHG EMISSIONS BREAKOUT FY 2020



The pie chart in **Figure 3** shows the distribution of GHG emissions by source for the 2020 fiscal year. The largest sources of GHG emissions are purchased electricity (49.9 percent, a decrease from FY2019) followed by natural gas (30.6 percent, an increase from FY2019) used in the co-generation steam plant.

Figures 4, 5, and 6 show power plant fuel consumption, usage, and GHG emissions between FY2014 and 2020. The main point to note is that power plant fuel consumption has remained relatively steady with a 75 percent decrease in coal use as Virginia Tech has switched to cleaner burning natural gas. Power plant GHG emissions have been reduced over the past 6 years due to this change in fuel source.

Figure 4. Power Plant Fuel Consumption. This figure shows the steady decline in the use of coal at Virginia Tech from FY2014 to 2020. **In FY2020, the power plant consumed 92.5 percent natural gas and only 7.5 percent coal!**

Point 4: Improved Energy Efficiency

"Virginia Tech will work toward these emission reduction targets through improved energy efficiency, reduction of energy waste, replacement of high-carbon fuels, and other measures identified in the Virginia Tech Climate Action Commitment and Sustainability Plan."

The Office of Energy Management within the Division of Campus Planning, Infrastructure, and Facilities guides 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.

DSM promotes energy efficiency by means of upgrading, retrofitting, and commissioning mechanical, lighting, building automation, and electrical systems in university buildings. The Office of Energy Management launched a Five-Year Energy Action Plan in 2015 to address the energy efficiency improvements within a group of the 50 most energy-intensive buildings on campus. Additionally, numerous other ongoing projects are in effect to successfully manage energy consumption on campus.

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. These reductions can be visualized in actualized savings achieved under the Five-Year Energy Action Plan discussed below. 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.

FIGURE 4: POWER PLANT FUEL CONSUMPTION

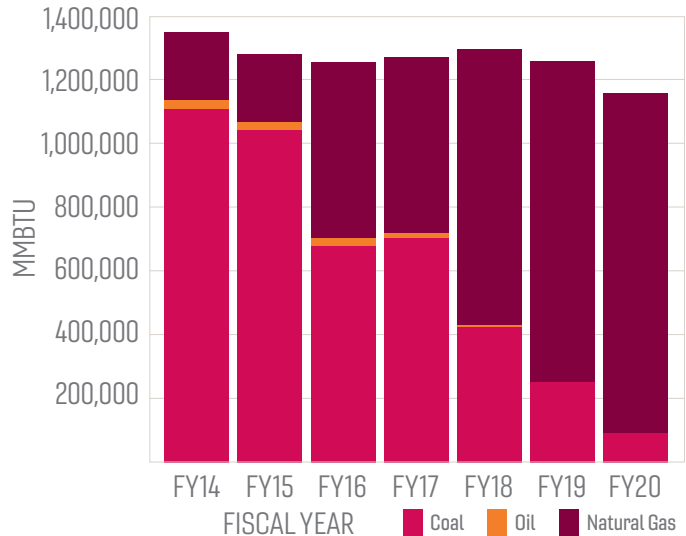


FIGURE 5: POWER PLANT FUEL USAGE BY TYPE

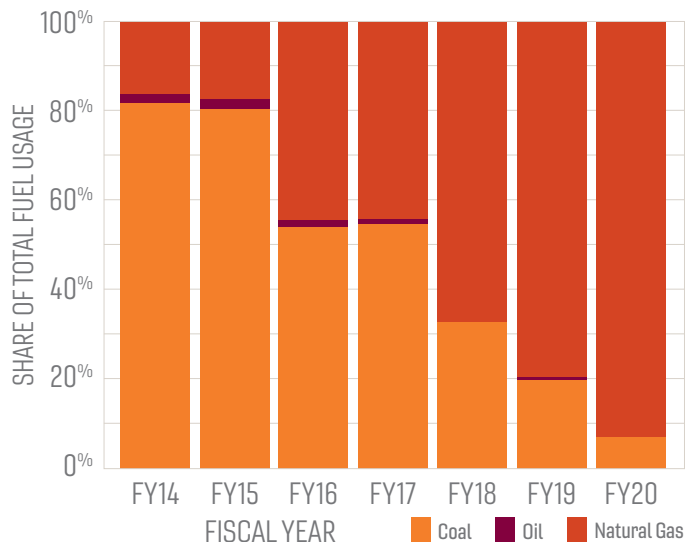
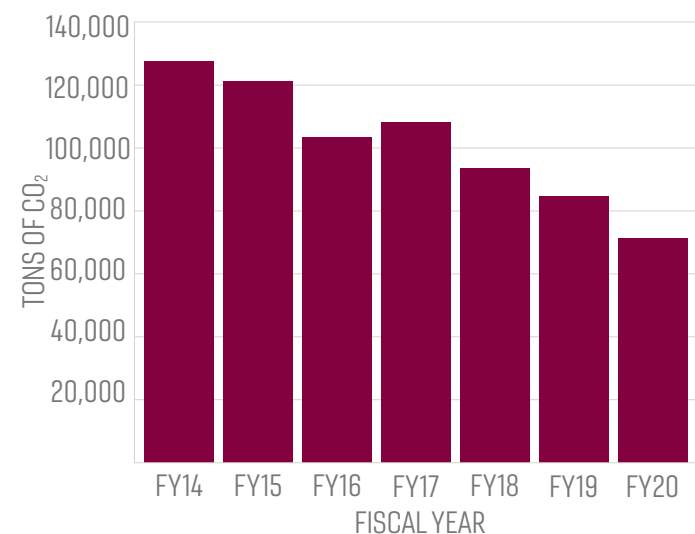


FIGURE 6: POWER PLANT GREENHOUSE GAS EMISSIONS



Virginia Tech Guidelines for Energy Efficient Design

The Division of Campus Planning, Infrastructure, and Facilities is in the process of formalizing standards to ensure that the design and construction of buildings at Virginia Tech comply with the Virginia Energy Conservation code. The purpose of Virginia Tech Guidelines for Energy Efficient Design (facilities.vt.edu/energy-utilities/energy-reduction-efforts/energy-efficiency-design-guidelines) is to formulate additional requirements which go beyond the applicable Energy Code and are specific to the university.

This document presents recommended design elements in ten sections each representing a vital interrelated component of an energy-efficient design and includes running a building energy simulation, efficient building shell design, windows and daylight harvesting, efficient use of lighting and power, heating and cooling, ventilation, local service water heating, building automation, renewable energy systems, and energy metering.

Five-Year Energy Action Plan

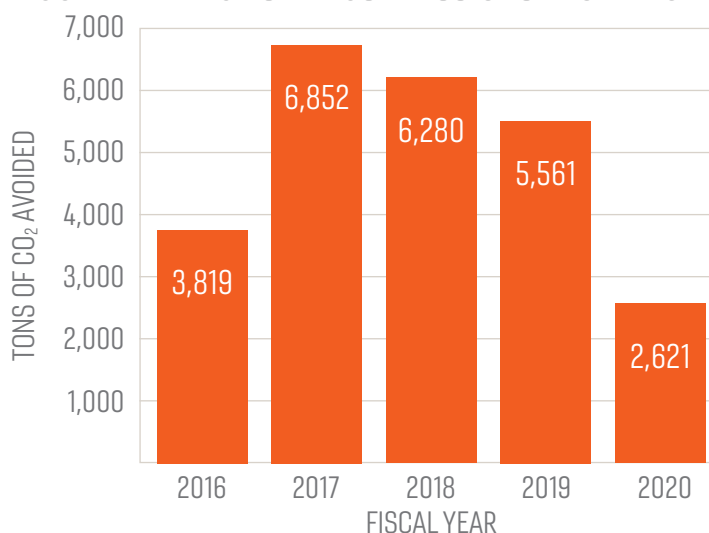
When the Virginia Tech Office of Energy Management conducted an energy benchmarking analysis of existing buildings on the main Blacksburg campus in 2015-16, it discovered 50 buildings accounted for over 70 percent of overall university energy costs. That is only 35 percent of all buildings on campus. This discovery was the catalyst for the Five-Year Energy Action Plan, a comprehensive blueprint to improve energy efficiency and reduce energy costs within five years in the 50 most energy-intensive, “energy hog” buildings.

Managed by the Office of Energy Management within the Division of Campus Planning, Infrastructure, and Facilities, the Energy Action Plan combines energy data analysis with a range of retrofitting projects to achieve significant energy cost reductions. Since 2016, five phases of the Five-Year Energy Action Plan have been implemented, with new energy-intensive buildings incorporated into each phase. Under the Energy Action Plan and its five phases, the university has already reduced its carbon emissions by about 25,000 tons per year and saved nearly \$3 million in equivalent annual energy costs; full integration of the plan is expected to yield more than \$6.3 million in overall cumulative energy cost savings.

Figure 7 shows the amount of CO₂ emissions avoided (in tons) per fiscal year for the implementation of the five phases of the Five-Year Energy Action Plan.

With the completion of the Five-Year Energy Action Plan in FY2020, the Office of Energy Management looks to the future in developing an aggressive Ten-Year Energy Action Plan to substantially reduce emissions through FY2030. Projects completed under the Five-Year Energy Action Plan proved the success of improving efficiency and similar projects will continue being completed for additional buildings around campus.

FIGURE 7: ENERGY SAVINGS EMISSIONS AVOIDANCE



OPTIMIZING ENERGY USAGE WITH DATA

Using data to guide decisions and achieve energy efficiency at scale is at the core of the Energy Action Plan. The Office of Energy Management utilizes a combination of central energy management platform and building-level spreadsheets to monitor energy usage in real-time. New buildings were added to the energy management platform during each project phase and help to visualize real-time parameters of energy use. Building spreadsheets enable detailed analysis in performance of buildings, especially with regard to project savings achieved.

Through newly installed smart meter and sub-meter infrastructure, energy data is stored in various campus systems that enable the Office of Energy Management and other users to identify potential projects and track energy usage per building. Practitioners can then identify energy consumption patterns to optimize lighting, ventilation, heating, and air based on demand. Data visualization can also help detect irregular spikes in energy usage.

O'Shaughnessy Renovation Lighting Fixture

The Office of Energy Management is currently working with other facilities departments to develop a Master Metering Plan to provide enhanced metering capabilities on campus. This will ultimately enable more detailed and accurate cost accounting and budgeting for campus building users, along with providing even more energy data that can be analyzed.

ADDRESSING OPERATIONAL INEFFICIENCIES

Under the Energy Action Plan, ongoing retrofitting projects help to improve energy efficiency in energy hog buildings. Retrofitting projects implemented under the plan so far include LED lighting replacement, smart meter and sub-meter installation, building automation system (BAS) improvements, insulation upgrades, HVAC upgrades, building envelope improvements, and retro-commissioning. Laboratories, which are the largest energy usage contributors on campus, are also included under the Energy Action Plan by addressing various energy inefficiencies. Such projects are expected to continue under a new energy action plan. Many energy saving projects have been identified and are awaiting implementation as more resources and personnel become available for the Office Energy Management.

PHASE 5: LOOKED TO THE FUTURE OF ENERGY EFFICIENCY ON CAMPUS

More than \$3.1 million in funding was approved in December 2019 to execute the fifth phase of the Energy Action Plan to deepen the university's energy conservation efforts. In Phase 4 (2018-19), a new solar project was partially funded and underwent preliminary design. During Phase 5 (2019-20), additional funding was made available with the projected design and construction is to be completed in FY2021. This will diversify the university's energy portfolio and be the largest solar addition on campus to date. In addition, retrofitting and energy accounting projects under Phase 5 helped to ensure the longevity of mechanical and lighting systems for years to come.

Projects under Phase 5 included the implementation of energy retrofit projects identified in Phase 4: LED lighting upgrades, lab ventilation optimization, steam pipe insulation, the integration of additional energy-intensive buildings into the energy management platform, and development of a rooftop solar project (one building). In addition, a compressed air system improvement project was implemented at the central steam plant which included piping improvements and the installation of new energy efficient desiccant air dryers.

RETRO-COMMISSIONING (RCX)

Commissioning of existing buildings or retro-commissioning, is a systematic process applied to existing buildings for identifying and implementing operational and maintenance improvements and for ensuring their continued performance over time. Beginning in 2018, the Office of Energy Management increased this effort significantly in Phase 4 buildings, as well as those buildings in previous plan years. Phase 5 continued this effort with current savings estimated at \$80,000 per year at an investment of just under \$5,000. Internal resources and commitment to RCx were limited in FY2020 resulting in lower than estimated values; yet those measures addressed were done predominantly with in-house labor, thus resulting in low simple payback. These types of savings when combined with other larger payback projects (i.e. solar) will help maintain overall energy fund simple paybacks within target values. Over 700 individual RCx measures were proposed in Phases 4 and 5. Of those 700, 300 have been implemented with over 400 still to be addressed. Hundreds of other RCx measures are in study or development; or awaiting approval for implementation. RCx will continue to be a major contributor to reducing energy consumption on campus.

Point 5: VT will Maintain a Sustainability Office

"Virginia Tech will maintain a sustainability office to:

- a. Coordinate programs for campus sustainability,*
- b. Oversee implementation of the VT Climate Action Commitment and Sustainability Plan,*
- c. Monitor annual electricity and other energy use and GHG emissions,*
- d. Working with faculty and departments, manage a campus-wide student internship and undergraduate research program using the campus as a sustainability laboratory,*
- e. Coordinate communication regarding campus sustainability initiatives and programs to the university community and external audiences."*

The Office of Sustainability was established within the Division of Campus Planning, Infrastructure, and Facilities and acts as a central hub to connect the many sustainability champions and efforts taking place all across campus. The office is staffed by two full-time employees and a part-time graduate assistant who carry out a wide range of activities from high-level sustainability planning to organizing outreach events or managing 20 student interns during the academic year.

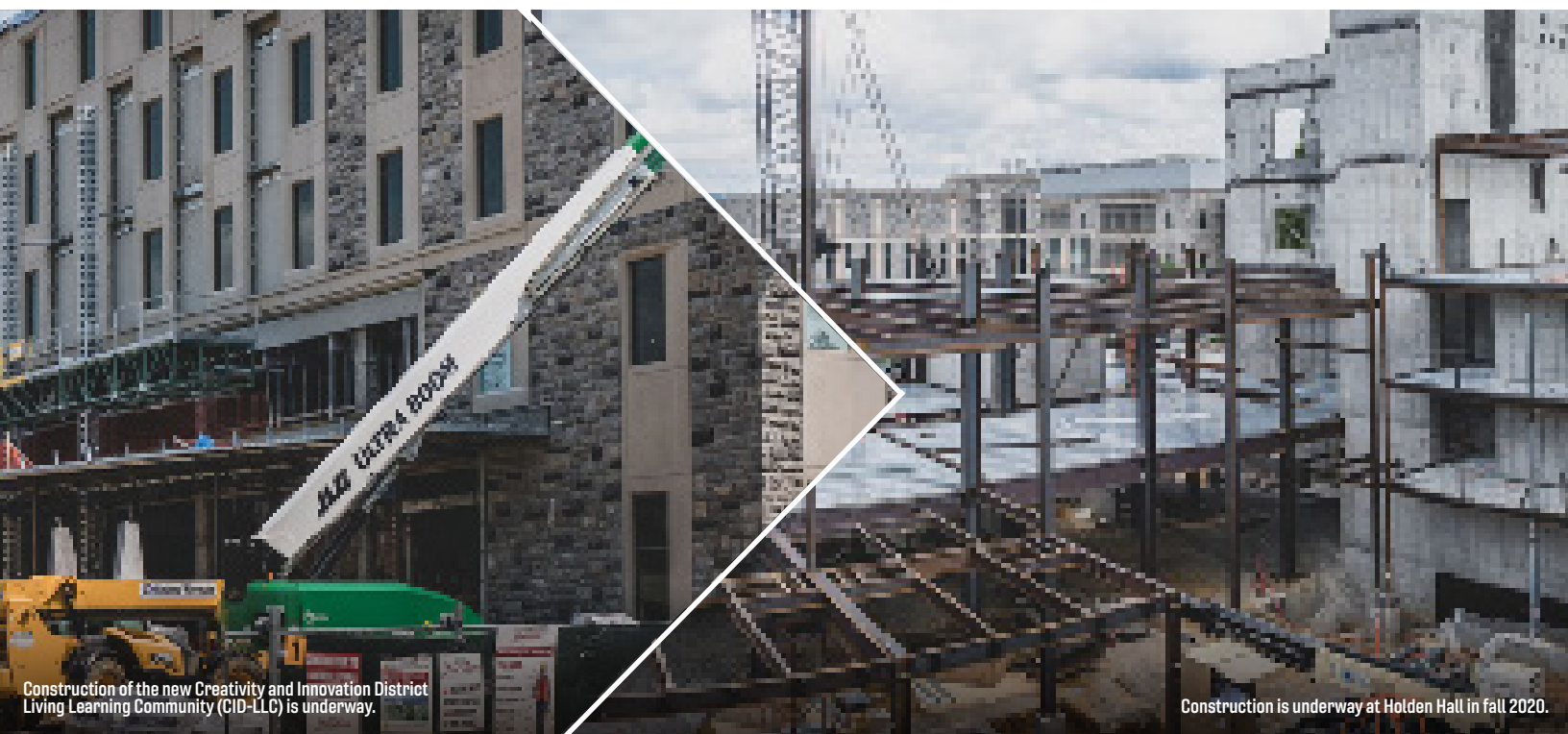
THE OFFICE OF SUSTAINABILITY HOUSES THE FOLLOWING PROGRAMS:

- Undergraduate Student Internship Program (see Point 10);
- Green Graduates (see Point 12);
- Green Day Green Tailgate (see Point 8);
- Green Request for Proposals Program (see Point 14);
- Y-Toss (see Point 8);
- Sustainability Week (see Point 12); and
- Earth Week (see Point 10).

Point 6: LEED Standards for New Construction, Major Renovations, and Existing Buildings

"Virginia Tech will improve the sustainability of its built environment by:

- a. Achieving LEED Silver certification or better for all eligible and applicable new buildings and major renovations.*
- b. Evaluating the feasibility of LEED for Existing Buildings certification for its existing buildings."*



The U.S. Green Building Council provides a green building certification program known as LEED, or Leadership in Energy and Environmental Design. This program scores buildings on their level of energy efficiency based on a point system. Currently, the university has 36 LEED-Registered Buildings totaling over 3.1 million gross square feet (17 certified; seven occupied and pending certification; four under construction; and eight in design). The university has specified that all new buildings entering the design phase of construction that are greater than 5,000 gross square feet in area, or the renovation of such buildings where the cost of renovation exceeds 50 percent of the value of the building, shall conform to LEED Silver standards or better.

For a complete list of LEED-certified buildings separated by LEED Gold, Silver, and Certified along with gross square footage and completion status, see **Figure 8**. Please note that this table was updated in August of 2020 and therefore includes data from outside of the 2019-20 Academic Year. The only building on this list that falls outside of our reporting timeframe is the Classroom Building as it was certified on August 12, 2020.



FIGURE 8: LEED REGISTERED BUILDINGS

LEED GOLD PROJECTS		Gross Square Feet
▲	Ambler Johnston Hall	269,463
▲	Moss Arts Center	147,382
▲	Goodwin Hall	154,935
▲	Human and Agricultural Biosciences Building I (HABBI)	93,860
▲	Institute for Critical Technology and Applied Science Ph II (ICTAS II)	42,190
▲	Henderson Hall Renovation and Theatre 101 Addition	38,750
		746,580
LEED SILVER PROJECTS		
▲	Pearson Hall East	111,191
▲	Pearson Hall West	108,765
▲	Indoor Athletic Training Facility	91,600
▲	Lavery Hall	77,301
▲	Classroom Building	72,275
▲	O'Shaughnessy Hall Renovation*	69,200
▲	Baseball Facilities Improvements*	49,872
▲	Rector Field House*	43,949
▲	Football Locker Room Addition	42,145
▲	Davidson Hall*	25,151
▲	Vet Med Instructional Addition	24,600
▲	Oak Lane Phase IV	20,508
▲	Sandy Hall*	19,889
▲	Chiller Plant Phase I (Southwest Chiller Plant)	16,655
▲	Liberal Arts Building*	15,394
▲	Undergrad Science Labs - Renovation (Derring Hall)*	13,127
●	Creativity and Innovation District Living Learning Community (CID-LLC)	224,500
●	Virginia Tech Carillon Biomedical Research Expansion	139,586
●	Holden Hall Renovation	101,240
●	Student Athletic Performance Center	25,800
✦	Innovation Campus Academic Building	300,000
✦	Student Wellness Improvements	263,000
✦	Data and Decision Sciences Building	120,000
✦	Hitt Hall and New Dining Facility	112,000
✦	Undergrad Science Labs - New Construction	102,000
✦	Corps Leadership and Military Science Building	60,500
✦	Global Business and Analytics Complex Residence Halls	60,500
✦	Multi-Modal Transit Facility	13,606
		2,324,354
LEED-CERTIFIED PROJECTS		
▲	Renovation Davidson Hall	44,845
▲	Visitors and Undergrad Admissions Center	18,155
		63,000

Status: ▲ Complete ● Construction ✦ Design

Point 7: Electricity and Heating Efficiency

"Virginia Tech will improve electricity and heating efficiency of campus facilities and their operations by:

- a. Exceeding the most current version of ASHRAE 90.1 energy performance by 10 percent for all new buildings and major renovations. Capital budgets should account for future energy price, life cycle cost of building operation, and environmental benefits of achieving this level of performance.*
- b. Improving the heating and cooling infrastructure and operation, lighting efficiency, equipment efficiency, and metering and controls of its existing buildings."*

Virginia Tech Utility Services

The Division of Campus Planning, Infrastructure, and Facilities operates and maintains an electric distribution utility, a co-generation steam plant, two central chilled water plants, and the associated distribution systems required to transport these services.

Virginia Tech Electric Service

Few universities serve the electrical needs for their surrounding communities - none to the extent of Virginia Tech and the Virginia Tech Electric Service (VTES). VTES has been in the business of providing primary electrical distribution service to the campus and other customers for more than 100 years. VTES is the electric utility provider for the Blacksburg campus and about 7,000 residential and commercial customers in the Town of Blacksburg. Over 1,300 "Hokie" lights and 650 streetlights on the Blacksburg campus are maintained by VTES as well as more than 1,000 streetlights and 370 dusk to dawn lights within the Town of Blacksburg.

Central Steam Plant

The Central Steam Plant is a co-generation asset that produces centralized steam and simultaneously uses some of that steam as a by-product to generate up to 6.25 megawatts of electricity. That electricity production offsets the electricity purchased by the university for distribution across campus and within Blacksburg.

Co-generation continues to gain importance in United States energy planning because it helps to increase thermal efficiency of the Central Steam Plant; reduce greenhouse gases and other harmful emissions; consumes no cooling water



Installation of the new gas boiler at the Central Steam Plant on campus in winter 2020.



Virginia Tech Power Plant workers removing the steam turbine



Southwest Chiller Plant

in generating electricity; and refocuses infrastructure investments on distributed generation and smart energy options. The university recently completed the installation of a nearly \$7 million, 100,000 pound-per-hour gas-fired boiler in place of the decommissioned boiler. Beyond the long-term financial benefits, the new gas boiler will result in a reduction of carbon dioxide emissions and increase the plant's overall capacity to meet future campus growth.

Compressed Air Plant

The central campus compressed air plant, located within the central steam plant facility, includes a total of eight air compressors and three desiccant air dryers. It serves processes in the power plant, in addition to labs and shops across campus. Reduced airflow and pressure while delivering the same amount of air enables a more efficient system all while meeting end-user needs. Recent projects will improve plant efficiency in these ways, including the addition of a new variable speed compressor, compressed air piping improvements, the addition of a pressure flow controller, and the replacement of existing inefficient air dryers with newer, more efficient technology.

Campus Chilled Water Infrastructure

Virginia Tech also has two districts served by chilled water plants that leverage a complex system of water cooling that is then pumped to nearby buildings to help reduce room temperatures and cool research equipment. In general, a chilled water plant is 50 percent more efficient than cooling systems in individual buildings. Long-range plans call for building more centralized chilled water plants in various parts of campus. This will improve energy efficiency, reduce costs, and allow for additional growth. A project to upgrade existing chiller plant equipment is underway and should be complete in summer 2021.

Design and Construction Standards

The university's Design and Construction Standards Manual

(facilities.vt.edu/planning-construction/design-and-construction-standards) outlines the philosophy, standards, recommendations, and requirements for the design and construction of campus buildings. As a component of the Design and Construction Standards, Guidelines for Energy Efficient Design address the energy-efficiency and on-campus renewable energy utilization requirements. These standards apply to all new construction, addition, and renovation projects on campus. Sections of the Design and Construction Standards Manual focus specifically on sustainability in areas such as Sustainable Design and Waste Management both inside and outside of new buildings. More information on the DCSM and sustainability construction standards can be found in the Appendix.

Point 8: Minimize Waste - 50 Percent Recycling Rate

"Virginia Tech will minimize waste and achieve a 50 percent recycle rate by 2020."

Virginia Tech, the Town of Blacksburg, the Town of Christiansburg, and Montgomery County are the four jurisdictional members of the Montgomery Regional Solid Waste Authority (MRSWA). Located in Christiansburg, MRSWA operates a transfer facility that receives the majority of the university's principal recyclable materials (PRMs), and all of municipal solid waste (MSW).

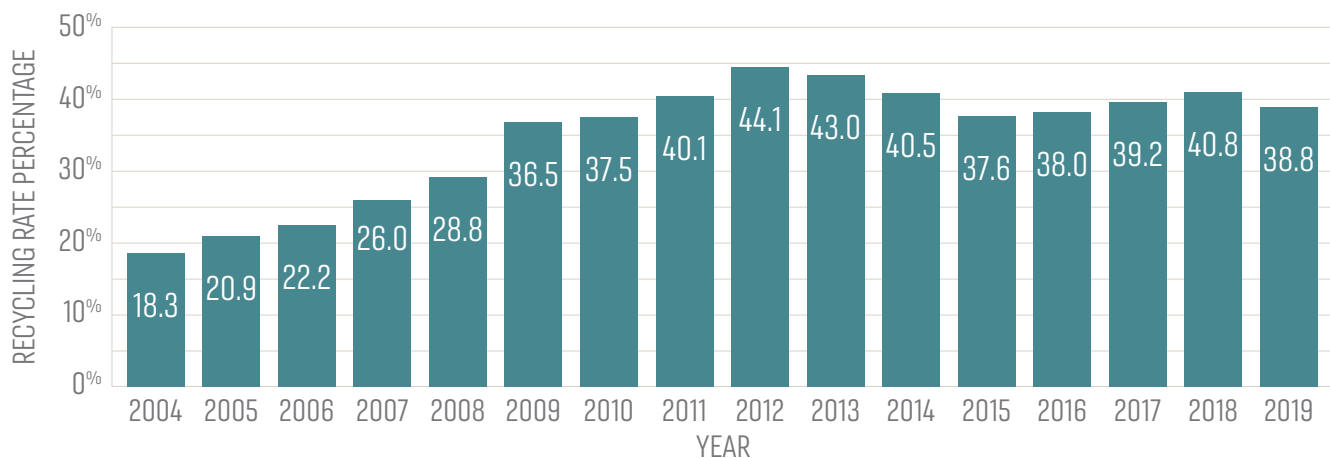
Virginia Tech transitioned to a Single Stream Recycling System on July 1, 2015. Recyclable materials are transported from the university to MRSWA, weighed, and further transported to Recycling and Disposal Solutions (RDS) in Roanoke. RDS serves as the recycling hub for the region receiving materials from both the New River and Roanoke Valleys. Food waste is collected from 11 on-campus dining facilities and stored temporarily at a consolidated campus location in a 10-ton sledge container. When the sledge container is full, composting company Royal Oak Farm (ROF) delivers an empty container and transports the full container to their location near Lynchburg, Va.

Solid waste materials are transported from the university to MRSWA, weighed, and further transported to the local landfill operated by the New River Resource Authority (NRRA) in Pulaski County in Dublin, Va.

MRSWA prepares a consolidated recycling rate report for the region to include the four jurisdictional members and submits it to the Department of Environmental Quality (DEQ). Virginia Tech uses the DEQ format and formula to calculate its recycling rate and waste diversion rate. The waste diversion rate includes all additional materials diverted from the local landfill. Reporting is done on a calendar year basis.

Figure 9 shows Virginia Tech Recycling Rates from CY2004 to 2019. During that time, Virginia Tech's recycling rates increased by nearly 25 percent to a high-water mark of 44 percent in 2012, and then have remained in the 38 to 43 percent range ever since. The dip in recycling rate during the period 2015-17 was due to the unexpected closing of nearby composting facility Poplar Manor Enterprises (PME) located in Riner, Va. in April 2015. Royal Oak Farm is the only permitted composting facility within 100 miles of Virginia Tech, and, for various reasons, it took two years to establish a composting contract for food waste with them.

FIGURE 9: RECYCLING RATES



For CY2018, Virginia Tech reported 2,242 tons of principal recyclable materials which included 679 tons of food waste, 458 tons of fiber (paper and cardboard), and 456 tons of commingled material (single-stream recycling). Virginia Tech reported 4,000 tons of municipal solid waste (trash). The university's recycling rate was 41 percent and the waste diversion rate (waste kept out of the local landfill) was 70 percent.

For CY2019, the university's principal recyclable materials dropped to 2,031 tons which included 566 tons of food waste, 319 tons of fiber, and 430 tons of commingled material. The municipal solid waste was essentially the same as the previous year. The university's recycling rate was 40 percent and the waste diversion rate (waste material kept out of the local landfill) was 80 percent. The food waste reduction was attributable to a temporary equipment problem with the metal shroud that allows food waste from the transport vehicle to flow into the ROF sledge container.

For CY2020, the COVID-19 global pandemic has had a significant impact on our waste management program. Following a two-week spring break, the university pivoted to online classes with minimal students returning to campus living in the residence halls. As a result, the tonnages for both principle recycling materials and municipal solid waste plummeted for the second quarter (April through June). As a way of comparison (if compostable food is not included) for the 2019 second quarter Virginia Tech reported 186 tons of recycled material and 1,085 tons of trash. For the 2020 second quarter, Virginia Tech will report 112 tons of recycled material and 318 tons of trash. The recycling and waste diversion rates for CY2020 will be impacted.

Game Day Green Tailgate

The Game Day Green Team promotes tailgate recycling during home football games by passing out blue recycling bags to tailgaters in the six highest impact parking lots surrounding Lane Stadium, including the Coliseum, Stadium, Maintenance, 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.



Ways to green your game day:

1. Carpool to the game.
2. Use propane to grill.
3. Bring reusable plates, cups, utensils, and grocery bags.
4. Recycle bottles, cans, and glass in bags provided by volunteers.
5. Buy in bulk - not single serving snacks (reduces packaging waste).
6. Buy local from the Blacksburg Farmers Market.

The Game Day Green Team is led and organized by students who manage supplies, recruit volunteers, work with the Division of Campus Planning, Infrastructure, and Facilities on waste collection, and execute the program on each home game day. The program had 82 student volunteers for the fall 2019 football season and the program resulted in the collection of 6.29 tons of recyclable materials. To date, the Green Tailgating program has resulted in the collection of over 18 tons of recyclables.

Y-Toss Program

The YMCA at Virginia Tech facilitates one of the largest student-run waste diversion projects on campus called Y-Toss. Y-Toss 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.

Since its inception in 2015 and in the past, together with our partners and sponsors, Y-Toss has diverted more than 100 tons of gently used household items from the waste stream; engaged over 1,300 community volunteers in service to students and families; and generated over \$60,000 to support student-led programs that nurture the potential of youth and teens, improve the health and well-being of individuals and families, and inspire social responsibility throughout the New River Valley. Despite the move out process looking a little different after the spring 2020 semester due to COVID-19, Y-Toss was still an active program which successfully diverted 3.5 tons of materials from the landfill in 2019-20. Collection bins were made available to students and placed around campus during the delayed June 10-20, 2020 move-out time frame.

In past years, the Green RFP program has provided support through signage and marketing materials to ensure the collection was a success. Thanks to continued support from the Green RFP program, Y-Toss has expanded to add in-hall collection bins so that collections can occur year-round in select residence halls. This will help facilitate a new Y-Toss "Pop-up Thrift Shop" where students can go to buy the used items that are collected.



Y-Toss Pod



Campus Kitchens filling paper bags with food.

Dining Services

Dining Services offers a free reusable to go program which reduces waste to landfill and allows for a sustainable way to eat on the go. The program follows three simple steps of eat, return, repeat! Over 350,000 meals have been served in reusable to-go containers since 2014. This program has also kept 5,000 pounds of packaging out of the landfill since its inception.

During the Fall semester, Dining Services held pop-up “Choose to Reuse” tabling events in the dining halls which allowed for open discussions with students about the marketing of the green to go program, educated students about the benefits of participating in the reusable to-go program, and reminded them to return their containers to the dining halls when they were done with them. These pop-up stands resulted in a 37 percent increase in return rate of reusable to-go containers, resulting in savings of roughly \$30,000.

The reusable to go program continued to serve the surrounding community even after students returned home in March due to COVID-19. English Meadows Senior Living, which operates two campuses in Montgomery County, struggled to find scarce supplies to provide in-room meal services for their residents with the rise of COVID-19. They ordered 1,500 reusable meal containers but their supplier could only ship 600 due to the huge demand. Within days of hearing about the shortage, Dining Services was able to loan 1,000 reusable to go containers to English Meadows at no cost. More information about this effort can be found at vtnews.vt.edu/articles/2020/05/051820-dsa-vtdiningcovidseiorliving.

In addition, Dining Services was committed to providing additional reusable to-go containers collection points to students during move-out. Y-Toss PODS also served as an additional return station for reusable to-go containers. Six return locations were added and over 500 reusable containers were collected at the PODS.

Dining Services also works with Campus Kitchens at Virginia Tech (CKVT) to recover unused food to give to those in need within the New River Valley. Student volunteers have devoted over 2,500 hours with the CKVT since its launch in fall 2015. Before the campus shifted to remote operations in March due to COVID-19, the program was recovering surplus food from three dining halls six days a week. Over 188,000 pounds of recovered food have been delivered to our community partners: Radford-Fairlawn Daily Bread, the Giving Tree Food Pantry, Plenty! Farm and Food Bank, New River Valley Agency on Aging, Warm Hearth Village, and the YMCA after school program.

While Campus Kitchens is normally a student-led program, Virginia Tech employees volunteered to step in and run the program after all student events were suspended in March. Three VT Engage team members and an employee from the Dean of Students Office stepped up to deliver food three days a week. While the reduction in Dining Services’ operations meant that less food was being produced on campus, at the same time dining employees were still working to clear out stored food that would no longer be used for student meals. During the months of March, April, and May, the Campus Kitchen team delivered more than 10,100 pounds of food to community organizations. More information about this effort can be found at: vtnews.vt.edu/articles/2020/05/051820-dsa-campuskitchencovid.

Point 9: Energy Star Equipment; Product Life Cycle Analysis

“Virginia Tech will:

- a. Require purchase or lease of Energy Star-rated equipment and maximum practicable recycled content paper, in accordance with University Policy 5505, with exceptions for special uses.*
- b. Consider a product’s life cycle cost and impact when making purchasing decisions.”*

Virginia Tech Sustainable Procurement Policy

In accordance with the Virginia Tech Climate Action Commitment and Sustainability Plan, the Virginia Tech Procurement Department recognizes its responsibility to support the university in its efforts to minimize negative impacts on health and the environment while supporting a vibrant campus community and local economy. The Department recognizes the types of products and services procured have inherent social, health, environmental and economic impacts, and that the Department should make procurement decisions that embody the university’s commitment to sustainability whenever possible.

The full Virginia Tech Sustainable Procurement Policy can be found in the Appendix or bit.ly/VTSustainableProcurementPolicy. This document highlights the different sustainability factors that Procurement Department employees and those with delegated procurement authority will take into consideration. The document also declares that Procurement Department employees will utilize best practices in sustainable procurement, including always looking for environmental labeling and considering life cycle assessments. Environmental standards and certifications are also listed.

University Policy 5505 Campus Energy, Water, and Waste Reduction

University Policy 5505 (policies.vt.edu/5505.pdf) is an integral part of Virginia Tech’s procurement process. This ensures that the university minimizes waste at the front-end of the process and not just the back-end which typically only promotes the recycling part of the 3R’s of waste reduction (reduce, reuse, and recycle).

Policy 5505 states in section 3.3 Operations and Maintenance, “The university shall purchase or lease Energy Star-rated appliances and equipment for all classification when designation is available, provided performance criteria are met.” Section 3.5 Waste Reduction states, “Purchase only recycled paper except where equipment limitations or the nature of the document preclude the use of recycled paper.” Section 3.2 Building and Construction states, “A new building entering the design phase of construction that is greater than 5,000 gross square feet in size, or the renovation of such a building where the cost of renovation exceeds 50 percent of the value of the building, shall meet the Virginia Department of General Services, Division of Engineering and Buildings, Virginia Energy Conservation and Environmental Standards for energy performance and water conservation. All such buildings shall conform to U.S. Green Building Council LEED Silver standards, consistent with the Virginia Tech Climate Action Commitment.

Energy Star



Energy Star provides labels for appliances and other products that are superior in energy efficiency. Virginia Tech’s goal is to set a minimum standard for all energy consuming equipment to be Energy Star-rated or better, assuming that the performance criteria are met.

All of these protocols listed above ensure the consideration of a product’s life cycle cost and impact when making purchasing decisions. The current Virginia Tech Design and Construction Standards have also been revised and updated to reflect the use of Life Cycle Analysis when appropriate.

Point 10: Engage Students, Faculty, and Staff

"Virginia Tech will engage students, faculty, and staff through education and involvement to develop and implement innovative strategies for efficient and sustainable use of energy, water, and materials in all university-owned facilities."

Undergraduate Student Internship Program

The internship program's reach extends to both the campus and the surrounding community. The Office of Sustainability's vision is to create a sustainability network of student and community leaders throughout Virginia Tech, Blacksburg, and the greater New River Valley. The program utilizes 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 the world is facing today. The program blends real-world projects with practical, skills-based professional development workshops to prepare students for an ever-changing career in the sustainability field. In fall 2019, the Office of Sustainability welcomed Nathan King as its new sustainability program manager. Nathan King is a Virginia Tech alum and previously worked as the director of sustainability at Western Colorado University.

The projects the students complete, paired with professional development classes and other trainings, allow students to sharpen and expand their environmental professional skill sets. Intern teams work on a variety of tasks, including:

- **Partner Projects:** Teams will partner with various departments such as Energy Management, Stormwater Management, Sustainable Dining, and Housing and Residence Life to complete technical projects.
- **Education and Outreach:** Teams will plan and execute outreach events in partnership with community organizations such as The YMCA, Town of Blacksburg, and Blacksburg Farmers Market. Past events include Thrift Swaps, Pop-up Farmers Market, and seed plantings.
- **University-Wide Campaigns:** Teams will assist in executing large-scale campaigns including Earth Week, Sustainability Week, and RecycleMania.

Dining Services Student Intern Partnership

During the fall 2019 semester, the Office of Sustainability's Student Internship Program and Dining Services kicked-off a new collaborative project. The purpose of this project is to identify/tag inventory items as local, recyclable, and/or compostable when applicable within the Dining Service's inventory management system. This project was created in an effort to better understand Dining Services' sustainable sourcing practices and begin working towards AASHE STARS Version 2.2 Credit OP-7 for Food and Beverage Purchasing.



Office of Sustainability staff at Gobblefest 2020

Undergraduate student interns greet the Hokie Bird at Gobblefest 2019.

The food tagging internship project is an exciting opportunity for students to gain real-world experience into supply chain management and sustainable purchasing practices. Interns will tag currently purchased items using the appropriate sustainability item tags and make suggestions for future sustainable purchases.

INTERN LEARNING OUTCOMES:

- Develop an understanding of the university dining sector.
- Draw connections between food purchasing and business operations.
- Gain valuable experience in supply chain management and sustainability.

CAMPUS SUSTAINABILITY IMPACTS:

- Leverage data-informed projects to assist decision makers make informed decisions.
- Develop communication channels and best practices for sustainable sourcing.
- Track our sustainable sourcing practices, in order to help Virginia Tech work towards its AASHE STARS OP-7 campus sustainability goals.

ASPIRATION FOR STUDENT LEARNING FOCUS:

- Pursue self-understanding and integrity.
 - Interns will form a set of affirmative values related to sustainable purchasing and develop the self-understanding to integrate these values into their decision-making when evaluating personal and professional purchasing decisions.

Green Graduates

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 think about which of those lessons and values they will take 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 2019-20, 72 graduates participated in the program. While these numbers are lower than in previous years, it's important to highlight the fact that this program continued to run despite the COVID-19 pandemic requiring commencement ceremonies to be moved online for the spring 2020. The Virginia Tech Green Graduates program has been running for five years straight now.

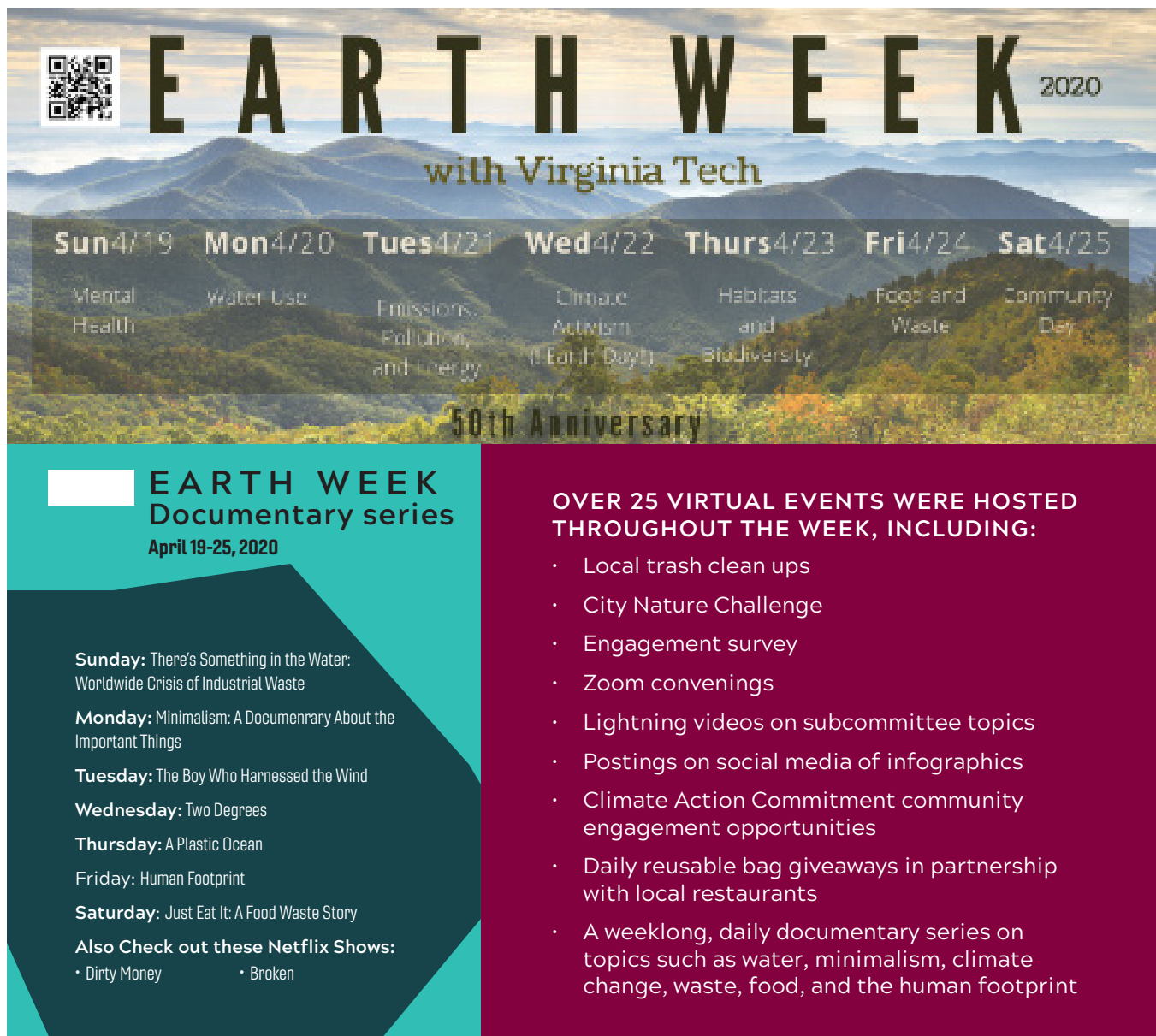


Sustainable Dining

Homefield Farm is a partnership between Dining Services and the College of Agriculture and Life Sciences. This six-acre 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. Over 200,000 pounds of produce were produced at Homefield Farm. Since fall 2016, Dining Services has held a Homefield Farm Pop-up Farm Stand on campus. Students are able to purchase fresh, local campus-grown veggies from Virginia Tech's very own Homefield Farm.

Dining Services is also making composting in the dining halls more efficient by removing 90 percent of water from compost waste at Turner Place in Lavery Hall through the use of their waste reduction technology. Nearly 5,000 tons of organic waste have been sent from Virginia Tech dining facilities for composting since 2009.

Virginia Tech is increasingly using products that promote a sustainable dining program and food systems. Local products are considered to be products sourced from within 250 miles of Blacksburg or within the Commonwealth. Produce, beef, lamb, pork, eggs, milk, herbs, fruits, and vegetables are all campus-sourced products.



EARTH WEEK 2020
with Virginia Tech

Sun 4/19 Mental Health
Mon 4/20 Water Use
Tues 4/21 Emissions, Pollution, and Energy
Wed 4/22 Climate Activism (Earth Day)
Thurs 4/23 Habitats and Biodiversity
Fri 4/24 Food and Waste
Sat 4/25 Community Day

50th Anniversary

EARTH WEEK
Documentary series
April 19-25, 2020

Sunday: There's Something in the Water: Worldwide Crisis of Industrial Waste
Monday: Minimalism: A Documentary About the Important Things
Tuesday: The Boy Who Harnessed the Wind
Wednesday: Two Degrees
Thursday: A Plastic Ocean
Friday: Human Footprint
Saturday: Just Eat It: A Food Waste Story

Also Check out these Netflix Shows:

- Dirty Money
- Broken

OVER 25 VIRTUAL EVENTS WERE HOSTED THROUGHOUT THE WEEK, INCLUDING:

- Local trash clean ups
- City Nature Challenge
- Engagement survey
- Zoom convenings
- Lightning videos on subcommittee topics
- Postings on social media of infographics
- Climate Action Commitment community engagement opportunities
- Daily reusable bag giveaways in partnership with local restaurants
- A weeklong, daily documentary series on topics such as water, minimalism, climate change, waste, food, and the human footprint

Earth Week

Virginia Tech's Earth Week is a student-led celebration that occurs annually on the week surrounding Earth Day in April. The goal is to educate and engage the entire campus community and surrounding communities on the importance of sustainability, climate change mitigation, environmental stewardship, climate justice, health/wellbeing, and many other topics. The student organization, Environmental Coalition, designates an Earth Week Coordinator who partners with student leadership from over 20 other student organizations to develop events and educational materials for the week. This often includes community groups and other activist groups from around the New River Valley that are interested in partnering with students. The Office of Sustainability staff help support the planning and communication process in the months leading up to Earth Week.

The spring semester began with planning Earth Week as normal until the coronavirus pandemic spread to the United States forcing all in-person campus events to be cancelled and students to be sent home after spring break. Traditionally, Earth Week planning includes hosting forums where representatives from different interested student groups and community members can come together to share ideas for how they all want the week to look and what events we want to host. Instead of cancelling Earth Week entirely, the group decided to plan and promote a digital Earth Week celebration, which has never been done before at Virginia Tech.

Student leadership only had one month to plan and execute virtual events and had to scrap over 75 percent of their original in-person events. However, the Office of Sustainability staff were able to link student leadership through a series of Zoom meetings and utilized Google Drive to share resources for event planning. This led to Virginia Tech hosting over 25 virtual events during Earth Week that ranged from Zoom discussions to Instagram Live events to Facebook educational posts. Each day of the week had a general theme which included: Mental Health, Water Use, Emissions/Pollution, Climate Activism, Habitats/Biodiversity, Food/Waste, and Community. Some events under the themed days included: sustainable cooking demonstrations, scavenger hunt, Instagram bingo, community cleanup pictures, rural climate activism panel discussion, water use facts, promotion of local farms/businesses, and many more.

Students and staff were also able to link to various virtual events being held across the state and nation including EarthX 2020. Virginia Tech pooled links to virtual events with other colleges and universities around the Commonwealth through the Virginia Association for Sustainability in Higher Education network. Because of these efforts, people throughout the state had the opportunity to participate and not just those in the local area as with a “normal” Earth Week.

In short, Virginia Tech was able to successfully hold its first ever Digital Earth Week celebration and leveraged social media/technology to engage the community in a way that had not been done previously. It was also remarkable that student leadership, faculty, and staff were able to switch gears to an online format with less than a month to prepare and still hosted many engaging sustainability events.

SOME OF THE GROUPS INVOLVED IN EARTH WEEK PLANNING AND EXECUTION INCLUDE:

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

Climate Action Commitment Working Group

A working group was established to accomplish President Tim Sands’ mandate to update and renew Virginia Tech’s Climate Action Commitment. The Working Group is composed of faculty, staff, students, and community members and is broken up into 12 subcommittees with focuses on different topical areas addressed by the Climate Action Commitment. Some examples of subcommittee topical areas include agriculture and forestry, buildings operations, climate justice, energy opportunities, transportation opportunities, waste and recycling, and more.

The working group has two fundamental goals. The first is to produce a summary of the university’s progress on sustainability since the university’s first Climate Action Commitment was put in place in 2009. The summary will outline the structure, partnerships, and arrangements that have developed over time to address sustainability; include high-level data summarizing the institution’s progress since 2009; and provide perspective on how these achievements compare to those at peer institutions.

Second, the working group will develop any proposed updates to the Climate Action Commitment that was last revised in 2013. They should consider whether updates to the definition, vision, and mission statements are needed; outline clear, measurable, and realistic goals; consider the long-term impact of the goals on policies, operations, and budget of the university; identify broad metrics and the elements for determining success in meeting these goals; and follow university policy format.

The Climate Action Commitment working group is a prime example of members of the Virginia Tech and Blacksburg communities coming together to promote overall sustainability. These working groups continued to meet and make progress on the Climate Action Commitment revision despite the shift to an entirely online format in March. Part of their response to the shift involved the creation of a series of videos, outlining their work. The playlist of videos can be found at youtube.com/channel/UCFXxSaBl6sD6ejVq3yGJfPw.

Another avenue that the working group used to make progress on the Climate Action Commitment revision process was virtual Earth Week. During the week, the working group opened up to the Virginia Tech community to educate them on the work they had done so far and to get feedback. They prepared lightning videos, teaching people about the work being done. They also distributed an engagement survey and had a Zoom Convening to get more people involved. This virtual convening had over 220 attendees.

Point 11: Transportation Energy Efficiency

"Virginia Tech will improve transportation energy efficiency on campus through parking, fleet, and alternative transportation policies and practices. The university will continue to implement programs that encourage the use of alternative transportation methods and will continue to implement programs and services that promote eco-responsible fleet management."

The Virginia Tech Alternative Transportation Department is housed within Transportation Services and coordinates the university's alternative transportation efforts. The following programs are offered by the Alternative Transportation Department:

Commuter Alternatives Program

The Commuter Alternatives Program, provided by Parking Services, offers two permit programs to meet employee and student commuting needs and encourage the use of alternative modes of transportation.

The first is a carpool permit which two or more people have to register together to receive. This permit gives participants access to reserved carpool spaces in preferred areas across campus.

The second is the Bike, Bus & Walk permit, which gives participants 16 discounted daily parking permits per semester (six per summer session). This permit acknowledges that it might not always be feasible to commute using alternative modes, and therefore allows for some flexibility for people who do.

Additional details on commuter alternatives can be found in the appendix in the brochure titled *No Car? No Problem*.

Hokie Bike Hub

The Hokie Bike Hub is a free bike repair and maintenance workshop for Virginia Tech affiliates. Cyclists have access to tools and one-on-one help for self-service bike repair. They can also attend bike maintenance workshops and Smart Cycling classes. The Hokie Bike Hub has become the home of bicycling on campus and serves as a social space for cyclists to interact and learn from one another. The Hokie Bike Hub had 2,256 visitors during FY2020 and was closed from March-July 2020 due to COVID-19.

Public Transportation

Several transit partners provide service locally (Blacksburg Transit and Radford Transit), regionally (Smart Way and Smart Way Express), and long distance (Campus Connect, Virginia Breeze, CollegeTransit, Abbott HomeRide, and Amtrak) from Virginia Tech's campus.

Bike Share

Roam New River Valley bike share launched in July of 2018 through a regional partnership with Virginia Tech, the Town of Blacksburg, the Town of Christiansburg, and Montgomery County. There are 75 bikes spread across 12 bike hubs. Eight of the hubs are on campus.



**>3.5
MILLION** BLACKSBURG
TRANSIT RIDERS
DURING FY 2020

**16.5
TONS OF CO₂** EMISSIONS PREVENTED
FROM ENTERING THE
ATMOSPHERE IN ROAM
BIKE'S FIRST TWO YEARS
OF THEIR PROGRAM

+850 VIRGINIA TECH ZIPCAR
MEMBERS WHO SHARE
JUST TWO VEHICLES

29% OF VIRGINIA TECH STUDENTS
LISTED SINGLE-OCCUPANCY
VEHICLES AS THEIR PRIMARY
MODE OF TRANSPORTATION

STATS FROM ROAM'S SECOND YEAR OF OPERATION:

- 5,263 trips taken
- 17,197.98 miles biked
- \$9,975 saved (when comparing the cost associated with driving a car the same distance)
- 15,165.49 pounds of CO₂ emissions prevented
- 687,919 calories burned



Cyclists riding on campus



Cyclists arriving at table set up by Dining Services as part of Virginia Tech's Sustainable Eats Bike Tour

Rideshare and Carshare

RIDE Solutions provides ride matching for the New River Valley. Their platform allows users to instantly find and communicate with potential carpool partners, join vanpools, and find transit or bike buddies to help them navigate their transportation choices, all via their smartphone or the web. Users can log their trips and earn rewards at over 2,000 local and national businesses.

RIDE Solutions' Guaranteed Ride Home Program provides any registered member a free ride home in the event of an emergency. This commuting "insurance policy" is your assurance that you will not get stranded at work.

Zipcar provides car sharing service to Virginia Tech affiliates, a greener alternative to car ownership. Membership gets you access to their national fleet for on-demand hourly and daily rentals. The service covers gas, insurance, parking and maintenance.

The Alternative Transportation Department reports on the use of each alternative transportation mode in the biennial Commuter Survey. The most recent survey was completed in 2018. It found that 49 percent of Virginia Tech affiliates use an alternative mode of transportation to get around. For students, Blacksburg Transit is the most popular alternative mode, and for faculty/staff, biking is the most popular.

Summer Bike Storage

The Alternative Transportation Department recently implemented a summer bike storage option for students. Permits are \$20 and can be purchased through the Virginia Tech parking permit portal. Students can then email gettingaround@vt.edu to schedule a time to drop off their bike at the Hokie Bike Hub for secure storage. This storage option can be modified for all breaks or other long-term storage needs.

Bike Census

The Alternative Transportation Department partnered with interns from the Office of Sustainability to perform a bike census in fall 2019. This census allowed for the identification of bike racks on campus which seem to be getting the most use and for the characterization of all bike rack conditions on campus. Identifying which racks were in need of repair allowed the Alternative Transportation Department to update and replace broken and outdated bike racks on campus to meet Association of Pedestrian and Bicycle Professionals guidelines.



Point 12: Sustainability-Related Academic Programs

"Virginia Tech will continue to develop and implement innovative sustainability-related academic programs in instruction, research, and outreach, and will coordinate and communicate these programs to the university community and external audiences."

Sustainability Offerings

Virginia Tech offers 569 sustainability focused courses and an additional 395 courses that include sustainability-related class topics. 93 percent of all academic departments at Virginia Tech offer courses with a sustainability focus. A total of 84 percent of students adopt at least one sustainability learning outcome prior to graduation and new student orientation continues to be a focus of the Office of Sustainability. Every July, the Office of Sustainability staff help train orientation leaders to equip them with the most accurate information on sustainability programs and offerings. The Office of Sustainability also sets up an informational table at Gobblerfest, the premier festival to introduce students to community, clubs, and other organizations on campus in the fall.

Green Engineering Program

The Charles Edward Via, Jr. Department of Civil and Environmental Engineering offers an undergraduate program that facilitates development of critical analytical abilities and the necessary core of knowledge and skills for entry into the civil engineering profession or graduate studies. This body of knowledge includes the scientific procedures for formulating and testing theories and the procedures for applying theory to enhance welfare through engineering analysis, synthesis, and design. The civil engineer plays a key role in the design, construction, maintenance, and management of society's physical infrastructure, including transportation and communication systems, structural facilities for housing human activities, water resource management systems, natural resource development systems, and facilities and programs for environmental protection. The Bachelor of Science program in Civil Engineering is accredited by the Engineering Accreditation Commission of ABET.

Students are progressively exposed to civil engineering design, culminating in a focused design course experience. The projects assigned in design courses are open-ended, incorporate appropriate engineering standards, and require the application of knowledge from earlier courses in the curriculum. Projects apply technical knowledge to design appropriate physical facilities, but also include consideration of non-technical constraints that confront real-world projects. These additional considerations include such interdisciplinary issues as economics, environmental impact, and sustainability. Accordingly, teamwork and good professional communication skills are a significant part of each design project course experience.

The Green Engineering Program at Virginia Tech serves as the focal point of the College of Engineering for considering the environmental impacts of the design, manufacture, and use of engineered products, processes, and systems across all engineering disciplines. In this capacity, the program:

- Develops courses and other educational opportunities for students and faculty to learn how engineering fundamentals can be applied to minimize environmental impacts in all engineering disciplines across life cycles.
- Facilitates the interdisciplinary collaboration of Virginia Tech engineering faculty with each other, government, industry, and other academic institutions in the research and development of innovative green engineering technologies.
- Promotes dialogue and collaboration of faculty, staff, and students with local, state, national, and global citizens and communities on issues related to green engineering and sustainability.

The Green Engineering Program at Virginia Tech will serve as a catalyst for the organic growth of sustainable systems engineering concepts throughout the College of Engineering and other academic units. It will be recognized both within the university and across the United States as an interdisciplinary center of excellence in the education of undergraduate and graduate engineers regarding environmental impacts of engineering practice.

Undergraduate Student Intern Program

As mentioned previously, the Office of Sustainability continues to develop and refine an award-winning student internship program that has been operating for ten years. The program offers 20 students the opportunity to research, coordinate, and implement various sustainability projects that range from outreach to operational changes on campus. Students partner with Virginia Tech Career Services to take part in a Cooperative Education and Internship Program (CEIP 3084) where they receive professional development with a mentor on a sustainability topic. The class is reflected on the student's official transcript and they learn valuable skills to give them a head start in their chosen career. Some examples of projects that interns have worked on from the academic year include Sustainability Week, a campus-wide bike census, design and creation of a water exhibit at a local children's museum, development of a database for labeling of purchased goods through Dining Services as local or sustainable, creating a Zero Waste Event Guide, and posting updated signage about recycling on campus.



Campus as a Living Learning Community

All of the items mentioned above, including Dining Services/Residence Life programming around sustainable living, help to create a Living Learning Community (LLC) or “laboratory” for students to experience while they attend Virginia Tech. Students are given the opportunity to see and experience how sustainability is woven into every aspect of their life on campus including buildings, energy, air, dining, waste, water, transportation, and many more. Some specific examples include:

- Tours of the campus co-generation steam plant;
- Class tours of building mechanical systems in LEED buildings;
- Alternative Transportation tours and bike maintenance workshops;
- The Dining Services Farm allows students hands-on experience growing food for campus;
- Multiple presentations by Office of Sustainability staff to classes and the broader campus community on sustainability programs;
- On-campus recycling and composting programs; and
- Dining Services' “Pop-up Stands” in dining halls throughout the academic year.

SUSTAINABILITY OPEN FORUM

WHAT ARE YOUR IDEAS?

Sustainability Forum

Sustainability Week

In 2007, Virginia Tech, the Town of Blacksburg, local citizen group Sustainable Blacksburg formed a “Green Partnership” and launched what has become the flagship sustainability outreach program, Sustainability Week. The goal was to plan a program to help the community live a more sustainable lifestyle through practical applications, workshops, presentations, tours, fairs, and guest speakers. Sustainability Week 2007 far exceeded expectations and received a 2008 Governor’s Environmental Excellence Bronze Award. Sustainability Week has been held during the third week in September consistently for the past 14 years.

EVENTS FROM 2019 SUSTAINABILITY WEEK INCLUDED:

- Blacksburg Bike Parade
- Documentary Screening at the Lyric Theater
- Electric Car Display
- Sustainable Brewery Tour of Rising Silo
- Active Commute Celebration
- Yoga and Tai Chi at Hahn Garden
- Sustainable Bike Tour
- Lightning Talks
- Stadium Woods Tours
- National Geographic Live - Coral Kingdoms and Empires of Ice at the Moss Arts Center
- Sustainability Open Forum: Discussing Past Progress and Future Opportunities



Point 13: Virginia Tech will Monitor Energy Use and GHG Emissions

“Virginia Tech will monitor energy use and GHG emissions as well as changing internal and external conditions, prepare an annual ‘report card’ showing progress towards targets, and periodically re-evaluate targets, making adjustments to targets as appropriate based on changing internal and external conditions and evolving technologies.”

The Office of Energy Management and the Office of Sustainability monitor and report campus emissions data through this publication each year. Refer to Virginia Tech Climate Action Commitment Point #3 for detailed energy use and GHG emissions data. Also, the Office of Sustainability updates their campus STARS report every three years in order to evaluate sustainability in all areas of the university setting. Previous annual reports may be found at facilities.vt.edu/sustainability/sustainability-reports.

The Office of Energy Management is in the process of proposing a new plan which, upon approval, will focus better on GHG accounting, a new energy action plan with identified pathways for energy reduction, improvements with energy efficiency at the building level, a development of a renewable energy portfolio, and a look at climate justice impacts in the community.

One focus of the aforementioned Climate Action Commitment revision working group is to expand the scope of Virginia Tech’s current greenhouse gas emissions inventory process to include leased spaces and other previously excluded areas under Virginia Tech’s authority. This will allow for more accurate tracking of GHG emissions. Additionally, the working group is looking into the possibility of using the Sustainability Indicator Management and Analysis Platform (SIMAP) to provide third party verification of greenhouse gas emissions to provide further reporting accuracy. Increased accuracy will allow Virginia Tech to make better plans to reduce and offset these emissions.

Point 14: Virginia Tech will Fund Sustainability Programs

"Virginia Tech will work to provide funding to support sustainability programs. With regard to all the items in this resolution, major personnel and investment decisions, including capital projects, associated with implementing the Virginia Tech Climate Action Commitment and Sustainability Plan will be based on a joint review of costs and benefits by university financial and facilities staff and be subject to availability of funds."

Green Request for Proposals Program

Since 2010, student-generated campus sustainability projects have spurred over \$1 million in energy-efficient upgrades across the Virginia Tech campus. Each fall, through the award-winning Green RFP Program, the Office of Sustainability seeks proposals from student groups for campus sustainability projects that support Virginia Tech's Climate Action Commitment. Submitted proposals are reviewed by the Office of Sustainability and submitted to the university Energy and Sustainability Committee for consideration. The committee prioritizes the proposals and forwards their recommendations to the Office of Budget and Financial Planning for further review, approval, and funding consideration.

The Office of Sustainability received 57 student proposals in fall 2019. Of those proposals, 19 were selected to move forward to be reviewed by the Budget Office. These 19 proposals came from 14 student organizations with funding totaling \$286,000. Of the 19 proposals, nine pertain to energy; four pertain to water; two pertain to dining; one pertains to stormwater management; one pertains to landscaping; one pertains to alternative transportation; and one pertains to waste. Due to COVID-19, the status of approving funding for these proposals is on hold.

For more information on the Green RFP or to see projects funded prior to 2019, please refer to facilities.vt.edu/sustainability/sustainability-programs/green-rfp-program.



Math Emporium Renovations

As a result of a 2018-19 Green RFP, the Math Emporium underwent some renovations during the 2019-2020 academic year. More than 300 energy-efficient LED light fixtures and HVAC controls modifications were installed in the Math Emporium. \$194,000 was allocated toward the improvements. Prior to the new changes, the Math Emporium main floor lights came on at once and stayed on 24/7. Newly installed independent control zones with dimming capabilities will help enhance energy conservation during periods of inactivity. The previous halide lights were replaced with LED lights. Due to these changes, the Math Emporium will save approximately 771,000 kWh of energy and \$74,000 annually. More information on these renovations can be found at vtnews.vt.edu/articles/2020/02/ops-mathemporiumLEDs.

VIRGINIA TECH 2020 CLIMATE ACTION COMMITMENT WORKING GROUP

In late 2019 – prompted by the demands of students and other community members involved in Climate Strikes and resolutions from the Faculty and Staff Senates, Student Government Association, and Graduate Student Assembly – President Tim Sands and Senior Vice President and Chief Business Officer Dr. Dwayne Pinkney established a Climate Action Commitment Working Group comprised of 26 faculty, students, staff, and community members. They selected Professor Randolph to serve as chair of the Climate Action Commitment Working Group and he was ideal for this role having spearheaded the 2009/2013 Climate Action Commitment. In announcing the creation of the Working Group, President Sands stated, “Climate change presents one of the world’s most pressing problems...and Virginia Tech has a duty to respond.”

The Group was charged to assess the university’s progress in implementing the 2009/2013 Virginia Tech Climate Action Commitment, compare Virginia Tech’s experience to peer institutions, and develop a new Commitment. While the university has made tremendous strides with advancing sustainability on campus, a decade later it fails to prescribe what climate scientists recognize as necessary actions and also falls short of many peer universities’ recent initiatives.

From January to June 2020, the Virginia Tech Climate Action Commitment Working Group executed its charge to evaluate the university’s current position and our future role in addressing climate change. During this same period, the global pandemic COVID-19 brought unprecedented hardship and suffering, particularly for the most vulnerable among us. Nevertheless, this unique time is engendering a tremendous spirit of innovation and collaboration. Around the world, people are coming together to address historic challenges. Individuals are becoming bolder and more creative. Every aspect of our lives is being reimaged.

In order to engage a broad range of expertise and perspectives from across the university and wider community and conduct an ambitious work program, the Working Group created 12 Subcommittees having a total of 130 personnel including faculty, staff, students and members of the local community to investigate and discuss specific issues relevant to the commitment. Most of the subcommittees met weekly from early February through the end of May.

THE 12 SUBCOMMITTEES WERE TITLED:

- Agriculture, Forestry, and Land Use
- Budget and Finance
- Buildings Opportunities
- Climate Justice
- Community Engagement
- Energy Opportunities
- Greenhouse Gas (GHG) Inventory
- Peer Institutions Comparison
- Renewables Opportunities
- Structuring Sustainable Choices
- Transportation Opportunities
- Waste-Recycling-Composting and Procurement

The Working Group developed several mechanisms to expand community involvement in the process, including a website and email address for comment and two online surveys. Plans for face-to-face town hall meetings and conference sessions had to be reimaged when the university shut down after spring break. In place of the in-person events, the Working Group hosted 12 Zoom Convening sessions in April, attended by over 220 participants who provided excellent feedback. In anticipation of the Convening sessions, the Working Group and its subcommittees also developed ten creative videos that described the Climate Action Commitment proposals.

The Working Group focused on developing effective strategies the university can advance to achieve meaningful climate action. Throughout the multitude of Working Group, subcommittee, and community Zoom meetings, discussions reflected on the important opportunity for Virginia Tech to reinvent itself, not only in its commitment to climate action, but also in its responsiveness to the needs of the world around us, in the spirit of Virginia Tech’s motto, *Ut Prosim - That I May Serve*.

The Working Group developed the draft Virginia Tech 2020 Climate Action Commitment recommending the following vision, mission statement, and 15 goals:

VISION OF THE VIRGINIA TECH 2020 CLIMATE ACTION COMMITMENT:

"In the spirit of Ut Prosim, Virginia Tech will be a leader in climate action in service to our community, the Commonwealth, and the world."

MISSION OF THE VIRGINIA TECH 2020 CLIMATE ACTION COMMITMENT:

"The mission of the Virginia Tech 2020 Climate Action Commitment is to achieve carbon neutrality by changing our physical infrastructure, collective and individual behaviors, and educational mission; to engage everyone in creating a culture of sustainability; and to achieve these objectives through just and equitable means."

Virginia Tech 2020 Climate Action Commitment goals:

1. Carbon neutral Virginia Tech campus by 2030.
2. 100 percent renewable electricity by 2030.
3. Complete the total conversion of steam plant fuel to natural gas by 2025, plan for full transition to renewable steam plant fuel after 2025, and continue to improve efficiency of campus energy systems.
4. Reduce building energy consumption to enable carbon neutrality by 2030.
5. Operations of new buildings initiated by 2030 will be carbon neutral.
6. Agricultural, forestry, and land use operations will be carbon neutral by 2030.
7. Virginia Tech to become a Zero-Waste Campus by 2030.
8. Establish the Sustainable Procurement Policy and Procedures by 2022.
9. Reduce single-occupancy-vehicle commuting to campus by 20 percent by 2025 and reduce transportation-related GHG emissions by 40 percent by 2030.
10. Integrate the Climate Action Commitment into Virginia Tech's educational mission through the Climate Action Living Laboratory beginning in 2021.
11. Establish climate justice as a core value of the Virginia Tech Climate Action Commitment.
12. Diminish barriers to sustainable behaviors through institutional change, education and social marketing
13. Implement the Virginia Tech Climate Action Commitment at a high level of university administration and governance; by integrating goals for facilities, education, and campus culture; and with stakeholder engagement for evaluation of goals and progress.
14. Develop innovative budgeting and financing mechanisms to generate finding and staffing to achieve Climate Action Commitment goals.
15. Develop Pathways after 2030 to eliminate fossil fuels and carbon offsets by 2050.

For each of the 15 goals the document includes potential pathways to achieve them. At the heart of the revised Climate Action Commitment is the goal of achieving carbon neutrality by 2030. The Working Group's recommendations are bold, aggressive, and comprehensive. Its goals range from necessary upgrades to the campus physical plant to reduce GHG emissions, to integrating those improvements into the educational mission through a Climate Action Living Laboratory, to engaging everyone in creating a culture of sustainability – all to position Virginia Tech as a leader as the clean energy economy evolves in the Commonwealth and the world.

On July 15, 2020, the Virginia Tech 2020 Climate Action Commitment Working Group Final Report - 2020 was successfully presented by Professor Emeritus John Randolph to Senior Vice President and Chief Business Officer Dr. Dwayne Pinkney. The recommendations were placed in a resolution format. The Commission on University Support Resolution 2020-21A, Resolution to Approve the Virginia Tech 2020 Climate Action Commitment is currently under review by university governance for presentation to the Virginia Tech Board of Visitors in November 2020.

For the Virginia Tech 2020 Climate Action Commitment Final Report - July 2020 see the Appendix.

CONCLUSION

Virginia Tech continues to demonstrate its commitment to being a leader in campus sustainability by making significant progress in every component of a university-wide climate action commitment. Infrastructure upgrades, highlighted by the conversion to natural gas as the university's primary fuel source, has resulted in a measurable increase in energy efficiency and a decrease in greenhouse gas emissions. The university has completed the fifth year of its Five-Year Energy Action Plan and is making plans for a 10-Year Energy Action Plan to continue to make strides in the reduction of energy consumption on campus over the next decade.

During 2019-20, Virginia Tech received numerous awards and recognition at the national and state levels. The university received 2020 Tree Campus USA Reaccreditation from the National Arbor Day Foundation which marks our 12th consecutive year. The university's Sustainability Tracking, Assessment, and Rating System (STARS) Gold Rating from the Association for the Advancement of Sustainability in Higher Education rates the university near the top of all institutions in the Commonwealth of Virginia and the Atlantic Coast Conference, and directly contributed to our being featured in the 2019 Princeton Review's Guide to Green Colleges and maintained a top 25 percent ranking in the 2020 Sierra Club's list of Cool Schools. Since 2008, the university has received nine GEEA awards.

Dining Services has consistently been recognized as having one of the best food programs (if not the best) in the country, and they continue to strive to be one of the best sustainable dining programs too. Virginia Tech is nationally recognized as a bike friendly university and best workplace for commuters.

The university's strategic plan, The Virginia Tech Difference: Advancing Beyond Boundaries, features the Virginia Tech Climate Action Commitment. Beyond Boundaries 2047: The campus Plan, integrates the facilities and infrastructure required to support the new strategic plan, and it received a 2019 Society for College and University Planning Excellence in Planning for an Existing Campus Merit award.

The conversion to natural gas and improved energy efficiency has resulted in a significant reduction in our greenhouse gas emissions, and in 2019, the university achieved emissions below the interim 2025 goal of 255,000 tons of CO₂ for the first time, and five years early. To continue this downward trend the university will pursue renewable energy options and opportunities.

Virginia Tech continues to expand our robust new construction and major renovation program. The university has 36 LEED-registered projects with the US Green Building Council, which represents over 3.1 million Gross Square Feet of the built environment.

The university has a single stream recycling system and our goal is to achieve a 50 percent recycle rate as soon as possible. For CY2019, Virginia Tech achieved a 40 percent recycling rate and an 80 percent waste diversion rate (waste kept out of the local landfill). The university's recycling rate trend line continues upward due in large measure to our strong food waste composting partnership with Royal Oak Farm (ROF). ROF has the only DEQ permitted composting facility west of Charlottesville.

Sustainability procurement is a primary component of University Policy 5505: Campus Energy, Water and Waste Reduction. The director of procurement and the Energy and Sustainability Committee (university governance system) has developed a new sustainable procurement policy which is now in effect. The new policy requires purchasing decisions to embody the university's commitment to sustainability whenever possible.

The Division of Campus Planning, Infrastructure, and Facilities has maintained its commitment of having the university infrastructure serve as a learning laboratory platform for our students, faculty, and staff so as to enhance learning and research. Student internship opportunities are numerous and appreciated for the value they have for all involved. The Office of Sustainability's award-winning Student Internship Program had 20 participants consisting of four teams (Energy, Water, Food, and Waste Management) with five students assigned working on real-world campus issues.

Sustainability at Virginia Tech is a partnership with its colleges, departments, units, students, and the Blacksburg community. It represents a Town-Gown model for the Commonwealth of Virginia and the U.S. At the end of the day, all Hokies are sustainability champions with a goal of making Blacksburg a Special Sustainable Place.

The Office of Sustainability has been producing Sustainability Annual Reports since 2010. For access to all prior reports, visit facilities.vt.edu/sustainability/sustainability-reports/virginia-tech-sustainability-annual-reports.

ACKNOWLEDGEMENTS

2019-20 SUSTAINABILITY ANNUAL REPORT PREPARED BY THE OFFICE OF SUSTAINABILITY:

Jon Clark Teglas
Chief of Staff to the Associate
Vice President and Chief Facilities Officer

Denny Cochrane
Director

Nathan King
Sustainable Program Manager

Emily Vollmer
STARS Data and Information Specialist

Michael Bell
Graduate Assistant

Josh Trump
Graduate Assistant

WITH ASSISTANCE FROM:

Alexa Briehl
Communication Director

Sarah Myers
Training Coordinator

Larissa Gimmy
Graphic Designer

Christy Myers
Communications Writer/Editor

WITH SPECIAL THANKS TO:

Professor Emeritus, John Randolph, Chair of the VT 2020 Climate Action Commitment Working Group and the members of the working group. Also, the many units within the Virginia Tech community.

APPENDIX

1. Virginia Tech Climate Action Commitment Presidential Policy No. 262

Revision 1, dated May 9, 2013

2. Virginia Tech 2020 Climate Action Commitment Working Group Final Report bit.ly/VT2020CACFR

3. Virginia Tech LEED Program Summary

4. Virginia Tech Design and Construction Standards Manual

facilities.vt.edu/planning-construction/design-and-construction-standards

a. Section 1.2.5 Sustainability

b. Section 1.2.5.1 Sustainable Design

c. DCSM Understanding and Using the Standards - Training Presentation Slides

5. Calendar Year 2019 Recycling Rate Report for Virginia Tech

6. Virginia Tech Sustainable Procurement Policy

7. Alternative Transportation Program Brochure, “No Car, No Problem”

8. 2019-20 Student Green RFP Memorandum



Presidential Policy Memorandum No. 226

Revision 1

TO: All Virginia Tech Employees and Students

FROM: Charles Steger

DATE: May 9, 2013

SUBJECT: Update to the Virginia Tech Climate Action Commitment

Approved by the Commission on University Support: April 18, 2013
Approved by the University Council: May 6, 2013
Approved by the President: May 6, 2013
Effective Date: Upon Approval by the President

University Council approved a resolution regarding an update to the Virginia Tech Climate Action Commitment

Following is the text of the resolution.

WHEREAS, the Virginia Tech Climate Action Commitment (VTCAC) was approved by the Board of Visitors on June 1, 2009; and

WHEREAS, the initial phase (2009-2012) of the VTCAC implementation plan has elapsed; and

WHEREAS, the Energy & Sustainability Committee (E&SC) established a subcommittee in the spring of 2012 to review the language of the VTCAC and recommend changes; and

WHEREAS, the E&SC subcommittee recommended several updates, as outlined in the attached; and

WHEREAS, the full E&SC has reviewed and recommended the proposed changes to the VTCAC for University Council approval;

Policy Memorandum #282
 Revision 1
 Page 2
 May 9, 2013

THEREFORE LET IT BE RESOLVED, that the Virginia Tech Climate Action Commitment be amended as follows:

1. Virginia Tech will be a Leader in Campus Sustainability. 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.
2. Virginia Tech will represent the VTCAC&SP in the university's Strategic Plan.
3. Virginia Tech will establish a target for reduction of campus GHG emissions to 80% below 1990 emission level of 188,000 tons by 2050. Interim targets from 2006 emissions of 316,000 tons will be: for 2012, 295,000 tons (on path to 2025 target); for 2025, 255,000 tons (2000 emission level); and for 2050, 38,000 tons (80% below 1990 emission level).
4. Virginia Tech will work toward these emission reduction targets through improved energy efficiency, reduction of energy waste, replacement of high-carbon fuels, and other measures identified in the VTCAC&SP.
5. Virginia Tech will maintain a sustainability office to:
 - a. Coordinate programs for campus sustainability,
 - b. Oversee implementation of the VTCAC&SP,
 - c. Monitor annual electricity and other energy use and GHG emissions, and
 - d. Working with faculty and departments, manage a campus-wide student internship and undergraduate research program using the campus as a sustainability laboratory, and
 - e. Coordinate communication regarding campus sustainability initiatives and programs to the university community and external audiences.
6. Virginia Tech will improve the sustainability of its built environment by:
 - a. Achieving LEED Silver certification or better for all eligible and applicable new buildings and major renovations.
 - b. Evaluating the feasibility of LEED for Existing Buildings certification for its existing buildings.
7. Virginia Tech will improve electricity and heating efficiency of campus facilities and their operations by:
 - a. Exceeding the most current version of ASHRAE 90.1 energy performance by 10% for all new buildings and major renovations. Capital budgets should account for future energy price, life cycle cost of building operation, and environmental benefits of achieving this level of performance.
 - b. Improving the heating and cooling infrastructure and operation, lighting efficiency, equipment efficiency, and metering and controls of its existing buildings.
8. Virginia Tech will minimize waste and achieve a 50% recycle rate by 2020.

Policy Memorandum #262
Revision 1
Page 3
May 9, 2013

9. Virginia Tech will:
 - a. Require purchase or lease of Energy Star rated equipment and maximum practicable recycled content paper, in accordance with University Policy 5505, with exceptions for special uses.
 - b. Consider a product's life cycle cost and impact when making purchasing decisions.
10. Virginia Tech will engage students, faculty, and staff through education and involvement to develop and implement innovative strategies for efficient and sustainable use of energy, water, and materials in all university-owned facilities.
11. Virginia Tech will improve transportation energy efficiency on campus through parking, fleet, and alternative transportation policies and practices. The university will continue to implement programs that encourage the use of alternative transportation methods and will continue to implement programs and services that promote eco-responsible fleet management.
12. Virginia Tech will continue to develop and implement innovative sustainability-related academic programs in instruction, research, and outreach, and will coordinate and communicate these programs to the university community and external audiences.
13. Virginia Tech will monitor energy use and GHG emissions as well as changing internal and external conditions, prepare an annual 'report card' showing progress towards targets, and periodically re-evaluate targets, making adjustments to targets as appropriate based on changing internal and external conditions and evolving technologies.
14. Virginia Tech will work to provide funding to support sustainability programs. With regard to all the items in this resolution, major personnel and investment decisions, including capital projects, associated with implementing the VTCAC&SP will be based on a joint review of costs and benefits by university financial and facilities staff and be subject to availability of funds.

Virginia Tech Sustainability Definition, Vision, & Mission:

Sustainability Definition:

Sustainability is the simultaneous pursuit of environmental quality, economic prosperity, and social justice and equity, through action, education, and engagement to address current needs without compromising the capacity and needs of future generations.

Sustainability Vision:

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.

Policy Memorandum #262

Revision 1

Page 4

May 9, 2013

Sustainability Mission:

The pursuit of sustainability is achieved through Virginia Tech's administration; physical environment and operations; student life and experience; campus culture and behavior; and academic learning, discovery, and engagement.

Acronyms:

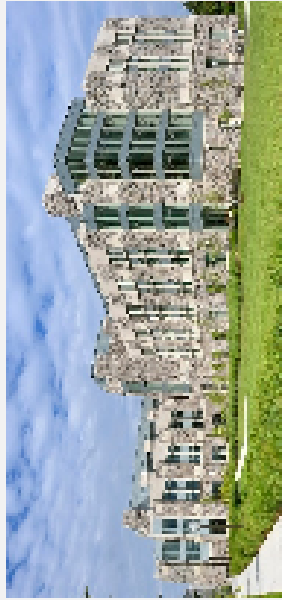
ASHRAE – American Society of Heating, Refrigerating and Air Conditioning Engineers

GHG – Greenhouse Gas

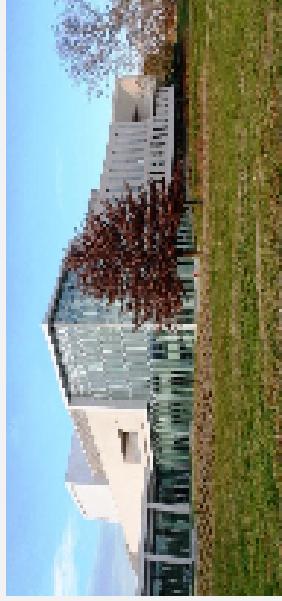
LEED – Leadership in Energy and Environmental Design

VTCAC&SP - Virginia Tech Climate Action Commitment & Sustainability Plan

#####



GOODWIN HALL – LEED GOLD
Academic Building - (GSF 154,935)

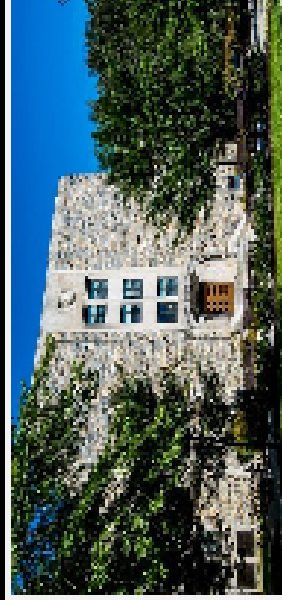


MOSS ARTS CENTER – LEED GOLD
Center for the Arts – (GSF 147,382)

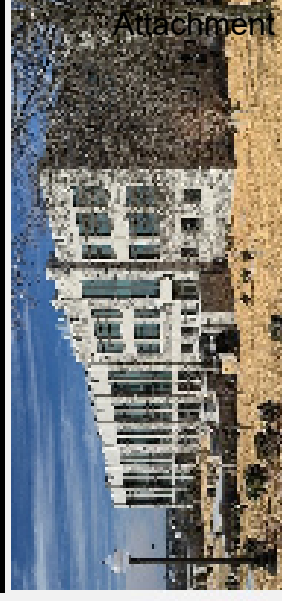
VIRGINIA TECH LEED PROGRAM SUMMARY

	Number of Buildings	Gross Sq. Ft. (GSF)
<input type="checkbox"/> Projects Completed:		
<input checked="" type="checkbox"/> LEED Certification - <i>Attained</i>	17	1,374,620
<input type="checkbox"/> LEED Certification - <i>Pending</i>	7	236,582
<input type="checkbox"/> Projects under Construction:		
<input type="checkbox"/> LEED Registered	4	491,126
<input type="checkbox"/> Projects under Design:		
<input type="checkbox"/> LEED Registered	4	439,106
<input type="checkbox"/> LEED Registration Pending:	4	592,500
<input type="checkbox"/> Total:	36	3,133,934

AMBLER JOHNSTON HALL – LEED GOLD
Residence Hall (GSF 269,463)



HUMAN & AGRICULTURAL BIOSCIENCES
BUILDING I – LEED GOLD
Research Building (GSF 93,860)



OFFICE OF SUSTAINABILITY
DIVISION OF CAMPUS PLANNING,
INFRASTRUCTURE & FACILITIES



VIRGINIA TECH LEED BUILDINGS STATUS - 2020-08-26

PROJECTS COMPLETED - LEED CERTIFICATION ATTAINED

PROJECT	PROJECT #	BUDGET	GSF	CONSTRUCTION START	OCCUPANCY DATE	STATUS	LEED CERTIFICATION	DATE OF CERTIFICATION
Henderson Hall Renovation & Theatre 101 Addition	208-16758-001	\$15,838,792	38,750	2/18/2008	8/14/2009	Complete	Gold	2/1/2010
Football Locker Room Addition	208-L00016-000	\$14,004,621	42,145	7/8/2009	6/21/2011	Complete	Silver	10/1/2011
Institute for Critical Technology & Applied Science - Phase II	208-17291-000	\$34,587,710	42,190	4/8/2009	4/6/2011	Complete	Gold	11/1/2011
Visitors & Undergraduate Admissions Center	208-L00012-000	\$10,338,192	18,155	3/23/2010	8/29/2011	Complete	Certified	8/1/2012
Lavery Hall	208-17859-000	\$44,302,610	77,301	7/29/2010	9/5/2012	Complete	Silver	4/1/2013
Vet Med Instructional Addition	208-17859-000	\$12,343,316	24,600	7/26/2011	11/5/2012	Complete	Silver	6/1/2013
Ambler Johnston Hall	208-17557-000	\$66,988,679	269,463	5/26/2009	6/25/2012	Complete	Gold	11/1/2013
Chiller Plant Phase I (Southwest Chiller Plant)	208-17657-000	\$20,097,729	16,655	3/22/2012	6/14/2013	Complete	Silver	11/1/2013
Moss Arts Center	208-16758-002	\$100,087,000	147,382	8/10/2010	8/21/2013	Complete	Gold	5/1/2014
Total GSF:			676,641					

VIRGINIA TECH LEED BUILDINGS STATUS - 2020-08-26

PROJECTS COMPLETED - LEED CERTIFICATION ATTAINED

PROJECT	PROJECT #	BUDGET	GSF	CONSTRUCTION START	OCCUPANCY DATE	STATUS	LEED CERTIFICATION	DATE OF CERTIFICATION
Human & Agricultural Biosciences Building I	229-17681-000	\$53,759,344	93,860	12/22/2011	3/10/2014	Complete	Gold	4/17/2015
Indoor Athletic Training Facility	208-17296-000	\$21,300,000	91,600	4/23/2014	6/25/2015	Complete	Silver	10/5/2015
Goodwin Hall	208-17658-000	\$95,218,249	154,935	9/13/2011	5/29/2014	Complete	Gold	10/28/2015
Davidson Hall	208-17662-000	\$32,003,099	44,845	2/17/2012	6/8/2014	Complete	Certified	3/11/2016
Pearson Hall East	208-L00031-000	\$45,500,000	111,191	10/14/2013	1/24/2017	Complete	Silver	12/16/2016
Oak Lane Phase IV	208-L00021-002	\$5,132,300	20,508	8/29/2011	1/4/2013	Complete	Silver	10/4/2017
Pearson Hall West	208-L00031-000	\$45,000,000	108,765	10/14/2013	4/27/2017	Complete	Silver	6/1/2018
Classroom Building	208-17995-000	\$40,851,740	72,275	1/26/2015	8/17/2016	Complete	Silver	8/12/2020
Total GSF: (Page 3)			697,979					
Total GSF: (Page 2)		+	676,641					
Total GSF:			1,374,620					

VIRGINIA TECH LEED BUILDINGS STATUS - 2020-08-26

PROJECTS COMPLETED - LEED CERTIFICATION PENDING

PROJECT	PROJECT #	BUDGET	GSF	CONSTRUCTION START	OCCUPANCY DATE	STATUS	LEED CERTIFICATION	DATE OF CERTIFICATION
Rector Field House	208-L00037-001	\$18,595,000	43,949	12/1/2016	2/3/2018	Complete	Silver	Pending
Baseball Facilities Improvements	208-L00037-002	\$18,496,000	49,872	2/1/2017	2/3/2018	Complete	Silver	Pending
O'Shaughnessy Hall Renovations	208-L00044-000	\$21,593,211	69,200	5/17/2017	8/1/2018	Complete	Silver	Pending
Sandy Hall	208-18065-000	\$30,563,000	19,889	1/4/2017	5/1/2019	Complete	Silver	Pending
Liberal Arts Building	208-18065-000	(see above)	15,394	1/4/2017	5/1/2019	Complete	Silver	Pending
Davidson Hall	208-18065-000	(see above)	25,151	1/4/2017	5/1/2019	Complete	Silver	Pending
Undergraduate Science Laboratories - Renovations	208-L00046-000	\$600,000	13,127	10/15/2018	10/14/2019	Complete	Silver	Pending
Total GSF:			236,582					

VIRGINIA TECH LEED BUILDINGS STATUS - 2020-08-26

PROJECTS UNDER CONSTRUCTION - LEED REGISTERED

PROJECT	PROJECT #	BUDGET	GSF	CONSTRUCTION START	OCCUPANCY DATE	STATUS	LEED CERTIFICATION	DATE OF CERTIFICATION
VT Carillion Biomedical Research Expansion	208-18269-000	\$85,574,000	139,586	2/5/2018	4/20/2020	Construction	Silver	N/A
Student Athlete Performance Center	208-L00056-000	\$16,681,500	25,800	8/8/2019	1/31/2021	Construction	Silver	N/A
Creativity & Innovation District Living Learning Community	208-L00060-000	\$105,500,000	224,500	3/4/2019	6/15/2021	Construction	Silver	N/A
Holden Hall Renovation	208-18267-000	\$73,500,000	101,240	8/15/2019	10/29/2021	Construction	Silver	N/A
Total GSF:			491,126					

VIRGINIA TECH LEED BUILDINGS STATUS - 2020-08-26

PROJECTS UNDER DESIGN - LEED REGISTERED

PROJECT	PROJECT #	BUDGET	GSF	CONSTRUCTION START	OCCUPANCY DATE	STATUS	LEED CERTIFICATION	DATE OF CERTIFICATION
Student Wellness Improvements	208-18357-000	\$58,000,000	263,000	12/11/2019	8/18/2021	Design	Silver	N/A
Undergraduate Science Laboratories - New Construction	208-18332-000	\$74,800,000	102,000	3/27/2020	1/17/2022	Design	Silver	N/A
Multi-Modal Transit Facility	CP-2029	\$38,000,000	13,606	5/18/2020	5/23/2022	Design	Silver	N/A
Corps Leadership & Military Science Building	208-L00043-000	\$40,000,000	60,500	8/2/21	7/13/2023	Design	Silver	N/A

Total GSF:

439,106

PROJECTS UNDER DESIGN - LEED REGISTRATION PENDING

PROJECT	PROJECT #	BUDGET	GSF	CONSTRUCTION START	OCCUPANCY DATE	STATUS	LEED CERTIFICATION	DATE OF CERTIFICATION
Hitt Hall & New Dining Facility	208-L00049-000	\$68,000,000	112,000	7/1/2020	7/1/2022	Design	*Silver (Pending)	N/A
Data & Decision Sciences	208-18427-000	\$79,000,000	120,000	7/31/2020	7/28/2022	Design	*Silver (Pending)	N/A
Global Business & Analytics Complex Residence Halls	208-L00063-000	\$84,000,000	60,500	12/10/2020	7/11/2023	Design	*Silver (Pending)	N/A
Innovation Campus Academic Building	208-18412-000	\$275,000,000	300,000	8/1/2021	2/1/2024	Design	*Silver (Pending)	N/A

Total GSF:

592,500

VIRGINIA TECH DESIGN AND CONSTRUCTION STANDARD MANUAL

1.2.5E Sustainability

Per the latest revision of the Presidential Policy Memorandum No. 262, the Virginia Tech Climate Action Commitment (VT CAC), Virginia Tech will be a leader in campus sustainability and programs to achieve sustainability goals will be represented in the University's Strategic Plan. Innovations in construction and building design have raised the benchmark for certification standards for buildings since 2013. The VT Facilities Department will strive to incorporate a maximum amount of sustainability improvements to honor the VT CAC to the limits of affordability for each design project.

The University is committed to the principles of energy conservation. All designs shall strive to maximize energy efficiency, and comply with the energy conservation requirements contained in these standards and Campus Energy, Water, and Waste Reduction Policy – No. 5505.

1.2.5.1E Sustainable Design

In order to incorporate sustainable design solutions in new construction and renovation projects, Virginia Tech has joined the U.S. Green Building Council (USGBC) and fully supports the principles of the LEED (Leadership in Energy and Environmental Design) Building Rating System. The pursuit of high performance green buildings that are energy efficient and environmentally sensitive will help to lower operating and energy costs, improve employee productivity, promote improved learning, and enhance the health, and wellbeing of the students, faculty and staff at Virginia Tech. All projects shall address sustainability as it relates to site issues, water, energy efficiency, materials and resources, and indoor air quality in accordance with the VT CAC.

In the early stages of design, the A/E shall strive to meet or exceed the minimum number of points needed for LEED certification under the rating system appropriate for the project in accordance with the VT CAC. The A/E shall determine the most cost effective means of achieving these points, and shall take full credit for points achieved through compliance with other University standards that address sustainability issues, such as building commissioning. The A/E shall submit for the University's review and approval a LEED Project Checklist, identifying the specific measures proposed to be incorporated into the project to achieve the target number of points. The A/E should consider the ParkSmart certification for projects involving parking garages.

VIRGINIA TECH DESIGN AND CONSTRUCTION STANDARD MANUAL

1.2.5.2E Waste Management

Virginia Tech is a jurisdictional member of the Montgomery Regional Solid Waste Authority. All members transitioned to single stream recycling effective July 1, 2015.

To achieve the recycle rate goal stated in the VT CAC, Virginia Tech requires an appropriate number of waste stations, both outside and inside of our facilities. All recycling containers for new construction and major renovations must be able to accommodate single stream recycling.

1. Outside the Building:
 - a. The design of the waste management serving area shall provide a concrete slab 26 feet wide by 14 feet deep to accommodate an 8 cubic yard single stream recycling container and another 8 cubic yard trash container placed side-by-side. It must provide an access route to accommodate an AASHTO WB-40 Design Vehicle. In order to accommodate this design vehicle during loading and unloading operations, a concrete road surface shall be placed along the entire 26-foot width of the concrete slab and extended outward and perpendicular a distance of 8 feet.
 - b. Outdoor waste stations for personal use should consist of an appropriate number of pairs of containers placed side-by-side with one designated and labeled for “single stream recycling” and the other designated and labeled for “trash.” The containers must conform to our design standards for outdoor furnishings.
2. Inside the Building:
 - a. Indoor waste stations shall 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.”
 - b. 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 shall be placed on the floor and secured to the building structure to meet fire code.
 - c. The quantity and design for indoor waste stations in residential buildings will vary. Coordinate with Student Affairs during the initial design.

Sustainability

DCSM section 1.2.5 addresses sustainability requirements and affirms the desire to maximize sustainability within the affordable limits of the project.

- Virginia Tech Climate Action Commitment (VT CAC) is contained in Presidential Policy Memorandum No. 262
- “Sustainability is the simultaneous pursuit of environmental quality, economic prosperity, and social justice and equity, through action, education, and engagement to address current needs without compromising the capacity and needs of future generations.”
- Campus Energy, Water, and Waste Reduction Policy, VT Policy No. 5505
 - LEED certification for new construction and major renovations
 - A/Es encouraged to consider ParkSmart certification when parking garages are part of the project

Sustainability

Approved in 2009 and updated in 2013, the VT CAC contains 14 points and set several goals.

- Reduction targets for greenhouse gas emissions
- Monitor and improve electricity and other energy use efficiency (campus heating and cooling, lighting, and transportation)
- Use the campus as a “sustainability laboratory” for student internship and undergraduate research programs
- LEED Silver certification or better for construction projects
- Minimize waste; achieve 50% recycle rate by 2020
- Exceed ASHRAE 90.1 energy performance by 10% for all new buildings and major renovations

Sustainability

The Campus Energy, Water, and Waste Reduction Policy, VT Policy No. 5505, was approved in 2006 and last revised in 2016.

- Policy fully involves the CPIF Division and the VPCPIF must coordinate efforts with other university departments and outside regulatory agencies to develop and implement procedures.
- Construction of a new building that is greater than 5,000 GSF or the renovation of such a building with a cost that exceeds 50% of the value of the building shall follow the Commonwealth of Virginia (COV) energy conservation requirements (updated in DEB Notice 121510).
- COV requirements in DEB Notice 121510 listed three conservation options and VT is committed to LEED.

Sustainability

The Campus Energy, Water, and Waste Reduction Policy, VT Policy No. 5505 (continued)

- Design systems based on space use and occupancy to reduce energy costs; educate occupants to participate in energy savings
- Design systems to meet or exceed standards for Federal Energy Policy Act and EPA WaterSense requirements
- Minimize water use and waste by installing low-flow fixtures and landscaping that doesn't require frequent watering
- Recycle construction debris and materials when possible

LEED

- DCSM section 1.2.5.1 addresses the LEED building rating system.

A/Es shall strive to meet or exceed the minimum number of points needed for LEED certification under the rating system appropriate for the project in accordance with the VT CAC.
- Emphasized from the beginning...

A/Es are required to state their compliance with the VT CAC and the applicable version of the LEED checklist on the title sheets for the Schematic Drawings (2.5.2).
- ...to the end of the construction project.

Systems based on the LEED goals of the project are commissioned by the university (1.8.3).

LEED

- VT CAC commitment to LEED
 - Achieve LEED Silver certification or better for all eligible and applicable new buildings and major renovations
 - Evaluate the feasibility of LEED certification for existing buildings
- Campus Energy, Water, and Waste Reduction Policy commitment to LEED

All new buildings greater than 5,000 GSF or the renovation of such a building with a cost that exceeds 50% of the value of the building shall conform to the USGBC LEED Silver standards, consistent with the VT CAC

- VT LEED Program Summary
 - Compilation of construction projects and LEED certification levels attained or in progress
 - Summary is maintained by Capital Construction



Commonwealth of Virginia Locality Recycling Rate Report For Calendar Year 2019

Contact Information

Reporting Solid Waste Planning Unit: Virginia Tech

Person Completing This Form: Dennis C. Cochrane

Title: Director, Office of Sustainability, Facilities Department

Address: Sterrett Center, (Mail Code 0529), 230 Sterrett Drive, Blacksburg, VA 24061

Office Phone Number: (540) 231-5184

Email Address: denniscc@vt.edu

Summary: Virginia Tech, the Town of Blacksburg, the Town of Christiansburg, and Montgomery County are the four jurisdictional members of the "Montgomery Regional Solid Waste Authority (MRSWA)". Located in Christiansburg, VA, MRSWA operates a transfer facility that receives the majority of our principal recyclable materials (PRMs), and all of our municipal solid waste (MSW). Virginia Tech uses a "Single Stream" Recycling System. Recyclable materials are transported from the university to MRSWA, weighed, and further transported to "Recycling & Disposal Solutions (RDS)." RDS serves as the recycling "hub" for our region receiving materials from both the New River and Roanoke Valleys. Food waste is collected from our 11 on-campus dining facilities and stored at a central location in a 10 ton "sledge" container. When the container is full, "Royal Oak Farm (ROF)" transports it to their composting facility located in Evington, VA. Municipal Solid Waste is transported to MRSWA, weighed, and further transported to the local landfill operated by the "New River Resource Authority (NRRA)" in Pulaski County near Dublin, VA. MRSWA prepares a consolidated recycling rate report for our region to include the four jurisdictional members, and submits it to the Commonwealth of Virginia Department of Environmental Quality (DEQ). Virginia Tech uses this DEQ format to calculate our base recycling rate, our waste diversion rate, and our final recycling rate. **For Calendar Year 2019 Virginia Tech's recycling rate was 39% and waste diversion rate (percentage of waste kept out of the local landfill) was 80% (see DEQ formula on page 2).**

Data in this report was collected from our recycling and solid waste facilities and 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.

A handwritten signature in black ink that reads "Dennis C. Cochrane".

Dennis C. Cochrane

Director of Sustainability
Title

March 18, 2020
Date

Locality Recycling Rate Report

Attachment C
For Calendar Year 2019

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 %

$$\frac{\boxed{2,031} \text{ TONS}}{\boxed{2,031} \text{ TONS} + \boxed{3,976} \text{ TONS}} \times 100 = \boxed{33.8} \%$$

Basic Recycling Rate (34%)

Step 2: CREDITS calculation

a. Total Recycling Residue 0 tons
b. Total Solid Waste Reused 17 tons
c. Total Non-MSW Recycled 13,740 tons

CREDITS 13,757 tons

Adjusted

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

$$\frac{\boxed{2,031} \text{ TONS} + \boxed{13,757} \text{ TONS}}{\boxed{2,031} \text{ TONS} + \boxed{13,757} \text{ TONS} + \boxed{3,976} \text{ TONS}} \times 100 = \boxed{79.9} \%$$

Waste Diversion Rate (80%)

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

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

$$\boxed{79.9} \% + 2\% = \boxed{81.9} \%$$

Step 5: Final Recycling Rate* for Solid Waste Planning Unit = **38.8 %**

Final Recycling Rate (39%)

*** 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
PART B: DATA

Attachment C
For Calendar Year 2019

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	319
Metal	193
Plastic	0
Glass	0
Commingled (also known as Single Stream)	430
Yard Waste (composted or mulched)	260
Waste wood (chipped or mulched)	175
White Goods	2
Tires	5
Used Oil	9
Used Oil Filters	1
Batteries	9
Electronics	7
Fluorescent Bulbs & Ballasts	13
Food Waste Organic – For Composting	566
Waste Cooking Oil	42
TOTAL PRMs	2,031 (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 (Buildings & Grounds)
 - c. Department of Facilities: Capital Construction & Renovation
 - d. Department of Environmental Health & Safety
 - e. Division of Student Affairs: Dining Services
 - f. Division of Student Affairs: Housing & Residence Life
 - g. Department of Parking & Transportation: Fleet Services
 - h. Department of Human Resources
 - i. Athletic Department
2. Other facilities/operations (not included in #1 above) from which MSW disposed/recycled data was collected:
 - a. Montgomery Regional Solid Waste Authority (MRSWA)
 - b. Y-toss Program –Partnership w/ VT and the YMCA at VT
 - c. Campus Kitchen Program – VT Dining Services
 - d. _____
 - e. _____
 - f. _____
 - g. _____
 - h. _____
 - i. _____

Locality Recycling Rate Report

For Calendar Year 2019

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 non-ferrous 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)

<u>MATERIAL DESCRIPTION</u>	<u>FACILITY/OPERATION</u>	<u>TONS OF MATERIAL</u>
_____ from _____	_____	_____
_____ from _____	_____	_____
_____ from _____	_____	_____
TOTAL RECYCLING RESIDUE		<u>0</u>
(Enter Total on Page 2, Step 2 a)		

B. Solid Waste Re-Used

<u>MATERIAL DESCRIPTION</u>	<u>REUSE METHOD</u>	<u>TONS OF MATERIAL</u>
<u>Furniture/Appliances</u>	<u>Yass Program (Collected - Spring Move-Out)</u>	<u>7</u>
<u>Food Donations</u>	<u>Campus Kitchen Program (Dining Services)</u>	<u>10</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
TOTAL SOLID WASTE REUSED		<u>17</u>
(Enter Total on Page 2, Step 2 b)		

C. Non-Municipal Solid Waste (MSW) Recycled

<u>MATERIAL DESCRIPTION</u>	<u>RECYCLING METHOD</u>	<u>TONS OF MATERIAL</u>
<u>Hokie Stone Gravel</u>	<u>Quarry “Overburden” - Stone recycled to Gravel</u>	<u>12,839</u>
<u>Asphalt</u>	<u>VDOT Roadwork – Milled Asphalt</u>	<u>365</u>
<u>Commingled</u>	<u>CID-LLC & Holden Hall Construction Projects</u>	<u>415</u>
<u>Commingled</u>	<u>Student Athlete Performance Center Project</u>	<u>121</u>
TOTAL NON-MSW RECYCLED		<u>13,740</u>
(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: The 2018-2019 Green RFP Program provided over \$16,000 for the purchase reusable to-go food containers for use in 4 on-campus dining facilities.

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

SRP description: Ytoss Program (Partnership with the student group YMCA at Virginia Tech) collected 7 tons of reusable items in residence halls during Spring Move-Out.

(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.

<u>MSW TYPE</u>	<u>TOTAL AMOUNT of MSW DISPOSED (TONS)</u>
Household	_____
Commercial	_____
Institutional	_____
Other (DO NOT INCLUDE INDUSTRIAL WASTES)	<u>3,976</u>
TOTAL MSW DISPOSED	<u>3,976</u>
	(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

Attachment C
For Calendar Year 2019

Credits Worksheet

I. Reuse of any Solid Waste

<input checked="" type="checkbox"/>	Material description	Tons
<input type="checkbox"/>	PRM	
<input type="checkbox"/>	PRM	
<input type="checkbox"/>	PRM	
<input type="checkbox"/>	Industrial	
<input type="checkbox"/>	Construction	
<input type="checkbox"/>	Demolition	
<input type="checkbox"/>	Debris	
<input type="checkbox"/>	Other	
<input checked="" type="checkbox"/>	Ytoss Program Resuable Residence Hall Items	7
<input checked="" type="checkbox"/>	Campus Kitchen Donated Food Program (Din Syes)	10
	TOTAL TONS	17

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

II. Recycling of any Non-Municipal Solid Waste

<input checked="" type="checkbox"/>	Material description	Tons
<input checked="" type="checkbox"/>	Roadwork Asphalt (VDOT)	365
<input checked="" type="checkbox"/>	Construction Holder Hall - Commingled	201
<input checked="" type="checkbox"/>	Construction CID LLC - Commingled	214
<input checked="" type="checkbox"/>	Construction Student Ath Perf Ctr- Commingled	121
<input checked="" type="checkbox"/>	Quarry Ops Hokie Stone "Overburden" to Gravel	12,893
<input type="checkbox"/>	Other	
<input type="checkbox"/>	Other	
	TOTAL TONS	13,740

(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 0
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.

Locality Recycling Rate Report

For Calendar Year 2019

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 100,000 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	Once 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	360-800
Newsprint, Compacted	One cubic yard	720-1,000
Newsprint	12" stack	35
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"x62"	500
Film, Baled	30"x42"x48"	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 Rigid (Whole, Loose)	One cubic yard	38
Mixed Rigid, No Film	One cubic yard	49
Glass		
Glass, Whole Bottles	One cubic yard	600-1,000
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 + 368 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/Laptop/TV	Each (avg wt from NCER)	38/26/8/49 respectively

This Table For General Guidance Only.

Virginia Tech Sustainable Procurement Policy

1. Background

In accordance with the Virginia Tech Climate Action Commitment and Sustainability Plan, the Virginia Tech Procurement Department [the Department] recognizes its responsibility to support the university in its efforts to minimize negative impacts on health and the environment while supporting a vibrant campus community and local economy. The Department recognizes that the types of products and services procured have inherent social, health, environmental and economic impacts, and that the Department should make procurement decisions that embody the university's commitment to sustainability whenever possible.

2. Purpose

This Sustainable Procurement Policy will complement and strengthen our commitment to sustainability and intends to:

- Identify those sustainability factors that shall be incorporated into procurement decisions;
- Provide implementation guidance;
- Empower employees to be innovative and demonstrate leadership by incorporating sustainability factors into procurement decisions;
- Complement university wide and department-specific sustainability goals and related policies; and communicate the Department's commitment to sustainable procurement.
- Encourage vendors to promote products and services that they offer which are most suited to the university's sustainability principles;
- Reduce the spectrum of environmental impacts from the university's use of products, including greenhouse gas emissions, landfill waste, health and safety risks, and resource consumption;
- Communicate the Department's commitment to sustainable procurement, by modeling the best product and services choices to the campus community, and other institutions of higher education;
- Reduce the environmental impacts of materials acquired for use in the operation, maintenance and upgrades of buildings, new building construction; and,
- Facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills or incineration facilities.

3. Policy

3.1 General Policy Statement

Procurement Department employees and those with delegated procurement authority will procure materials, products or services in a manner that integrates fiscal responsibility and environmental stewardship whenever possible within the guidelines of the Purchasing Manual for Institutes of Higher Education. Each university department shall comply with this policy and actively encourage procurement decisions that reflect the policy objectives. The Procurement Department shall actively promote and encourage product and service acquisitions compliant to the policies and guidelines adopted herein.

3.2 Sustainability Factors

Procurement Department employees shall incorporate whenever possible the following factors when writing specifications for, or procuring materials, products, or services.

Environmental factors which may be considered include, but are not limited to, the life cycle assessment of:

- Pollutant releases
- Toxicity
- Waste generation
- Water efficiency
- Greenhouse gas emissions
- Energy efficiency
- Packaging and shipping impacts
- Depletion of natural resources
- Recyclability
- Use of recycled content

Fiscal factors to be considered may include, but are not limited to:

- Product efficiency which minimizes need
- Product performance, quality, and durability
- Upfront cost
- Life-cycle cost
- Leveraging of buying power through the utilization of cooperative, group purchasing and consortium contracts
- Impact on staff time and labor, including operational and maintenance requirements

While not all factors will be incorporated into every purchase, it is the intent of this policy that Procurement Department employees will make a good faith effort to incorporate and balance these factors to the maximum extent possible.

4. Use of Best Practices

Procurement Department employees will utilize best practices in sustainable procurement as they evolve whenever possible. As it applies to this policy, best practices in sustainable procurement are those that utilize leading edge sustainability factors, standards, and procedures in an efficient and effective way that is successful and replicable. The Procurement Department will promote and encourage strategies to reduce consumption due to the societal and community costs, such as landfill waste handling, toxin exposures, resource depletion, and greenhouse gas emissions.

The following guidelines and best practices are provided and required to the extent practical:

General

- Always look for environmental labeling, including recycling symbols and qualifying assertions such as ENERGY STAR, WaterSense, EPEAT, and/or Green Seal certified.
- When purchasing materials, supplies or equipment, purchases must meet sustainability requirements as may be specified in the solicitation documentation.
- Waste stream management within the buildings and among the grounds must be compliant with specified requirements, specifically for consumable goods and facilities alterations and additions.

4.1 Applicable Codes and Laws

It is the intent of this policy to complement existing codes and laws. Nothing in this policy shall be construed to conflict or be inconsistent with applicable federal, state, or local procurement codes or laws.

5. Environmental Standards and Product and Certifications

5.1 Standards: The standard for all acquisitions shall be compliant at least to:

- The U.S. Environmental Protection Agency (EPA) standards whenever published for a product or services; and
- The Virginia Department of Environmental Quality (DEQ)

5.2 Third-Party Certifications: The Procurement Department shall apply the most stringent third-party label standard available for a product or service being acquired. The Department shall use independent, third-party social and/or environmental (eco) product or service label certifications when writing specifications for procuring materials, products, or services, whenever a responsible label standard is available. Qualifying labels shall be:

- Developed and awarded by an impartial third-party (examples include: Green Seal, ENERGY STAR, EPEAT, Environmental Choice and Forest Stewardship Foundation);
- Developed in a public, transparent, and broad stakeholder process; and
- Represent specific and meaningful leadership criteria for that product or service category.

In addition, whenever possible, label standards used in product or service specifications should represent standards that consider multiple attributes and life-cycle considerations, with claims verified by an independent third party.

5.3 Specifications and Contracts

The Director of Procurement shall be responsible for:

- Ensuring that specifications written by the Department comply with this policy and incorporate sustainable procurement best practices.
- Ensuring procurement manuals and other internal procedures reference this policy and incorporate best practices for specifying products and services that meet the intent of this policy; and,
- Developing and integrating sustainable procurement boilerplate language into solicitation document templates.

6. Implementation and Responsibilities

6.1 Acquisition Responsibilities

Leadership of those areas with delegated procurement authority shall:

- Serve on specification or best practice teams, to collaborate with other university staff and the Procurement Department in standards, strategies and specifications;
- Ensure internal policies and procedures that reference this policy and incorporate the use of sustainable products and services that meet the intent of this policy; and,
- Encourage pilot testing for environmentally preferable/sustainable products.

The Procurement Department shall:

- Promote and ensure that bid and contract strategies incorporate the most favorable standards and best practices in sustainable procurement;
- Stay current and informed on advances in sustainable procurement specifications and strategies; and,
- Consult with experts as needed when reviewing or designing specifications, to ensure progressive and emerging specifications for the product or service being solicited.

7. Education

Leadership of those areas with delegated procurement authority shall be responsible for:

- Building awareness of this policy through information dissemination and incorporation into routine employee trainings;
- Encouraging employee attendance at internal and external trainings related to sustainability; and
- Encouraging the use of environmentally preferable/sustainable products and services through information dissemination, development of internal procedures, pilot testing, and leading by example.

The Purchasing Department shall be responsible for:

- Developing employee sustainable procurement resources such as, but not limited to, standards, specifications, tools, and best practices;
- Developing buyer-specific training on sustainable procurement best practices that meet the intent of this policy;
- Developing buyer competency in communicating to other university departments about this policy and opportunities for incorporating sustainable procurement best practices into solicitations and contracts;
- Developing communication among higher education procurement professionals about sustainable procurement best practices; and
- Taking the lead in communicating to existing and potential vendors about this policy and related requirements.

8. Policy Review

The Director of Procurement shall be responsible for periodically bringing together internal stakeholders to review this policy for updates or to otherwise determine whether this policy is in alignment with other university sustainability efforts and policies. The policy review shall be completed at least every five years but may be done on a more frequent basis as needed.

9. Explanation of Sustainable Terms

Following are routine terms related to sustainability as they apply to this policy.

Alternative/Hybrid Fuel Vehicle - vehicles that are powered by fuels that reduce air pollution, reduce fossil fuel consumption, solid waste and/or hazardous waste that result from their manufacture, use, service, and maintenance. The term is used to refer to various types of vehicles, including compressed natural gas, biodiesel, ethanol, electric and hybrid electric, propane, liquefied natural gas, and hydrogen fuel cell.

Biodegradable - capable of readily decomposing under natural conditions.

Durable Goods - goods which do not quickly wear out, or more specifically, it yields services or utility over time rather than being completely used up when used once.

Energy Efficiency - refers to products that meet or exceed the U.S. Department of Energy (DOE) federal energy management program's energy efficiency recommendations or that meet the energy efficiency criteria of the U.S. Environmental Protection Agency (EPA) ENERGY STAR program.

ENERGY STAR - A voluntary partnership among DOE, EPA, product manufacturers, local utilities and retailers. Partners help promote efficient products by labeling with the ENERGY STAR logo and educating consumers about the benefits of energy efficiency.

Environmentally Preferable - products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or service that serve the same purpose. The product or service comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance or disposal.

EPEAT - the Electronic Product Environmental Assessment Tool (epeat.net)

Integrated Pest Management - the coordinated use of pest information, environmental information, and available pest control methods to prevent unacceptable levels of pest damage by the most economical means and with the least possible hazard to people, property, and the environment.

Ongoing Consumables - Goods that may be depleted or worn out by use and must therefore be regularly replenished.

Post-Consumer Material - refers to a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. "Post-consumer material" is part of the broader category of "recovered material."

Practicable - means sufficient in performance and reasonably available at a competitive cost.

Reconditioned/Remanufactured - the process of restoring used durable products to meet original performance standards. Remanufacturing has many other names, including: rebuilding, retreading, reconditioning, and refurbishing.

Recycled Content - materials that have been recovered from the solid waste stream, either during the manufacturing process (pre-consumer), or after consumer use (post-consumer).

Recycling- placing used materials into channels that reuse them.

Waste Stream - The total flow of solid waste from homes, businesses, institutions, and manufacturing plants that is recycled, burned, or disposed of in landfills.

Xeriscaping/Sustainable Landscaping - an ecologically sound landscaping approach that is water conscious.

10. Additional Resources

This section provides university staff, vendors, and potential vendors resources for identifying suppliers of sustainable products as well as best practices which may be useful in the successful application of this sustainable procurement policy. The following lists of organizations and sites may be consulted when purchasing products and services.

The Association for the Advancement of Sustainability in Higher Education: (aashe.org) AASHE empowers higher education faculty, administrators, staff and students to be effective change agents and drivers of sustainability innovation.

ENERGY STAR: (energystar.gov)- Develops energy efficiency guidelines and helps promote the utilization of efficient products through the ENERGY STAR logo.

EPA Green Resources: (epa.gov/greenerproducts) Allows users to search for EPA programs related to greener products based on the type of user and their specific product interests.

EPEAT: (epeat.net) The Electronic Product Environmental Assessment Tool

consists of a set of voluntary environmental criteria for identifying energy efficient and environmentally preferable computers and other electronic components.

Green Seal: (greenseal.org) Establishes environmental standards and awards its "green seal of approval" to products meeting its standards. Green Seal has created environmental standards for more than 30 product categories and regularly publishes its Choose Green Reports, which evaluate the environmental impacts of products.

My Green Lab: (mygreenlab.org) Formed to unify and lead scientists, vendors, designers, energy providers, and others in a common drive toward a world in which all research reflects the highest standards of social and environmental responsibility.

New American Dream: (newdream.org) Provides extensive information on purchasing energy efficiency and environmentally preferable products via its Responsible Purchasing Network.

US EPA WaterSense: (epa.gov/watersense) Provides labeling, certification, information regarding water efficient products, contractors, and programs.

Virginia Department of Environmental Quality: (deq.virginia.gov)- The Department of Environmental Quality protects and enhances Virginia's environment, and promotes the health and well-being of the citizens of the Commonwealth.

Virginia Tech Office of Sustainability: (facilities.vt.edu/sustainability) The Office of Sustainability acts as a central hub to connect the many sustainability champions and efforts taking place all across campus.



- Perry Street Parking Garage
1330 Perry St. Blacksburg, VA 24061
Monday–Friday from 8 a.m. to 6 p.m.
- ▶ The Hokie Bike Hub is a **FREE** service dedicated to hands-on learning and empowering Virginia Tech bicyclists through a variety of maintenance resources.
 - ▶ Access to tools for self-service bike maintenance and repair
 - ▶ One-on-one help and attention

Fix-It Stations

24/7 repair stands and air pumps that include all the tools necessary to perform basic bike maintenance. Locations include: Squires Plaza, Dietrick Hall, Duck Pond Trail, Randolph Hall, Pamplin Hall, and War Memorial Gym.

Goatsa Bike Share

ridegoatsa.com/locations/rammrv
Membership-based bike rental with stations on campus and in Blacksburg, Christiansburg, and Montgomery County.



Heads Up Hokies is an awareness and safety campaign that encourages everyone to
Be aware, be predictable, and be a Hokie!

Alternative Transportation Department

1330 Perry Street, Blacksburg, VA, 24061
540-231-2116
Monday–Friday from 9 a.m. to 6 p.m.

parking.vt.edu/alternative



GettingAroundVT



Virginia Tech Alternative Transportation



VTAlternativeTransportation



@gettingaroundvt

NO CAR?
No problem

parking.vt.edu/alternative

Attachment C



RULES AND REGULATIONS



Bikes and E-Scooters

- ▶ All bikes regularly parked on campus must be registered: tinyurl.com/vtbikeregistration
- ▶ Bicyclists must obey the same traffic laws as motorists
- ▶ Bikes and scooters are permitted on all roadways, shared-use paths, and sidewalks, except sidewalks in downtown Blacksburg
- ▶ People on bikes and scooters must yield to pedestrians
- ▶ It is illegal to bike or scoot while using headphones/earphones

Pedestrians

- ▶ Pedestrians should cross streets at all intersections or marked crosswalks

Mopeds and Personal Mobility Devices

- ▶ Mopeds are only permitted on roadways
- ▶ A parking permit is required to park on campus
- ▶ Skateboards, skates, and electric personal assistive mobility devices are allowed on paved pathways and sidewalks, but not in roadways or parking lots/garages

Motorists

- ▶ Vehicles must give at least three feet of clearance to bicyclists
- ▶ Vehicles turning must yield to pedestrians and bicyclists
- ▶ Drivers must signal turns



MASS TRANSIT

Local

BLACKSBURG TRANSIT

All Week | Free blackburgtransit.org
Virginia Tech – Christiansburg – Blacksburg

SMART WAY EXPRESS

Mon-Fri | Free smartwaybus.com
Virginia Tech Campus
Blacksburg campus – VTC in Roanoke

SMART WAY BUS

Mon-Sat | \$ smartwaybus.com
Roanoke – Blacksburg – Roanoke Airport

ROANOKE AIRPORT TRANSPORTATION SERVICE

Sunday | \$ roanokebus.com
Runs from ROA to Blacksburg on Sundays

RADFORD TRANSIT

Mon-Fri | \$ radfordtransit.com
Radford – Blacksburg – Christiansburg

Stata

VIRGINIA BREEZE

All Week | \$\$ virginiabreeze.org
Blacksburg – Washington, D.C.
Stops along I-81 and I-66

CAMPUS CONNECT

All Week | \$\$ staput.com/roanokecampusconnect
Virginia Tech Campus
Blacksburg campus – Arlington Campus

ABBOTT HOMERIDE

Major Breaks | \$\$\$ abbottsbuses.com/homeride
Harrisonburg – Richmond
Charlottesville – Manassas – Hampton

National

COLLEGETRANSIT

Major Breaks | \$\$\$ collegetransit.com
Pennsylvania – New Jersey – New York

AMTRAK

All Week | \$\$\$ amtrak.com
Roanoke – Washington D.C. – all over the country

CAR AND RIDE SHARING

Zipcar

zipcar.com/vt

- ▶ 24/7 access to vehicles
- ▶ Hourly or daily rental of nationwide fleet
- ▶ Gas, insurance, and maintenance included

RIDE Solutions

ridesolutions.org

- ▶ Find rides to and from work/school and across the state. Modes include carpooling and vanpooling, as well as transit and bicycle buddy options.
- ▶ The free Guaranteed Ride Home Program assures a ride home in the event of an emergency.

COMMUTER ALTERNATIVES PROGRAM

Bike, Bus, and Walk

- ▶ Sixteen reduced-price daily parking permits per semester (six daily permits per summer session)

Carpool

- ▶ Reduced-cost parking permit
- ▶ Designated carpool parking areas located across campus

Employee Only Vanpool

- ▶ Shared, monthly vanpool cost payroll deducted using pretax dollars
- ▶ Reserved parking space near driver's office






Associate Vice President and Chief Facilities Officer
230 Sterrett Dr., Suite 112 (0127)
Blacksburg, Virginia 24061
Phone: 540-231-6291 Fax: 540-231-4745

MEMORANDUM

TO: Student Organizations

FROM: Christopher H. Kiwus, Associate Vice President and Chief Facilities Officer 

DATE: September 18, 2019

SUBJECT: Academic Year 2019-20 Request for Proposal for Sustainability Initiatives by Student Organizations Program (Green RFP Program)

Student engagement is an important factor in advancing sustainability at Virginia Tech. The university has created the Request for Proposal for Sustainability Initiatives from Student Organizations Program (called the "Green RFP Program") to solicit proposals from recognized student organizations that supports the goals of the Virginia Tech Climate Action Commitment and Sustainability Plan. Since its initiation in academic year 2010-11, the Green RFP Program has provided funds in excess of \$1.2 million for 83 approved student sustainability proposals.

The purpose of this memorandum is to present the proposal submission process, timeline, format, contacts, and the review criteria. Recognized student organizations should identify sustainability initiatives that are directly targeted to specific projects and therefore limited in size and scope. The university is especially interested in projects focused on energy reduction and conservation that produce achievable savings. Requests for one-time support are generally preferred over those requiring ongoing support.

The process and key dates for proposal submission and are shown in Attachment 1. The process begins with this memorandum and continues through the current academic year. Approved proposals will be formally announced during Spring Semester 2020.

Student organizations will submit a proposal(s) using the form titled "Sustainability Initiatives by Student Organizations Funding Proposal" shown in Attachment 2. All four parts of the form must be completed in detail. Part 11, "Supporting Information" should be completed prior to addressing Part 11, "Project Cost Information." As shown in Part IV, all proposals must have an appropriate university official's participation and concurrence prior to submission. The participation of the appropriate university official is essential, particularly if a proposal involves the purchase and installation of new equipment, a modification to an existing facility or grounds, or a new program.

The completed form must be signed and electronically submitted to Dennis C. Cochrane in the Office of Sustainability at denniscc@vt.edu by 4p.m. on November 8, 2019. If students have questions, need assistance in completing the form,

or need assistance with identifying the appropriate university official for their proposal, please contact Mr. Cochrane via email or office telephone 540-231-5184. If technical assistance is needed in preparing a proposal, please see our subject matter contact list in Attachment 3. For a list of previously approved Green RFPs, please visit the Office of Sustainability website:

facilities.vt.edu/sustainability/sustainability-programs/green-rpf-program

The Office of Sustainability will present select proposals to the university's Energy and Sustainability Committee for review and prioritization. This committee is a part of our university governance system and is comprised of faculty, staff, graduate students, and undergraduate students. The committee will consider and evaluate proposals based on the following criteria:

- Does the proposal help to achieve the goals of the Virginia Tech Climate Action Commitment and Sustainability Plan? See: Presidential Policy Memorandum No. 262 Revision 1 "Update to the Virginia Tech Climate Action Commitment" dated May 8, 2013.
facilities.vt.edu/content/dam/facilities_vt_edu/sustainability/climate-action-commitment.pdf
- Does the proposal generate savings that exceed the cost of implementation?
- Does the proposal pertain to energy reduction/conservation that produces cost savings?
- Does the funding request address a one-time or an ongoing need?
- Does the proposal leverage other sources of funding or volunteer effort?

Select proposals meeting these criteria will be prioritized and submitted by the Energy and Sustainability Committee to the Office of Budget and Financial Planning (OBFP) for further consideration. OBFP will assemble a budget committee to review proposals and determine potential funding strategies for those recommended for approval. The Vice President for Finance will announce the list of approved proposals and funding sources. The Office of Sustainability will oversee implementation.

Thank you for your interest in the university's sustainability efforts. I encourage your participation in this very popular student program.

c: Dennis C. Cochrane
Gannon T. Davis
James S. Hillman
Timothy L. Hodge
Travis W. Hundley
Kenneth E. Miller
Angela S. Page
Patricia A. Perillo
Jonathan C. Teglas

STUDENT ORGANIZATIONS SUSTAINABILITY INITIATIVE PROPOSAL PROCESS AND TIMELINE

DATE	ACTIVITY
Sep 16, 2019	Associate Vice President and Chief Facilities Officer announces the 2019-20 Green RFP Program and the Office of Sustainability (OS) notifies student organizations.
Nov 8, 2019	Proposal submission deadline to OS.
Nov 13, 2019	OS coordinates a proposal review for feasibility and completeness.
Jan 27, 2020	Energy and Sustainability Committee receives select proposals, and appoints Subcommittee to review and recommend a priority order.
Feb 24, 2020	Subcommittee presents proposed priority recommendations to the Energy and Sustainability Committee for approval.
Mar 4, 2020 (estimated)	Energy and Sustainability Committee presents proposals to the Office of Budget and Financial Planning for review and funding consideration.
Mar 2020 (estimated)	Office of Budget and Financial Planning, in coordination with other university offices, determines potential funding options for proposals and seeks the appropriate approvals.
Apr 2020 (estimated)	Vice President for Finance and Chief Financial Officer announces the approved proposals and funding sources.
May 2020 (estimated)	The Office of Budget and Financial Planning transfers funds to the appropriate Green RFP funding codes for proposal implementation.
May 2020 (estimated)	OS initiates Green RFP implementation.

STUDENT ORGANIZATIONS SUSTAINABILITY INITIATIVE PROPOSAL FORM

Part I — General Information:

Name of Student Organization

Contact/Responsible Person

Contact Office Held/Title

Contact Email Address

Contact Telephone Number

Part II — Project Cost Information

Estimated Cost of this Proposal

See III.C. Below

Estimated Savings -

See III.D. below

Net Cost of this Proposal =

Part III — Supporting Information

A. Please describe your sustainability initiative and attach supporting documentation.

B. How does this initiative help to achieve the goals of the Virginia Tech Climate Action Commitment Resolution and Sustainability Plan?

C. What is the cost of your proposal? Please describe in adequate detail the basis for your cost estimate.

D. Will your proposal produce cost savings for the University? If so, how much? Please describe in adequate detail the basis for your savings estimate.

E. Is this funding request for a One-Time need or an Ongoing need (please check one)?

☐ One-time☐ Ongoing

F. Is funding available for this request from another source? If yes, describe the funding (source, amount, etc.)

Attachment # 2

STUDENT ORGANIZATION SUSTAINABILITY INITIATIVE PROPOSAL FORM (Continued)

Part IV-Recommendations

Reviewed By (Name of the Student Organization): _____

Date: _____

Reviewed by (Name of the Virginia Polytechnic University Official): _____

Date: _____

Reviewed By (Name of the Student Sustainability Representative): _____

Date: _____

Attachment # 3

STUDENT ORGANIZATION SUSTAINABILITY INITIATIVE FUNDING PROPOSAL CONTACT LIST

In the preparation of your Green RTP form, student organizations are encouraged to seek input and guidance from the following list of university employees. These individuals are familiar with the form and the process. They can address the feasibility of your proposal, provide a technical review, and evaluate the cost & potential savings.

<u>Area of Expertise</u>	<u>Name</u>	<u>Title</u>	<u>Email Address</u>
Engineering & Operations, Energy Management	Ken Striebs	Director Engineering & Assessment	kstriebs@vt.edu
Facilities: Housing & Residence Life	Todd Pignatari	Associate Director of Facilities	tpignat@vt.edu
Facilities: Buildings & Grounds (Small Renovations)	Jim McDaniel	Project Coordinator	jmdani@vt.edu
Exterior Lighting	Rob Glenn	Director VT Electric Services	RobGlenn@vt.edu
Student Engagement & Campus Life	Clayton Kolb	Associate Director Student Eng. & Campus Life	kolbaj@vt.edu
Dining Services & Housing (Student Affairs)	Blake Bensman	Sustainability Mgr.	bensman@vt.edu
Alternative Transport (Bus, Bike & Walk/Electric Vehicles)	Nick Quint	Transportation Network Mgr.	nquint@vt.edu
Landscape Architecture	Melissa Philor	Site Planner	mphilor@vt.edu
Hahn Horticulture Garden	Scott Douglas	Director/Instructor	sdougl@vt.edu
Recycling and Waste Management	Denny Cochran	Director Office of Sustainability	dennisco@vt.edu
Other Sustainability Topics	Nathan King	Sustainability Mgr. Office of Sustainability	naking@vt.edu



CAPITAL PROJECTS STATUS REPORT

Prepared for the Buildings and Grounds Committee

November 15, 2020





Project Portfolio

- 25 projects (active and completed/1-year warranty phase)
- Total value exceeds \$1B
- Adds 2M gross square feet (GSF) of additional space
- Renovates nearly 300K GSF of existing space



Attachment C

Date Prepared: 29 OCT 2020

Legend:  Design  Construction

[illegible]

Under Construction



Biomedical Research Expansion



PPEA
State Authorized

Status:

- Project complete

Next Actions:

- Certificate of Occupancy pending

Legend: <div>Design</div> <div>Construction</div>				Designer: AECOM (Carilion Contract)										Builder: Skanska (Carilion Contract)									
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024			
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC
				FY20		FY21		FY22		FY23		FY24		FY25									
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
VTC Biomedical Research Expansion (PPEA)	\$91.7	139,586																					

Athletic Weight Room Expansion



Design-Bid-Build
BOV Authorized

Status:

- Project complete

Next Actions:

- Certificate of Occupancy pending

Legend: <div>Design</div> <div>Construction</div>				Designer: Hanbury																Builder: Thor							
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024							
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC				
				FY20		FY21		FY22		FY23		FY24		FY25													
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2				
Athletic Weight Room Renovations	\$4.5	4,880	17,640																								

Improve Kentland Facilities

APR Building



Complete

MRL Building



BETR Building



Complete

Design-Bid-Build
State
Authorized

Status:

- APR Building complete
- BETR Building complete
- MRL Building on track (98% complete)

Next Actions:

- BETR Certificate of Occupancy pending
- MRL anticipated completion in December 2020

Legend: Design Construction		Designer: Spectrum Design										Builder(s): APR = Snyder; MRL & BETR = CPPI											
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024			
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC
				FY20		FY21		FY22				FY23				FY24				FY25			
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Improve Kentland Facilities (Phase II) -- Various Locations	\$12.5	28,403																					

Student Athletic Performance Center

Design-Bid-Build
BOV Authorized



Status:

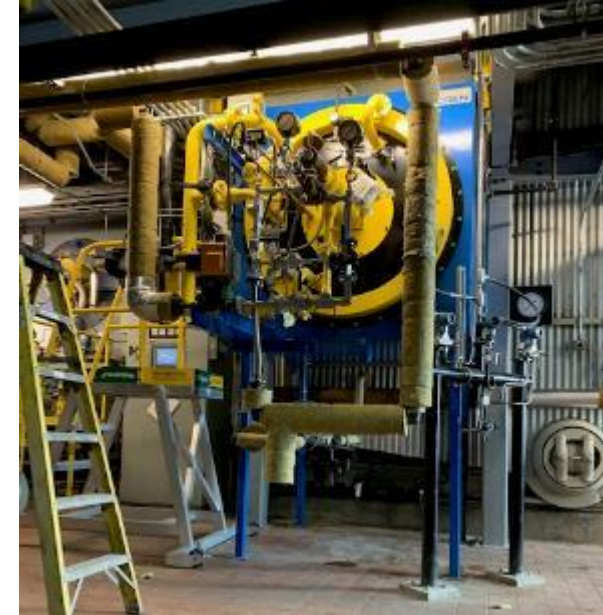
- Project on track (95% complete)

Next Actions:

- Anticipated completion in November 2020

Legend: <div>Design</div> <div>Construction</div>				Designer: Hanbury												Builder: Branch Builds											
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024							
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC				
				FY20		FY21		FY22				FY23				FY24				FY25							
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2				
Student Athlete Performance Center (Jameson Hall)	\$20.1	10,800																									

New Package Boiler



Design-Bid-Build
BOV Authorized

Status:

- Project on track (99% complete)
- New boiler fully installed

Next Actions:

- Complete boiler performance testing & commissioning
- Anticipated completion in February/March 2021

Legend: <div><div>Design</div><div>Construction</div></div>				Designer: AEI										Builder: Faulconer										
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024				
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	
				FY20		FY21		FY22		FY23		FY24		FY25										
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2					
New Package Boiler #12	\$8.2	N/A																						

Creativity & Innovation District LLC



**Design-Build
BOV Authorized**

Status:

- Project on track (65% complete)

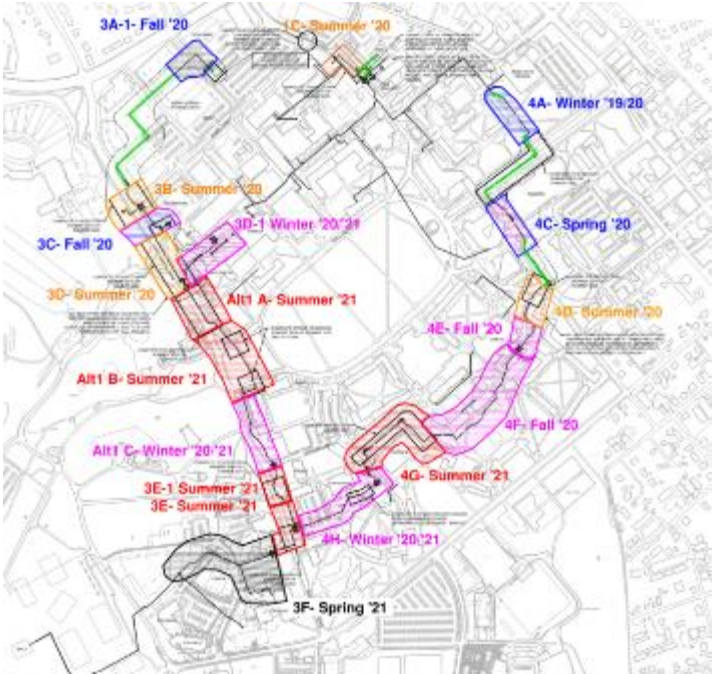
Next Actions:

- Anticipated completion in June 2021

Legend: <div>Design</div> <div>Construction</div>				Designer: Hanbury																Builder: WM Jordan											
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024											
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC								
				FY20		FY21		FY22				FY23				FY24				FY25											
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2								
Creativity & Innovation District Living Learning Community	\$105.5	234,000																													

Chiller Plant (Phase II)

Design-Bid-Build
State Authorized



Status:

- Project on track (50% complete)

Next Actions:

- Anticipated completion in July 2021

Legend:	 Design	 Construction
---------	--	--

Designer: AEI

Builder: Faulconer

Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024			
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC
				FY20		FY21		FY22		FY23		FY24		FY25									
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Chiller Plant Phase II	\$42.9	N/A																					

Holden Hall



CM at Risk
State Authorized

Status:

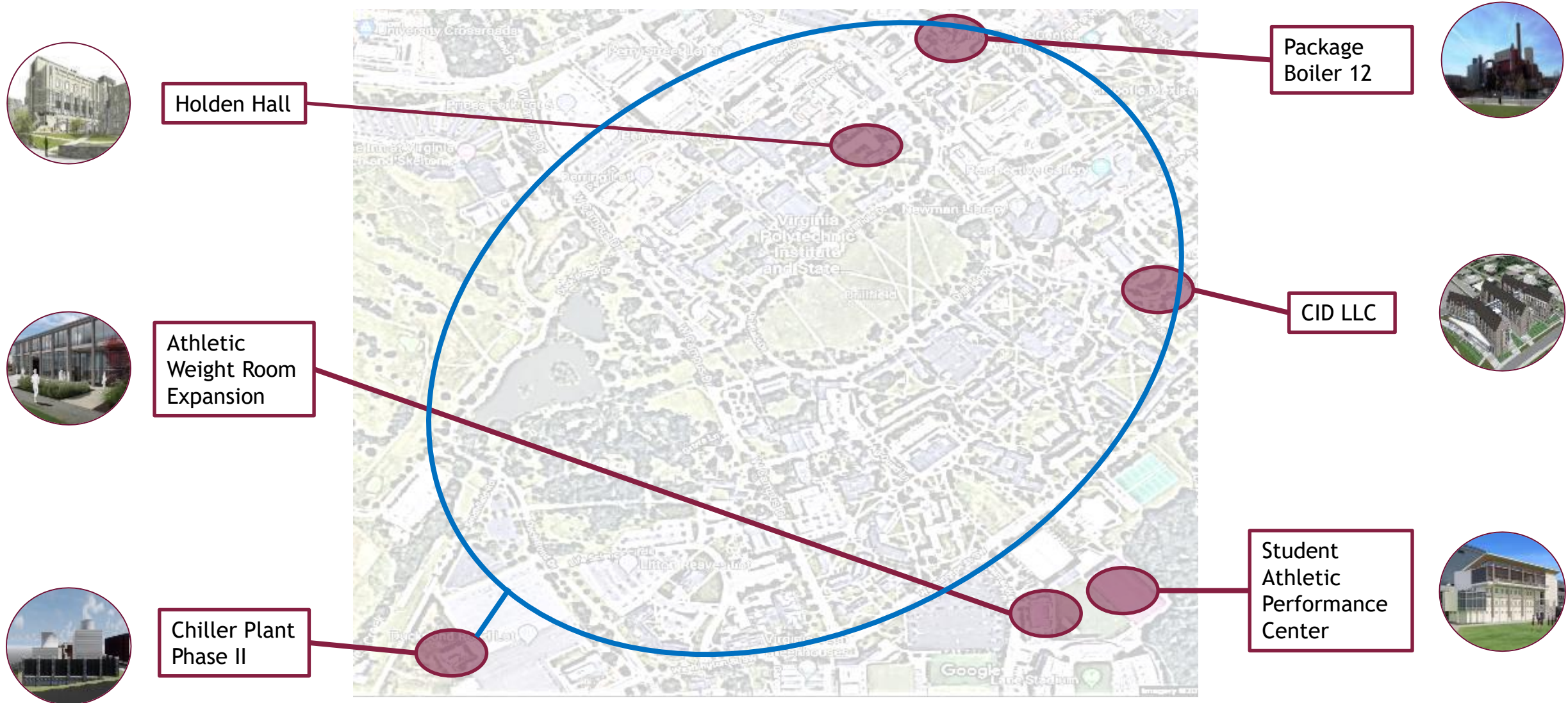
- Project on track (20% complete)

Next Actions:

- Anticipated completion in December 2021

Legend: <div>Design</div> <div>Construction</div>				Designer: Moseley																Builder: WM Jordan							
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024							
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC				
				FY20		FY21		FY22		FY23		FY24		FY25													
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2				
Holden Hall Renovation	\$74.9	81,000	20,240																								

Active Construction On Campus 2020

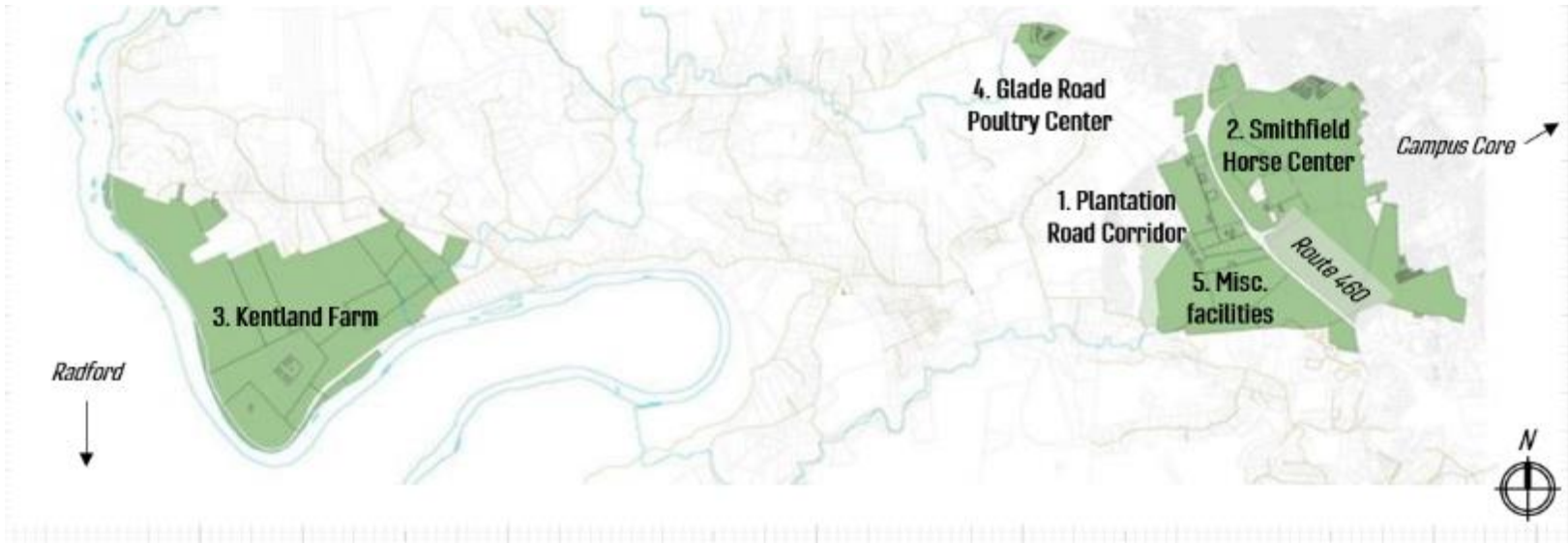


In Design



Livestock & Poultry Research Facilities (Phase II)

Design-Bid-Build
State Authorized



Status:

- 10 new buildings
- 16 demolitions
- 6 different bid packages
- 4 of 6 bid packages advertised
- Bid packages 1 & 2 awarded

Next Actions:

- Bids for packages 3 & 4 due in NOV/DEC
- Finalize & advertise bid package 5

Legend: <div>Design</div> <div>Construction</div>				Designer: Spectrum Design												Builder(s): TBD												
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020					CY 2021					CY 2022					CY 2023					CY 2024				
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC					
				FY20		FY21			FY22				FY23				FY24				FY25							
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2					
Livestock & Poultry Research Facilities (Ph I) -- Various Locations	\$22.5	128,895																										

Data & Decisions Sciences



CM at Risk
State Authorized

Status:

- Project on track; design complete

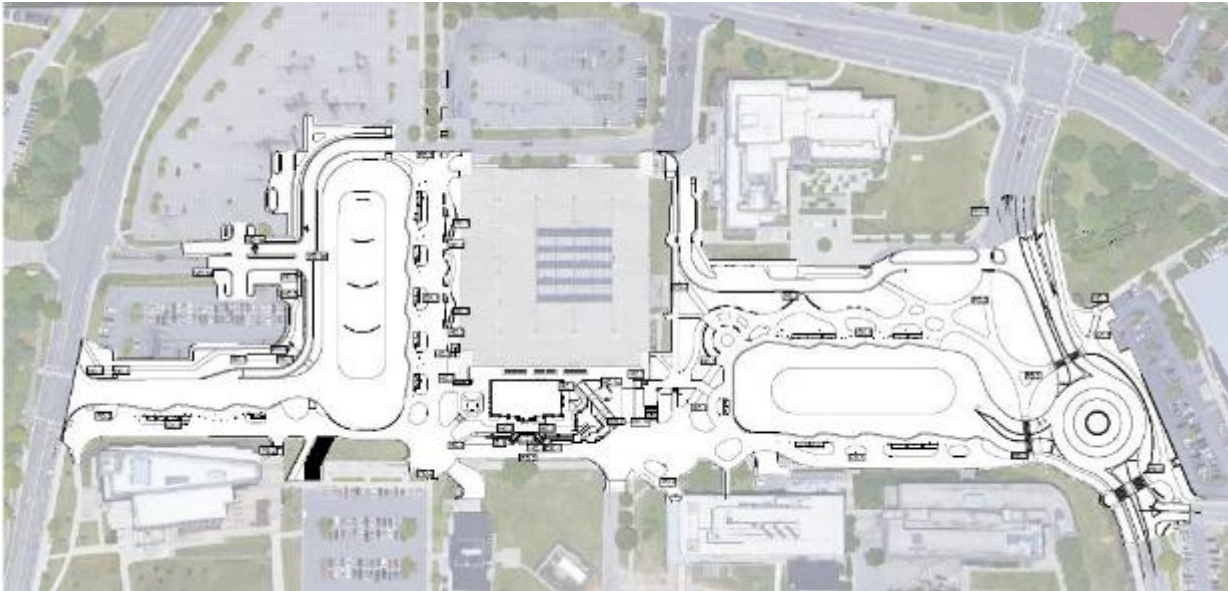
Next Actions:

- CMaR finalize GMP in November 2020
- Construction start targeted for December 2020

Legend: <div>Design</div> <div>Construction</div>		Designer: Moseley										Builder: Kjellstrom & Lee											
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024			
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC
				FY20		FY21		FY22				FY23				FY24				FY25			
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Data & Decision Sciences Building (D&DS)	\$79.0	120,000																					

Multi-Modal Transit Facility

**Design-Bid-Build
ToB Project**



- Status:
- Town of Blacksburg (ToB) A/E finalizing bid documents
- Next Actions:
- ToB targeting issuance of Invitation For Bids in November

Legend: Design Construction				Designer: Wendel (ToB contract)										Builder: TBD (ToB contract)									
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024			
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC
				FY20		FY21		FY22				FY23				FY24				FY25			
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Multi-Modal Transit Facility	\$34.0	13,606																					

New Upper Quad Residence Hall

CM at Risk
BOV Authorized



Status:

- Preliminary Design complete
- Current cost estimate is over budget

Next Actions:

- Analyzing costs and determining courses of action
- Transition design into Working Drawings phase
- Targeting demo of Femoyer in winter/spring 2021

Legend: <div>Design</div> <div>Construction</div>				Designer: Clark-Nexsen																Builder: Vannoy							
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024							
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC				
				FY20		FY21		FY22		FY23		FY24		FY25													
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2				
New Upper Quad Residence Hall (Femoyer Hall Replacement)	\$33.0	70,200																									

Corps Leadership & Military Science

CM at Risk
BOV Authorized



Status:

- Working Drawings design phase underway

Next Actions:

- CMaR will develop GMP in late fall 2020
- Targeting construction start in July 2021

Legend: <div>Design</div> <div>Construction</div>				Designer: Clark-Nexsen																Builder: Vannoy							
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024							
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC				
				FY20		FY21		FY22				FY23				FY24				FY25							
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2				
Corps Leadership & Military Science Building	\$52.0	60,735	14,725																								

Innovation Campus



CM at Risk
State Authorized

Status:

- Preliminary Design phase underway

Next Actions:

- Develop/finalize detailed construction schedule

Legend:	Design	Construction
---------	--------	--------------

Designer: SmithGroup

Builder: Whiting-Turner

Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024			
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC
				FY20		FY21		FY22		FY23		FY24		FY25									
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Innovation Campus Academic Building #1	\$275.0	300,000																					

Hitt Hall/New Dining

CM at Risk
BOV Authorized



Status:

- A/E contract fully executed
- CMaR selection pending

Next Actions:

- Validate cost estimates; restart design
- Construction start targeted for October 2021

Legend: <div>Design</div> <div>Construction</div>				Designer: TBD																Builder: TBD							
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024							
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC				
				FY20		FY21		FY22		FY23		FY24		FY25													
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2				
HITT Hall and New Dining Facility	TBD	101,000																									

Undergraduate Science Lab (Design Only)

CMAR
State Authorized



Status:

- Design is complete
- Waiting General Assembly to authorize construction

Next Actions:

- Finalize Budget Request for General Assembly consideration
- Upon construction authorization, coordinate CMaR development of Guaranteed Maximum Price (GMP)

Legend: <div>Design</div> <div>Construction</div>				Designer: ZGF																Builder: Skanska											
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024											
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC								
				FY20		FY21		FY22				FY23				FY24				FY25											
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2								
Undergraduate Science Lab (Design Only)	(Note 1)	\$74.8	102,000																												

PENDING STATE CONSTRUCTION FUNDING

Tennis Facility Addition and Renovation (Design Only)

Design-Bid-Build
BOV Authorized



Status:

- Preliminary Design phase underway

Next Actions:

- Complete Schematic Design validation and transition to Preliminary Design phase

Legend: <div>Design</div> <div>Construction</div>				Designer: Tymoff & Moss												Builder: TBD							
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024			
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC
				FY20		FY21		FY22		FY23		FY24		FY25									
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Tennis Facility Addition & Renovation (Design Only)	\$0.5	TBD	TBD																				

Replace Randolph Hall (Design Only)

CMaR (Pending)
State Authorized



- Status:
- Project authorized for design only
 - A/E design services procurement is underway

- Next Actions:
- Complete A/E procurement
 - Initiate CMaR procurement

Legend: <div>Design</div> <div>Construction</div>				Designer: TBD																Builder: TBD							
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020					CY 2021				CY 2022				CY 2023				CY 2024						
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC			
				FY20		FY21			FY22				FY23				FY24				FY25						
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2				
Replace Randolph Hall (Design Only)	(Note 1)	\$11.0	284,000																								

Life, Health, Safety, Accessibility and Code Compliance

Design-Bid-Build State Authorized



Status:

- Procuring A/E design services

Next Actions:

- Award A/E contract and initiate Schematic Design phase

Legend: <div>Design</div> <div>Construction</div>				Designer: TBD																Builder: TBD							
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020					CY 2021				CY 2022				CY 2023				CY 2024						
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC				
				FY20		FY21			FY22				FY23				FY24				FY25						
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2				
Life, Health, Safety, Accessibility and Code Compliance	\$3.1	N/A																									

Dietrick 1st Floor Enclosure & Spirit Plaza

Design-Bid-Build
BOV Authorized



Status:

- Project on hold
- Project “bid-busted” in May 2020
- Construction budget = \$6M; Low bid = \$7.3M

Next Actions:

- Determine appropriate course of action for project

Legend: <div><div></div> Design</div> <div><div></div> Construction</div>				Designer: Hanbury																Builder: TBD							
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024							
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC				
				FY20		FY21		FY22				FY23				FY24				FY25							
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2				
Dietrick Dining Hall First Floor Enclosure & Spirit Plaza	\$8.3	6,298	11,960	ON HOLD																							

GBAC Residence Halls

Design-Bid-Build
BOV Authorized



Status:

- Project on hold
- Project was previously slated for D/B procurement

Next Actions:

- Determine appropriate course of action for project

Legend: <div><div></div> Design</div> <div><div></div> Construction</div>				Designer: TBD																Builder: TBD							
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024							
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC				
				FY20		FY21		FY22				FY23				FY24				FY25							
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2				
Dietrick Dining Hall First Floor Enclosure & Spirit Plaza	\$8.3	6,298	11,960	ON HOLD																							

Slusher Hall Replacement



Design-Build
Non-General
Funds

Status:

- Project on hold

Next Actions:

- Determine appropriate course of action for project

Legend: <div>Design</div> <div>Construction</div>				Designer: Clark Nexsen																Builder: TB							
Project Title		Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024						
					JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC			
					FY20		FY21		FY22		FY23		FY24		FY25												
					Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2			
Slusher Hall Replacement		TBD	196,000		ON HOLD																						

Student Wellness Improvements

CM at Risk
BOV Authorized



Status:

- CMaR Guaranteed Maximum Price (GMP) is over budget

Next Actions:

- Determine appropriate course of action for project

Legend: <div>Design</div> <div>Construction</div>				Designer: Cannon Design												Builder: Whiting-Turner											
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024							
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC				
				FY20		FY21		FY22		FY23		FY24		FY25													
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2				
Student Wellness Improvements (War Memorial Gym & McComas Hall)	TBD	30,124	217,108	ON HOLD																							

Cassell Coliseum Renovations (Feasibility Study Only)

Not Yet Authorized
by BOV



Status:

- Study complete

Next Actions:

- None – final BOV report for this project

Legend: <div>Design</div> <div>Construction</div>				Designer: HNTB Corporation																Builder: TBD							
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024							
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC				
				FY20		FY21		FY22				FY23				FY24				FY25							
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2				
Cassell Coliseum Renovations (Feasibility Study Only)	\$0.1	TBD	TBD																								

Northern Virginia Falls Church (PPEA)

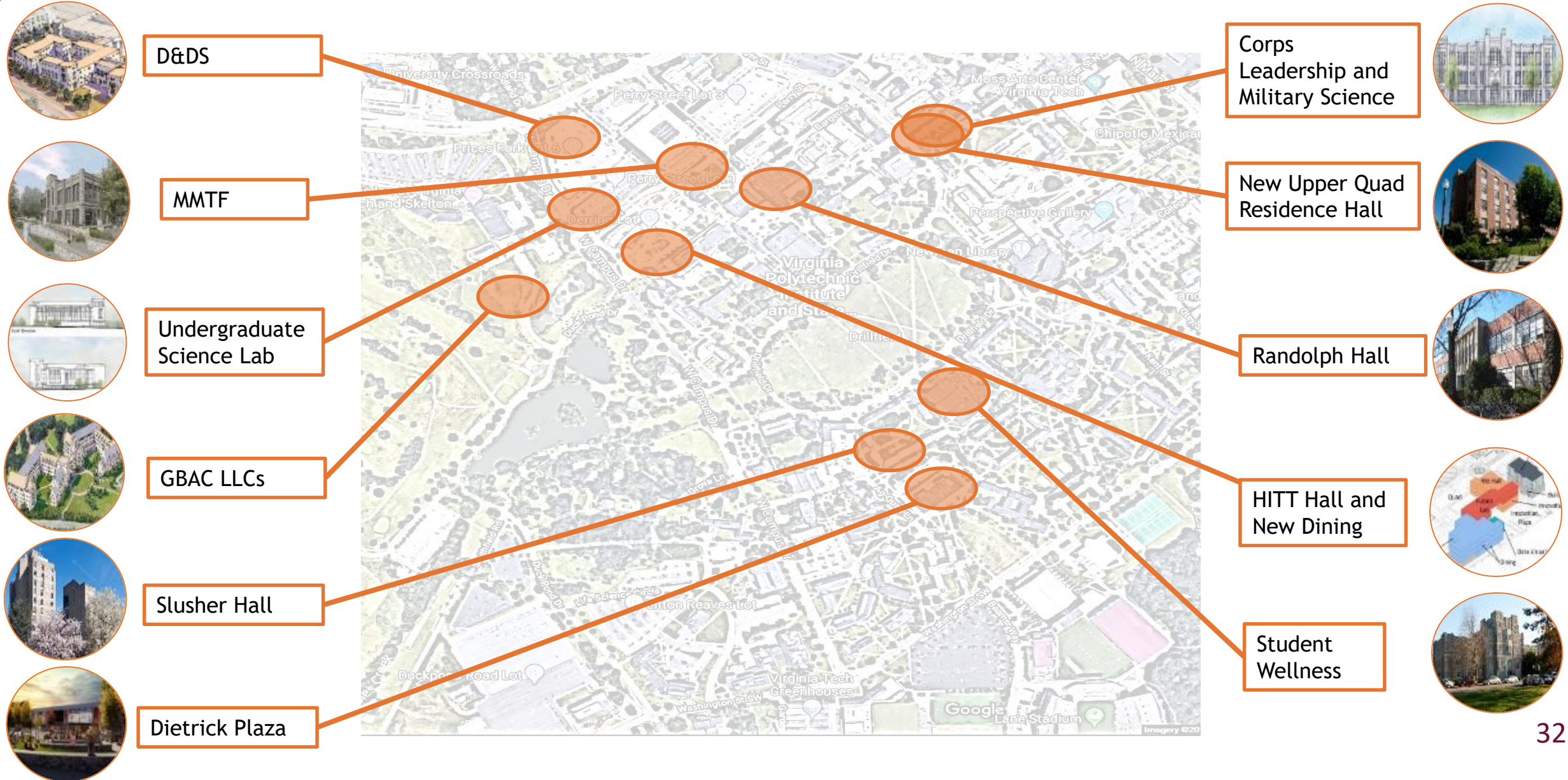
PPEA
Not Yet Authorized
by BOV



- Status:
- Currently developing PPEA Comprehensive Agreement
 - Programming and Schematic Design phase underway
- Next Actions:
- Iterate/finalize PPEA Comprehensive Agreement

Legend: <div>Design</div> <div>Construction</div>		Designer: Gensler Architecture										Developer: Converse West Falls, LLC											
Project Title	Total Project Cost (\$M)	New Const (GSF)	Renovation (GSF)	CY 2020				CY 2021				CY 2022				CY 2023				CY 2024			
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC
				FY20		FY21		FY22		FY23		FY24		FY25									
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Northern Virginia Center Falls Church (PPEA)	(Note 2)	TBD	75,000																				

On-Campus Projects In Design





Definitions

- **State Authorized:** Authorized and funded (whole or in part) by the Virginia General Assembly
- **BOV Authorized:** Authorized and funded by the Virginia Tech Board of Visitors
- **Schematic Design Phase** = 0% to approx 20% design complete
- **Preliminary Design Phase** = Approx 20% to approx 50% design complete
- **Working Drawing Phase** = Approx 50% to 100% design complete



Construction Method Refresher

Design-Bid-Build (DBB):

- A/E completes full design
- Invitation For Bid (IFB) issued...contract awarded to lowest bidder

Construction Manager at Risk (CMaR):

- A/E completes full design
- CMaR's compete for project during early stage of design
- CMaR hired during schematic design phase
- When final designs are complete, CMaR develops Guaranteed Maximum Price (GMP)

Design-Build (D/B):

- A/E completes partial design ("criteria docs")
- D/B teams (builder + A/E) compete for project and propose full price for project delivery
- Selection based upon "best value"
- D/B team completes design and executes construction

John Randolph (chair)
Todd Schenk (vice-chair)
Tim Baird
Shannon Bell
Erin Hopkins
Chen-Ching Liu
Kray Luxbacher
Sean McGinnis
Annie Pearce
Peter Sforza
Brooke Baugher
Jayme Bibbins
Brandon Burkey
Owen Callahan
Brogan Dineen
Drew Harris
Natalie Koppier
Jack Leff
Phil Miskovic
Blake Bensman
Rob Glenn
Brandon Hendricks
Christopher Kiwus
Carol Davis
Shayla Utzinger

2020 Virginia Tech Climate Action Commitment

Climate Action Commitment Working Group

**Presentation to
Board of Visitors, Buildings & Grounds Committee
November 15, 2020**

The 2020 VT CAC Working Group Final Report

Attachment C

Executive Summary

- 1. Introduction**
- 2. Virginia Tech 2020 Climate Action Commitment**
- 3. Implications of VT 2020 CAC Goals and Pathways**
- 4. Implementing, Engaging, Monitoring, Reporting, and Updating VT CAC**
- 5. What We Learned from Community Engagement**
- 6. Virginia Tech Progress in Climate Action, 2009 to 2020**
- 7. Critique of Progress and the 2009 VT CAC**
- 8. Comparison to Peer Universities**
- 9. Conclusion and Proposed Immediate Actions**

Appendices: A. Executive Summaries of 12 VT CAC WG Subcommittee Reports

B. Charge, Membership, Glossary, Student demands/Faculty Senate

The 2020 VT CAC Working Group Final Report

Attachment C

Key Points

1. **Intro:** serious times, serious future, VT as model for society
2. **Working Group:** engaged, comprehensive, consensus process
3. **Much to build on:** Progress since 2009
4. **...but, limited, others passing us by...**all top tier universities focusing on climate
5. **CAC Goals & pathways:** #1-9: physical changes, #10-14 non-physical changes
6. **Comprehensive nature of CAC:** physical plant + education + culture + justice
7. **VT controls most physical changes:** VTES, energy systems, buildings
8. **Implementation:** operation and governance at high level of university
9. **How we compare to others:** VT 2020 CAC enhances VT leadership and reputation
10. **What's it going to cost?**
 - a. Many initiatives that are no-cost/low-cost/already budgeted or part of necessary upgrades
 - b. Some have positive return or attract external funding or innovative financing (e.g., thru VTES or solar PPA)
 - c. But given budget uncertainties, flexibility needed in implementation/timing for some initiatives

Key Points about Working Group process

1. Working Group operated by **consensus**
2. WG met at least weekly live < March 5, via Zoom > March 15
3. **12 subcommittees** involved 125 members including 35 staff
4. Subcommittees met weekly Feb-May and each wrote final reports (in Volume II)
5. **Community engagement** including
 - a. Website, email
 - b. 10 creative U-tube videos
 - c. On-line surveys (>220 responses)
 - d. 12 public Zoom convening sessions (226 participants)

Virginia Tech Climate Action Progress 2009-2020

Attachment C

The 2009 VT CAC & Sustainability Plan was a cutting-edge effort for its time, but a decade later it fails to prescribe what climate scientists recognize as necessary actions and also falls short of many peer universities' recent initiatives.

In many respects, we have forged ahead beyond the 2009 CAC.

- STARS Gold score, Numerous awards and recognitions since 2010,
- Greenhouse gas (GHG) emissions reduced 24% from 2006 to 2019, despite 22% growth of campus from
- Alternative transportation upgrades, waste management program,
- Virginia Tech Electric Service (VTES), Facilities Department, Office of Sustainability, Sustainable Procurement Policy; Design and Construction Building Standards
- Envable array of sustainability-related academic programs

But in other areas, we are falling behind.

- The 2009 VT CAC was a leading effort for its time, but is now **limited in both scope and ambition.**
- It **did not include several sources** of campus GHG
- It **did not even mention renewable energy**
- Goal of **80% reduction** in GHG from 1990 levels by 2050, is **not aggressive enough**

Virginia Tech 2020 Climate Action Commitment

Attachment C

Vision of the Virginia Tech 2020 Climate Action Commitment:

In the spirit of Ut Prosim, Virginia Tech will be a leader in climate action in service to our community, the Commonwealth, and the world.

Mission of the Virginia Tech 2020 Climate Action Commitment:

President Tim Sands: “climate change presents one of the world’s most pressing problems...and Virginia Tech has a duty to respond.”

The mission of the Virginia Tech 2020 Climate Action Commitment is to achieve carbon neutrality by changing our physical infrastructure, collective and individual behaviors, and educational mission; to engage everyone in creating a culture of sustainability; and to achieve these objectives through just and equitable means.

The VT 2020 CAC:

15 Goals, Pathways to meet them, Implications, Implementation, Immediate Initiatives

- #1-9 address physical climate action by 2030,
- #10-14 address non-physical climate action
- #15 targets 2050

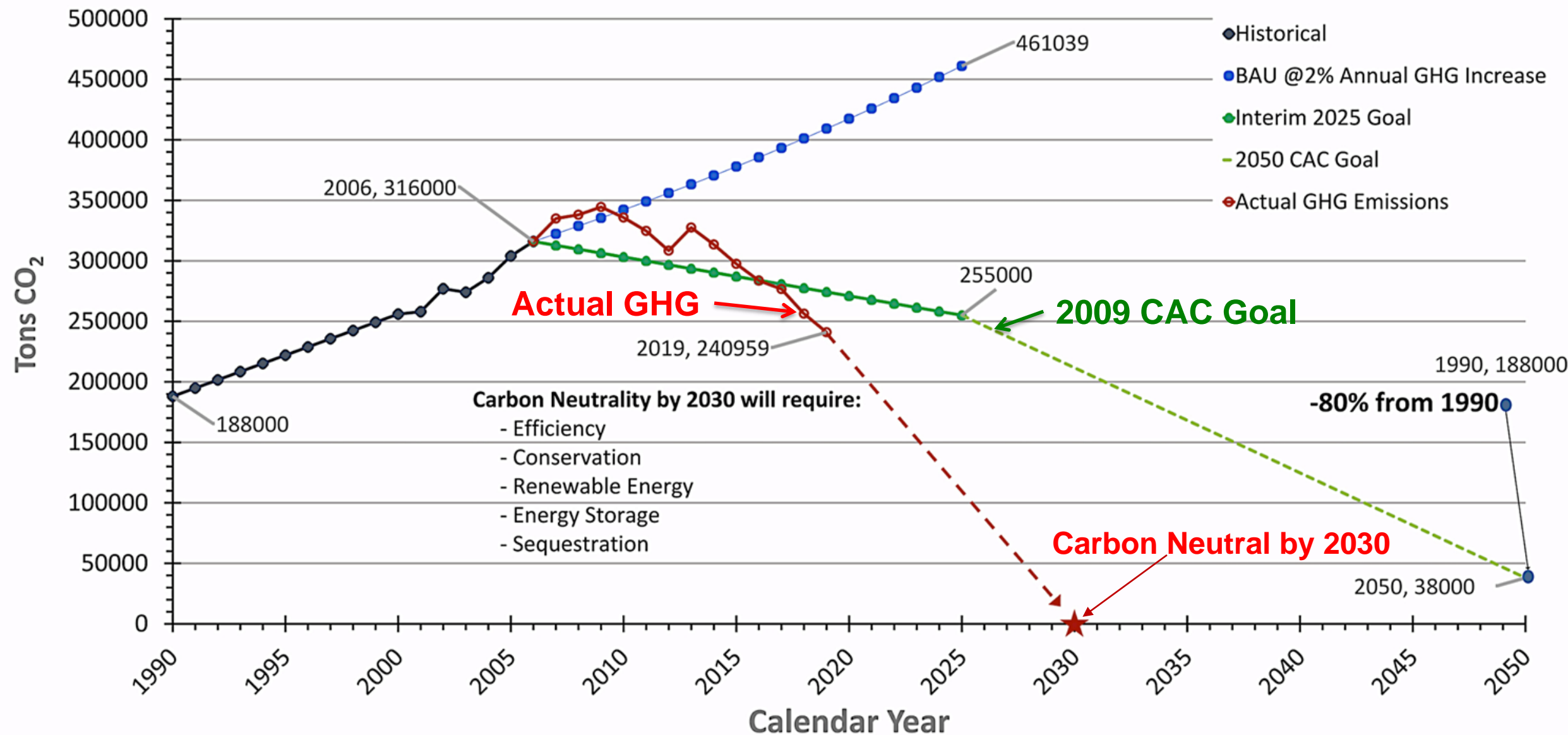
2020 Virginia Tech Climate Action Commitment Goals 1-9

Attachment C

1. **Carbon neutral Virginia Tech campus by 2030**
2. **100% renewable electricity by 2030**
3. **Complete the total conversion of steam plant fuel to natural gas by 2025, plan for a full transition to renewable steam plant fuel after 2025, and continue to improve efficiency of campus energy systems**
4. **Reduce building energy** consumption to enable carbon neutrality by 2030
5. Operations of **new buildings** initiated after 2030 will be carbon neutral
6. **Agricultural, forestry, land use operations** will be carbon neutral by 2030
7. Virginia Tech to become a **Zero-Waste Campus by 2030**
8. Establish **sustainable procurement policies** and procedures by 2022
9. Reduce single-occupancy commutes to campus by 20% by 2025, and reduce **transportation**-related GHG emissions by 40% by 2030

Goal #1: Virginia Tech GHG Emissions Progress and Needed Reduction to Carbon Neutral by 2030

Attachment C



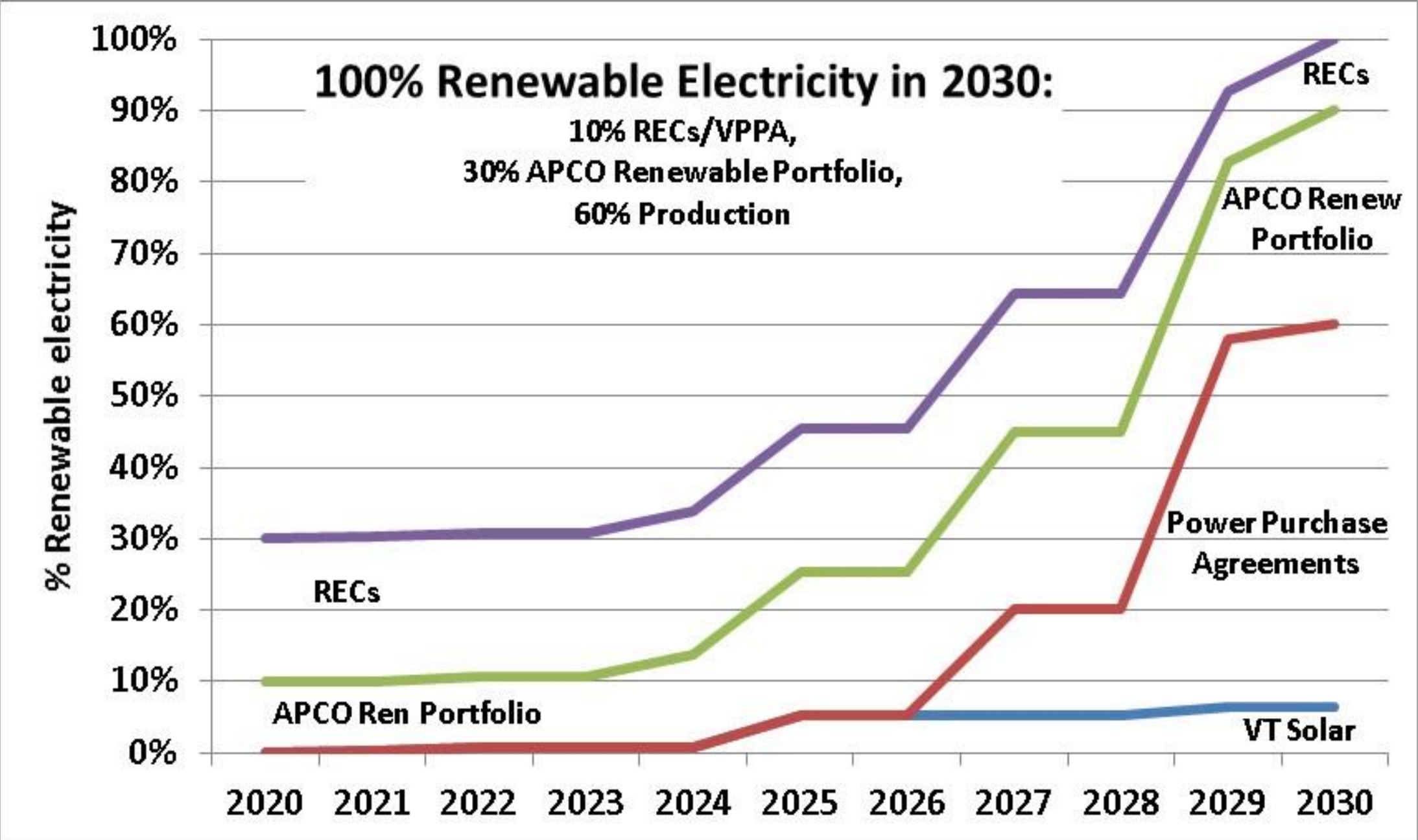
Goal 2: 100% Renewable Electricity by 2030

Attachment C

POTENTIAL PATHWAYS TO GOAL:

- **2020: achieve 30% renewable electricity** via purchase 20% renewable energy certificates (RECs) from APCO + APCO 10% renewable portfolio
- **2020-2030: Achieve 100% renewable electricity by 2030** via combination of
 - VT owned or 3rd party owned power purchase agreement (PPA) solar on VT rooftops/land (15 MW),
 - APCO/3rd party owned SWVA including coalfields solar farm PPA capacity (130 MW), total=145 MW,
 - to serve campus (95 MW) and town customers (50 MW) for 60% of needs
 - plus 30% APCO renewable portfolio and 10% RECs to cover steam plant natural gas cogeneration
- Support the Virginia coalfield economy by targeting proposed solar farms in the coalfields developed by APCO and 3rd parties with VT power purchase agreements

Goal 2: 100% Renewable Electricity by 2030



Sterrett Rooftop Solar Project Plan: 340 kW Attachment C



Current plan for 2.3 MW solar on VT rooftops shows positive financial savings

Goal 3: Complete the total conversion of steam plant fuel to natural gas by 2025, plan for a full transition to renewable steam plant fuel after 2025, and continue to improve the efficiency of campus energy systems

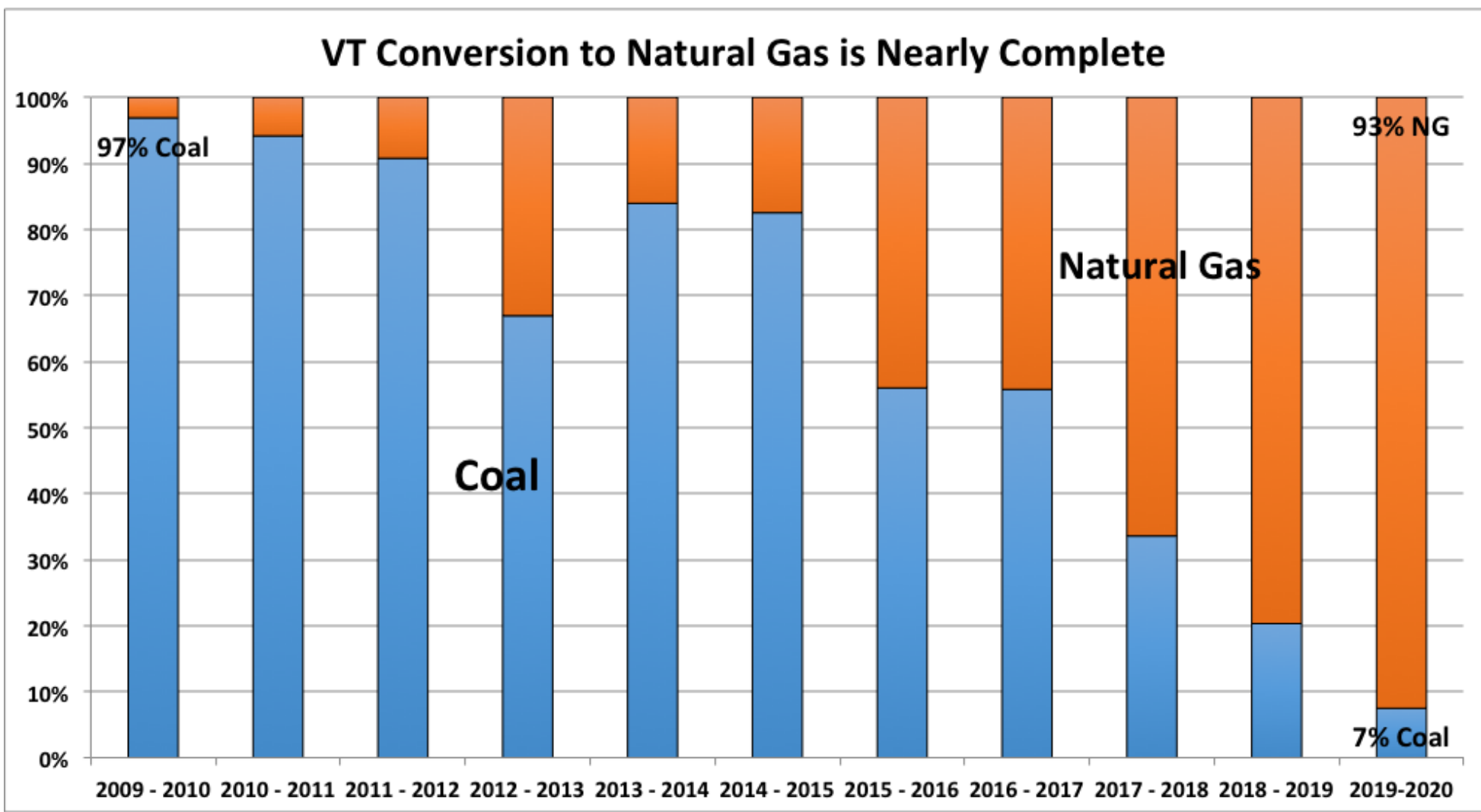
Attachment C

Potential pathway:

- Gas boiler #12 will provide **natural gas capacity to meet all steam plant needs.**
- New **natural gas service contract** provides cost and reliability benefits and prospects for renewable gas.
- To complete natural gas conversion, develop plan for **LNG backup fuel**
- **Improve chiller efficiency** with Chiller Plant Phase II project by 2023, Energy Management Plan for stand-alone chillers, central chillers for new growth.
- In the 2025 CAC Update, **develop a plan for full transition to a renewable energy heating system after 2025.** To promote zero emissions full options in the plan, refine GHG inventory estimates of methane leakage from VT natural gas sources and include those estimates in the carbon neutral goal for 2035.

Goal 3: Complete the total conversion of steam plant fuel to natural gas by 2025, plan for a full transition to renewable steam plant fuel after 2025, and continue to improve the efficiency of campus energy systems

Attachment C



VT Steam Plant CO₂ Emissions in FY2020 were 72,000 tons, half of FY2010 (140,000 t)

Virginia Tech Central Steam Plant, Virginia Tech Electric Service Blacksburg Substation (foreground) and the North Chiller Plant (behind substation)

Attachment C



4.1 By the end of 2022 reduce total electricity consumption (kWh) by 10% and electricity intensity (kWh/gross square foot (gsf)) by 20% below 2006 levels.

4.2 In 2021-30, deploy 10-year energy management retrofit to reduce total energy use in all buildings by 10% and energy use intensity (EUI=Btu+kWh/GSF) by 20% below 2020

5.1 Continue to upgrade new building efficiency conforming to latest adopted LEED-Silver or higher standards and ASHRAE 90.1 energy performance standards + 10%

5.2 By 2022, reduce total energy use intensity (EUI) in newly initiated buildings by 20% compared to 2020 existing buildings.

5.3 By 2026, build a signature zero-net-energy (ZNE) building on campus as a showcase and learning model for the Climate Action Living Laboratory

5.4 By 2028, newly initiated buildings' efficiency improvements will reduce total energy use intensity (EUI) in new buildings by 40% compared to 2020 existing buildings

Two recent LEED-Gold Buildings:

Goodwin Hall (left), Human and Agricultural Biosciences Building 1 (right)

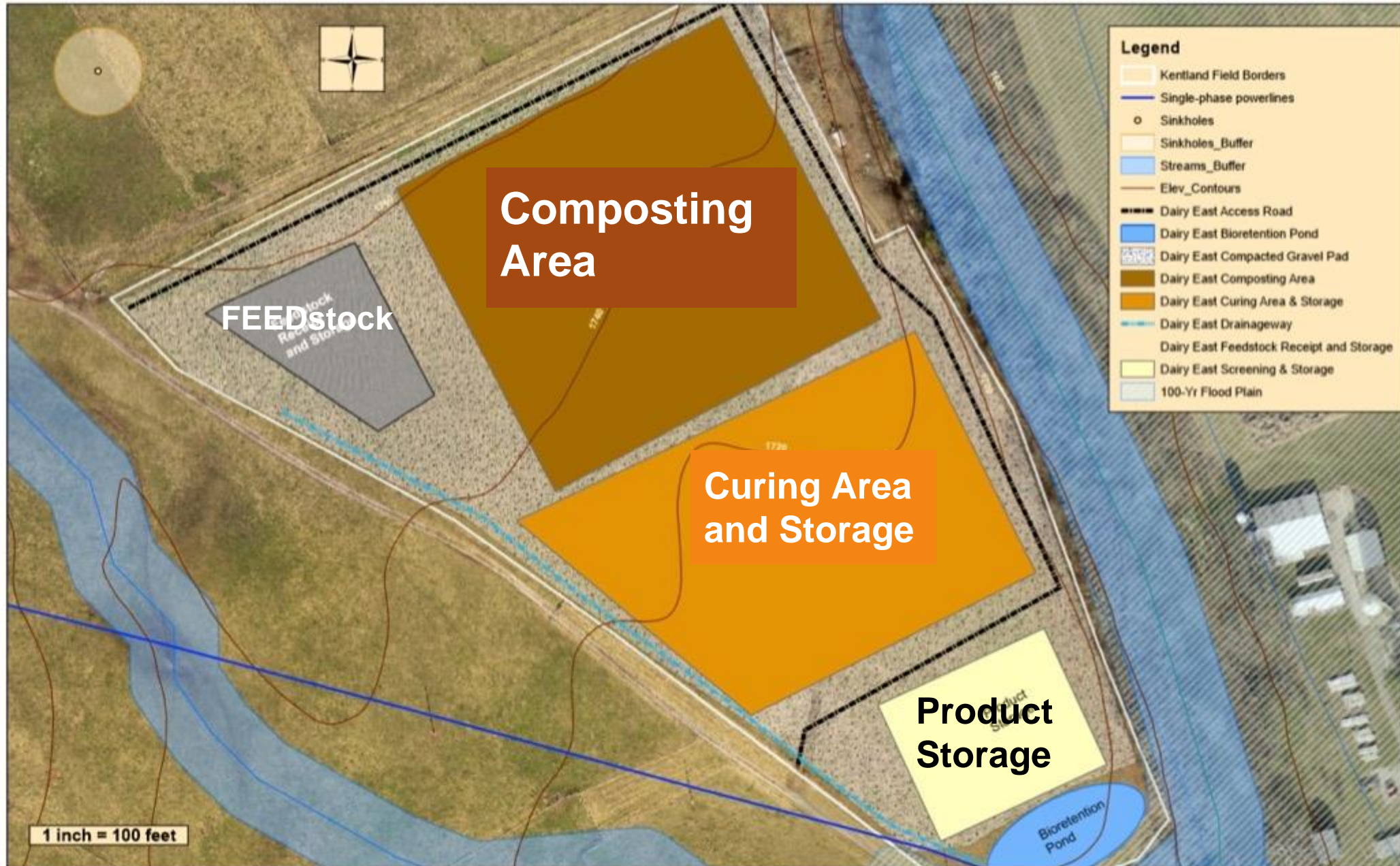


Potential pathway:

- Develop the **University Compost Facility at Kentland**
- **Adopt Campus Tree Policy** to increase canopy cover from 16% to 25%
- **Reduce agricultural and forestry net GHG emissions**
- **Use VT agricultural lands to develop solar farms** including co-use solar and farmland agrivoltaics for Living Laboratory instruction and research.

University Compost Facility at Kentland Concept Plan

Attachment C



7.1 Increase landfill waste diversion rate to 85% by 2025

7.2 Increase waste recycling rate to 55% by 2025

7.3 Reduce waste to landfill per faculty/staff/student enrolled by 25% by 2025

Goal 7: Zero Waste Campus by 2030

Attachment C

By 2025, reduce landfill waste/capita by 25%, increase recycle rate to 55%



Goal 8: Implement and Evaluate the Procurement Department's Sustainable Procurement Policy 2020-2022

Attachment C

Pathway to goal

- On a pilot basis, the **Procurement Department will implement and evaluate** the 2020 Sustainable Procurement Policy for two years
- By 2022, based on the evaluation, the Procurement Department in collaboration with the Energy & Sustainability Committee will assess the pilot project and **formulate the Sustainable Procurement Policy v.2.**

9.1 Reduce Single-Occupancy Vehicle (SOV) Commuting To Campus By 20% By 2025

Goal 9: Advance Alternative, Safe & Efficient Commuting

Attachment C

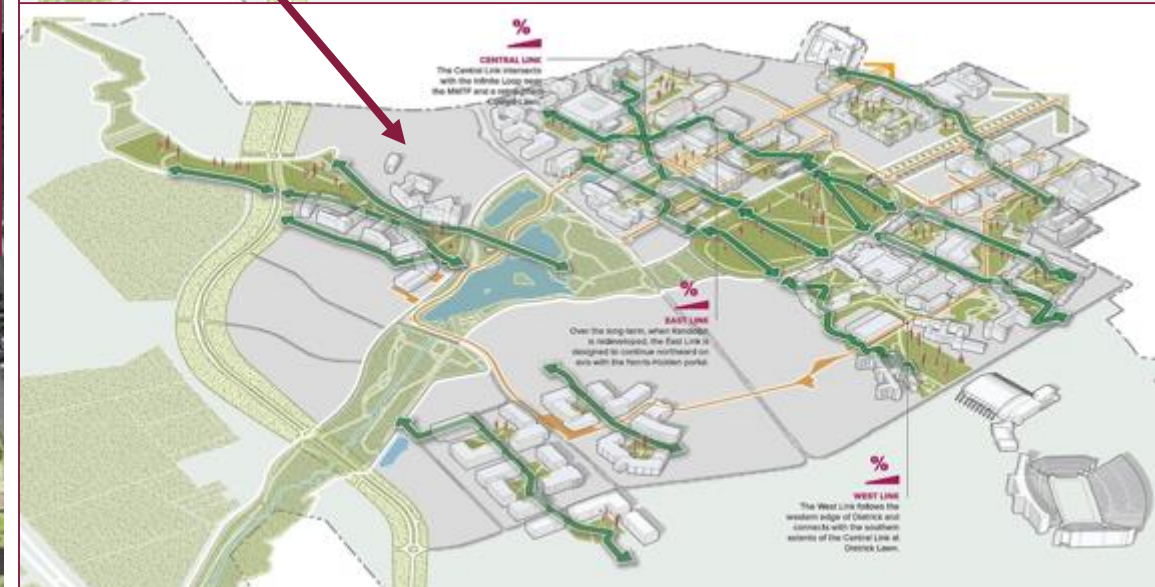


Goal 9: Implement transportation infrastructure plans

Attachment C

**Beyond Boundaries 2047 Campus Plan:
Infinite Loop
Green Links**

**Parking & Transportation Master Plan:
Multi-Modal Transportation Facility**



2020 Virginia Tech Climate Action Commitment Goals 10-15 Attachment C

10. Integrate the Virginia Tech 2020 Climate Action Commitment into the university's educational mission through a new **Climate Action Living Laboratory** in 2021
11. Establish **climate justice** as one of the core values of the VT Climate Action Commitment
10. Diminish barriers to **sustainable behaviors** and through institutional change, education, and social marketing
10. Implement the VT Climate Action Commitment
 - ...at a high level of university administration and governance;
 - ...by integrating CAC goals for facilities, education, and campus culture;
 - ...with ongoing stakeholder engagement for evaluation of goals and progress
14. Develop **innovative budgeting and financing** mechanisms to generate funding and staffing to achieve Climate Action Commitment goals

Goal 10: Integrate the CAC into Virginia Tech's Educational Mission through the Climate Action Living Laboratory (CALL)

Attachment C

Potential Pathways

- **Use the campus physical-plant and people-related climate actions as basis for instruction, research, and outreach.**
- **Build on existing programs** such as Sustainability Internship, Green RfP, and department experiential learning using campus facilities and grounds as laboratory
- **Engage students, faculty, departments, colleges, and provost office as well as Facilities and Auxiliaries** to enhance educational opportunities of the Climate Action Commitment initiatives.
- **Generate external funds** for related instruction & research opportunities through contracts, grants, and fundraising.
- Specific examples for instruction, research, outreach identified in other CAC goals:
 - Campus Energy Data Dashboard
 - VT Smart Grid partnership of VTES and Power & Energy Center
 - Showcase solar rooftop and agrivoltaic projects and signature zero-net-energy building
 - Sustainable agriculture and composting facility
 - Outreach/extension programming in climate-change vulnerable communities: coalfields, coastal Virginia
 - Social science research/instruction on sustainable behavior, mobility, circular economy, climate justice, others.

Establish Climate Justice as a Core Value of the Climate Action Commitment

Potential Pathway

- Ensure that the **social impacts** of Virginia Tech's climate mitigation choices (e.g. energy, land use, and waste) are identified and addressed to the greatest extent possible.
- By 2021 establish a **Climate Justice Subcommittee** to the revised Energy, Climate, and Sustainability Committee with representation from students, faculty, and community members.
- Ensure that VT climate action implementation **plans recognize and assist vulnerable or frontline groups adversely affected by those plans**, including low-wage VT employees, tuition-paying students, VTES town ratepayers, coalfield communities, and others.
- **Provide education, research, and outreach programs to assist vulnerable and historically marginalized groups** mitigate and adapt to climate change and help them thrive in the new energy economy. These efforts should target all Virginia Tribes, African Americans in the New River Valley, coalfield communities in southwest Virginia, and coastal Virginia communities, among others.

Goal 12: Diminish Barriers to Sustainable Behaviors through Institutional Change, Education and Social Marketing

Attachment C

Potential Pathway

- **Identify structural, social and institutional barriers** to sustainable behaviors
- **Implement infrastructural changes**—from waste management to transportation to building operation—to make sustainable choices easier
- Develop **educational programs** to foster pro-environmental behavior change
- **Design and implement choice architecture or “nudges”** to promote sustainable behavior, while allowing for individual choice.

Goal 13: Implement the VT Climate Action Commitment at a high level of university; by integrating CAC goals for facilities, education, and campus culture; with ongoing stakeholder engagement

Attachment C

Potential Pathway

- **Governance:**
 - Restructure the university Energy and Sustainability Committee (E&SC), renaming it the **Climate Action, Sustainability, Energy (CASE) Committee**
- **Implementation/operations:**
 - Appoint a new university **Chief Climate Action and Sustainability Officer (CCASO)** to direct a reconstituted **University Office of Climate Action and Sustainability (OCAS)** to oversee CAC implementation and other campus sustainability initiatives.
- **Learning:**
 - Establish the **Climate Action Living Laboratory (CALL)** to enhance offerings and build bridges between facilities and academic departments (Goal 10)

Goal 14: Develop innovative budgeting and financing mechanisms to generate funding and staffing to achieve Climate Action Commitment goals

Attachment C

Potential Pathway

- Strategically invest university E&G and Auxiliary funds to implement the **10-year Energy Management Plan** targeting academic and auxiliary buildings at a level of \$5 million/year
- Major investment is needed to implement the **pathways for renewable electricity** both on VT buildings/lands and in the SWVA region, including options:
 - **VT owned** and developed projects on VT buildings/land, and
 - **Utility or 3rd party owned** and developed projects on VT buildings/land and in SWVA with VT power purchase agreement (PPA).
- **VT Foundation** can be a valuable partner starting with investment in cost-effective energy efficiency measures in Foundation-owned properties leased to VT operations
- **VTES** power utility has opportunities for investment in renewables in partnership with APCO
- Additional funding sources include:
 - Federal and state research and education funding for Climate Action Living Laboratory
 - Development donor funds
 - State funding for energy efficiency and renewables
 - Foundations and philanthropic organizations for climate action initiatives

Potential Pathway

- It is difficult to anticipate how technology, the economy, and public policy will evolve in the next 10-30 years.
 - **2025: 5-year CAC revision** review explore options for 2030-2040 timeframe
 - **2030: 5-year CAC revision** review explore options for 2040-2050 timeframe
- **Eliminating offsets and fossil fuels** would require significant changes in Virginia Tech's physical plant.
 - We are dependent on natural gas in the steam plant and eliminating natural gas will require replacement by a non-carbon fuel (e.g. biogas, hydrogen, biochar) or
 - a new heating system based not on steam but on hot water perhaps generated by renewable electricity and geothermal ground-source heat pump systems.

The 2020 VT CAC WG Peer Comparison

Attachment C

Our extensive review of peer institutions showed that we are among the leaders but are lagging behind many that have made recent actions and commitments.

But our VT 2020 CAC sets the stage for Virginia Tech to shine as an exemplar and leader in university climate action. Beyond our climate neutrality and zero-waste campus goals, **several areas of the 2020 CAC can place Virginia Tech above other universities:**

- The detail and **specificity of the pathways** developed to achieve the CAC goals
- Our own **unique utility VTES** leading our way to 100% renewable electricity, while most other universities are totally dependent on private utilities and companies
- Using our considerable **land resources** not only to manage our agricultural impacts, but also to sequester carbon and develop renewable energy
- Incorporating in our carbon neutral goal **scope 3 GHG emissions relating to behavior** (e.g., commuting, waste/recycling, water/wastewater, business travel), while most others include just scope 1 & 2
- Integrating our physical climate action into the **university's educational mission** through the Climate Action Living Laboratory (CALL).
- **Elevating climate action and sustainability** in university administration and governance
- Specifically addressing **community engagement, sustainable behaviors, and social equity and justice** as core elements of our climate action.

What will Climate Action Commitment cost?

Attachment C

- **Renewable Electricity:** cost competitive with what we now/will pay for power
- **Campus energy systems:** ready to eliminate coal now
- **Building efficiency:**
 - Existing: 10-year energy plan \$5-10 million/year, 12% ROI;
 - New: 2020 CAC sets same LEED/ASHRAE standards as 2009 CAC
- **Agriculture, Forestry, Waste Management, Transportation:** need compost facility, waste consultant, planned mobility infrastructure, when funds are available
- **Carbon offsets:** not required until 2030
- **Climate Change Living Laboratory:** Integrate VT climate action and education can be moved forward with existing resources
- **Climate Justice, Sustainable Behaviors, Budget & Finance:** can be moved forward with existing resources
- **Climate Action Leadership:** perhaps provide interim leadership, defer university level position



2020 VIRGINIA TECH

Climate Action Commitment Working Group Final Report

EXECUTIVE SUMMARY AND OVERVIEW

November 2020

7 TIME WINNER OF GOVERNOR'S
ENVIRONMENTAL EXCELLENCE AWARD

#14 ON PRINCETON'S REVIEW TOP 50 GREEN
COLLEGES OF 2019

24% REDUCTION IN GREENHOUSE GAS
EMISSIONS SINCE 2006



EXECUTIVE SUMMARY

From January to June 2020, the Virginia Tech Climate Action Commitment Working Group executed its charge to evaluate the university's current position and future role in addressing climate change.

This summary report and the much longer full 2020 Virginia Tech Climate Action Commitment Working Group Report, Subcommittee Reports, and associated appendices provide a clear road map for not only how Virginia Tech can do its part to address climate change, but also become a leader in taking bold action to combat this worldwide crisis.

Throughout 2020, a global pandemic brought unprecedented hardship and suffering, particularly for the most vulnerable among us. In this public health crisis, citizens are learning an important lesson: when experts are near unanimous in ringing the alarm bells on looming crises, society must take decisive action.

This unique time is engendering a tremendous spirit of innovation and collaboration that is highly applicable to the Climate Action Commitment revision process.

In late 2019 – prompted by the demands of students and other community members involved in climate strikes and resolutions from the Faculty and Staff Senates, Student Government Association, and Graduate Student Assembly – President Tim Sands and Senior Vice President and Chief Business Officer Dwayne Pinkney established a Climate Action Commitment Working Group comprised of 26 faculty, students, staff, and community members. In announcing the creation of the Working Group, President Sands stated that “climate change presents one of the world's most pressing problems...and Virginia Tech has a duty to respond.”

The Working Group was charged to assess the university's progress in implementing the 2009/2013 Virginia Tech Climate Action Commitment, compare our experience to peer institutions, and develop a new commitment. Virginia Tech, like other universities, is facing both short-term fiscal challenges and long-term uncertainties in these challenging times. Nonetheless, the university remains committed to taking bold action to do its part to address the climate emergency.

Please read on to learn more about the 2020 Virginia Tech Climate Action Commitment. The full Working Group Report and other pertinent documents and information may be found at svpoa.vt.edu/index/VTACRevision. Chapter references that follow are applicable to the full report.

WORKING GROUP PROCESS

In order to engage a broad range of expertise and perspectives from across the university and wider community and conduct an ambitious work program, the Working Group established 12 subcommittees including a total of 130 faculty, students, community members, and staff to investigate and discuss specific issues relevant to the commitment. Most of the subcommittees met weekly from early February through the end of May. The subcommittees included:

- Agriculture, Forestry, and Land Use
- Budget and Finance
- Buildings Opportunities
- Climate Justice
- Community Engagement
- Energy Opportunities
- Greenhouse Gas (GHG) Inventory
- Peer Institutions Comparison
- Renewables Opportunities
- Structuring Sustainable Choices
- Transportation Opportunities
- Waste-Recycling-Composting and Procurement

The Working Group developed several mechanisms to expand community involvement in the process, including a website and email address for comment and two online surveys. Plans for face-to-face town hall meetings and conference sessions had to be reimaged when the university shut down after spring break. In place of the in-person events, the Working Group hosted 12 Zoom Convening sessions in April, attended by over 220 participants who provided excellent feedback. In anticipation of these Convening sessions, the Working Group and its subcommittees also developed ten creative videos that describe the Climate Action Commitment proposals. Learn more about campus community engagement in the process and access videos at svpoa.vt.edu/index/UTCACRevision.

The Working Group's efforts have focused on developing effective strategies the university can advance to achieve meaningful climate action. Throughout the multitude of Working Group, subcommittee, and community Zoom meetings, discussions have also reflected on the important opportunity for Virginia Tech to reinvent itself, not only in its commitment to climate action, but also in its responsiveness to the needs of the world around us, in the spirit of *Ut Prosim*.

The recommended Climate Action Commitment is bold, aggressive, and comprehensive. Its goals range from necessary upgrades to the campus physical plant to reduce GHG emissions, to integrating those improvements into the educational mission through a Climate Action Living Laboratory, to engaging everyone in creating a culture of sustainability—all to position Virginia Tech as a leader as the clean energy economy evolves in the Commonwealth and the world.

PROGRESS IMPLEMENTING 2009 VIRGINIA TECH CLIMATE ACTION COMMITMENT

Virginia Tech has made considerable progress in implementing its 2009/2013 Climate Action Commitment (2009 Virginia Tech Climate Action Commitment) over the past decade. The 2009 Virginia Tech Climate Action Commitment and Sustainability Plan was a cutting-edge effort for its time, but a decade later it fails to prescribe what climate scientists recognize as necessary actions and also falls short of many peer universities' recent initiatives.

In many respects, however, Virginia Tech has been forging ahead beyond the 2009/2013 Climate Action Commitment. Virginia Tech is a recognized leader in campus sustainability with a Sustainability Tracking and Rating System (STARS) Gold score that is highest among Virginia and ACC peer institutions. Virginia Tech has won numerous awards and recognitions since 2010, including Princeton Review's top 50 Green Colleges (#14 in 2019), the Governor's Environmental Excellence Award (7 times), Best Workplaces for Commuters (every year, gold in 2019-20), Bicycle Friendly Campus (every year, silver level in 2019), Tree Campus USA certification (every year), and many others.

The university has reduced greenhouse gas (GHG) emissions by 24 percent from 2006-19, despite 22 percent growth in campus building size and enrollment. This reduction is faster than the 2009 Climate Action Commitment targeted trajectory. It resulted from investments in energy efficiency in existing and new buildings, and most importantly, from replacing coal with natural gas in the steam plant, which was enabled by a new gas pipeline. Virginia Tech now has 36 LEED-certified buildings constructed or in process, amounting to 30 percent of campus space, and in 2015-20 the university invested \$14 million in energy efficiency improvements, resulting in energy and dollar savings with a 5-year payback.

Virginia Tech has done much to develop alternative transportation choices, including dual use trails, bike share, ride share, and car share programs. The university has had record ridership on its partner Blacksburg Transit and innovative plans for campus mobility. Virginia Tech has a functional, although fragmented, waste management program with an 80 percent waste diversion rate (waste diverted from landfill) and 40 percent recycling rate, although shy of the 50 percent by 2020 goal of the 2013 Virginia Tech Climate Action Commitment. In April 2020, the Procurement Department unveiled a Sustainable Procurement Policy; and in May, the Facilities Department produced new Design and Construction Building Standards, both reflecting the ideals of the Virginia Tech Climate Action Commitment.



The university has an enviable array of sustainability-related academic programs, majors, coursework, and research, in green engineering, natural resources, agriculture, power and energy systems, environmental policy, and smart and sustainable cities. In the STARS rating system, Virginia Tech scores 89 percent of possible points in academic categories. It also scores 95 percent of possible points in campus engagement. Virginia Tech has a rich campus life for students with a wide array of opportunities, including strong environmental student organizations. Indeed, these student groups have energized the university community to move forward on climate action, both in 2008 and in 2019.

The Division of Campus Planning, Infrastructure, and Facilities has embraced sustainability and climate action as part of its mission, and the Office of Sustainability is second to none, even with limited staff. The university has the highly unique and valuable Virginia Tech Electric Service (VTES), a university-owned electric energy utility system, which serves not only the campus, but also 6,000 Town of Blacksburg customers.

In other areas, however, the university is falling behind. Although the 2009/2013 Virginia Tech Climate Action Commitment was a leading effort for its time, from the perspective of 2020, it is limited in both scope and ambition. It did not include several sources of campus GHG, such as agriculture, business travel, and leased building space, the latter amounting to 13 percent of operational square footage. It did not mention renewable energy nor the human cost of climate change. Furthermore, its overall goal of an 80 percent reduction in GHG from 1990 levels by 2050, while a typical goal for its time, is not aggressive enough compared to the contemporary needs for climate action and the national movement of our peer institutions.

2020 VIRGINIA TECH CLIMATE ACTION COMMITMENT

The major product of the Working Group is a new Climate Action Commitment. It aims to be bold and visionary, but also comprehensive and pragmatic for a leading academic institution. Goals 1-9 target physical means to achieve carbon neutrality by 2030, Goals 10-14 address education, culture, social equity, and engaged implementation, and Goal 15 sets a longer-range goal of a fossil-fuel-free campus. The Working Group also developed a set of potential pathways to achieve each goal. The table to the right lists the goals, and they are presented with summary pathways. More detailed pathways are presented in chapter 2.

Vision of the 2020 Virginia Tech Climate Action Commitment

In the spirit of *Ut Prosim*, Virginia Tech will be a leader in climate action in service to our community, the Commonwealth, and the world.

Mission of the 2020 Virginia Tech Climate Action Commitment

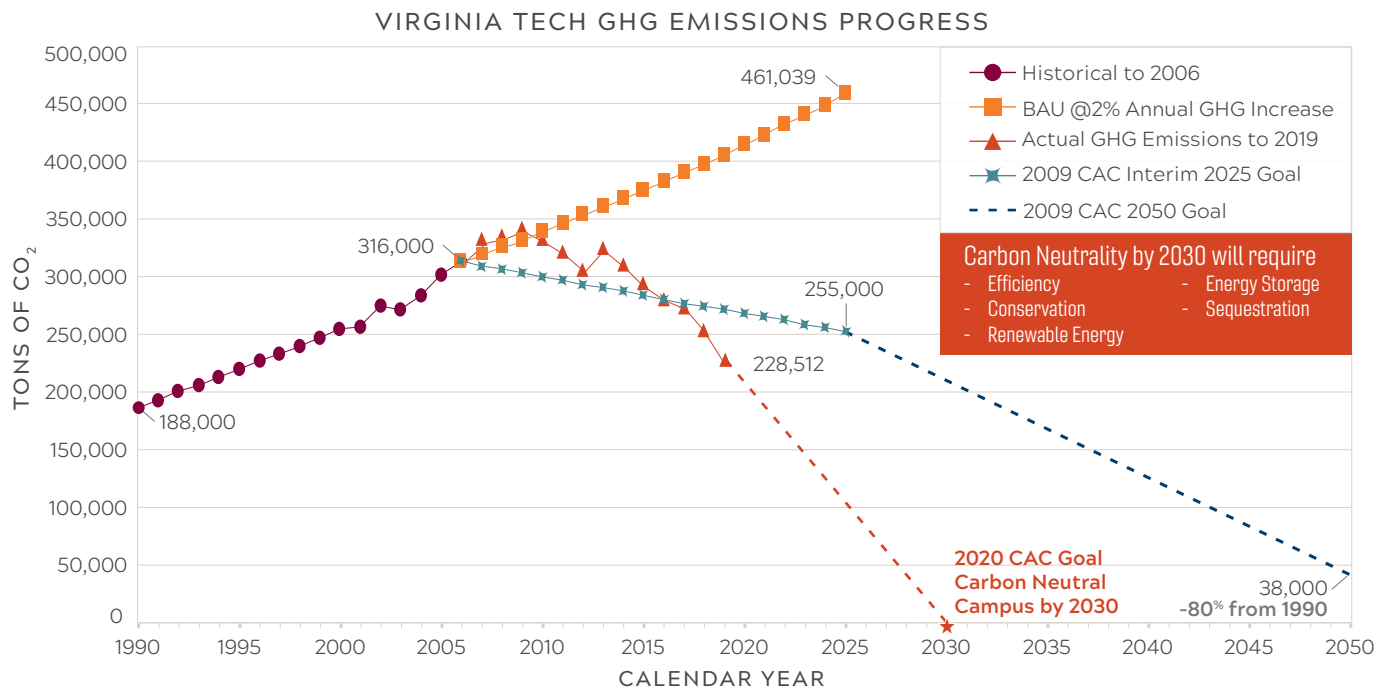
The mission of the 2020 Virginia Tech Climate Action Commitment is to achieve carbon neutrality by changing the university's physical infrastructure, collective and individual behaviors, and educational mission; to engage everyone in creating a culture of sustainability; and to achieve these objectives through just and equitable means.

2020 VIRGINIA TECH CLIMATE ACTION COMMITMENT GOALS

1. Achieve a carbon neutral Virginia Tech campus by 2030.
2. Achieve 100 percent renewable electricity by 2030.
3. Complete the total conversion of steam plant fuel to natural gas by 2025, plan for full transition to renewable steam plant fuel after 2025, and continue to improve efficiency of campus energy systems.
4. Reduce building energy consumption to enable carbon neutrality by 2030.
5. Operations of new buildings initiated by 2030 will be carbon neutral.
6. Agricultural, forestry, and land use operations will be carbon neutral by 2030.
7. Virginia Tech to become a Zero-Waste Campus by 2030.
8. Establish the Sustainable Procurement Policy and Procedures by 2022.
9. Reduce single-occupancy-vehicle commuting to campus by 20 percent by 2025 and reduce transportation-related GHG emissions by 40 percent by 2030.
10. Integrate the Climate Action Commitment into Virginia Tech's educational mission through the Climate Action Living Laboratory beginning in 2021.
11. Establish climate justice as a core value of the Virginia Tech Climate Action Commitment.
12. Diminish barriers to sustainable behaviors through institutional change, education and social marketing.
13. Implement the Virginia Tech Climate Action Commitment at a high level of university administration and governance; by integrating goals for facilities, education, and campus culture; and with stakeholder engagement for evaluation of goals and progress.
14. Develop innovative budgeting and financing mechanisms to generate funding and staffing to achieve Climate Action Commitment goals.
15. Develop Pathways after 2030 to eliminate fossil fuels and carbon offsets by 2050.

2020 Virginia Tech Climate Action Commitment: SUMMARY OF GOALS AND PATHWAYS

1. Carbon Neutral Virginia Tech Campus by 2030.



Carbon neutral equals net-zero emissions of CO₂, CH₄, and NO₂ from Virginia Tech operations at Blacksburg campus based on the geographic and GHG scope of the 2020 Climate Action Commitment.

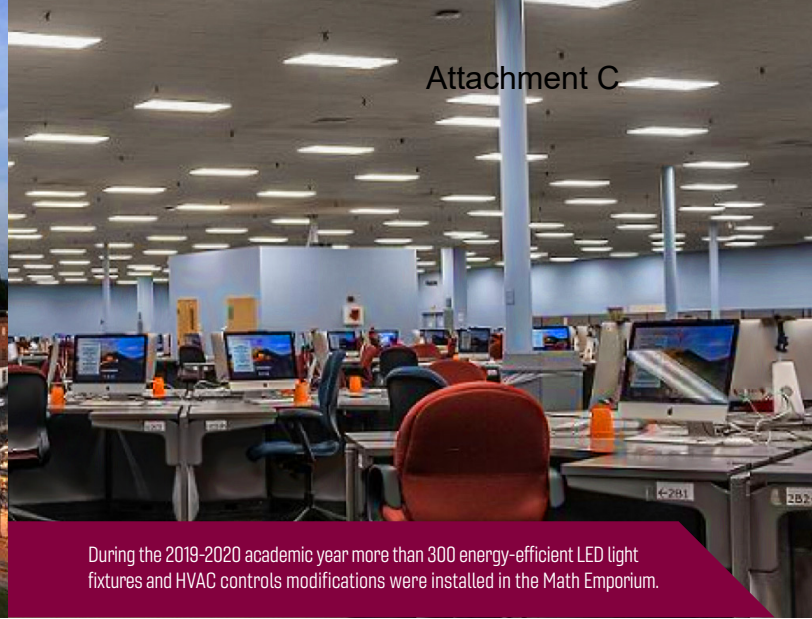
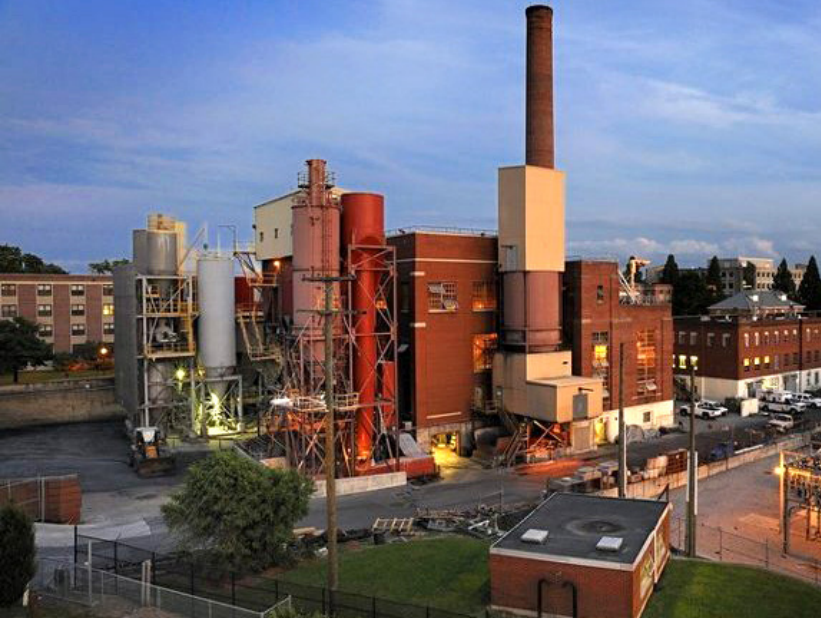
POTENTIAL PATHWAYS:

- ▶ 100 percent renewable electricity by 2030 can reduce emissions by 50 percent below 2019 levels.
- ▶ Total conversion from coal to natural gas in steam plant by 2025 can reduce GHG by 10 percent below 2019.
- ▶ Reduction of energy use in existing and new buildings can result in further emissions reductions of 10 percent, despite campus growth.
- ▶ Reduction of GHG from waste/recycling, transportation, and agriculture, forestry, and land use described below can reduce emissions by 10 percent.
- ▶ In 2030, remaining emissions can be negated by carbon offsets.

2. 100 Percent Renewable Electricity by 2030.

POTENTIAL PATHWAYS:

- ▶ 2020: achieve 30 percent renewable electricity via purchase of 20 percent renewable energy certificates (RECs) from APCO + APCO 10 percent renewable portfolio.
- ▶ 2020-2030: Achieve 100 percent renewable electricity by 2030 via combination of Virginia Tech rooftops/lands solar (15 MW), 3rd party owned PPA, and APCO owned SWVA PPA solar capacity (130 MW+15 MW=145 MW) to serve campus (95 MW) and town customers (50 MW) for 60 percent of needs plus 30 percent APCO renewable portfolio and 10 percent RECs to cover steam plant cogeneration.
- ▶ Integrate solar development into the Climate Action Living Laboratory (CALL) of academic instruction and research, including dual-use solar-farm production agrivoltaics; a 10-MW storage testbed/showcase project for smart micro-grid reliability and resilience research through Virginia Tech Electric Service and the Virginia Tech Power and Energy Center; and other instruction/research initiatives.
- ▶ As with all components of this Climate Action Commitment, full lifecycle analysis of renewables procurement should include the environmental and social justice costs and benefits of procured systems.
- ▶ The siting of renewable energy systems should employ best practices in public engagement to identify the most appropriate locations.



During the 2019-2020 academic year more than 300 energy-efficient LED light fixtures and HVAC controls modifications were installed in the Math Emporium.

3. Complete the total conversion of steam plant fuel to natural gas by 2025, plan for full transition to renewable steam plant fuel after 2025, and continue to improve efficiency of campus energy systems.

POTENTIAL PATHWAYS:

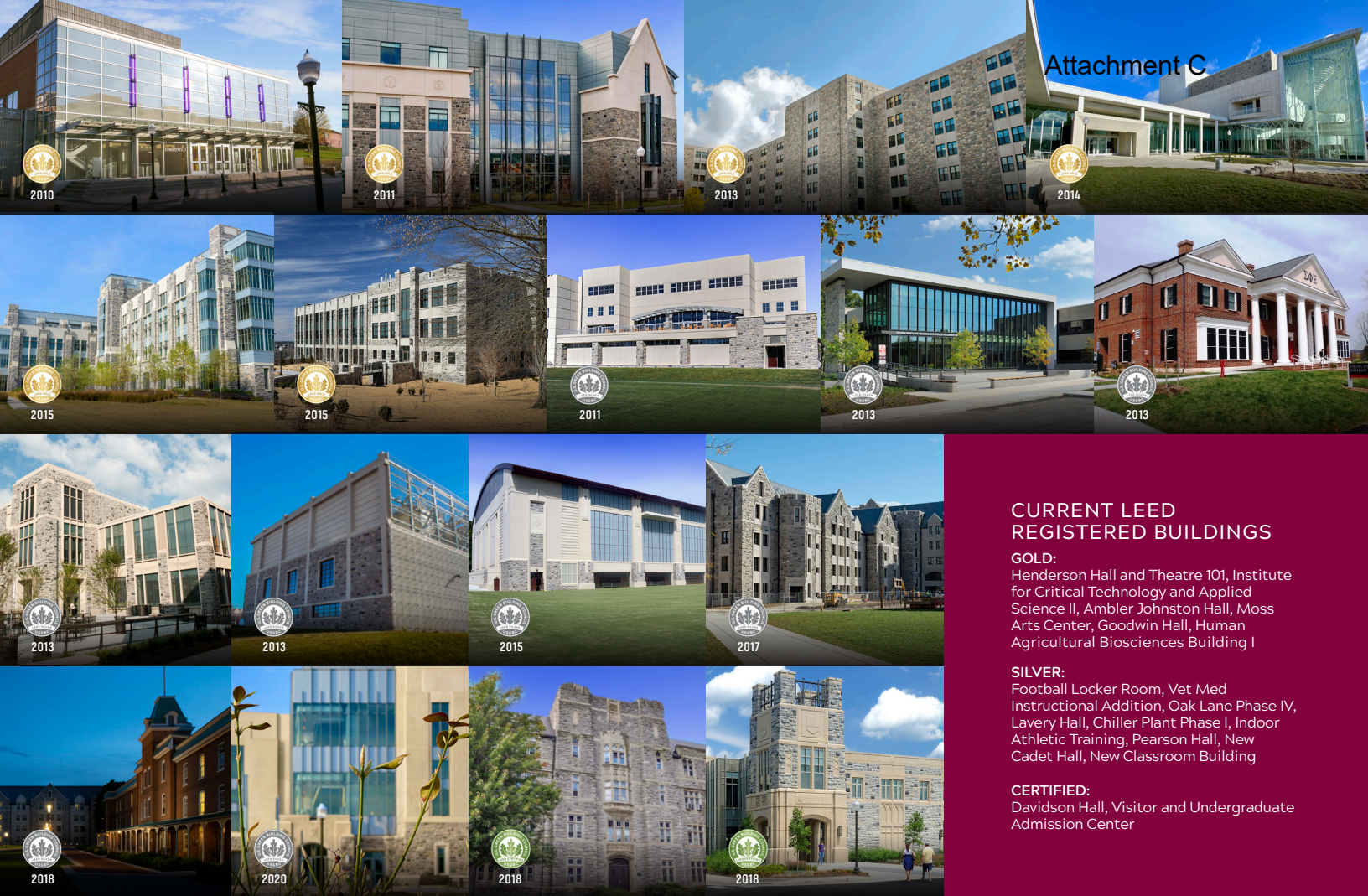
- ▶ Addition of gas boiler #12 provides natural gas thermal capacity for all steam plant demand.
- ▶ VT's new natural gas service contract signed in summer 2020 and effective until 2025, provides favorable price and reliability terms and prospects for renewable gas.
- ▶ For reliability and resilience, a plan is needed for backup fuel (such as liquefied natural gas (LNG), biochar, or other fuel) when natural gas is unavailable, and boiler redundancy (so-called "n+1") in case of a boiler outage at a critical time.
- ▶ Improve chiller efficiency: By 2023 the Chiller Plant Phase II capital project will reduce central chiller energy usage by 20% from 2020; future campus growth needs for chilled water will be met from central plants where possible.
- ▶ Ten-year 2021-30 Energy Management Plan will improve efficiency of stand-alone chilled water plants
- ▶ Establish an online Climate Action Living Laboratory (CALL) Energy Dashboard for faculty, staff, and students to access and analyze campus facilities energy use data for instruction and research.
- ▶ After 2025, plan for transition to renewable energy in heating systems, considering renewable gas, geothermal and ground source heat pump systems, and other non-fossil-fuel options for heating existing and new districts of campus.
- ▶ Beginning with the CAC 2025 revision, develop a plan for full transition to renewable energy for campus heating systems. To promote zero emissions energy options in the plan, refine GHG inventory estimates of methane leakage from VT natural gas sources and include those estimates of methane leakage in the carbon neutral goal for 2035.

4. Reduce Building Energy Consumption to Enable Carbon Neutrality by 2030.

- ▶ By the end of 2022, reduce electricity consumption (kWh) by 10 percent and electricity intensity (kWh/gsf) by 20 percent below 2006 levels.
- ▶ By 2030, employ energy management retrofits to reduce total energy consumption in all buildings by 10 percent and energy use intensity (Btu+kWh/gsf) by 20 percent below 2020 levels.

POTENTIAL PATHWAYS:

- ▶ Implement an aggressive 2021-30 ten-year energy management plan updated annually to reduce total energy consumption in all buildings including auxiliaries by 10 percent.
- ▶ For leased buildings owned by the Virginia Tech Foundation, work with the Foundation to develop financial arrangements to improve efficiency and reduce emissions.
- ▶ By 2021, develop a campus-wide Climate Action Living Laboratory Green Lab program based on a pilot test-bed Green Lab to reduce energy, emissions, and materials in our most energy-intensive facilities.
- ▶ Reduce building energy and GHG emissions by smart operations, such as demand response, digital controls, thermostat settings, occupant behavior, and innovative space scheduling, especially in summer.
- ▶ Achieving these goals will require sufficient staffing in energy management.



CURRENT LEED REGISTERED BUILDINGS

GOLD:

Henderson Hall and Theatre 101, Institute for Critical Technology and Applied Science II, Ambler Johnston Hall, Moss Arts Center, Goodwin Hall, Human Agricultural Biosciences Building I

SILVER:

Football Locker Room, Vet Med Instructional Addition, Oak Lane Phase IV, Lavery Hall, Chiller Plant Phase I, Indoor Athletic Training, Pearson Hall, New Cadet Hall, New Classroom Building

CERTIFIED:

Davidson Hall, Visitor and Undergraduate Admission Center

5. Operations of New Buildings Initiated by 2030 will be Carbon Neutral.

- ▶ New building efficiency will conform to latest adopted LEED-Silver standards and ASHRAE 90.1 energy performance standards + 10 percent.
- ▶ By 2022, reduce total energy use intensity (EUI) in newly initiated buildings by 20 percent compared to 2020 existing buildings.
- ▶ By 2026, build a signature zero-net-energy (ZNE) building on campus as a showcase and learning model for the Climate Action Living Laboratory.
- ▶ By 2028, newly initiated buildings' efficiency improvements will reduce total energy use intensity (EUI) in new buildings by 40 percent compared to 2020 existing buildings.

POTENTIAL PATHWAYS:

- ▶ In 2021, identify candidate new buildings for a showcase zero-net-energy (ZNE) building and begin fundraising to attract donors to help fund the project to be completed by 2026.
- ▶ Electricity currently contributes 50 percent of total GHG emissions. One hundred percent renewable electricity by 2030 will reduce building CO₂ emissions by more than 50 percent.
- ▶ By 2030, all newly initiated building design will have carbon neutral operations through 100 percent renewable electricity, improved energy efficiency, and carbon offsets.
- ▶ Post-occupancy evaluation (POE) should become standard practice to fine tune building operations and engage occupants to better serve users and reduce emissions.
- ▶ New buildings offer opportunities for campus Climate Action Living Laboratory research and instruction by faculty and students through field testing and use of emerging technologies, monitoring energy use, air quality, and occupant perceptions, and other projects.
- ▶ Achieving these goals will require sufficient engineering and design staffing.



6. Agricultural, Forestry, and Land Use Operations Go Carbon Neutral by 2030.

POTENTIAL PATHWAYS:

- ▶ Develop the University Compost Facility at Kentland to provide benefits to campus organic waste management, help reduce animal waste GHG emissions, support soil health, and reduce need for new land for future land application of animal wastes.
- ▶ Adopt Campus Tree Policy to increase canopy cover from 16-to-25 percent and manage Virginia Tech trees, forests and woodlands to increase carbon sequestration and provide additional environmental benefits.
- ▶ Reduce agricultural and forestry net GHG emissions through more efficient operations, reduced animal enteric fermentation emissions, improved energy and fuel efficiency, possibly an anaerobic digester to produce usable methane, and other means.
- ▶ Use Virginia Tech agricultural lands to develop solar farms toward renewables goal, including co-use solar and farmland agrivoltaics for Climate Action Living Laboratory instruction and research.
- ▶ In 2030, offset any remaining net GHG emissions from agricultural/forestry operations with solar production from Virginia Tech agricultural land and/or by purchasing carbon offsets.

7. Virginia Tech to become a Zero-Waste Campus by 2030.

POTENTIAL PATHWAYS:

- ▶ Hire a zero-waste consultant to conduct a waste audit study and plan to evaluate organization, procedures, and staffing to enhance campus waste management.
- ▶ Based on consultant recommendations, consider hiring a campus waste manager.
- ▶ Engage personnel involved in campus waste management on a Waste/Recycling Council to help streamline operations and reduce redundancies.
- ▶ Develop University Compost Facility at Kentland to process campus organic waste from dining halls and athletics, veterinary and agriculture animal waste, yard trimmings, wood waste, non-recyclable soiled paper, and other compostables.
- ▶ Engage faculty, students, and staff in greater use of recycling/compost behavior using social marketing and media, incentives, and innovative approaches to advance Circular Economy and Pollution Prevention (P2) principles as part of the Climate Action Living Laboratory.
- ▶ Evaluate and improve as needed the management of specialty wastes, such as e-waste, laboratory waste, construction debris, and wastes from major sporting and other events.

8. Establish the Sustainability Procurement Policy and Procedures by 2022.

POTENTIAL PATHWAY:

- ▶ On a pilot basis, adopt, implement, and evaluate the 2020 Sustainable Procurement Policy.
- ▶ In 2022, the Energy & Sustainability Committee will assess the pilot project and work with the Procurement Department to formulate the Sustainability Procurement Policy v.2.



9. Reduce Single-Occupancy Vehicle (SOV) Commuting to Campus by 20 percent by 2025 and Reduce Transportation Related GHG Emissions by 40 percent by 2030.

POTENTIAL PATHWAYS:

- ▶ Promote walking/biking/transit as the preferred means of commuting to campus: Use parking policies, alternative transportation programs, campus mobility planning in collaboration with Town of Blacksburg, and encourage Blacksburg Transit (BT) programs to improve the safety and convenience of and promote walking, biking, and transit.
- ▶ Promote sustainable mobility choices through marketing, including social media, parking permit literature, gaming, university promotion literature and website, and student orientation.
- ▶ Promote non-commuting work and learning opportunities such as telecommuting, innovative online instruction, Internet conferencing, and other means.
- ▶ Improve infrastructure and traffic management to improve mobility choices and safety by reducing speed limits, improved bike and pedestrian path lighting, limiting/restricting vehicles in core campus, implementing current transportation plans, and coordinating with Town of Blacksburg plans.
- ▶ Improve vehicle efficiency and promote low-carbon emissions vehicles through Motor Pool purchases and development of electric vehicle charging stations on campus.
- ▶ Promote social equity in mobility and parking policies by developing effective and efficient commuting options for lower wage employees who cannot afford to live in Blacksburg, sliding-scale parking fees based on salary/wage, and collaboration with the Town of Blacksburg to provide affordable workforce housing proximate to campus.
- ▶ Reduce and negate business travel GHG emissions with carbon offsets.
- ▶ Establish an alternative mobility subcommittee of the Transportation and Parking Committee to recommend strategies to increase the non-SOV mode share on campus.

10. Integrate the Climate Action Commitment into Virginia Tech's Educational Mission through the Climate Action Living Laboratory (CALL) Beginning in 2021.

POTENTIAL PATHWAYS:

- ▶ Recognize the excellent opportunities for student learning, faculty and student technical research, and staff development. Benefits include learning from and innovating creative solutions in-house for Virginia Tech's climate initiatives and better engaging the entire university both in Blacksburg and other Virginia Tech locations in our quest for sustainable and just climate action.
- ▶ Establish the Climate Action Living Laboratory (CALL) in the new University Office for Climate Action and Sustainability (OCAS) to enhance offerings and build bridges between facilities and academic departments, facilitating and supporting opportunities.

- ▶ Alter norms and incentives to overcome traditional barriers and nurture cooperation between academic units (research and teaching) and operations units such as Division of Campus Planning, Infrastructure, and Facilities and auxiliary units including Dining Services, Housing and Residence Life, and Athletics. Greater collaboration between university units will help implement the Climate Action Commitment and integrate physical plant climate action with academics and campus life.
- ▶ Integrate Climate Action Living Laboratory (CALL) initiatives in other goals/pathways for renewables (2), energy materials, devices and systems (3), buildings (4, 5), agriculture (6), waste (7), transportation (9), climate justice (11), sustainable behaviors (12), and community engagement (13).
- ▶ Engage the university's land grant extension and outreach programs to reflect the principles of the Climate Action Commitment and help implement them throughout the Commonwealth.
- ▶ Integrate the physical infrastructure elements of the Climate Action Commitment into the fabric of the university's educational and research programs to expand funding opportunities for campus innovation from state and federal sources as well as foundations.

11. Establish Climate Justice as a Core Value of the Climate Action Commitment.

POTENTIAL PATHWAYS:

- ▶ Encourage an accelerated transition to carbon-neutral status as a climate-justice imperative.
- ▶ Ensure that the social impacts of Virginia Tech's climate mitigation choices (e.g. energy, land use, and waste) are identified and addressed to the greatest extent possible.
- ▶ Establish a Climate Justice Subcommittee of the revised Climate Action, Sustainability, and Energy (CASE) Committee by 2021 with representation from students, faculty, and community members from frontline groups.
- ▶ Ensure that Virginia Tech climate action implementation plans recognize and assist vulnerable or frontline groups adversely affected by those plans, including low-wage Virginia Tech employees, tuition-paying students, VTES town ratepayers, historically marginalized people of color and Indigenous communities, coalfield communities, and others.
- ▶ Establish education, research, and outreach programs to assist vulnerable and historically marginalized groups mitigate and adapt to climate change and thrive in the new energy economy. These efforts should specifically target Virginia Tribes, African Americans in the New River Valley, coalfield communities in southwest Virginia, and coastal Virginia communities threatened by climate-related hazards.

12. Diminish Barriers to Sustainable Behaviors through Institutional Change, Education, and Social Marketing.

POTENTIAL PATHWAYS:

- ▶ Implement infrastructural changes—from waste management to transportation to building operation—to make sustainable choices easier.
 - › Identify structural, social and institutional barriers to sustainable behaviors.
 - › Develop educational programs to foster pro-environmental behavior change.
- ▶ Design and implement choice architecture or “nudges” to promote sustainable behavior, while allowing for individual choice, using social media, gaming, and other means.
- ▶ Develop a shared toolkit of best practices in social marketing, rooted in behavioral sciences, for campus groups initiating sustainability initiatives.
- ▶ Nurture cross-campus partnerships to coordinate climate action and enhance sustainability initiatives.



13. Implement the Virginia Tech Climate Action Commitment.

- ... at a high level of university administration and governance;
- ... by integrating Climate Action goals for facilities, education, and campus culture; and
- ... with ongoing stakeholder engagement for evaluation of goals and progress.

POTENTIAL PATHWAYS:

- ▶ **Governance:** By fall 2021, restructure the university Energy and Sustainability Committee (E&SC), renaming it the Climate Action, Sustainability, Energy (CASE) Committee, and revising its charge, membership, and reporting, to oversee the implementation and review of the Climate Action Commitment goals and progress involving student, faculty, and staff stakeholders.
- ▶ **Implementation/operations:** Appoint a new university Chief Climate Action and Sustainability Officer (CCASO) to direct a reconstituted University Office of Climate Action and Sustainability (OCAS) to oversee Climate Action Commitment implementation and other campus sustainability initiatives. The CCASO would jointly report to the Senior Vice President and Chief Business Officer and to the Executive Vice President and Provost. The CCASO would chair the CASE Committee. The Facilities Division would, in parallel, appoint a director of strategic success to oversee a range of strategic Facilities issues including climate action and sustainability.
- ▶ **Learning:** Establish the Climate Action Living Laboratory (CALL) in the new OCAS to enhance offerings and build bridges between facilities and academic departments, facilitating and supporting opportunities (Goal 10).
- ▶ **Duties of Operations and Governance units:**
 - › Collect data relevant to the Climate Action Commitment including GHG inventory and prepare an Annual Report of Climate Action Commitment progress each fall semester for the previous fiscal year.
 - › Establish mechanisms to engage and educate the Virginia Tech community on the Climate Action Commitment and climate action.
 - › Establish ad hoc committees to develop instructional, research and outreach programming for the Climate Action Living Laboratory (CALL).
 - › Evaluate Climate Action Commitment goals according to best practices in light of new information and standards and direct update of the Climate Action Commitment on a five-year cycle.
 - › Broaden the geographic scope of the Climate Action Commitment to all Virginia Tech properties in future iterations to include the entire university.
 - › Advocate for allocation and prioritization of resources to support the Climate Action Commitment.
- ▶ **Annual review:** Conduct an in-depth annual review of the Climate Action Commitment goals and implementation, progress that involves student, staff, faculty, and community stakeholders. The results of this review will be shared publicly in an accessible and easy-to-read format.

14. Develop Innovative Budgeting and Financing Mechanisms to Generate Funding and Staffing to Achieve Climate Action Commitment Goals.

POTENTIAL PATHWAYS:

- ▶ Strategically invest university E&G and auxiliary funds to implement the 10-year Energy Management Plan at a level of \$5 million/year in energy efficiency projects with a cumulative 8-year financial payback or 12 percent return on investment.
- ▶ Major investment is needed to implement the pathways for renewable electricity both on Virginia Tech buildings/lands and in the Southwest Virginia region, including the following options:
 - › Virginia Tech-owned and developed projects on Virginia Tech buildings/land and
 - › Utility or third party owned and developed projects on Virginia Tech buildings/land and in SWVA with Virginia Tech power purchase agreement (PPA).

The first option requires major Virginia Tech capital investment but provides greater long-term return and control, while the second requires no Virginia Tech capital but provides less long-term financial return. A combination of the two options may be used to meet the Climate Action Commitment renewables goal.

- ▶ As a unique power utility, VTES has opportunities for investment in renewable energy serving both campus and its town customers.
- ▶ The Virginia Tech Foundation helps the university achieve its goals and may be a valuable partner in implementing the Climate Action Commitment:



- › As owner of most of the leased academic space off campus, the Foundation has already agreed to provide funding for an energy efficiency retrofit pilot project in Corporate Research Center buildings on a revenue neutral basis.
- › Campus solar development provides another opportunity for Foundation investment with appropriate return on that investment.
- ▶ Additional sources of funds to implement the Climate Action Commitment include, federal and state grants, research funding in connection with the Living Laboratory, advancement donations, philanthropic organizations and foundations, and low interest revenue bonds by VTES and auxiliaries.
- ▶ In addition to project funding, implementation of the Climate Action Commitment will require upgrading the staff to rise to the needs of the commitment, especially in energy management, energy and utility systems, building analysis and design, waste management, university compost facility operation, and campus sustainability.

15. Develop Pathways After 2030 to Eliminate Fossil Fuels and Offsets by 2050.

POTENTIAL PATHWAYS:

- ▶ A long-term Utilities Master Plan should fully incorporate the goals of this Climate Action Commitment
- ▶ It is difficult to anticipate how technology, the economy, and public policy will evolve in the next 10-30 years, necessitating revisions along the way:
 - › 2025: 5-year Climate Action Commitment revision review explore options for 2030-2040 timeframe.
 - › 2030: 5-year Climate Action Commitment revision review explore options for 2040-2050 timeframe.
- ▶ Beginning with the CAC 2025 revision, develop a plan for full transition to renewable energy for campus heating systems. To promote zero emissions energy options in the plan, refine GHG inventory estimates of methane leakage from VT natural gas sources and include those estimates of methane leakage in the carbon neutral goal for 2035.
- ▶ Eliminating offsets and fossil fuels would require significant changes in Virginia Tech's physical plant. The university is dependent on natural gas in the steam plant and eliminating natural gas will require replacement by a non-carbon fuel (e.g. biogas, hydrogen, biochar) or a new heating system based not on steam but on hot water perhaps generated by renewable electricity and geothermal ground-source heat pump systems. Some universities are moving in that direction, and Virginia Tech will have much to learn from them about the prospects.

IMPLEMENTATION MILESTONES

The 15 goals and pathways include many target dates for actions or achievement as part of their implementation. They are summarized in the table below, with date, relevant goal number and action milestone.

DATE	ACTION MILESTONE	GOAL
2020	BOV approves 2020 Virginia Tech Climate Action Commitment	
	30 percent renewable electricity	2
2021	E&SC renamed Climate Action, Sustainability & Energy (CASE) Committee	13
	Operation plan for Climate Action Living Laboratory (CALL)	11
	Candidate identified for zero-net-energy new building to be built by 2026	5
	First year of 10-year 2021-30 Energy Management Plan	3,4
	Fishburn Forest student-led assessment	2
2022	2.3 MW solar PV on Virginia Tech rooftop and land	2
	VTES Solarize Program for Town customers, 250 kW net metered	2
	Electricity use 10% below 2006 (Governor's E.O. 43)	4
	Newly initiated buildings EUI 20% below 2020 existing average	5
	Sustainable Procurement Policy v.2. implemented	8
2023	Virginia Tech Foundation energy efficiency plan for leased buildings (CRC)	14
	VTES Community Solar project for Town customers 0.5-1 MW	2
2024	Chiller Phase II Upgrade complete	3
2025	Complete conversion of steam plant fuel to natural gas	3
	Begin planning transition to renewable steam plant fuel	3
	Five-year Climate Action Commitment update: Explore options for 2030-2040	15
	Recycling rate 55%; waste diversion rate 85%; reduce trash to landfill/capita by 25%	7
	Reduce single-occupancy-vehicle commuting by 20%	9
	10 MW solar PV on Virginia Tech lands	2
	Explore geothermal heat pump hot water heating options for new districts	3
2026	Signature Zero-Net-Energy (ZNE) building on campus	5
2027	10 MW battery storage for Virginia Tech Smart Grid research by VT PEC-VTES partnership	2
	35 MW solar PPA with APCO/third party in SWVA including coalfields	2
2028	Newly initiated buildings EUI 40% below 2020 existing average	5
2029	100 MW solar PPA with APCO/third party in SWVA including coalfields	2
2030	Five-year Climate Action Commitment update: Explore options for 2040-50	15
	Carbon neutral campus operations	1
	100% renewable electricity	2
	Total building energy use down 10%; EUI down 20% below 2020	4
	Newly initiated buildings carbon neutral operations	5
	Carbon neutral agriculture/forestry operations	6
	Zero-waste campus	7
	Transportation emissions reduced 40% from 2020	9
2050	Fossil fuel-free campus	15

COSTS AND BENEFITS OF 2020 VIRGINIA TECH CLIMATE ACTION COMMITMENT GOALS AND PATHWAYS

The Working Group assessed the impacts of the 2020 Virginia Tech Climate Action Commitment goals and pathways including GHG emissions, fiscal costs and benefits, and implications for Virginia Tech's educational mission, operations, policies and governance, and culture. These implications are far-reaching and are presented in Chapter 3.

Major benefits are reduction of GHG and enhanced university reputation, culture, and educational programs linked to campus climate action and sustainability.

To implement the Climate Action Commitment goals, there will be costs and benefits for the university:

- Some initiatives (e.g., upgrades to the steam plant) are part of the cost of doing business, and the added costs to incorporate climate action goals may be small.
- Others, such as energy efficiency retrofits, have a positive return on investment.
- Others, including solar electric projects, will require major investment; however, creative power purchase agreements can reduce capital cost and achieve cost-effective results.
- Finally, some projects (e.g., the proposed University Compost Facility at Kentland) require capital and operating expenditures but provide substantial operational and educational benefits.

Effective Climate Action Commitment implementation will require changes in operations and governance. Goal 13 recommends establishing a University Office for Climate Action and Sustainability (OCAS) directed by a Chief Climate Action and Sustainability Officer that reports jointly to the Senior Vice President and Chief Business Officer and the Executive Vice President and Provost.

The university's financial uncertainties resulting from the Covid-19 pandemic require flexibility in implementing the Climate Action Commitment. As presented on the next page, much can be done with limited investment.



IMMEDIATE NEAR-TERM INITIATIVES (2020-22)

Although the 2020 Virginia Tech Climate Action Commitment focuses on 2030 as the target date for its goals, the pathway to those goals begins the day the Climate Action Commitment is officially adopted by the university, if not before. The Working Group has identified a number of initiatives and projects that can and should be acted on in the short term from now until 2022 with full understanding of the current budget constraints of the university. The “shovel ready” initiatives aim to get a jump start on necessary action and to demonstrate the university’s commitment. They are listed below sorted by (a) low-cost/no-cost/revenue-neutral initiatives, (b) ongoing and budgeted projects, and (c) new priorities in need of funding and/or approval. These initiatives are described in Chapter 9.

a. Low/no cost/revenue neutral project/policy/planning initiatives

- ▶ Establish framework for Climate Action Living Laboratory (CALL) through the Office of the Provost and Executive Vice President, college deans, and the Division of Campus Planning, Infrastructure, and Facilities.
- ▶ Restructure the Energy and Sustainability Committee to oversee 2020 Virginia Tech Climate Action Commitment, renaming it the Climate Action, Sustainability, and Energy (CASE) Committee.
- ▶ Establish an alternative mobility subcommittee of the Transportation and Parking Committee.
- ▶ Develop plan for steam plant resilience/redundancy needs to complete conversion to natural gas by 2025.
- ▶ Develop a Utility Master Plan.
- ▶ Develop a Campus Energy Dashboard.
- ▶ Initiate Student Project for Fishburn Wind Energy Assessment.
- ▶ Promote partnership between Virginia Tech Electric Service and the Virginia Tech Power and Energy Center as part of Climate Action Living Laboratory.
- ▶ Initiate partnership with APCO on renewable electricity development.
- ▶ Initiate community relations with VTES Town of Blacksburg customers.
- ▶ Identify candidates for a zero-net-energy building on campus and develop fundraising plan.
- ▶ Engage Virginia Tech Foundation in energy efficiency retrofit plan for leased buildings.
- ▶ Adopt a Campus Tree Policy.
- ▶ Seek external funding for agrivoltaics test array at Catawba Sustainability Center.
- ▶ Implement and evaluate Sustainable Procurement Policy.

b. Ongoing budgeted projects

- ▶ Implement ongoing steam plant and chiller upgrade projects.
- ▶ Evaluate new natural gas contract on implications for Climate Action Commitment goals and pathways.
- ▶ 2020 RECs for 30 percent renewable electricity, continue through 2022 as needed.
- ▶ Implement Design and Construction Standards in light of Climate Action Commitment Goals.
- ▶ Fill the Virginia Tech energy manager position and supplement staff as needed.
- ▶ Implement budgeted projects in the Parking and Transportation Plan.

c. New priority projects in need of funding/approval

- ▶ Establish the University Office of Climate Action & Sustainability (OCAS) and appoint a university Chief Climate Action and Sustainability Officer (CCASO).
- ▶ Develop University Compost Facility at Kentland.
- ▶ Initiate 10-year energy management plan, 2021-30, and develop first year projects.
- ▶ Develop solar projects on campus: 2.3 MW by 2022: Sterrett and other rooftop projects.
- ▶ Implement zero-waste management consultant study.
- ▶ Implement a Green Lab Program.
- ▶ Dedicate consistent, annual funds to maintain existing trails, sidewalks, bicycle infrastructure.
- ▶ Implement transportation infrastructure plans (e.g., MMTF).



COMMUNITY ENGAGEMENT

Engaging the university community in the Climate Action Commitment update was part of the Working Group's charge and a critical component of our effort. The process overall—with its robust network of subcommittees—may be considered a true 'collaborative' enterprise, with over 130 students, staff, faculty, and community members involved. In terms of wider outreach, the Engagement Subcommittee originally planned on holding a major half-day town hall event on campus. Unfortunately, COVID-19 made that impossible.

The group responded by deploying a range of 'physically distanced' engagement activities:

- ▶ Dedicated website portal introducing the Climate Action Commitment process and sharing committee materials.
- ▶ Dedicated email address for the initiative.
- ▶ A series of 10 videos sharing progress of the Working Group and the subcommittees.
- ▶ A survey distributed widely throughout the community with 242 respondents.
- ▶ A series of 12 hour-long Zoom "convenings," attended by at least 226 participants.

Each of these streams of engagement is detailed in Chapter 5, and insights and information collected through them is summarized. Key findings from these various engagement efforts include:

- ▶ The vast majority of participants/respondents believe that climate change is a serious threat, and thus support aggressive action on the part of the university. In fact, many feel that Virginia Tech is not doing enough.
- ▶ The importance of setting ambitious goals and sticking to them was emphasized.
- ▶ Emphasis was placed on systemic or "upstream" solutions rather than placing the onus on behavior change of individuals, given that many of the barriers to action are infrastructural and institutional (e.g., poor cycling infrastructure).



- ▶ The above notwithstanding, many did see individual actions as important and needing of attention. Creative ideas emerged around how to, for example, ‘gamify’ desired actions.
- ▶ Key champions are important for propelling further action, including potentially a higher-level champion within university administration. This may be achieved through a stronger OCAS (see recommendation #13).
- ▶ There is strong support for taking a more holistic view of understanding our greenhouse gas emissions, accounting for emissions associated with community behaviors like commuting.
- ▶ There is broad support for key actions proposed through the Climate Action Commitment update process, including:
 - › A shift to carbon neutrality and 100 percent renewable energy, including integrating renewable energy infrastructure into campus design.
 - › Alternative transportation and reductions in private automobile usage, including a ban on freshmen car parking permits.
 - › Improved waste management, including a new compost facility, and reductions at the source through purchasing decisions that minimize waste and promote sustainability
 - › The creation of a ‘living laboratory’ to foster partnerships between campus operations, local partners, and the academic (teaching and research) enterprise.
 - › A green lab system, and similar programs to promote sustainable behaviors within work and student life spaces.
 - › Optimize building design, including with energy, water, and waste monitoring.
 - › The need to account for climate justice in any and all actions taken.
 - › Stronger partnerships with other institutions, including the Town of Blacksburg.
 - › There is a strong desire to see engagement continue as the university shifts to implementation.

COMPARISON WITH PEER UNIVERSITIES

One of the Working Group's deliverables is a comparison of Virginia Tech progress in climate action to peer universities, and this is presented in Chapter 8. There are three good reasons for doing this:

1. To offer an evaluative reference point (i.e., to see how we are doing),
2. To adopt effective plans and avoid ineffective ones (i.e., to borrow good ideas), and
3. To demonstrate that what the university is proposing is feasible and in line with similar universities (i.e., to show it is not far-fetched to have a bold and aggressive climate action plan).

Knowing that our perspective is comprehensive and that other universities have different strengths in different areas, the Working Group decided to have our thematic subcommittees select the peer and exemplary universities to assess in their specific areas.

Those areas include:

- Buildings
- Renewable Energy
- Energy Systems
- Transportation
- Carbon neutrality and GHG inventory
- Budget and Finance
- Climate Justice
- Waste-Recycling-Composting
- Agriculture, Forestry, Land Use
- Community Engagement

In most areas the Working Group selected 3-8 universities that they consider to be peers or to be exemplary in that area. Some are from Virginia, some are Land Grants, some are from the Atlantic Coast Conference, some are far away, but all offer good examples and benchmark our progress to-date and our aspirations for the 2020 Climate Action Commitment.

All in all, our peer reviews told us that, while our 2009 Climate Action Commitment was right for its time and has led to improved energy efficiency and reductions in GHG emissions, it now lags behind the actions of many of our peers. This deficiency is most notable in the quest for carbon neutrality, for renewable energy, for zero-waste, for zero-net-energy buildings, for alternative transportation, and for community engagement to advance climate action and sustainable behavior.

Many of our related programs do standup well in comparison to others, but if Virginia Tech is to regain its leadership role in climate action and sustainability, it needs to move to a new Climate Action Commitment that is right for this time. Of course, that is what it has set out to do, and the Working Group believes that it has found the right balance of aggressive, yet pragmatic, climate action. The group's goals are to achieve carbon neutrality by 2030, 100 percent renewable electricity by 2030, investment in energy efficiency in existing and new buildings, carbon neutral agriculture, a zero-waste campus, sustainable procurement practices, sustainable mobility, climate justice as a core value, community engagement, and the establishment of a Climate Action Living Laboratory that will integrate these goals into the fabric of the university.

Relative to the peer and exemplary universities reviewed in this analysis, this 2020 Virginia Tech Climate Action Commitment sets the stage for Virginia Tech to shine as an exemplar and leader in university climate action. Beyond our climate neutrality and zero-waste campus goals, six areas of the 2020 Climate Action Commitment stand Virginia Tech above the rest:

1. The detail and specificity of the pathways developed to achieve the Climate Action Commitment goals
2. Our own unique utility VTES leading our way to 100 percent renewable electricity, while most other universities are totally dependent on private utilities and companies.
3. Using our considerable land resources not only to manage our agricultural climate impacts, but also to sequester carbon and develop renewable energy.
4. Incorporating in our carbon neutral goal scope 3 GHG emissions relating to behavior (e.g., commuting, waste/recycling, water/wastewater, business travel), while most others include just scope 1 and 2.
5. Integrating our physical climate action into the university's educational mission through the Climate Action Living Laboratory (CALL).
6. Specifically addressing community engagement, sustainable behaviors, and social equity and justice as core elements of our climate action.



LEARN MORE

View the full Virginia Tech 2020 Climate Action Commitment Working Group Report and associated appendices at svpoa.vt.edu/index/VTACRevision.

Questions may be addressed to climateaction@vt.edu.



Virginia Tech 2020 Climate Action Commitment Working Group

**Final Technical Report
July 2020
Revised October 2020**

Executive Summary

1. Introduction

Part I: Virginia Tech 2020 Climate Action Commitment

- 2. Virginia Tech 2020 Climate Action Commitment**
- 3. Implications of VT 2020 CAC Goals and Pathways**
- 4. Implementing, Engaging, Monitoring, Reporting, Updating VT CAC**
- 5. What We Learned from Community Engagement**

Part II: Progress in Climate Action since 2009 CAC and Comparison to Peers

- 6. Progress in Climate Action since 2009 Climate Action Commitment**
- 7. Critique of Progress**
- 8. Comparison to Peer Universities**

9. Conclusion and Proposed Immediate Actions

Appendix A:

Executive Summaries of VT CAC Working Group Subcommittee Reports

Appendix B:

**Working Group and subcommittee membership, Charge to Working Group,
Student and faculty climate action**

Slide decks (separate)

Volume II: Full Subcommittee Reports (separate)

Virginia Tech 2020 Climate Action Commitment Working Group

Final Technical Report

Executive Summary	ES-1
ES.1 Working Group Process	ES-1
ES.2 Progress Implementing 2009 VT Climate Action Commitment	ES-2
ES.3 The Virginia Tech 2020 Climate Action Commitment	ES-3
ES.4 Implementation Milestones	ES-12
ES.5 Costs and Benefits of the VT 2020 CAC Goals and Pathways	ES-13
ES.6 Immediate Near-Term Initiatives (2020-2022)	ES-13
ES.7 Community Engagement	ES-14
ES.8 Comparison with Peer Universities	ES-15
 1. Introduction	 1-1
1.1 Seize the moment	1-1
1.2 The Charge to the Climate Action Commitment Working Group	1-2
1.3 VT CAC Working Group Process	1-3
1.4 Roadmap to this Working Group Report	1-4
 Part I: Virginia Tech 2020 Climate Action Commitment	
 2. Virginia Tech 2020 Climate Action Commitment	 2-1
2.1 Factors, Criteria, and Process for Developing Goals and Pathways	2.1
2.2 Virginia Tech 2020 Climate Action Commitment	2.2
2.2.1 Climate Action Commitment Vision and Mission	2.2
2.2.2 Virginia Tech 2020 CAC Expanded Goals and Pathways	2.2-2.25
 3. Implications of VT 2020 CAC Goals and Pathways	 3-1
3.1 Impacts on GHG Emissions	3-1
3.2 University Budget & Finance	3-1
3.3 University Educational Mission	3-6
3.4 University Operations and Staffing	3-7
3.5 University Policies and Governance	3-8
3.6 University Culture	3-8
 4. Implementing, Engaging, Monitoring, Reporting and Updating VT CAC	 4-1
4.1 Structure, Operation and Governance of VT CAC Implementation	4-1
4.1.1 Structure and Operations of VT CAC	4-1
4.1.2 Governance of VT CAC	4-2
4.1.3 Duties of Operations and Governance	4-2
4.2 Engaging the Community	4-3
4.3 Annual Report of Progress and AASHE STARS Reporting	4-3
4.4 GHG Inventory Procedures	4-4
4.5 Timing of Recommended Pathways and Implementation Milestones	4-4
4.6 Five-year CAC update	4-6
 5. What We Learned from Community Engagement	 5-1
5.1 Means of Engagement: Webpages, Videos, Survey, and VT News Coverage	5-2
5.2 Survey Process and Results	5-3
5.2.1 Survey Responses	5-3
5.3 Zoom Convening Ideas and Exit Survey	5-7
5.4 Conclusion	5-16

Part II: Progress in Climate Action since 2009 CAC and Comparison to Peers

6. Progress in Climate Action since 2009/2013 Climate Action Commitment	6-1
6.1 Summary and Introduction	6-1
6.2 Progress Implementing 2009/2013 VT CAC	6-2
6.2.1 VTCAC #1: VT a Leader	6-4
6.2.2 VTCAC #2: VT CAC in Strategic Plan	6-6
6.2.3 VTCAC #5, #13: Sustainability Office, Annual Reporting	6-7
6.2.4 VTCAC #3: GHG emission reduction target	6-8
6.2.5 VTCAC #4, #6, #7: Energy efficiency improvements	6-10
6.2.6 VTCAC #8: Waste recycling	6-16
6.2.7 VTCAC #9: Procurement	6-17
6.2.8 VTCAC #11: Transportation energy efficiency, alternative transportation	6-17
6.2.9 VTCAC #10: Community engagement	6-19
6.2.10 VTCAC #12: Sustainability-related academics	6-21
6.2.10 VTCAC #14: Funding for sustainability programs	6-22
6.2.11 Other Progress: Virginia Tech Electric Service (VTES)	6-23
6.3 Structure, Partnerships, and Arrangements to address Sustainability	6-23
7. Critique of Progress	7-1
7.1 GHG Scope of 2009/2013 CAC	7-1
7.2 Renewables	7-1
7.3 Energy	7-1
7.4 Buildings	7-2
7.5 Agriculture, Forestry, Land Use	7-2
7.6 Waste, Recycling, Composting	7-2
7.7 Transportation	7-3
7.8 Sustainable Choices	7-3
7.9 Community Engagement and Climate Justice	7-4
8. Comparison to Peer Universities	8-1
8.1 Carbon Neutrality and GHG Inventory	8-2
8.2 Renewable Energy	8-3
8.3 Buildings	8-5
8.4 Energy Systems	8-6
8.5 Transportation	8-8
8.6 Waste/Recycling/Composting	8-10
8.7 Agriculture, Forestry, Land Use	8-12
8.8 Sustainable Choices	8-13
8.9 Climate Justice	8-13
8.10 Community Engagement	8-15
8.11 Budget & Finance	8-20
9. Conclusion and Proposed Immediate Actions	9-1
9.1 Concluding Comments	9-1
9.2 Proposed Immediate Actions, Projects and Initiatives (2020-2022)	9-2
9.2.1 Low/no cost/revenue neutral project/policy/planning initiatives	9-2
9.2.2 Ongoing Budgeted Projects	9-4
9.2.3 Priority projects in need of funding/approval	9-5

Appendix A: Executive Summaries of VT CAC Working Group Subcommittee Reports

A-1: Agriculture/Forestry/Land Use GHG	A-7: GHG inventory
A-2: Budget & Finance	A-8: Peer Comparison
A-3: Buildings Opportunities	A-9: Renewables Opportunities
A-4: Climate Justice	A-10: Sustainable Choices
A-5: Community Engagement	A-11: Transportation Opportunities
A-6: Energy Opportunities	A-12: Waste/Recycling/Composting and Procurement

Appendix B:

VT CAC Working Group & Subcommittee Membership	Glossary	Climate Strike Student Demands
Dr. Pinkney's Charge Letter to Working Group		Faculty Senate Climate Action Resolution

Executive Summary

From January to June 2020, the Virginia Tech **Climate Action Commitment Working Group** executed its charge to evaluate the university's current position and our future role in addressing climate change. During this same period, a global pandemic has brought unprecedented hardship and suffering, particularly for the most vulnerable among us. Nevertheless, this unique time is engendering a tremendous spirit of innovation and collaboration. Around the world, people are coming together to address historic challenges. We are becoming bolder and more creative. And we are reimagining every aspect of our lives.

In this public health crisis, we are learning an important lesson: when experts testify to looming crises, when science speaks, society must take decisive action. People are learning to trust science and use it to guide action, shape responses, and inform policy-making. It has also exposed critical and uneven vulnerabilities in our economy and society, raising calls for recovery efforts to redress inequities. Similarly, our actions to combat climate change and strengthen our community's resilience must be guided by a just and equitable transition to sustainable new strategies, policies and practices. As a new world dawns, we must bounce "forward," not "back," to seize the promise and opportunities of this moment.

One such promise is the prospect of working together, creatively, urgently and with care, to address pressing challenges. Climate change is a slow-growing emergency compared to the lightning strike of Covid-19, but it will be more painful and longer lasting. This moment of pause gives governments, businesses, communities, and universities the opportunity to evaluate their current positions and their future roles. While the individual actions of any single institution may seem insignificant for the magnitude of the problem, the world cannot be saved without our collective action.

In late 2019—prompted by the demands of students and other community members involved in Climate Strikes and resolutions from the Faculty and Staff Senates, Student Government Association, and Graduate Student Assembly—President Tim Sands and Senior Vice President Dwayne Pinkney established a Climate Action Commitment Working Group (WG) comprised of 26 faculty, students, staff, and community members. In announcing the creation of the WG, President Sands stated that: "climate change presents one of the world's most pressing problems...and Virginia Tech has a duty to respond." **The Group was charged to assess the university's progress in implementing the 2009/2013 VT Climate Action Commitment, compare our experience to peer institutions, and develop a new Commitment.**

Virginia Tech, like other universities, is facing both short-term fiscal challenges and long-term uncertainties in these challenging times. Nonetheless, the university remains committed to taking bold action to do its part to address the climate emergency.

ES.1 Working Group Process

In order to engage a broad range of expertise and perspectives from across the university and wider community and conduct an ambitious work program, the Group established 12 subcommittees including a total of 130 faculty, students, community members, and staff to

investigate and discuss specific issues relevant to the Commitment. Most of the subcommittees met weekly from early February through the end of May. The subcommittees included:

- Agriculture, Forestry, and Land Use
- Budget and Finance
- Buildings Opportunities
- Climate Justice
- Community Engagement
- Energy Opportunities
- Greenhouse Gas (GHG) Inventory
- Peer Institutions Comparison
- Renewables Opportunities
- Structuring Sustainable Choices
- Transportation Opportunities
- Waste-Recycling-Composting and Procurement

The Working Group (WG) developed several mechanisms to expand community involvement in the process, including a website and email address for comment and two online surveys. Plans for face-to-face town hall meetings and conference sessions had to be reimaged when the university shut down after spring break. In place of the in-person events, the WG hosted 12 Zoom Convening sessions in April, attended by over 220 participants who provided excellent feedback. In anticipation of the Convening sessions, the WG and its subcommittees also developed ten creative videos that describe the CAC proposals (See: <https://svpoa.vt.edu/index/VTCACRevision.html>).

Our work has focused on developing effective strategies the university can advance to achieve meaningful climate action. Throughout the multitude of WG, subcommittee, and community zoom meetings, our discussions have also reflected on the important opportunity for Virginia Tech to reinvent itself, not only in its commitment to climate action, but also in its responsiveness to the needs of the world around us, in the spirit of *Ut Prosim*.

Our recommended climate action commitment is bold, aggressive, and comprehensive. Its goals range from necessary upgrades to the campus physical plant to reduce GHG emissions, to integrating those improvements into the educational mission through a Climate Action Living Laboratory, to engaging everyone in creating a culture of sustainability—all to position Virginia Tech as a leader as the clean energy economy evolves in the Commonwealth and the world.

ES.2 Progress Implementing 2009 VT Climate Action Commitment

Virginia Tech has made considerable progress in implementing its 2009/2013 Climate Action Commitment (2009 VT CAC) over the past decade, and our assessment of progress is presented in chapters 6 and 7. The 2009 VT CAC & Sustainability Plan was a cutting-edge effort for its time, but a decade later it fails to prescribe what climate scientists recognize as necessary actions and also falls short of many peer universities' recent initiatives.

In many respects, however, we have been forging ahead beyond the 2009/2013 CAC. Virginia Tech is a recognized leader in campus sustainability with a Sustainability Tracking and Rating System (STARS) Gold score that is highest among Virginia and ACC peer institutions. VT has won numerous awards and recognitions since 2010, including Princeton Review's top 50 Green Colleges (#14 in 2019), the Governor's Environmental Excellence Award (7 times), Best Workplaces for Commuters (every year, gold in 2019-20), Bicycle Friendly Campus (every year, silver level in 2019), Tree Campus USA certification (every year), and many others.

We have reduced greenhouse gas (GHG) emissions by 24% from 2006 to 2019, despite 22% growth in campus building size and enrollment. This reduction is faster than the 2009 CAC targeted trajectory. It resulted from investments in energy efficiency in existing and new buildings, and most importantly conversion to natural gas in the steam plant, which was enabled by a new gas pipeline. We now have 36 LEED certified buildings constructed or in process, amounting to 30% of campus space, and in 2015-2020 we invested \$14 million in energy efficiency improvements, resulting in energy and dollar savings with a 5-year payback.

We have done much to develop alternative transportation choices, including dual use trails, bike share, ride share, and car share programs. We have record ridership on our partner Blacksburg Transit and innovative plans for campus mobility. We have a functional, although fragmented, waste management program with an 80% waste diversion rate (waste diverted from landfill) and 40% recycling rate, although shy of the 50% by 2020 goal of the 2013 VT CAC. In April 2020, our Procurement Department unveiled a Sustainable Procurement Policy; and in May, Facilities produced new Design and Construction Building Standards, both reflecting the ideals of the VT Climate Action Commitment.

We have an enviable array of sustainability-related academic programs, majors, coursework, and research, including in green engineering, natural resources, agriculture, power and energy systems, environmental policy, and smart and sustainable cities. In the STARS rating system, VT scores 89% of possible points in academic categories. It also scores 95% of possible points in campus engagement. We have a rich campus life for students with a wide array of opportunities, including strong environmental student organizations. Indeed, these student groups have energized the university community to move forward on climate action, both in 2008 and in 2019.

Our Facilities Department has embraced sustainability and climate action as part of its mission, and our Office of Sustainability is second to none, even with limited staff. We have the highly unique and valuable Virginia Tech Electric Service (VTES), a university-owned electric energy utility system, which serves not only the campus but also 6000 Blacksburg customers.

In other areas, however, we are falling behind. Although the 2009/2013 VT CAC was a leading effort for its time, from the perspective of 2020, it is limited in both scope and ambition. It did not include several sources of campus GHG, such as agriculture, business travel, and leased building space, the latter amounting to 13% of operational square footage. It did not even mention renewable energy nor the human cost of climate change. Furthermore, its overall goal of an 80% reduction in GHG from 1990 levels by 2050, while a typical goal for its time, is not aggressive enough compared to the contemporary needs for climate action and the national movement of our peer institutions.

ES.3 The Virginia Tech 2020 Climate Action Commitment

The major product of the Working Group is a new Climate Action Commitment. It aims to be bold and comprehensive, but also to be visionary and pragmatic for a leading academic institution. Goals 1-9 target physical means to achieve carbon neutrality by 2030, goals 10-14 address education, culture, social equity, and engaged implementation, and goal 15 sets a longer-range goal

of a fossil-fuel-free campus. The Group also developed a set of potential pathways to achieve each goal. The table below lists the goals, and they are presented with summary pathways. More detailed pathways are outlined in chapter 2.

Vision of the Virginia Tech 2020 Climate Action Commitment:

In the spirit of Ut Prosim, Virginia Tech will be a leader in climate action in service to our community, the Commonwealth, and the world.

Mission of the Virginia Tech 2020 Climate Action Commitment:

President Tim Sands: “climate change presents one of the world’s most pressing problems...and Virginia Tech has a duty to respond.”

The mission of the Virginia Tech 2020 Climate Action Commitment is to achieve carbon neutrality by changing our physical infrastructure, collective and individual behaviors, and educational mission; to engage everyone in creating a culture of sustainability; and to achieve these objectives through just and equitable means.

Virginia Tech 2020 Climate Action Commitment

The 2020 CAC update process yielded the following 15 goals, which are expanded upon below.

1. Carbon neutral Virginia Tech campus by 2030
2. 100% renewable electricity by 2030
3. Complete the total conversion of steam plant fuel to natural gas by 2025, plan for a full transition to renewable steam plant fuel after 2025, and continue to improve the efficiency of campus energy systems
4. Reduce building energy consumption to enable carbon neutrality by 2030
5. Operations of new buildings initiated by 2030 will be carbon neutral
6. Agricultural, forestry, and land use operations will be carbon neutral by 2030
7. Virginia Tech to become a Zero-Waste Campus by 2030
8. Establish the Sustainable Procurement Policy and Procedures by 2022
9. Reduce single-occupancy-vehicle commuting to campus by 20% by 2025 and reduce transportation-related GHG emissions by 40% by 2030
10. Integrate the CAC into Virginia Tech’s educational mission through the Climate Action Living Laboratory beginning in 2021
11. Establish climate justice as a core value of the VT Climate Action Commitment
12. Diminish barriers to sustainable behaviors through institutional change, education and social marketing
13. Implement the VT Climate Action Commitment at a high level of university administration and governance; by integrating goals for facilities, education, and campus culture; and with stakeholder engagement for evaluation of goals and progress
14. Develop innovative budgeting and financing mechanisms to generate funding and staffing to achieve Climate Action Commitment goals
15. Develop Pathways after 2030 to eliminate fossil fuels and carbon offsets by 2050

VT 2020 Climate Action Commitment Summary Goals and Pathways

Goal 1. Carbon Neutral Virginia Tech Campus by 2030

Carbon neutral = net-zero emissions of CO₂, CH₄, and NO₂ from VT operations at Blacksburg campus based on the geographic and GHG scope of the 2020 CAC.

Potential Pathways:

- **100% renewable electricity** by 2030 can reduce emissions by 50% below 2019 levels
- **Total conversion of steam plant to natural gas** by 2025 can reduce GHG by 10% below 2019
- **Reduction of energy use** in existing and new buildings can result in further emissions reductions of 10%, despite campus growth
- **Reduction of GHG** from waste/recycling, transportation, and agriculture, forestry, and land use described below can reduce emissions by 10%
- In 2030, remaining emissions can be negated by **carbon offsets**

Goal 2. 100% Renewable Electricity by 2030

Potential Pathways:

- **2020: achieve 30% renewable electricity** via purchase 20% renewable energy certificates (RECs) from APCO + APCO 10% renewable portfolio
- **2020-2030: Achieve 100% renewable electricity by 2030** via combination of VT rooftops/lands (15 MW), 3rd party owned PPA, and APCO owned SWVA PPA capacity (130 MW+15 MW=145 MW) to serve campus (95 MW) and town customers (50 MW) for 60% of needs plus 30% APCO renewable portfolio and 10% RECs to cover steam plant cogeneration
- Integrate solar development into the **Climate Action Living Laboratory** (CALL) of academic instruction and research, including dual-use solar-farm production agrivoltaics; a 10-MW storage testbed/showcase project for smart micro-grid reliability and resilience research through Virginia Tech Electric Service and the VT Power & Energy Center; and other instruction/research initiatives
- As with all components of this CAC, full **lifecycle analysis** of renewables procurement should include the environmental and social justice costs and benefits of procured systems
- The **siting** of renewable energy systems should employ best practices in public engagement to identify the most appropriate locations

Goal 3. Complete the total conversion of steam plant fuel to natural gas by 2025, plan for a full transition to renewable steam plant fuel after 2025, and continue to improve the efficiency of campus energy systems

Potential pathways:

- Addition of gas boiler #12 provides **natural gas thermal capacity for all steam plant demand**
- VT's new **natural gas service contract** signed in summer 2020 and effective until 2025, provides favorable price and reliability terms and prospects for renewable gas
- For **reliability and resilience**, a plan is needed for **backup fuel** (such as liquefied natural gas

(LNG), biochar, or other fuel) when natural gas is unavailable, and **boiler redundancy** (so-called “n+1”) in case of a boiler outage at a critical time.

- **Improve chiller efficiency:** By 2023 the Chiller Plant Phase II capital project will reduce central chiller energy usage by 20% from 2020; future campus growth needs for chilled water will be met from central plants where possible.
- **Ten-year 2021-30 Energy Management Plan** will improve efficiency of stand-alone chilled water plants
- Establish an online Climate Action Living Laboratory (CALL) **Energy Dashboard** for faculty, staff, and students to access and analyze campus facilities energy use data for instruction and research
- Beginning with the CAC 2025 revision, develop a **plan for full transition to renewable energy for campus heating systems**. To promote zero emissions energy options in the plan, refine GHG inventory estimates of methane leakage from VT natural gas sources and include those **estimates of methane leakage in the carbon neutral goal for 2035**.

Goal 4. Reduce Building Energy Consumption to Enable Carbon Neutrality by 2030

- a. **By the end of 2022, reduce electricity consumption (kWh) by 10% and electricity intensity (kWh/gsf) by 20% below 2006 levels**
- b. **By 2030, employ energy management retrofits to reduce total energy consumption in all buildings by 10% and energy use intensity (Btu+kWh/gsf) by 20% below 2020 levels**

Potential pathways:

- Implement an **aggressive 2021-30 ten-year energy management plan** updated annually to reduce total energy consumption in all buildings including auxiliaries by 10%
- For **leased buildings** owned by the VT Foundation, work with the Foundation to develop financial arrangements to improve efficiency and reduce emissions
- By 2021, develop a campus-wide **Climate Action Living Laboratory Green Lab program** based on a pilot test-bed Green Lab to reduce energy, emissions, and materials in our most energy-intensive facilities
- **Reduce building energy and GHG emissions by smart operations**, such as demand response, digital controls, thermostat settings, occupant behavior, and innovative space scheduling, especially in summer
- Achieving these goals will require sufficient **staffing in energy management**

Goal 5. Operations of New Buildings Initiated by 2030 will be Carbon Neutral

- a. **New building efficiency will conform to latest adopted LEED-Silver standards and ASHRAE 90.1 energy performance standards + 10%**
- b. **By 2022, reduce total energy use intensity (EUI) in newly initiated buildings by 20% compared to 2020 existing buildings**
- c. **By 2026, build a signature zero-net-energy (ZNE) building on campus as a showcase and learning model for the Climate Action Living Laboratory**
- d. **By 2028, newly initiated buildings’ efficiency improvements will reduce total energy use intensity (EUI) in new buildings by 40% compared to 2020 existing buildings**

Potential pathways:

- In 2021, identify candidate new buildings for a **showcase zero-net-energy (ZNE) building** and

begin fundraising to attract donors to help fund the project to be completed by 2026

- Electricity currently contributes 50% of total CO₂ emissions. **100% renewable electricity** by 2030 will reduce building CO₂ emissions by more than 50%
- By 2030, all newly initiated building design will have **carbon neutral** operations through 100% renewable electricity, improved energy efficiency, and carbon offsets
- **Post-occupancy evaluation** (POE) should become standard practice to fine tune building operations and engage occupants to better serve users and reduce emissions
- New buildings offer opportunities for campus **Climate Action Living Laboratory** research and instruction by faculty and students through field testing and use of emerging technologies, monitoring energy use, air quality, and occupant perceptions, and other projects
- Achieving these goals will require **sufficient engineering and design staffing**

Goal 6. Agricultural, Forestry, and Land Use Operations Carbon Neutral by 2030

Potential pathways:

- Develop the **University Compost Facility at Kentland** to provide benefits to campus organic waste management, help reduce animal waste GHG emissions, support soil health, and reduce need for new land for future land application of animal wastes
- **Adopt Campus Tree Policy** to increase canopy cover from 16% to 25% and manage VT trees, forests and woodlands to increase carbon sequestration and provide additional environmental benefits
- **Reduce agricultural and forestry net GHG emissions** through more efficient operations, reduced animal enteric fermentation emissions, improved energy and fuel efficiency, possibly an anaerobic digester to produce usable methane, and other means
- **Use VT agricultural lands to develop solar farms** toward renewables goal, including co-use solar and farmland agrivoltaics for Climate Action Living Laboratory instruction and research
- In 2030, **offset any remaining net GHG emissions** from agricultural/forestry operations with solar production from VT agricultural land and/or by purchasing carbon offsets

Goal 7. Virginia Tech to become a Zero-Waste Campus by 2030

- Increase landfill waste diversion rate to 85% by 2025**
- Increase waste recycling rate to 55% by 2025**
- Reduce waste to landfill per capita by 25% by 2025**

Potential Pathways:

- **Hire a zero-waste consultant** to conduct a waste audit study and plan to evaluate organization, procedures, and staffing to enhance campus waste management
- Based on consultant recommendations, consider hiring a **campus waste manager**
- Engage personnel involved in campus waste management on a **Waste/Recycling Council** to help streamline operations and reduce redundancies
- Develop **University Compost Facility at Kentland** to process campus organic waste from dining halls and athletics, veterinary and agriculture animal waste, yard trimmings, wood waste, non-recyclable soiled paper, and other compostables
- **Engage faculty, students, and staff** in greater use of recycling/compost behavior using social marketing and media, incentives, and innovative approaches to advance Circular Economy and

Pollution Prevention (P2) principles as part of the Climate Action Living Laboratory

- Evaluate and improve as needed the management of **specialty wastes**, such as e-waste, laboratory waste, construction debris, and wastes from major sporting and other events

Goal 8. Establish the Sustainability Procurement Policy and Procedures by 2022

Potential Pathway:

- On a pilot basis, adopt, implement, and evaluate the 2020 Sustainable Procurement Policy
- In 2022, the Energy & Sustainability Committee will assess the pilot project and work with the Procurement Department to formulate the Sustainability Procurement Policy v.2

Goal 9. Reduce Single-Occupancy Vehicle (SOV) Commuting to Campus by 20% by 2025 and Reduce Transportation-Related GHG Emissions by 40% by 2030

Potential Pathways:

- **Promote walking/biking/transit as the preferred means of commuting to campus:** use parking policies, alternative transportation programs, campus mobility planning in collaboration with Town of Blacksburg, and encourage Blacksburg Transit (BT) programs to improve the safety and convenience of and promote walking/biking/transit
- **Promote sustainable mobility choices** through good marketing including social media, parking permit literature, gaming, university promotion literature/website, and student orientation
- **Promote non-commuting work and learning opportunities** such as telecommuting, innovative on-line instruction, Internet conferencing, and other means
- **Improve infrastructure and traffic management to improve mobility choices and safety** by reducing speed limits, improved bike/ped path lighting, limiting/restricting vehicles in core campus, implementing current transportation plans, and coordinating with Town of Blacksburg plans
- **Improve vehicle efficiency and promote low-carbon emissions vehicles** through Motor Pool purchases and development of electric vehicle charging stations on campus
- **Promote social equity in mobility and parking policies** by developing effective and efficient commuting options for lower wage employees who cannot afford to live in Blacksburg, sliding-scale parking fees based on salary/wage, and collaboration with the Town to provide affordable workforce housing proximate to campus
- **Reduce and negate business travel GHG emissions with carbon offsets**
- **Establish an alternative mobility subcommittee of the Transportation and Parking Committee** to recommend strategies to increase the non-SOV mode share on campus

Goal 10. Integrate the CAC into Virginia Tech's Educational Mission through the Climate Action Living Laboratory (CALL) beginning 2021

Potential Pathways:

- Recognize the excellent **opportunities for student learning, faculty and student technical research, and staff development.** Benefits include learning from and innovating creative solutions in-house for VT's climate initiatives and better engaging the entire university both in

Blacksburg and other Virginia Tech locations in our quest for sustainable and just climate action

- Establish the **Climate Action Living Laboratory (CALL)** in the new University Office for Climate Action & Sustainability (OCAS) to enhance offerings and build bridges between facilities and academic departments, facilitating and supporting opportunities
- Alter norms and incentives to overcome traditional barriers and nurture cooperation between academic units (research and teaching) and operations units such as Facilities and auxiliary units including dining, residence and athletics. **Greater collaboration** between university units will help implement the CAC and integrate physical plant climate action with academics and campus life
- Integrate Climate Action Living Laboratory (CALL) **initiatives in other goals/pathways** for renewables (2), energy materials, devices and systems (3), buildings (4, 5), agriculture (6), waste (7), transportation (9), climate justice (11), sustainable behaviors (12), and community engagement (13)
- Engage the university's **land grant Extension and Outreach programs** to reflect the principles of the CAC and help implement them throughout the Commonwealth
- Integrate the physical infrastructure elements of the CAC into the fabric of the university's educational and research programs to expand **funding opportunities for campus innovation** from state and federal sources as well as foundations

Goal 11. Establish Climate Justice as a Core Value of the Climate Action Commitment

Potential Pathways:

- Encourage an **accelerated transition to carbon-neutral status** as a climate-justice imperative
- Ensure that the **social impacts** of Virginia Tech's climate mitigation choices (e.g. energy, land use, and waste) are identified and addressed to the greatest extent possible
- Establish a **Climate Justice Subcommittee** of the revised Climate Action, Sustainability, and Energy (CASE) Committee by 2021 with representation from students, faculty, and community members from frontline groups
- Ensure that VT climate action implementation **plans recognize and assist vulnerable or frontline groups adversely affected by those plans**, including low-wage VT employees, tuition-paying students, VTES town ratepayers, historically marginalized people of color and Indigenous communities, coalfield communities, and others
- **Establish education, research, and outreach programs to assist vulnerable and historically marginalized groups** mitigate and adapt to climate change and thrive in the new energy economy. These efforts should specifically target Virginia Tribes, African Americans in the New River Valley, coalfield communities in southwest Virginia, and coastal Virginia communities threatened by climate-related hazards

Goal 12. Diminish Barriers to Sustainable Behaviors through Institutional Change, Education and Social Marketing

Potential Pathways:

- **Identify structural, social and institutional barriers** to sustainable behaviors

- **Implement infrastructural changes**—from waste management to transportation to building operation—to make sustainable choices easier
- Develop **educational programs** to foster pro-environmental behavior change
- **Design and implement choice architecture or “nudges”** to promote sustainable behavior, while allowing for individual choice, using social media, gaming, and other means
- **Develop a shared toolkit of best practices** in social marketing, rooted in behavioral sciences, for campus groups initiating sustainability initiatives
- **Nurture cross-campus partnerships** to coordinate climate action and enhance sustainability initiatives

Goal 13. Implement the VT Climate Action Commitment

...at a high level of university administration and governance;

...by integrating CAC goals for facilities, education, and campus culture;

...with ongoing stakeholder engagement for evaluation of goals and progress

Potential Pathways:

- **Governance:** By fall 2021, restructure the university Energy and Sustainability Committee (E&SC), renaming it the **Climate Action, Sustainability, Energy (CASE) Committee**, and revising its charge, membership, and reporting, to oversee the implementation and review of the CAC goals and progress involving student, faculty, and staff stakeholders
- **Implementation/operations:** Appoint a new university **Chief Climate Action and Sustainability Officer (CCASO)** to direct a reconstituted **University Office of Climate Action and Sustainability (OCAS)** to oversee CAC implementation and other campus sustainability initiatives. The CCASO would jointly report to the Senior Vice President and Chief Business Officer and to the Executive Vice President and Provost. The CCASO would chair the CASE Committee. The Facilities Division would, in parallel, appoint a director of strategic success to oversee a range of strategic Facilities issues including climate action and sustainability
- **Learning:** Establish the **Climate Action Living Laboratory (CALL)** in the new OCAS to enhance offerings and build bridges between facilities and academic departments, facilitating and supporting opportunities (Goal 10)
- **Duties of Operations and Governance units:**
 - Collect data relevant to the CAC including GHG inventory and prepare an **Annual Report** of CAC Progress each fall semester for the previous fiscal year
 - Establish mechanisms to **engage and educate** the Virginia Tech community on the CAC and climate action
 - Establish ad hoc committees to develop instructional, research and outreach programming for the **Climate Action Living Laboratory (CALL)**
 - Evaluate CAC goals according to best practices in light of new information and standards and **direct update of the CAC on a five-year cycle**
 - **Broaden the geographic scope** of the CAC to all Virginia Tech properties in future iterations to include the entire University
 - **Advocate** for allocation and prioritization of resources to support the CAC
- **Annual review:** Conduct an in-depth annual review of the CAC goals and implementation progress that involves student, staff, faculty, and community stakeholders. The results of this review will be shared publicly in an accessible and easy-to-read format

Goal 14. Develop Innovative Budgeting and Financing Mechanisms to Generate Funding and Staffing to Achieve Climate Action Commitment Goals

Potential Pathways:

- Strategically invest university E&G and Auxiliary funds to implement the **10-year Energy Management Plan** at a level of \$5 million/year in energy efficiency projects with a cumulative 8-year financial payback or 12% return on investment
- Major investment is needed to implement the **pathways for renewable electricity** both on VT buildings/lands and in the SWVA region, including the following options:
 - **VT owned** and developed projects on VT buildings/land, and
 - **Utility or 3rd party owned** and developed projects on VT buildings/land and in SWVA with VT power purchase agreement (PPA)

The first option requires major VT capital investment but provides greater long-term return and control, while the second requires no VT capital but provides less long-term financial return. A combination of the two options may be used to meet the CAC renewables goal
- As a unique **power utility**, VTES has opportunities for investment in renewable energy serving both campus and its town customers
- The **Virginia Tech Foundation** helps the university achieve its goals and may be a valuable partner in implementing the CAC:
 - As owner of most of the **leased academic space** off campus, the Foundation has already agreed to provide funding for an energy efficiency retrofit pilot project in Corporate Research Center buildings on a revenue neutral basis
 - **Campus solar development** provides another opportunity for Foundation investment with appropriate return on that investment
- **Additional sources of funds** to implement the CAC include, federal and state grants, research funding in connection with the Living Laboratory, advancement donations, philanthropic organizations and foundations, and low interest revenue bonds by VTES and Auxiliaries.
- In addition to project funding, implementation of the CAC will require **upgrading the staff** to rise to the needs of the commitment, especially in energy management, energy and utility systems, building analysis and design, waste management, university compost facility operation, and campus sustainability

Goal 15. Develop Pathways After 2030 to Eliminate Fossil Fuels and Offsets by 2050

Potential Pathways:

- A long-term **Utilities Master Plan** should fully incorporate the goals of this Climate Action Commitment
- It is difficult to anticipate how technology, the economy, and public policy will evolve in the next 10-30 years, necessitating revisions along the way:
 - **2025: 5-year CAC revision** review explore options for 2030-2040 timeframe
 - **2030: 5-year CAC revision** review explore options for 2040-2050 timeframe
- Beginning with the CAC 2025 revision, develop a **plan for full transition to renewable energy for campus heating systems**. To promote zero emissions energy options in the plan, such as green hydrogen, hot water heating with geothermal heat pumps, refine GHG inventory estimates of methane leakage from VT natural gas sources and include those **estimates of methane leakage in the carbon neutral goal for 2035**.

ES.4 Implementation Milestones

The 15 goals and pathways include many target dates for actions or achievement as part of their implementation. They are summarized in the table below, with date, relevant goal number and action milestone.

VT 2020 CAC Implementation Milestones

Date	Goal	Milestone
2020	2	30% Renewable Electricity
		BOV approves VT 2020 CAC
2021	13	E&SC renamed Climate Action, Sustainability & Energy (CASE) Committee
	11	Operation plan for Climate Action Living Laboratory (CALL)
	5	Candidate identified for Zero-Net-Energy new building to be built by 2026
	3,4	1st year of 10-year 2021-2030 Energy Management Plan
	2	Fishburn Forest student-led wind assessment
2022	2	2.3 MW solar PV on VT rooftop and land
	2	VTES Solarize program for Town customers, 250 kW net metered
	4	Electricity use 10% below 2006 (Governor's E.O. 43)
	5	Newly initiated buildings EUI 20% below 2020 existing average
	8	Sustainable Procurement Policy v.2
2023	14	VT Foundation energy efficiency plan for leased buildings (CRC)
	2	VTES Community Solar project for Town customers 0.5-1 MW
2024	3	Chiller Phase II Upgrade complete
2025	3	Total conversion to natural gas in steam plant; plan for transition to renewable fuel
	15	5-year CAC update: Explore options for 2030-2040
	7	Recycling rate 55%; Waste diversion rate 85%; reduce trash to landfill/capita by 25%
	9	Reduce Single-occupancy-vehicle commuting by 20%
	2	10 MW solar PV on VT lands
	3	Explore geothermal heat pump hot water heating options for new districts
2026	5	Signature Zero-Net-Energy (ZNE) building on campus
2027	2	10 MW battery storage for VT Smart Grid research by VT PEC-VTES partnership
	2	35 MW solar PPA with Apco/3rd party
2028	5	Newly initiated buildings EUI 40% below 2020 existing average
2029	2	100 MW solar PPA with Apco/3rd party
2030	15	5-year CAC update: Explore options for 2040-2050
	1	Carbon neutral campus operations
	2	100% Renewable Electricity
	4	Total building energy use down 10%, EUI down 20% below 2020
	5	Newly initiated buildings carbon neutral operations
	6	Carbon neutral agriculture/forestry operations
	7	Zero Waste campus
	9	Transportation emissions reduced 40% from 2020
2050	15	Fossil fuel free campus

ES.5 Costs and Benefits of VT 2020 CAC Goals and Pathways

The Working Group assessed the impacts of the 2020 VT CAC goals and pathways including GHG emissions, fiscal costs and benefits, and implications for Virginia Tech's educational mission, operations, policies and governance, and culture. These implications are far-reaching and are presented in chapter 3.

Major benefits are reduction of GHG and enhanced university reputation, culture, and educational programs linked to campus climate action and sustainability. To implement the CAC goals, there will be costs and benefits for the university:

- Some initiatives (e.g., upgrades to the steam plant) are part of the cost of doing business, and the added costs to incorporate climate action goals may be small.
- Others, such as energy efficiency retrofits, have a positive return on investment.
- Others, including solar electric projects, will require major investment; however, creative power purchase agreements can reduce capital cost and achieve cost-effective results.
- Finally, some projects (e.g., the proposed University Compost Facility at Kentland) require capital and operating expenditures but provide substantial operational and educational benefits

Effective CAC implementation will require changes in operations and governance. Goal 13 recommends establishing a University Office for Climate Action & Sustainability (OCAS) directed by a Chief Climate Action & Sustainability Officer that reports jointly to the Senior Vice President and Chief Business Officer and the Executive Vice President and Provost. These arrangements are described in chapter 4.

ES.6 Immediate Near-Term Initiatives (2020-2022)

Although the 2020 VT Climate Action Commitment focuses on 2030 as the target date for its goals, the pathway to those goals begins the day the CAC is officially adopted by the University, if not before. The Working Group has identified a number of initiatives and projects that can and should be acted on in the short term from now until 2022 with full understanding of the current budget constraints of the university. The “shovel ready” initiatives aim to get a jump start on necessary action and to demonstrate the university's commitment. They are listed below sorted by (a) low-cost/no-cost/revenue-neutral initiatives, (b) ongoing and budgeted projects, and (c) new priorities in need of funding and/or approval. These initiatives are described in chapter 9.

a. Low/no cost/revenue neutral project/policy/planning initiatives

- Establish framework for Climate Action Living Laboratory (CALL) through Provost's Office, College Deans, and Facilities Department
- Restructure the Energy & Sustainability Committee to oversee 2020 VT CAC, renaming it the Climate Action, Sustainability, and Energy (CASE) Committee
- Establish an alternative mobility subcommittee of the Transportation and Parking Committee
- Develop plan for steam plant resilience/redundancy for total conversion to natural gas by 2025
- Develop Utility Master Plan
- Develop Campus Energy Dashboard

- Initiate Student Project for Fishburn Wind Energy Assessment
- Promote partnership between Virginia Tech Electric Service and the VT Power and Energy Center as part of Climate Action Living Laboratory
- Initiate partnership with APCO on renewable electricity development
- Initiate community relations with VTES Town customers
- Identify candidates for a zero net energy building on campus and develop fundraising plan
- Engage VT Foundation in energy efficiency retrofit plan for leased buildings
- Adopt Campus Tree Policy
- Seek external funding for agrivoltaics test array at Catawba Sustainability Center
- Implement and evaluate Sustainable Procurement Policy

b. Ongoing budgeted projects

- Implement ongoing steam plant and chiller upgrade projects
- Evaluate new natural gas contract on implications for CAC goals and pathways
- 2020 RECs for 30% renewable electricity, continue through 2022 as needed
- Implement Design & Construction Standards in light of CAC Goals
- Fill the VT Energy Manager Position and supplement staff as needed
- Implement budgeted projects in Parking & Transportation Plan

c. New priority projects in need of funding/approval

- Establish the University Office of Climate Action & Sustainability (OCAS) and appoint a university Chief Climate Action & Sustainability Officer (CCASO)
- Develop University Compost Facility at Kentland
- Initiate 10-year energy management plan, 2021-2030, and develop first year projects
- Develop solar projects on campus: 2.3 MW by 2022: Sterrett and other rooftop projects
- Implement Zero-waste management consultant study
- Implement a Green Lab Program
- Dedicate consistent, annual funds to maintain existing trails, sidewalks, bicycle infrastructure
- Implement transportation infrastructure plans (e.g., MMTF)

ES.6 Community Engagement

Engaging the university community in the CAC update was part of our charge and a critical part of our effort. The process overall--with its robust network of subcommittees--may be considered a true ‘collaborative’ enterprise, with over 120 students, staff, faculty, and community members involved. In terms of wider outreach, the Engagement Subcommittee originally planned on holding a major half-day town hall event on campus. Unfortunately, COVID-19 made that impossible. The group responded by deploying a range of ‘physically distanced’ engagement activities:

- Dedicated website portal introducing the CAC process and sharing committee materials
<https://svpoa.vt.edu/index/VTACACRevision.html>
- Dedicated email address for the initiative
- A series of 10 videos sharing progress of the Working Group and the subcommittees
- A survey distributed widely throughout the community with 242 respondents
- A series of 12 hour-long Zoom “convenings,” attended by at least 226 participants

Each of these streams of engagement is detailed in Chapter 5, and insights and information collected through them is summarized. **Key findings from these various engagement efforts include:**

- The vast majority of participants/respondents believe that **climate change is a serious threat**, and thus support aggressive action on the part of the university. In fact, many feel that VT is not doing enough
- The importance of **setting ambitious goals and sticking to them** was emphasized
- Emphasis was placed on **systemic or “upstream” solutions** rather than placing the onus on behavior change of individuals, given that many of the barriers to action are infrastructural and institutional (e.g., poor cycling infrastructure)
- The above notwithstanding, many did see **individual actions as important** and needing of attention. Creative ideas emerged around how to, for example, ‘gamify’ desired actions
- **Key champions** are important for propelling further action, including potentially a higher-level champion within university administration. This may be partnered with a **stronger Office of Sustainability**
- There is strong support for taking a more holistic view of **understanding our greenhouse gas emissions**, accounting for emissions associated with community behaviors like commuting
- There is **broad support for key actions proposed** through the CAC update process, including:
 - A shift to **carbon neutrality and 100% renewable energy, including** integrating renewable energy infrastructure into campus design
 - **Alternative transportation** and reductions in private automobile usage, including a ban on freshmen car parking permits
 - **Improved waste management**, including a new compost facility, and reductions at the source through purchasing decisions that minimize waste and promote sustainability
 - The creation of a **‘living laboratory’** to foster partnerships between campus operations, local partners, and the academic (teaching and research) enterprise.
 - A **‘green lab’ system**, and similar programs to promote sustainable behaviors within work and student life spaces
 - Optimize **building design**, including with energy, water, and waste monitoring
 - The need to account for **climate justice** in any and all actions taken
 - **Stronger partnerships** with other institutions, including the Town of Blacksburg
 - There is a strong desire to see **engagement continue as the university shifts to implementation**

ES.8 Comparison with Peer Universities

One of the Working Group’s deliverables is a comparison of Virginia Tech progress in climate action to peer universities, and this is presented in chapter 8. There are three good reasons for this:

1. To offer an evaluative reference point (i.e., to see how we are doing),
2. To adopt effective plans and avoid ineffective ones (i.e., to borrow good ideas), and
3. To demonstrate that what we’re proposing is feasible and in line with similar universities (i.e., to show it is not far-fetched to have a bold and aggressive climate action plan)

Knowing that our perspective is comprehensive and that other universities have different strengths in different areas, we decided to have our specialty subcommittees select the peer and exemplary universities to assess in their specialty area. Those areas include:

- Carbon neutrality and GHG inventory
- Renewable Energy
- Buildings
- Energy Systems
- Transportation
- Waste-Recycling-Composting
- Agriculture, Forestry, Land Use
- Climate Justice
- Community Engagement
- Budget and Finance

In most areas we selected 3-8 universities that we consider to be peers or to be exemplary in that area. Some are from Virginia, some are Land Grants, some are from the Atlantic Coast Conference, some are far away, but all offer good examples and benchmark our progress to-date and our aspirations for our 2020 Climate Action Commitment.

All in all, our peer reviews told us that, while our 2009 Climate Action Commitment was right for its time and has led to improved energy efficiency and reductions in GHG emissions, it now lags behind the actions of many of our peers. This deficiency is most notable in the quest for carbon neutrality, for renewable energy, for zero waste, for zero-net-energy buildings, for alternative transportation, and for community engagement to advance climate action and sustainable behavior.

Many of our related programs do standup well in comparison to others, but if Virginia Tech is to regain its leadership role in climate action and sustainability, we need to move to a new Climate Action Commitment that is right for *this* time. Of course, that is what we have set out to do, and we believe that we have found the right balance of aggressive, yet pragmatic, climate action. Our goals are for carbon neutrality by 2030, 100% renewable electricity by 2030, investment in energy efficiency in existing and new buildings, carbon neutral agriculture, a zero-waste campus, sustainable procurement practices, sustainable mobility, climate justice as a core value, community engagement, and the establishment of a Climate Action Living Laboratory that will integrate these goals into the fabric of the university.

Relative to the peer and exemplary universities reviewed in this analysis, this 2020 VT Climate Action Commitment sets the stage for Virginia Tech to shine as an exemplar and leader in university climate action. Beyond our climate neutrality and zero-waste campus goals, **six areas of the 2020 CAC stand Virginia Tech above the rest:**

1. The detail and **specificity of the pathways** developed to achieve the CAC goals
2. Our own **unique utility VTES** leading our way to 100% renewable electricity, while most other universities are totally dependent on private utilities and companies
3. Using our considerable **land resources** not only to manage our agricultural climate impacts, but also to sequester carbon and develop renewable energy
4. Incorporating in our carbon neutral goal **scope 3 GHG emissions relating to behavior** (e.g., commuting, waste/recycling, water/wastewater, business travel), while most others include just scope 1 & 2
5. Integrating our physical climate action into the **university's educational mission** through the Climate Action Living Laboratory (CALL).
6. Specifically addressing **community engagement, sustainable behaviors, and social equity and justice** as core elements of our climate action.

1. Introduction

1.1 Seize the Moment

From January to June 2020, the Virginia Tech **Climate Action Commitment Working Group** executed its charge to evaluate the university's current position and our future role in addressing climate change. During this same period, a global pandemic has brought unprecedented hardship and suffering, particularly for the most vulnerable among us. Yet, this unique time is engendering a tremendous spirit of innovation and collaboration. Around the world, people are coming together to address historic challenges. We are becoming bolder and more creative. And we are reimagining every aspect of our lives.

In this public health crisis, we are learning an important lesson: when experts testify to looming crises, when science speaks, society must take decisive action. People are learning to trust science and use it to guide action, shape responses, and inform policy-making. It has also exposed critical and uneven vulnerabilities in our economy and society, raising calls for recovery efforts to redress inequities. Similarly, our actions to combat climate change and strengthen our community's resilience must be guided by a just and equitable transition to sustainable new strategies, policies and practices. As a new world dawns, we must bounce "forward," not "back," to seize the hope and promise of this moment.

One such promise is the prospect of working together, creatively, urgently, and with care, to address pressing challenges. Climate change is a slow-growing emergency compared to the lightning strike of Covid-19, but it will be more painful and longer lasting. This moment of pause gives governments, businesses, communities, and universities the opportunity to evaluate their current positions and future roles. While the individual actions of any single institution may seem insignificant for the magnitude of the problem, the world cannot be saved without their collective action.

The Working Group of 26 faculty, students, staff, and community members was established by President Tim Sands and Senior Vice President Dwayne Pinkney because, as they said, "climate change presents one of the world's most pressing problems...and Virginia Tech has a duty to respond." Virginia Tech, like other universities, is facing both short-term fiscal challenges and long-term uncertainties in these challenging and tumultuous times. Nonetheless, the university remains committed to taking bold action to do its part to address the climate emergency. The Group was charged to assess the university's progress in implementing the 2009/2013 VT Climate Action Commitment, compare our experience to peer institutions, and develop our new Commitment.

Our work focused on the smart ways the university can advance genuine climate action. Furthermore, through the multitude of working group, subcommittee, and community zoom meetings, our discussion has also reflected on the opportunity for Virginia Tech to reinvent itself, not only in its commitment to climate action, but also in its responsiveness to the needs of the world around us, in the spirit of *Ut Prosim*.

Universities play important roles in the U.S. and around the world. They aim to create innovative, sustainable, inclusive, and just communities as models for the future. They are societies' laboratories of change. Virginia Tech is not alone in this quest. We already lead our peer universities in some respects, but we have fallen behind in many others. Our 2009 VT Climate Action Commitment & Sustainability Plan was a leading effort for its time, but a decade later it falls short of both necessary action and the recent initiatives of many peer universities.

This recommended 2020 Climate Action Commitment is bold, aggressive, and comprehensive. Its goals are many and range from necessary upgrades to the campus physical plant to reduce GHG emissions, to integrating these improvements into the educational mission through a Climate Action Living Laboratory, to engaging everyone in creating a culture of sustainability—all to position Virginia Tech as a leader, as the Commonwealth and the world evolve to the clean energy economy.

1.2 The Charge to the Climate Action Commitment Working Group

During fall semester 2019, Virginia Tech students involved in Climate Strikes met with President Tim Sands with a series of climate action demands. The Faculty and Staff Senates, SGA, and GSA all passed resolutions calling for climate action (see Appendix B). In November 2019, President Sands issued a statement that Virginia Tech has a duty to respond to the pressing problem of climate change. He called on Senior Vice President Dwayne Pinkney to establish a working group of faculty, students, and staff to develop a new Climate Action Commitment, revising the original commitment endorsed by the Board of Visitors in 2009 and updated in 2013.

In December 2019, Dr. Pinkney formed the Climate Action Commitment (CAC) Working Group of ten faculty, ten students, and six staff and community representatives, and charged the Group to develop two deliverables:

- a. A summary of the university's progress on sustainability since the original 2009/2013 CAC
- b. A proposed revision to the CAC

The summary of progress was to outline the structure, partnerships, and arrangements developed to address sustainability; include high-level data summarizing progress; and compare our achievements to peer institutions. The revised CAC should consider updates to vision, mission and definitions; outline clear, measurable, and realistic goals; consider long-term impact of goals on university policies, operations, and budget; identify metrics and elements for determining progress meeting the goals; and follow university format (see charge letter in Appendix B).

President Sands requested the Group complete its work by May so governance approvals can occur during fall 2020. The charge to the committee asked for an Interim Report by March 1 and the final reports by May 7, 2020. The Interim Report was delivered in March. However, the Covid-19 pandemic shutdown delayed the final reports until the end of June. We are pleased to herewith submit the final report and look forward to thoughtful deliberation as it passes through governance and is ultimately implemented.

1.3 VT CAC Working Group Process

The Working Group could not convene until the start of spring semester (January 21st, 2020). Because of the short timeline, the Group was very busy. In order to engage a broad range of expertise and perspectives from the university community, the Group established 12 subcommittees that involved over 130 faculty, students, and staff members in the investigation and discussion of specific issues relevant to the Commitment. The membership of the Working Group and the subcommittees as well as the executive summaries of the 12 subcommittee reports are provided in the Appendices. Most of the subcommittees met weekly from February through May. The subcommittees include:

- Agriculture, Forestry, Land Use GHG
- Budget and Finance
- Buildings Opportunities
- Climate Justice
- Community Engagement
- Energy Opportunities
- Greenhouse Gas Inventory
- Peer Institutions Comparison
- Renewables Opportunities
- Structuring Sustainable Choices
- Transportation Opportunities
- Waste-Recycling-Composting and Procurement

The subcommittees provided an opportunity to involve a wide range of university stakeholders in the process. They have brought expertise and knowledge necessary to analyze the opportunities and constraints involved in our needed climate action. In addition, these many subcommittee members broadened the campus participation in our effort and with that, broader support for our results. Among the participants were 35 staff members who provided needed data and reality checks. Each subcommittee prepared its own report for the Working Group; these subcommittee reports are provided in Volume II to this report.

In addition to the subcommittees, the Working Group, through its Community Engagement Subcommittee, developed several mechanisms for communication and involvement in the process. The Group used a website and email address for comment and two online surveys. Plans for face-to-face town hall meetings and conference sessions had to be abandoned when the university shut down after spring break. In response, the Group hosted 12 Zoom Convening sessions in April that involved 226 participants and provided excellent feedback. In anticipation of the Convening sessions the Group and its subcommittees developed ten creative videos that described the CAC recommendations. See website:

<https://svpoa.vt.edu/index/VTCACRevision.html>

1.4 Roadmap to the 2020 VT CAC Working Group Report

This report is divided into two main parts with a total of eight chapters and two appendices:

Part I: The Virginia Tech 2020 Climate Action Commitment

- *Chapter 2* presents the 2020 Virginia Tech Climate Action Commitment including goals and detailed pathways to achieve them.
- *Chapter 3* explores a range of implications of the 2020 CAC for Virginia Tech including impacts on GHG emissions, budget and finance, operations and staffing, the educational mission, policies and governance, and university culture.
- *Chapter 4* discusses implementation of the CAC including major changes in operations and governance, staffing, procedures for annual GHG inventories, engaging the campus community, an annual review report of progress, and a five-year cycle for updating the CAC.
- *Chapter 5* focuses on the process and results of our community engagement process

Part II: Progress Implementing the 2009 VT CAC and Comparison to Peers

- *Chapters 6 and 7* provide a summary of progress we have made in the eleven years since the 2009 Climate Action Commitment was adopted as well as a critique of that progress.
- *Chapter 8* reviews related experience at peer and exemplary universities to see how we stand, steal good ideas, and show that we are not far-fetched with our recommendations.
- *Chapter 9* provides a short conclusion and describes a couple dozen initiatives, policies, and projects that are “shovel ready” for immediate action from now to 2022.

Appendix A provides information on the Working Group, its charge, its subcommittees, Climate Strike student demands, and the Faculty Senate climate action resolution.

Appendix B provides the executive summaries of the 12 subcommittees’ reports.

The full subcommittee reports are given in the separate Volume II report of the Working Group. In addition, a series of slide decks presenting most of the Working Group’s results is available on-line.

2. Virginia Tech 2020 Climate Action Commitment

2.1 Factors, Criteria, and Process for Developing Goals and Pathways

2.1.1 Factors Determining Effective Implementation of VT 2020 Climate Action Commitment

Before considering elements of the VT 2020 Climate Action Commitment, it must be noted that several factors will affect the potential achievement and beneficial consequences of the CAC. Implementation depends on internal commitments and external influences. Successful achievement must consider implications for students, faculty and staff and community.

Among **internal commitments** are those of the VT administration, staff, faculty, students, alumni, and donors. Their commitment will determine the university's sustainability culture and advocacy, including voices for change as well as behavior that affects sustainability choices. To a major extent the achievement of CAC goals will depend on financial investment from diverse sources including E&G and auxiliary funds, VT Foundation investments, external grants, and private donors. The university community has many funding priorities, especially as it recovers from Covid-19, and the climate commitment must compete with other needs including safety and security, academic excellence, quality student experience, affordable tuition and fees, and competitive faculty salaries.

Among **external influences**, state policy and funding, utility providers' climate commitments, terms and conditions of utility contracts, as well as federal and international climate commitments will all affect the context in which VT operates. Already 2020 state Governor and General Assembly action is providing mandates and goals that will facilitate VT's 2020 Climate Action Commitment.

The climate commitment and its implementation must consider not only GHG reduction and cost-effectiveness, but also benefits for VT's educational mission, culture, and reputation. Moreover, climate actions need to consider **social equity implications** for students, employees, and the larger community. These implications involve sources of energy; upstream and downstream social impacts; student fees; staff wages; affordable options for housing, transportation, and utilities; among others.

2.1.2 Process and Criteria for Developing and Evaluating Climate Action Goals

The Climate Action goals and pathways presented in this chapter are the heart of the matter. They were developed through a process of deliberation in each subcommittee and within the Working Group. A set of preliminary goals and pathways was developed for the Interim Report. They underwent revision through weekly subcommittee discussions and were presented in the 12 Zoom public convening sessions. Based on public comments, the goals and pathways were finalized in the subcommittee reports in summary form (presented in the Executive Summary) and in expanded form (presented below). The process of assessment was generally based on the following set of criteria:

- Relative **contribution expected to reduce greenhouse gas emissions and achieve reduction goals**, and to achieve complementary sustainability objectives.
- Context of VT's mission as a leading institution in education, research and outreach.
- **Resource efficiency** or 'bang for the buck', acknowledging that we seek to achieve as much as possible in a resource constrained environment.
- **Ease of implementation**, given legal, institutional, political, and other constraints.
- **Palatability to the VT community** with the goal of fostering broad support for actions to ease implementation and minimize barriers.
- Wider societal **social justice** implications (positive and negative) associated with adoption and implementation.

2.2 Virginia Tech 2020 Climate Action Commitment

2.2.1 Climate Action Commitment Vision and Mission

Vision of the Virginia Tech 2020 Climate Action Commitment:

In the spirit of Ut Prosim, Virginia Tech will be a leader in climate action in service to our community, the Commonwealth, and the world.

Mission of the Virginia Tech 2020 Climate Action Commitment:

President Tim Sands: “climate change presents one of the world’s most pressing problems...and Virginia Tech has a duty to respond.”

The mission of the Virginia Tech 2020 Climate Action Commitment is to achieve carbon neutrality by changing our physical infrastructure, collective and individual behaviors, and educational mission; to engage everyone in creating a culture of sustainability; and to achieve these objectives through just and equitable means.

2.2.2 Virginia Tech 2020 CAC Expanded Goals and Pathways

The Executive Summary presented summary goals and pathways. This section provides more detailed information on the CAC goals and potential pathways to achieve them.

The 15 primary CAC goals:

1. Carbon neutral Virginia Tech campus by 2030
2. 100% renewable electricity by 2030
3. Complete the total conversion of steam plant fuel to natural gas by 2025, plan for a full transition to renewable steam plant fuel after 2025, and continue to improve the efficiency of campus energy systems
4. Reduce building energy consumption to enable carbon neutrality by 2030
5. Operations of new buildings initiated by 2030 will be carbon neutral
6. Agricultural, forestry, and land use operations will be carbon neutral by 2030
7. Virginia Tech to become a Zero-Waste Campus by 2030
8. Establish the Sustainable Procurement Policy and Procedures by 2022
9. Reduce single-occupancy-vehicle commuting to campus by 20% by 2025 and reduce transportation-related GHG emissions by 40% by 2030
10. Integrate the CAC into Virginia Tech’s educational mission through the Climate Action Living Laboratory beginning in 2021
11. Establish climate justice as a core value of the VT Climate Action Commitment
12. Diminish barriers to sustainable behaviors through institutional change, education and social marketing
13. Implement the VT Climate Action Commitment at a high level of university administration and governance, by integrating goals for facilities, education, and campus culture, and with stakeholder engagement for evaluation of goals and progress
14. Develop innovative budgeting and financing mechanisms to generate funding and staffing to achieve Climate Action Commitment goals
15. Develop Pathways after 2030 to eliminate fossil fuels and carbon offsets by 2050

Expanded Goals and Pathways

The Working Group and subcommittees devoted significant attention to deliberating around not just what the updated CAC goals should be, but how they can be implemented in practice. This section further expands upon the goals outlined above and provides potential *pathways*.

Goal 1: Carbon Neutral Virginia Tech Campus by 2030

Carbon neutral is defined as net-zero emissions of CO₂, CH₄, and N₂O by VT operations on the Blacksburg campus based on the geographic and GHG scope of the 2020 CAC update.

The **geographic scope** includes all Virginia Tech owned lands and buildings on the main campus, buildings leased by university departments in Blacksburg, and agricultural/forestry operations and lands in the Blacksburg region.

The **GHG scope** includes:

- *Scope 1* emissions from campus fuel use and fugitive sources,
- *Scope 2* emissions related to purchased electricity (generation CO₂ and N₂O, transmission/distribution losses), and
- Some *Scope 3* emissions related to campus behavior (commuter driving, transit bus fuel, waste/recycling/compost, water/wastewater, aviation fuel, and commercial business travel).

Other GHG Scope 3 emissions are not included in 2030 carbon neutral goal, but will be monitored as part of the annual GHG inventory. These include estimates of upstream leakage from natural gas extraction/distribution, upstream emissions from the production/ transport of dining hall food, and possibly other sources. By 2025, reduction targets will be established for these emissions as data sources are improved.

Emissions from other Virginia Tech locations across the state and in other countries are not included in the 2030 carbon neutral goal. By 2025, GHG inventory methods for the 2020 VT CAC should be applied to other VT operations in the Commonwealth, and each should establish GHG reduction targets, goals and pathways.

Potential Pathways:

1a. Goal 2—100% renewable electricity by 2030—can reduce emissions by 50% below 2019

1b. Goal 3—in the steam plant total conversion to natural gas use by 2025 and transition to some renewable fuel by 2030—can reduce GHG by at least 10% below 2019

1c. Goals 4 & 5—reduction of energy use in existing and new buildings—can result in further emissions reductions of 10% despite campus growth.

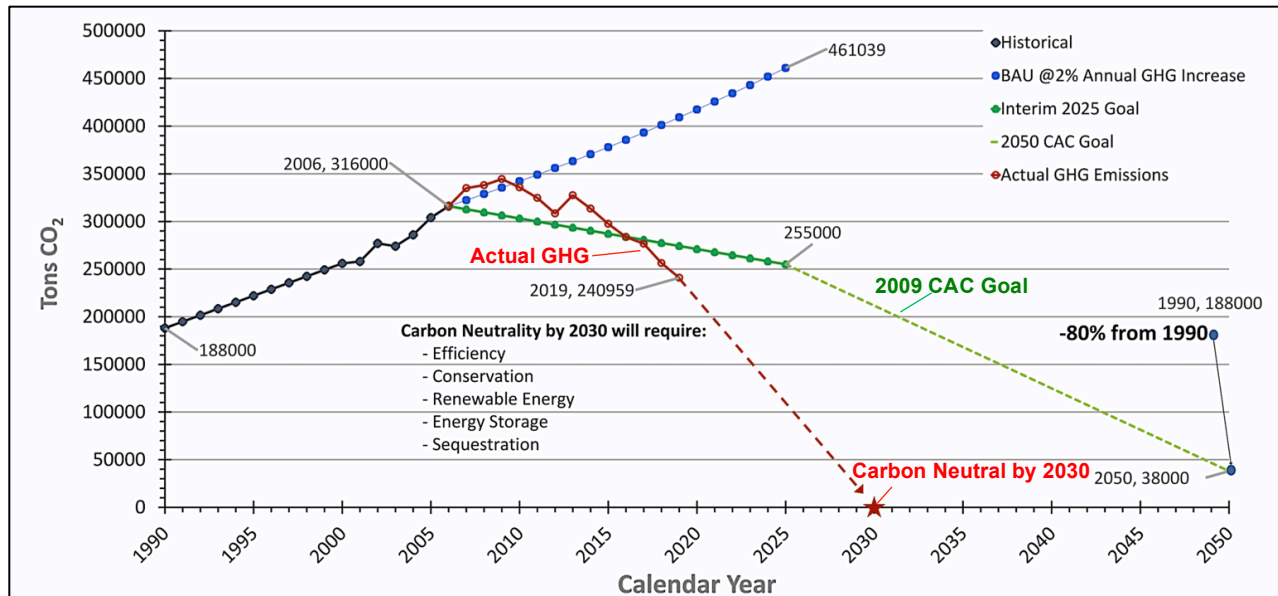
1d. Goals 6, 7, & 8— reductions in GHG emissions from waste/recycling, transportation, and agriculture, forestry, and land use—can reduce emissions by 10%.

1e. In 2030, remaining emissions can be negated by carbon offsets.

- Most universities use carbon offsets to reduce their GHG emissions and approach carbon neutrality.
- Purchase of carbon offsets can be costly. Current offset prices are \$5-12/MT (metric ton) CO₂e. Carbon offsets to cover 2020 VT CAC GHG emissions of about 300,000 MT would be \$1.5-3.6 million.

- There are better uses for this money, so every effort should be made to avoid the need for offsets by investing in energy efficiency and renewable energy. This investment not only reduces emissions and the need for offsets, but also provides long-term financial benefits.

Figure 2.1. Carbon Neutral by 2030. 2009 CAC GHG reduction goal (green line); actual GHG reduction progress (solid red line); needed reduction for carbon neutral by 2030 (dashed red line)



Goal 2: 100% Renewable Electricity by 2030

Virginia Tech is in the unique position of having its own electric utility - Virginia Tech Electric Service (VTES) - which dates back to the 1890s when it made Blacksburg the first town in SWVA with electric power, and the steam and power plant became the instructional tools for electrical and mechanical engineering departments.

Virginia Tech can achieve 100% renewable electricity through a combination of:

- Solar energy projects on campus building rooftops and VT lands. These can be VT owned or 3rd party owned with a VT power purchase agreement.
- Power purchase agreements (PPA) with utility or 3rd party-owned projects in Southwest Virginia
- Other PPAs or virtual PPAs.
- Appalachian Power increasing renewable portfolio, which is now 10% and by new state law must be 14% by 2025 and 30% by 2030.
- Renewable energy certificates (RECs) or purchased MWh credits from utility or 3rd parties.

Achieving 100% renewable electricity by 2030 assumes 60% VT owned or purchased renewable generation, plus 30% APCO renewable portfolio and 10% RECs to cover steam plant cogeneration. 60% generation requires 145 MW of solar capacity to serve campus (95 MW) and town customers (50 MW).

The pathways assume a combination of solar on VT buildings and land (15 MW), 3rd party owned PPA, and APCO owned SWVA PPA capacity (130 MW), for total 15 MW+130 MW = 145 MW. Capital costs of VT owned solar systems are assumed to be \$2/W for <0.5 MW projects and \$1.50/W for >1MW projects.

- Total capital cost for 15 MW on VT buildings/lands would be about \$25-30 million.
- Total capital cost for 145 MW would be over \$200 million.
- Best PPA contract rates on the market are 20-year, non-escalating ~7¢/kWh.

While utility/3rd party PPAs are assumed to be the preferred approach for off campus solar projects, on-campus projects can be either VT-owned or utility/3rd party owned with PPAs.

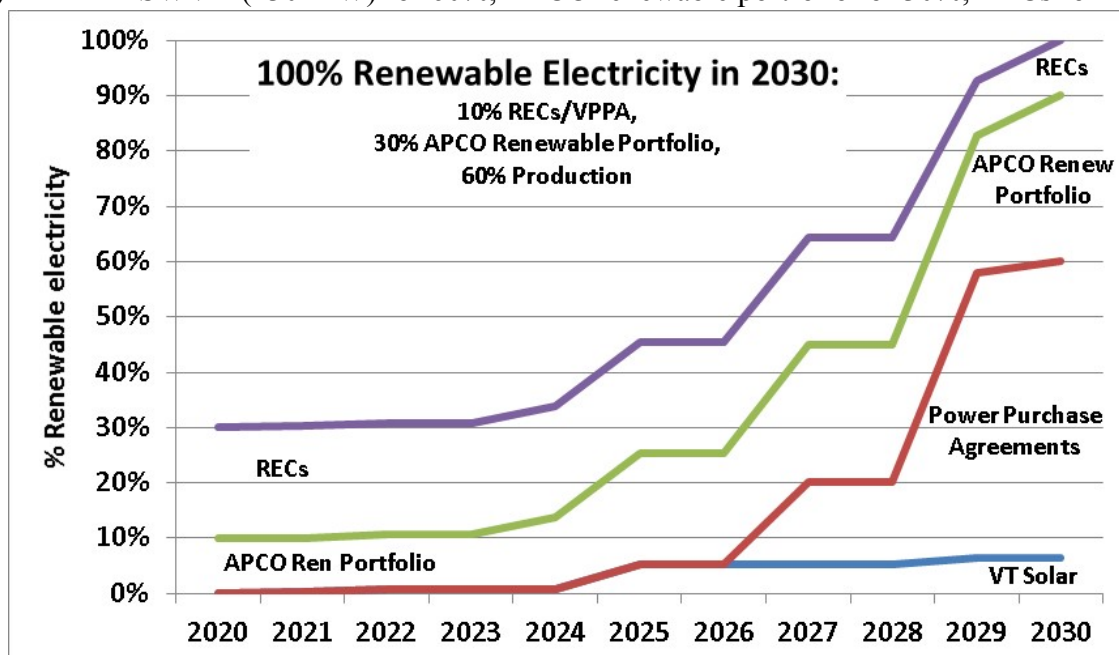
- The advantages of VT owned and managed renewable systems are greater control and possible greater long-term financial return; and disadvantages are high initial capital investment and ongoing operation/maintenance/decommissioning requirements.
- The advantages of PPAs are little or no initial capital costs and no operation/maintenance cost; and disadvantages are potentially higher electricity costs and less operational control.

Potential pathways (including timelines and different options):

- 2a. 2020:** achieve 30% renewable electricity via purchase 20% renewable energy certificates (RECs) from APCO + APCO 10% renewable portfolio
- 2b. 2020-22:** 2.35 MW on VT bldgs/land including “showcase” solar array perhaps on Old Southgate
- Option 1: VT finance and own: 2.3 MW @ \$2/W=\$4.6 million
 - Option 2: 3rd party PPA: no upfront cost, pay per kWh; 25-year contract, 5 year buyback option
 - Option 3: Sterrett 0.33 MW and 2nd building 0.67 MW through 3rd party PPA, learn from experience then VT finance and own remaining 1.3 MW (\$2.6 million)
- 2c. Beginning 2021:** Incorporate campus and region VT renewable electricity development by Virginia Tech Electric Service (VTES) into VT educational mission through **Climate Action Living Laboratory** with faculty, student, and staff instructional, research, and outreach opportunities.
- 2d. 2021:** assess VT Fishburn Forest atop Price Mountain and other sites for cost-effective wind energy; engage students/faculty and partner with JMU to conduct a wind study.
- 2e. 2022-27:** Continue to work with APCo to be a primary customer of their renewable capacity as they develop it to meet state requirements. APCO just completed an RfP solicitation for 250 MW of renewables in March and as this capacity is developed, VTES could contract for the output. Under the Virginia Clean Economy Act, APCO is required to achieve a 14% renewable portfolio by 2025, 20% by 2027, 30% by 2030, 65% by 2049, and 100% by 2050.
- 2f. 2022:** VTES Solarize program to add 0.25 MW net-metered solar for town customers, doubling VTES current distributed capacity. Customers cover cost but VTES could facilitate/incentivize customers. RECs owned by customer, but VTES could buy their RECs.
- 2g. 2023:** 0.5-1.0 MW community solar for VTES customers, possibly located on airport land off of Hubbard Dr. VTES would own RECs.
- Customers buy shares in 100 kWh blocks for \$10/block (10¢/kWh) for 20 years.
 - Production 500 kW = 500 kW*1,314 kWh/yr/kW = 670,000 kWh/yr (6,700 shares)
 - Revenue = \$67,000/yr * 20 yr = \$1.34 million (present value = \$1 million, 20 yr, 3%)
 - Capital cost: 500 kW * \$2/W = \$1 million
- 2h. 2025:** add 10 MW solar capacity on campus and on VT land in region in cooperation with APCo (still within 2027 contract). Use solar installations at Kentland Farm and Catawba Sustainability Center to study “agrivoltaics,” or agricultural production on solar farms. 10 MW @ 6 ac/MW= 60 ac.

- Option 1: VT finance and own: 10 MW@ \$1.50/W = \$15 million
 - Option 2: 3rd party PPA: no upfront cost, pay per kWh; 25-year contract, 5 year buyback option
- 2i. By 2027** (APCO contract renewal date), 50% renewable electricity via campus and VT land capacity (12 MW), APCo power purchase agreements (PPA) in southwest Virginia (including reclaimed mine land) (35 MW), APCo renewable portfolio (20%), and virtual PPA (VPPA) and/or RECs (10%) (e.g., 20% production (47 MW)) + 20% APCo portfolio + 10% purchased PPA/VPPA/RECs)
- 2j. By 2027** or earlier, add 10 MW **energy storage** to campus renewable capacity and use VTES as a testbed and showcase for innovative **VT Smart Grid** reliability and resilience research through a partnership between VTES and the VT ECE Power & Energy Center (PEC) using shared SCADA data and in collaboration with APCo for research and testing in real-life scenarios.
- 2k. By 2029** add 100 MW solar capacity via campus and VT land capacity (+3 MW, total 15 MW) and PPA with APCo and/or 3rd party in southwest Virginia (+95 MW, total 130 MW).
- 2l. By 2030**, 100% renewable electricity with 60% renewable production (VT solar (15 MW) and APCo+3rd party PPA in southwest Virginia (130 MW), total 145 MW to serve campus (95 MW) and town customers (50 MW), 30% APCo renewable portfolio, and 10% VPPA and/or RECs
- 2m.** As with all components of this CAC, full **lifecycle analysis** should include the environmental and social justice costs and benefits of procured systems, including sources and decommissioning of photovoltaic systems, requiring end-of-life recycling.
- 2n. Siting** renewable energy systems should employ best practices of public engagement to identify most appropriate sites considering compatible uses and economic, environmental, social effects
- 2o.** VT should **work closely with VDMME** (Virginia Department of Mines, Minerals, and Energy) to take advantage of state grant programs and compliance for agencies and universities in response to the Governor's Executive Order 43 and 2020 legislation

Figure 2.2. 100% Renewable Electricity by 2030. Shows pathway to 2030 with VT Solar on Campus (15 MW) + PPA in SWVA (130 MW) for 60%, APCo renewable portfolio for 30%, RECs for 10%



Goal 3. Complete the total conversion of steam plant fuel to natural gas by 2025, plan for a full transition to renewable steam plant fuel after 2025, and continue to improve the efficiency of campus energy systems

The **2015 natural gas pipeline** enabled the steam plant to drop from 97% reliance on coal fuel in 2009 to 7% in 2019. With the addition of gas boiler #12, we will have the natural gas thermal capacity to meet all steam plant demand.

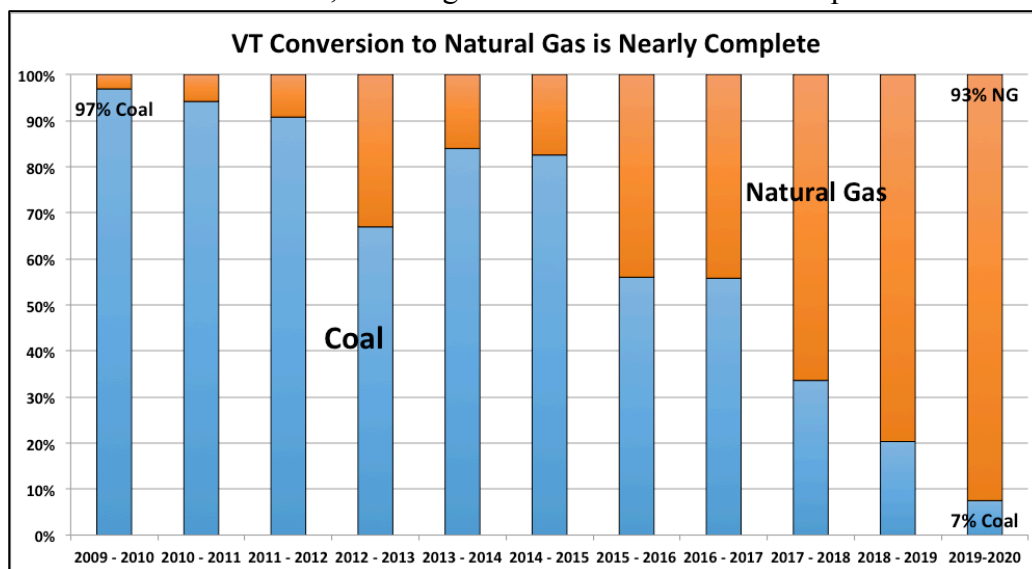
For reliability and resilience in total conversion to natural gas, the steam plant will need:

- **Backup fuel** (such as liquefied natural gas (LNG), biochar, or other fuel) when natural gas is unavailable or the market is tight, and
- **Boiler redundancy** (so-called “n+1”) in case of a boiler outage at a critical time. Converting a coal boiler to biochar or natural gas could provide this.
- Scheduled upgrades to the steam plant to provide resilience and reliability will incur necessary costs of doing business. Total conversion to natural gas reducing GHG emissions will be incorporated into those plans with limited increases in net costs.

VT’s **natural gas service contract** will be renewed summer 2020 and the new contract will determine the conditions and need for backup, price terms, and possibility of some renewable gas.

Figure 2-3. Total conversion to natural gas in steam plant is nearly complete

From 2009-10 to 2019-20, natural gas from 3% to 93% of steam plant fuel



Potential pathways:

3a. Improve chiller efficiency:

- By 2023 the Chiller Plant Phase II project will reduce 2020 central chiller energy usage by 20%.
- The ten-year 2021-30 Energy Management Plan will improve efficiency of stand-alone chillers
- Future campus growth needs for chilled water will be met from central plants where possible.

3b. By 2022, develop a plan for total conversion to natural gas while providing resilience

backup fuel in cold weather or interrupted natural gas supply. The backup fuel need will be affected by the terms of the 2020 natural gas contract. Options include:

- Liquefied natural gas (LNG) with storage at Old Southgate site where it can be tapped into the existing pipeline (cost ~\$1 million) or better yet at the steam plant if coal storage and baghouse emission control can be removed.

- Renewable fuels, such as biogas and biochar, which is currently being applied to institutional uses in Virginia and Maryland.
- 3c.** By 2022, develop a plan for **boiler n+1 resilience** backup, dependent on decision for back-up fuel
- 3d.** Continue to explore **options for renewable gas** from service provider's contract as a means to reduce natural gas emissions and/or offset natural gas electricity from the steam plant cogeneration
- 3e.** As part of the Climate Action Living Laboratory (CALL), engage faculty and students to develop an online **Energy Dashboard** for users to obtain and analyze energy use data for campus facilities
- 3f.** Beginning with the CAC 2025 update, develop a **plan for full transition to renewable energy for campus heating systems**. To promote zero emissions energy options in the plan, refine GHG inventory estimates of methane leakage from VT natural gas sources and include those **estimates of methane leakage in the carbon neutral goal for 2035**.
- Explore geothermal and ground source heat pump systems and other non-fossil-fuel options for heating new districts of campus.
 - New districts being considered on campus should evaluate hot water rather than steam heating systems. Understanding the extreme cost of extending steam tunnels, hot water systems sourced by the existing steam loop are already being explored for new districts.
 - Conversion of steam to hot water central heating systems is being considered at other universities and offers the prospect of efficient geothermal and ground source heat pump heating and cooling systems in conjunction with renewable electricity.

Goal 4. Reduce Building Energy Consumption to Enable Carbon Neutrality By 2030

- 4.1. By the end of 2022 reduce electricity consumption (kWh) by 10% and electricity intensity (kWh/gsf) by 20% below 2006 levels**
- This subgoal reflects the **Governor's E.O 43**, which requires that state agencies reduce their electricity consumption to 10% below 2006 levels by 2022.
 - From 2006 to 2019 the campus gross square feet (gsf) grew by 22% and electricity consumption grew by only 9% due to energy improvements, so electricity intensity (kWh/gsf) dropped by 14%
 - To achieve this subgoal electricity consumption needs to be reduced by 15% from 2019 by the end of 2022, which will be a challenge. We are on track to achieve the electricity intensity subgoal.
 - Means to achieve the 2022 subgoal include the current chiller upgrade (see Goal 3 pathway), this last year of the current 5-year energy plan, an aggressive start to the proposed 2021-30 energy plan, and energy conservation/demand response.
- 4.2. By 2030 employ energy management retrofit to reduce total energy consumption (Btu+kWh) in all buildings by 10% and EUI (Btu+kWh/gsf) by 20% below 2020.**
- **All buildings** include campus academic (E&G) buildings (5.36 million ft²), auxiliary buildings (e.g., dining and residence halls, athletics, 4.35 million ft²), and off-campus buildings leased for VT operations (CAC geographic footprint includes 47 leased properties, 1.45 million ft², 70% owned by VT Foundation).

- Energy efficiency retrofits in the **2015-2020 Energy Management Plan** have reduced energy use in academic buildings financed with E&G funds. Other means of financing are needed for energy retrofits in auxiliary buildings and leased buildings.

Potential pathways:

- 4a.** An **aggressive 2021-30 10-year energy management plan** updated annually can reduce total energy consumption in all buildings by 10% below 2020 levels. Auxiliary buildings need to be included, financed with internal funds or external energy performance contracting. Identified opportunities for 2021-30 energy management strategies include:
- Energy audits;
 - Retrofit lighting, equipment replacement;
 - Re-commissioning of lighting and mechanical systems;
 - Optimizing chilled water plants,
 - Studies and pilot projects for HVAC, lighting, and renewable energy; and
 - Electricity demand management.
- 4b.** For **buildings leased** for VT department use, special arrangements are needed to finance efficiency retrofits and reduce emissions. Most leased space is owned by the VT Foundation. The Foundation can invest in efficiency improvements in its buildings, and has indicated an interest in doing this on a revenue neutral basis, starting with a pilot program.
- 4c.** Building energy and GHG emissions can be reduced by **smart operations**, such as demand response, digital controls, thermostat settings, occupant behavior, and innovative space scheduling especially in summer.
- 4d.** As part of the **Climate Action Living Laboratory (CALL)**,
- Engage faculty and students to develop an on-line **Energy Dashboard** for users to obtain and analyze energy use data for campus facilities. Dashboard kiosks in high-traffic individual buildings can raise campus awareness of energy and GHG emissions.
 - By 2021, use a showcase and test-bed **Green Lab** to pilot a campus-wide Green Lab program to better design and manage research labs, our most energy-intensive buildings, with a goal of Green Lab certification of 80% of science and engineering labs by 2025.
- 4e.** In addition to project funding, achieving these goals will require sufficient **staffing in energy management**.

Goal 5. Operations of new buildings initiated by 2030 will be Carbon Neutral

5.1 New building efficiency will conform to the latest adopted LEED-Silver standards and ASHRAE 90.1 energy performance standards + 10%

- The 2009/13 VT CAC called for new buildings to achieve LEED-Silver standard and exceed ASHRAE 90.1 energy performance standard by 10%. Since 2009, both LEED and ASHRAE standards have been upgraded significantly and far exceed their 2009 levels of efficiency. ASHRAE 90.1-2019 standards produce 37% energy savings compared to their 2004 standards.
- **ASHRAE standards are upgraded every three years and LEED standards have aligned themselves closely to ASHRAE standards over the years.** To be even considered for LEED v.4-Silver buildings must exceed ASHRAE by 5%; and to achieve half of the available energy

points, it must exceed it by 22%. Since LEED-Silver can be achieved without exceeding ASHRAE by more than 5%, our goal is to continue exceeding ASHRAE by 10%.

- Following **accepted industry-standards**, such as ASHRAE and LEED, align efficiency goals with building design and construction contracting, and ultimately improves implementation.
- ASHRAE also develops and upgrades a “stretch” standard 189.1, including guidelines for high performance green buildings, which can be used to inform VT design guidelines.

5.2 By 2022, reduce total energy use intensity (EUI) in newly initiated buildings by 20% compared to 2020 existing buildings.

- This interim sub-goal is intended to be applied as a benchmark for new building stock rather than a design tool for individual buildings. It can help **jump-start new-building energy analysis** and improvements. It will likely be easy to achieve, but the analytical exercise will be useful for Facilities staff training.
- Each project should determine the design EUI and then evaluate the actual EUI over time using metered data.

5.3 By 2026, build a signature zero-net-energy (ZNE) building on campus as a showcase and learning model.

- A **zero-net-energy (ZNE) building** has high energy efficiency and reduced annual consumption that can be supplied (offset) with site-produced renewable energy. Such a building still uses some conventional energy but balances that consumption with on-site net-metered solar electricity generation on an annual basis.
- A ZNE building on campus can serve as a **showcase for Virginia Tech leadership** and as an **educational model** for the Climate Action Living Laboratory. Virginia Tech has received international recognition for its ZNE design innovation through Solar Decathlon competitions.

5.4. By 2028, newly initiated building efficiency improvements will reduce total energy use intensity (EUI) in new buildings by 40% compared to 2020 existing buildings

- Like subgoal 5.2 this is intended to be a benchmark for new building stock rather than a design tool. Following continually revised **ASHRAE 90.1 and LEED-Silver** building energy standards, efficiency improvements can bring down total energy intensity in new construction by 40% by 2030 while providing necessary building performance.
- Each project should determine the design EUI and then evaluate the actual EUI over time using metered data.

Potential pathways:

5a. Electricity currently contributes 50% of total CO₂ emissions. 100% renewable electricity by 2030 will reduce new building CO₂ emissions by 50%.

5b. In 2020, identify candidate new building projects/needs for a **showcase ZNE building** and begin fundraising to attract donors to help fund the project.

5c. By 2030, all newly initiated construction will be **carbon neutral** through 100% renewable electricity, reduced energy consumption, on-site solar energy production, and carbon offsets..

5d. Capital budgets need to reflect these goals and incorporate the value of life-cycle energy and GHG savings.

- 5e. Post-occupancy evaluation (POE)** should become standard practice to assess building operations to reduce energy & emissions, better serve users, and establish better thermal comfort set-points.
- 5f.** As part of the **Climate Action Living Laboratory** new building budgets or supplements should include project design and operation elements, such as metering, that offer opportunities for research and instruction by faculty and students through use of emerging technologies, monitoring energy use, air quality, and occupant perceptions, and other projects.
- 5g.** Achieving these goals will require sufficient **engineering and design staffing**.

Goal 6. Agricultural, forestry, and land use operations will be carbon neutral by 2030

Virginia Tech owns and manages **considerable land area** in the Blacksburg region and throughout the Commonwealth. In addition to main campus, VT owns and manages 3,500 acres of agricultural lands including the 1,950-acre Kentland Farm. In addition, there are about 1,300 acres of VT forested land in the area including the 1,150-acre Fishburn Forest on Price Mountain. The 377-acre Catawba Sustainability Center in Roanoke County is also part of our inventory.

Campus trees, including several old growth stands like Stadium Woods, play an important role in the campus environment with many benefits. Canopy cover is 16%.

Campus lands play an **historic and important part of the university's** educational programs especially in agriculture and forestry, as well as the natural and physical sciences, engineering, and other disciplines. Incorporating these lands and operations in the Climate Action Commitment can enhance our Climate Action Living Laboratory.

Agricultural and forestry operations GHG emissions were not included in 2009/2013 CAC but are part of the 2020 VT CAC GHG inventory.

- In 2019 emissions totaled 11,297 MT CO₂e and came from animal enteric fermentation CH₄ (58%, 45% from dairy cows), manure management CH₄ (31%), land application of manure and fertilizer N₂O (6.5%), and equipment and vehicle fuel and electricity CO₂ (4.8%).
- Conservation tillage in VT cropland sequesters an estimated 1,271 MT and VT forested land has carbon sequestration benefit of 1,980 that is documented. Total net A/F/LU GHG emissions in 2019 are 8,046 MT CO₂e or about **3.3% of 2019 VT GHG emissions**.

Animal enteric fermentation emissions amount to 58% of total agriculture emissions and about 3% of total VT GHG. Animal scientists at Virginia Tech are investigating practices that reduce methane generation, such as increasing ruminant digestion efficiency by adjusting feed rations and provision of dietary additives that reduce metabolism of rumen CH₄-producing bacteria. Such scientific breakthroughs have the potential to reduce CH₄ emissions that currently comprise about 2% of VT GHG emissions.

Manure management CH₄ amounts to 31% of agricultural GHG emissions and 1.5% of total VT GHG. Two options for reducing GHG manure emissions that could be used in combination are composting and anaerobic digestion (AD) to produce usable methane.

- AD of VT livestock manure could produce about 200,000-220,000 m³/year of CH₄ (7 billion Btu). If combusted for heat or a micro-turbine, this would offset the GHG emissions from the estimated 225,000 m³ CH₄ from manure handling or 1.5% of VT GHG.

Composting would reduce GHG emissions not only from manure but also from campus dining hall and other compostable organic waste. The GHG reduction value of composting depends on its landscape application, from 0.036 to 4.58 MTCO₂ per MT compost. Based on an assumed reduction

of 0.42 MT CO₂e per MT of food composted, composting the current 550 MT of VT dining hall food waste would yield reduction of 230 MT CO₂e, 0.1% of VT GHG. If compost were applied to disturbed, marginal soils the estimated reduction could be as high as 1% of VT GHG.

Potential pathways:

6a. Develop the University Compost Facility at Kentland

Developing and operating the University Compost Facility at Kentland will provide significant benefits in management of campus organic wastes from dining halls, athletics, vet school, and campus tree trimmings. The Facility will also reduce net animal waste GHG emissions, support soil health, relieve the need to purchase new land for future land application of animal wastes, and support sustainable agriculture education and research. Capital cost is estimated at \$1.8 million with net operating cost of about \$200,000/year.

6b. Adopt a Campus Tree Policy to increase canopy cover from 16% to 25%

VT forest lands can be managed to increase carbon sequestration to offset some of the agricultural emissions. The current campus canopy cover of 16% can be increased to 25% through a Campus Tree Policy, which will also offer additional environmental and climate adaptation benefits.

6c. Reduce GHG emissions through ruminant research and improved efficiency of agricultural operations

- The source of most VT agriculture/forestry/land use emissions is animal enteric fermentation, especially from the dairy herd. Animal emissions of methane are a global problem, and animal science research can increase ruminant digestion efficiency via adjusting rations, additives that reduce metabolism of rumen CH₄-producing bacteria.
- Agricultural and forestry programs can reduce net GHG emissions through the compost facility and possibly anaerobic digestion with methane recovery, more efficient operations, improved energy and fuel efficiency, agrivoltaics solar production, and other means.

6d. Develop Solar Energy Projects on Virginia Tech Lands

- The 2020 VT CAC goal #2 is 100% renewable electricity by 2030 and it calls for at least 15 MW of solar capacity on Virginia Tech buildings and lands in the area. Land area on campus, Kentland Farm, Fishburn Forest, and Catawba Sustainability Center are prime candidates for solar development. 15 MW would require about 75-100 acres.
- Develop solar farms on VT agricultural land to provide “agrivoltaic” multiple use solar and usable grazing/cropland. These agrivoltaic farms would provide unique research and educational opportunities, part of the Climate Action Living Laboratory.

6e. Enhance Sustainable Agriculture Education in Climate Action Living Laboratory

- Expand climate sensitive and sustainable agriculture experiential education programs at Catawba Sustainability Center and Kentland’s Homefield Farm
- The University Composting Facility at Kentland will provide a living learning laboratory for VT students and educational programming for waste management and composting professionals from Virginia and nearby states.

6f. In 2030, negate remaining net GHG emissions from agricultural/forestry operations

- In order to achieve zero net GHG emissions by 2030, credits developed by the agriculture and forestry sectors via solar agrivoltaic adoption, energy generated from anaerobic digestion of manure and other wastes, and C sequestration may need to be supplemented by purchasing carbon offsets.

Goal 7. Virginia Tech to become a Zero Waste Campus by 2030

As defined by industry, a “Zero Waste Campus” has a 90% or greater Waste Diversion Rate or waste kept out of landfills.

7.1. Increase waste diverted from landfill—including construction waste—to 85% by 2025

For CY 2019, Virginia Tech achieved an 80% waste diversion rate. For the past decade the rate has averaged 70%, with a low of 47% (2016), and a high of 84% (2011, 2012). The waste diversion rate includes recycled/reused construction waste from new construction and major renovations. In a robust construction year, the waste diversion rate will increase significantly. The university owned Quarry is currently producing about 1,000 to 2,000 tons/month of Hokie Stone scrap material or overburden, which is crushed into useful gravel and can be included in diverted waste.

7.2. Increase waste recycling rate to 55% by 2025

For Calendar Year (CY) 2019, Virginia Tech achieved a 39% recycle rate. The recycling rate has remained relatively constant at or near 40% for the past decade.

For CY 2019, Virginia Tech recycled a total of 2,000 tons of principal recyclable materials:

- 750 tons sent to MRSWA at a cost of \$25,875 (\$34.50 per ton) plus contractor cost for storage containers and collection and transport fees; and
- 566 tons of food waste for composting sent to ROF and of waste cooking oil collected on campus by Valley Protein, at a cost of \$84,900 (\$150 per ton) plus contractor cost for collection and transport of food waste to the ROF sledge container at Prices Fork Closed Landfill.
- 684 tons sent to a number of other organizations with varying costs

7.3. Reduce waste to landfill per capita by 25% by 2025

For CY 2019, Virginia Tech sent 4,000 tons of municipal solid waste through MRSWA to the NRRA local landfill or 0.1 tons or 200 pounds per capita (students + faculty + staff = 40,000). Goal 7.3 is 150 lb/capita by 2025. The 2019 trash disposal cost was \$218,000 (\$54.50 per ton) plus contractor cost for storage containers and collection and transport fees.

Pathways to Goals:

7a. To enhance campus waste management, **hire a zero-waste consultant** to conduct a waste audit study and plan to evaluate current organization, equipment, procedures, and staffing.

- A third-party zero-waste consultant is critically needed to objectively evaluate waste operations for E&G facilities, auxiliaries, and the athletic department to identify opportunities to streamline operations, maximize efficiencies, reduce costs, and recommend measures to achieve zero waste.

7b. Improve Oversight of Waste/Recycling/Compost

- Based on consultant recommendations, improve organization of waste management with one option being the **hiring of a waste manager** to manage all aspects of campus waste management and forming a Waste/Recycling Council of existing program personnel to coordinate waste management activities to help streamline operations and reduce redundancies.

- 7c. Develop University Compost Facility at Kentland** to process campus organic food waste, veterinary and agricultural animal waste, yard trimmings and other compostables.
- For CY 2019, 566 tons of food waste for composting was sent from our 11 dining facilities to Royal Oak Farm (ROF) at a cost of \$150 per ton. ROF is the nearest DEQ permitted composting facility. The university continues to produce 600 tons of food waste for composting.
 - A University Compost Facility at Kentland would provide composting of not only dining hall waste but also other campus organic wastes from athletics, the vet school, residence halls, and campus tree and brush trimmings, and ultimately community organic waste. The capital cost of the facility is estimated at \$1.4-1.8 million with net operating cost of \$165,000 per year.
- 7d. Engage faculty, students, and staff in the Climate Action Living Laboratory** to promote Pollution Prevention (P2) concepts of reduce/reuse/recycle to achieve principles of Circular Economy. Include P2 and Circular Economy activities in Sustainability Internships, learning living centers, student orientation programs, and recycling/composting programs.
- 7e. Promote greater adoption of recycling, composting, and other best practices in waste management** through effective social marketing, social media, incentives, and innovative approaches. Include CAC sustainable choices Goal 12 pathways including web-based and smart-phone apps, student clubs, roundtables, 1st year experience app, and campaigns for Y-toss, green tailgating, and related programs.
- 7f. Evaluate and improve as needed management of specialty wastes**, such as e-waste, construction debris, laboratory waste, and wastes from major sporting and other events.
- By 2021, use a showcase and test-bed **Green Lab** to pilot a campus-wide Green Lab program to better design and manage waste materials in research labs (see Goal 4 pathways).
 - Expand programs for **reuse of materials**, such as Surplus, Hokie-Swap, Y-Toss
 - Expand programs for Green Tailgating and related Athletics recycling/compost initiatives

Goal 8. Establish the Sustainability Procurement Policy and Procedures by 2022

In April 2020, the Virginia Tech Procurement Department developed a **Sustainable Procurement Policy** that aims “to make procurement decisions that embody the university’s commitment to sustainability whenever possible.” The Policy reflected the elements of the 2009/2013 VT Climate Action Commitment and Sustainability Plan. This Policy is a significant development by the University in procurement to reflect sustainability principles.

Because the 2009/2013 CAC and plan will be superseded by the 2020 VT CAC, we recommend the new Policy be piloted for two years and then be evaluated by the Energy & Sustainability Committee in 2022 for its conformance with the adopted 2020 VT CAC.

Potential Pathway:

- 8a.** On a pilot basis, adopt, implement, and evaluate the 2020 Sustainable Procurement Policy for two years
- 8b.** In 2022, the Energy & Sustainability Committee will assess the pilot project and work with the Procurement Department to formulate the Sustainability Procurement Policy.

Goal 9. Reduce Single-Occupancy Vehicle Commuting To Campus by 20% by 2025 and Reduce Transportation-Related GHG Emissions by 40% by 2030

Virginia Tech transportation-related GHG emissions for 2020 VT CAC include:

- Scope 1 GHG: fuel for fleet vehicles and other campus vehicles, aviation fuel for VT airplanes
- Scope 3 GHG: student, faculty, and staff commuting to campus; Blacksburg Transit (BT) fuel, and business air travel

The 2009 VT CAC&SP did not include BT or business air travel. 2019 transportation GHG emissions under that more limited scope were about 20,000 MT CO₂e, or 8.4% of total VT emissions. About 80% of transportation's share of emissions were from commuting, 13% from fleet vehicles, and 7% from aviation fuel.

The 2020 CAC addition of Blacksburg Transit fuel adds 3515 MT CO₂e or 1.4% of total VT emissions and business air travel adds 5000-7500 MT CO₂e or 2-3%. **Overall, transportation will account for about 12% of total VT emissions in 2020, under the expanded scope.**

Since the 2009 VT CAC&SP, Virginia Tech and the Town of Blacksburg have made considerable progress in developing alternative transportation choices, including:

- 50% increase in Blacksburg Transit ridership,
- BT has 9 hybrid-electric buses of its 53-bus fleet; BT has also ordered 5 electric buses
- 32% increase in campus bike racks (since 2013),
- 20 miles of campus shared-use paths,
- Roam NRV bike-share (since 2018 11,000 trips, 28,000 miles).
- Shuttles and bus service to Roanoke and Northern Virginia,
- Car- and ride-share programs, and
- Recognition by Best Workplaces for Commuters every year since 2009 (Best of the Best in 2014) and as a Bicycle Friendly University at bronze level 2012-18 and silver in 2019.

The 2016 Transportation Master Plan calls for further improvements in bike infrastructure and parking management, and the Beyond Boundaries 2047 Campus Plan includes the Infinite Loop to improve mobility and Green Links pedestrian-friendly routes.

However, there are also negative trends:

- Single occupancy vehicle (SOV) commuting increased by 10% from 2014 to 2018,
- There is an oversupply of parking (2000 spaces sit empty on any given day),
- Parking permit prices are cheap and provide no incentive for alternative commuting,
- Student orientation or employee onboarding don't include education on transportation options,
- VT is one of only a few universities that allow freshman to bring cars to campus, and
- University motor pool vehicles do not use alternative fuels.

Guiding principles in developing goals and pathways:

- Prioritize moving the most people over moving the most cars
- Emphasize safety
- Consider equity issues
- Emphasize collaboration with Town of Blacksburg
- Develop cost-effective solutions

Potential Pathways to achieving Transportation goals:

9a. Make walking/biking/transit the preferred means of commuting to campus

Use parking policies, alternative transportation programs, campus mobility planning in collaboration with Town of Blacksburg, and Blacksburg Transit (BT) programs to promote and improve the safety and convenience of walking/biking/transit as the preferred means of commuting to campus.

- In 2020, provide **better data** on student and staff commuting behavior and reasons for that behavior through surveys and other means to monitor progress.
- **Promote sustainable mobility choice through good social marketing** including social media, parking permit literature, university promotion literature/website, student orientation materials, and other means.
- **Follow other Virginia universities in restricting freshman vehicles** on campus to help students develop less car-dependent culture and behavior.
- **Enhance Blacksburg Transit** as a commuting choice through education, marketing, coordinating with other transit, development of the Multi-Modal facility, and other means.
- Upgrade VT's **Bike Friendly University from silver rating to gold.**
- **Parking demand management:**
 - Increase parking permit prices. For employees, implement on a sliding income-scale. Use additional revenue to fund sustainable transportation improvements.
 - Consider moving away from annual and toward automated daily fee parking permits so people have to think about paying for parking every time they drive to campus

9b. Promote non-commuting work and learning opportunities

- Based on experiences during the Covid-19 pandemic shutdown, promote teleworking, innovative online instruction, video conferencing, compressed workweek schedules, and other means to reduce travel demand.
- Work with Human Resources to identify opportunities and barriers to increasing teleworking.

9c. Improve infrastructure and traffic controls to improve mobility choices and safety

- Improve safety of vehicle, bicycle and pedestrian mobility on campus
 - Reduce the speed limit on all core campus streets to 15 miles per hour.
 - Improve lighting on walking and bicycle paths
 - Limit/restrict vehicles in the core of campus by gating streets at strategic locations (Drillfield Drive, Alumni Mall, Kent Street, West Campus Drive, and Stanger Street).
- Implement infrastructure recommendations in the Parking & Transportation Master Plan and Beyond Boundaries 2047: The Campus Plan.
 - Infinite Loop, Green Links, Expand Bike Lanes on Kent Street and Washington Street
 - Multi-modal Facility
- Coordinate with Town of Blacksburg transportation and corridor plans to improve connectivity between campus and town.

9d. Improve vehicle efficiency and promote low-carbon emissions vehicles

- Require University fleet vehicle purchases and encourage Blacksburg Transit to emphasize fuel efficiency, through zero-emission, hybrid, and electric vehicles.
- Although transportation emissions per vehicle-mile will naturally decline with improved vehicle efficiency and increased electric vehicle ownership, changes in commuting mode are necessary to achieve GHG reduction goals and a more livable and less car-oriented campus.
- Support electric vehicle use by installing a mix of charging station types in parking garages, at Fleet Services, and at other locations.

9e. Promote social equity in mobility and parking policy

- Develop effective and efficient commuting options for lower-wage employees who cannot afford to live in Blacksburg, including vanpools, park & ride, and other means.
- Implement sliding income-scale pricing for parking permits.
- Collaborate with the Town to provide affordable workforce housing proximate to campus.
- Build more residence halls on campus to free up more off-campus housing for staff.

9f. Reduce and negate business travel GHG emissions

- Encourage car sharing and transit use for business travel.
- By 2030, negate business airline travel emission with carbon offsets.

9g. Establish an Alternative Mobility Subcommittee of the Transportation and Parking Committee to recommend strategies to increase non-SOV mode share on campus.**Goal 10. Integrate the CAC into Virginia Tech's Educational Mission through the Climate Action Living Laboratory (CALL) beginning in 2021**

The 2009/2013 VT Climate Action Commitment and Sustainability Plan highlighted sustainability related academic programs in goal #9. And Virginia Tech has scored well in the academic categories in AASHE's STARS rating system, scoring 90% of available points for undergraduate, graduate and research programs.

Since the 2009 VTCAC&SP, the Sustainability Office has implemented the Sustainability Internship program, whose interns work on campus projects and studies, and the Green RFP program for student initiated sustainability projects on campus, which the University Budget & Finance Office has funded with \$1 million over ten years.

Although climate action and sustainability are addressed well in several academic departments, few of them rely on the campus as a learning laboratory. The VT 2020 CAC goals and pathways offer great **opportunities for student learning, faculty and student technical research, and staff development**. Benefits include learning from and innovating creative solutions in-house for VT's climate initiatives and better engaging the entire university both in Blacksburg and other Virginia Tech locations in our quest for sustainable climate action.

Potential Pathways:

10a. Establish the **Climate Action Living Laboratory (CALL)** in the new University Office for Climate Action & Sustainability (OCAS) (see Goal 13) to enhance offerings and build bridges between facilities and academic departments, facilitating and supporting opportunities.

10b. Alter norms and incentives to overcome traditional barriers and nurture cooperation between academic units (research and teaching) and operations units like Facilities and auxiliary units like dining and residence and athletics. **Greater collaboration** between university units will support the implementation of the CAC and integrate physical plant climate action with academics and campus life.

10c. Implement **Climate Action Living Laboratory** initiatives in other goals/pathways:

- **Goal 2: Renewables** - Incorporate campus and region VT **renewable electricity development** by Virginia Tech Electric Service (VTES) into VT educational mission through Virginia Tech

Living Learning Campus with faculty, student, and staff instructional, research, and outreach opportunities.

- **Goal 3: Energy** - Engage faculty and students to work with staff to develop an online **Energy Dashboard** for users to obtain and analyze energy use data for campus facilities
 - **Goals 4, 5: Buildings** - As part of the **Campus Living Learning Laboratory**:
 - Provide building energy/emissions/solar production data through **energy dashboard kiosks** in high-traffic buildings to raise campus awareness of climate action.
 - By 2021, use a showcase and test-bed **Green Lab** to pilot a campus-wide Green Lab program as part of the national movement to better design and manage research labs, our most energy-intensive buildings.
 - **Goal 6: Agriculture/Forestry/Land Use** - Sustainable Agriculture Educational Programs
 - Expand climate sensitive and sustainable agriculture experiential education programs at Catawba Sustainability Center and Kentland's Homefield Farm
 - The University Composting Facility at Kentland will provide a living learning laboratory for VT students and educational programming for waste management and composting professionals from Virginia and nearby states.
 - **Goal 7: Waste/Recycling/Compost** - Engage faculty, students, and staff to promote Pollution Prevention (P2) concepts of reduce/reuse/recycle to achieve principles of Circular Economy, including activities in Sustainability Internships, living learning centers, student orientation programs, and recycling/composting programs.
 - **Goal 11, 12, 13: Climate Justice, Sustainable Choices, and Community Engagement** - Engage faculty and students in social science studies and research related to sustainable behavior, justice issues, and involving the campus community in climate action.
- 10e.** The university's **land grant Extension and Outreach programs** must also be engaged to reflect the principles of the CAC and help implement them throughout the Commonwealth.
- 10f.** Integrating the physical infrastructure elements of the CAC into the fabric of the university's educational and research programs offers **funding opportunities for campus innovation** from foundation and state and federal sources.

Goal 11. Establish climate justice as a core value of the Climate Action Commitment

- Harlan, et al. (2015) **defines climate justice** in four parts:
 - Sharing benefits and burdens of climate action equitably
 - Engaging marginalized groups as participants in the climate action process
 - Maximizing opportunities in climate action for marginalized groups to survive and thrive
 - Repairing historic harms against marginalized groups in developing climate action
- The Governor's 2019 **E.O. 43 and the 2020 Clean Economy Act** require clean energy and climate goals be achieved in a just manner that advances energy- and social-equity and environmental justice.

Potential Pathways:

- 11a.** Encourage an **accelerated transition to carbon-neutral** status as a climate-justice imperative.
 - Assess the viability of renewable energy sources, such as geothermal, solar, and wind, for heating and cooling new buildings constructed on Virginia Tech's campus.
 - Seek opportunities to transition the steam plant's primary fuel source away from natural gas to renewable energy sources.
- 11b.** Ensure that the **social impacts** of Virginia Tech's climate mitigation choices (e.g. energy, land use, and waste) are identified and addressed to the greatest extent possible.
 - Consider the lifecycle impacts of all renewable energy procured systems to ensure they are sourced ethically and sustainably, manufactured with high standards for worker safety, and include a decommissioning plan for responsible, end-of-useful-life recycling.
 - For example, solar photovoltaic manufacturers should receive a score of 80 or higher on the Silicon Valley Toxics Coalition's annual Solar Scorecard. (<http://www.solarscorecard.com/>)
- 11c.** By 2021 establish a **Climate Justice Subcommittee** to the revised Climate Action, Sustainability, and Energy (CASE) Committee with representation from students, faculty, staff, and community members possibly from frontline groups.
- 11d.** Ensure that VT **climate action strategies recognize and assist vulnerable** and frontline groups adversely affected by those plans
 - Groups potentially affected by VT CAC plans include low-wage VT employees, tuition-paying students, VTES town-resident customers, historically marginalized people of color and Indigenous communities, coalfield communities, and others.
 - Low-wage employees who cannot afford to live in Blacksburg should have access to affordable commuting options with low climate impact and local work-force housing.
 - VT CAC implementation should identify ways to mitigate potential increases in electricity costs for low-income VTES town customers and increases in tuition and fees for low-income students, should such increases result from the University's climate-action commitment.
 - VT CAC renewable energy development should work with coalfield communities to establish locations for utility- or 3rd party owned solar farms for VT power purchase agreements.
 - Establish education, research, and outreach **programs to assist vulnerable and historically marginalized groups** in their efforts to mitigate and adapt to climate change and thrive in the new energy economy. These efforts should specifically target Virginia Tribes, African Americans in the New River Valley, coalfield communities in southwest Virginia, and coastal Virginia communities threatened by climate-related hazards.

Goal 12. Diminish Barriers to Sustainable Behaviors through Institutional Change, Education and Social Marketing

Most of the goals of this Climate Action Commitment deal with physical strategies for improving the efficiency of buildings and energy systems, replacing coal, adding renewable energy, building a compost system and mobility infrastructure. But becoming carbon neutral also depends on what people do, how much they recycle and compost, turn off the lights, bike to campus instead of drive, make choices that reduce GHG emissions. The extent to which our students, faculty and staff make sustainable choices that define our culture will say more about who we are and our commitment to climate action than the physical changes we make.

We intentionally include in our CAC GHG emissions inventory, against which we have set the carbon neutral by 2030 goal, those scope 3 sources that relate to people's behaviors: waste and water, commuting, and business travel. Sustainable choices are about structuring institutions and infrastructure to facilitate sustainable individual behaviors. By leveraging structural changes, incentives, disincentives, educational programs, and games and other innovative tools, these choices can and must be made much easier, cheaper, safer, and more enjoyable. The sustainable choices goal and pathways focus on how university units can 'nudge' community members towards adopting behaviors that will reduce our greenhouse gas emissions and create a more sustainable campus culture.

Potential Pathways:

12a. Identify structural, social and institutional barriers to sustainable behaviors

12b. Implement infrastructural changes—from waste management to transportation to building operation—to make sustainable choices easier

12c. Develop educational programs to foster pro-environmental behavior change

- Educate first-year students about sustainability and sustainable choices, beginning with campus tours and orientation and continuing through First Year Experience
- Find innovative ways to include learning-based opportunities for student climate action, awareness, and engagement.
- Support creative ways to integrate behavior change with research and educational programming, working through the proposed Climate Action Living Laboratory (CALL)

12d. Design and implement choice architecture or “nudges” to promote sustainable behavior, while allowing for individual choice

12e. Develop a shared toolkit of best practices in social marketing, rooted in behavioral sciences, for campus groups initiating sustainability initiatives

12f. Nurture cross-campus partnerships to coordinate climate action and enhance sustainability initiatives

- Create a structuring sustainable choices subcommittee of the new Climate Action, Energy, and Sustainability (CASE) committee (currently E&SC)
- Partner with Experience VT and Sustainability Managers to integrate sustainability into the new Experience VT app.
- Craft an ongoing university survey that enables university departments to submit their own university sustainability goals, aspirations, and current infrastructure challenges that may prevent their goals/aspirations from being achieved.

Goal 13. Implement the VT Climate Action Commitment

- **at a high level of university administration and governance;**
- **by integrating CAC goals for facilities, education, and campus culture;**
- **with stakeholder engagement for evaluation of goals and progress.**

Over the past decade, commitments at both the policy and operational levels have led to substantial progress on climate action and sustainability. However, the comprehensive nature of the VT 2020 CAC necessitates a broader approach than current policy and governance arrangements allow. Currently, the Office of Sustainability (OS) in the Division of Campus Planning, Infrastructure, and Facilities (DCPIF) has primary responsibility for injecting sustainability principles into operations and the Energy & Sustainability Committee (E&SC) is the primary governance unit responsible for proposing policy changes in the areas of environment, energy, and sustainability.

Both are positioned in the Facilities world, with the OS reporting to the Chief of Staff to the Chief Facilities Officer and the E&SC reporting to the Commission on University Support (CUS). Facilities continues to be a critical component of the VT 2020 CAC; goals 1-5, 7, 9 & 15 are the most important actions proposed to reduce VT's GHG emissions and are all dependent on initiatives to be taken by Facilities departments. The DCPIF must play a critical role in CAC implementation.

However, the 2020 CAC goals go farther than the physical plant to address the university's educational mission, campus culture, social equity and justice, and engagement of all university departments, faculty, staff and students. Both the OS and the E&SC units have, in practice, engaged broader perspectives than Facilities; for example, with a limited staff the OS has operated effective student internship and student-initiated Green RfP programs, and the E&SC has a diverse membership of faculty, students, and Facilities staff. However, efforts to elevate sustainability, energy, and climate planning must be truly university-wide if the ambitious 2020 CAC goals are to be met.

This goal and the pathways laid out below suggest operational and governance structures that can elevate the university's commitment and better reflect the comprehensive nature of the 2020 CAC.

Potential Pathways:

13a. Governance: Restructure the Energy and Sustainability Committee (E&SC)

- Rename the E&SC the **Climate Action, Sustainability, and Energy (CASE) Committee**
- Revise the **reporting lines** of the CASE committee to include, in addition to the Commission on University Support (CUS), relevant commissions for student life, academics, faculty and staff.
- Modify the **membership** of the new CASE committee to include additional representation of the DCPIF, the Provost's Office, Student Affairs, student life, student environmental organizations, and vulnerable frontline communities.
- Create **CASE subcommittees (SC)** that may include: CAC Implementation SC, GHG Inventory SC, Climate Action Living Laboratory (CALL) SC, Climate Justice SC, Engagement & Sustainable Choices SC, Education & Student Involvement SC, Town-Gown Sustainability SC. Subcommittees may include participation beyond formal CASE membership.
- Modify the existing **charge of the committee** to:
"To review and provide guidance to all facets of University Administration on implementation opportunities relating to the university's Climate Action Commitment and the pursuit of environmental quality and social sustainability, through policy, infrastructural and operational changes, education, and broad engagement."

- During fall 2020, develop a formal proposal for the CASE committee through an ad hoc subcommittee of the current E&SC. The subcommittee may include some non-E&SC members involved in the VT CAC Working Group update process. The proposal developed should include a revised charge, membership, subcommittees, and reporting lines. It should be completed by December 2020 with the transition from the E&SC committee to the CASE committee occurring in fall 2021.

13b. Implementation/Operations: Consider new options for the direction, responsibilities, staffing, location, and reporting lines of the operational **unit charged with implementing the CAC**.

- **Restructure the OS as a university wide unit**, renamed the **University Office for Climate Action and Sustainability (OCAS)**. The OCAS would have primary responsibility for CAC implementation, with strong connections to Facilities units as well as to related activities in academics (including the goal 10's Climate Action Living Laboratory addressed below), student life and student affairs, and other units.
- Appoint a new University **Chief Climate Action and Sustainability Officer (CCASO)**. The CCASO would direct OCAS and chair the CASE Committee. The CCASO would report jointly to the Senior Vice President and Chief Business Officer and the Executive Vice President and Provost.
- In order to support the CCASO with CAC implementation in Facilities, a new director position would be created in the Division of Campus Planning, Infrastructure, and Facilities (DCPIF), who would oversee strategic facilities initiatives including climate action and sustainability.

13c. Learning: The 2020 CAC update process has strengthened relationships between employees in operational university units (including facilities, student life, and elsewhere), Town of Blacksburg and other local partners, and faculty and students on the 'academic side'. The next steps include:

- Increasing educational initiatives and research opportunities in the areas of climate, sustainability, and energy using CAC projects to test new technologies and ideas and provide students with invaluable hands-on learning opportunities.
- To this end, CAC Goal 10 recommends the creation of a **Climate Action Living Laboratory (CALL)** as a unit that can enhance offerings and build bridges between facilities and academic departments, facilitating and supporting opportunities. The CALL should be situated under the reorganized OCAS.

13d. Annual Review: Conduct an annual review of the CAC goals and implementation progress through a process that involves student, staff, faculty, and community stakeholders. The annual review process should include the following features:

- The GHG Inventory Subcommittee of the revised CASE Committee will be responsible for leading annual audits of the university's emissions portfolio.
- The results of this review will be shared publicly in accessible and easy-to-read formats, including through social media.
- There will be opportunities for stakeholders to critique and provide feedback, potentially through both a yearly community survey and yearly CASE Town Hall.

13d. Duties of Operations and Governance units:

- Collect data relevant to the CAC including GHG inventory and prepare an Annual Report of CAC Progress each fall semester for the previous fiscal year.
- Establish mechanisms to engage and educate the Virginia Tech community on the CAC and climate action

- Establish ad hoc committees to develop instructional, research and outreach programming for the Climate Action Living Laboratory (CALL)
- Evaluate CAC goals according to best practices in light of new information and standards and direct update of the CAC on a five-year cycle
- Broaden the geographic scope of the CAC to all Virginia Tech properties in future iterations to include the entire University
- Advocate for allocation and prioritization of resources to support the CAC

Goal 14. Develop innovative budgeting and financing mechanisms to generate funding and staffing to achieve Climate Action Commitment goals

Achieving the Climate Action Commitment will require financial and staffing resources. With limited resources especially as a result of the Covid-19 pandemic, CAC financial needs will be in competition with other needs and priorities of the university, including safety and security, academic excellence, quality student experience, affordable tuition and fees, and competitive faculty salaries.

Academic (E&G) funds may be used to fund projects to improve existing academic building efficiency. More creative funding mechanisms can address energy efficiency needs in auxiliary buildings not included in E&G funded efficiency improvements. Energy Performance Contracting through Virginia DMME may be an effective financing vehicle for these buildings. Also, these auxiliaries may have some bonding authority to generate investment funds for efficiency improvements. Savings in utility bills can repay capital and financing costs.

New building energy efficiency continues to be challenged by the separation of capital design/construction budgets and operating budgets. To advance life cycle cost analysis, future operating costs need to be considered to justify upfront investment in efficiency.

Many VT operations are located in leased space in Blacksburg owned by the VT Foundation or others. We have included most of this space (1.45 million ft² in 45 properties, 13% of total VT space, about 70% Foundation owned) in our GHG emissions calculations. The university cannot directly reduce these emissions because it does not own the buildings. But the Foundation can improve the efficiency of its buildings that house VT operations. Lease terms could be revenue neutral for the Foundation in that the lease agreements cover the Foundation financing costs. The university pays the utility bills.

Potential Pathways:

14a. Strategically invest university E&G and Auxiliary funds to implement the 10-year Energy Management Plan targeting academic and auxiliary buildings at a level of \$5 million/year in energy efficiency projects with a cumulative 8-year financial payback.

- The 2015-2020 Five-year Energy Management Plan invested nearly \$3 million/year of academic (E&G) funds that resulted in efficiency improvements that averaged about a 5-year payback with energy cost savings. More creative funding mechanisms can address energy efficiency needs in auxiliary buildings (e.g., residence halls, dining halls, athletics). These buildings account for 45% for campus gross square footage.

- 14b.** Major investment is needed to implement the **pathways for renewable electricity** both on VT buildings/lands and in the SWVA region. Options for development include:
1. **VT owned** and developed projects on VT buildings/land, and
 2. **Utility or 3-party owned** and developed projects on VT buildings/land and in SWVA with VT power purchase agreement (PPA).
- Option (1) provides major VT capital investment but greater long-term return and control, while option (2) requires no VT capital but less long-term financial return. A combination of the two options may be necessary to meet the CAC renewables goals.
- 14c.** The **Virginia Tech Foundation** helps the university achieve its goals and can be a valuable partner in adopting and implementing the CAC in the following ways:
- The VT Foundation should assess efficiency opportunities in its properties **leased to VT operations** and invest in cost-effective energy efficiency measures in these properties, lowering university utility bills to offset increased lease cost to finance improvements.
 - The VT Foundation should **invest in projects to implement the VT CAC** that provide a return to the Foundation. These may include solar projects on Foundation buildings, and/or solar projects on VT or Foundation-owned land.
 - As the university moves toward carbon neutrality and the economy turns toward clean energy, the VT Foundation should assess the **fiduciary risk associated with its investment in fossil-fuel-reliant industries** as part of its portfolio.
 - The Foundation should broaden its investments to achieve **triple-bottom-line goals (financial, social, environmental)**. It is noteworthy that the CAC Working Group vigorously debated the issue of Foundation divestment from fossil fuels and different opinions are held among group members and the wider university community. However, consensus was reached among the WG on the need to strongly consider triple bottom line values in investment and other decisions.
- 14d.** As a unique **power utility**, **VTES** has opportunities, in partnership with APCO and 3rd parties, for investment in renewable energy projects in serve both campus and its town customers.
- 14e.** Additional sources of funds to implement the CAC should be pursued,
- **Federal and state grants and research funding** for the Climate Action Living Laboratory
 - **Development donor funds** are also a potential source for some of the initiatives and projects needed to implement the CAC. Naming rights for a signature Zero-Net-Energy (ZNE) building or a showcase solar farm at entry to campus are up for grabs.
 - **State funding** is also available for university project development. Virginia Department of Mines, Minerals and Energy (DMME) has a cost-sharing solar development fund to cover half the costs of the Sterrett rooftop solar project and possibly other projects.
 - Funding from **foundation and philanthropic organizations** can support implementation of the CAC especially elements related to innovation and academic programs.
- 14f.** In addition to project funding, implementation of the CAC needs to **upgrade staff** to rise to the needs of the commitment, especially in energy management, energy and utility systems, building analysis and design, waste management, University compost facility operation, and campus sustainability.

Goal 15. Develop Pathways after 2030 to eliminate offsets and fossil fuels by 2050

It is difficult to anticipate how **changing technology, the economy, and public policy** will evolve in the next 10-30 years. Super-efficient and inexpensive solar technology and energy storage, autonomous electric vehicles, smart buildings and controls, and enhanced communications are likely, and they will change our conception of what is possible. Public policies such as a carbon fee or tax, efficiency mandates, and funding incentives are also likely to change the economics of choices we have.

Potential Pathways:

15a. A long-term and continually updated **Utilities Master Plan** should incorporate the goals of this Climate Action Commitment.

15b. Use the 5-year VT CAC update process to assess **changing technology, the economy, and public policy** related to climate action.

- **2025: 5-year CAC revision** review explore options for 2030-2040 timeframe
- **2030: 5-year CAC revision** review explore options for 2040-2050 timeframe

15c. Beginning with the CAC 2025 revision, develop a **plan for full transition to renewable energy for campus heating systems**. To promote zero emissions energy options in the plan, refine GHG inventory estimates of methane leakage from VT natural gas sources and include those **estimates of methane leakage in the carbon neutral goal for 2035**.

- Explore geothermal and ground source heat pump systems and other non-fossil-fuel options for heating new districts of campus.
- New districts being considered on campus should evaluate hot water rather than steam heating systems. Understanding the extreme cost of extending steam tunnels, hot water systems sourced by the existing steam loop are already being explored for new districts.
- Conversion of steam to hot water central heating systems is being considered at other universities and offers the prospect of efficient geothermal and ground source heat pump heating and cooling systems in conjunction with renewable electricity.

3. Implications of VT 2020 CAC Goals and Pathways

The fifteen 2020 VT CAC goals call for the adoption of initiatives, programs, and projects to achieve the overall goal of carbon neutral campus operations by 2030. Each of the Working Group subcommittees assessed the impacts, costs, and benefits of their goals and pathways.

Most of the initiatives proposed provide significant non-monetary benefits to the University, including GHG emissions reductions, enhanced educational quality through the Climate Action Living Laboratory, increased campus quality and livability, cultural and behavioral change, climate social justice, community engagement, cleaner air and environmental quality, and an improved university reputation. Many of the pathways require financial investment. Some have a favorable financial return on investment, while others provide little financial return but high non-financial benefits.

3.1 Impacts on GHG Emissions

Goal #1 of the VT 2020 CAC calls for carbon neutral campus operations by 2030. The FY 2019 GHG inventory shows emissions of 240,959 metric tons (MT) CO₂e. This inventory did not include sources that have been added in the 2020 CAC GHG scope. These are listed below with the mid-range estimate of how they would change the 2019 inventory:

VT occupied leased space:	37,475 MT (+15.5%)
AEP new emissions factor:	16,761 MT (+6.7%)
Agricultural operations:	11,004 MT (+4.4%)
Upstream Elect. T&D losses:	5,447 MT (+2.2%)
Business travel:	6,282 MT (+2.6%)
BT bus system fuel:	3,515 MT (+1.4%)
VT forests:	- 2,178 MT (-0.9%)
TOTAL:	78,306 MT (+32%)

If added to the 2019 GHG inventory, total VT emissions would be 319,000 MT. In *figure 2.1*, the GHG emissions reduction line to zero emissions by 2030 would have to start at 32% more emissions. We will have to wait until the next GHG inventory for FY 2020 is completed in the fall using the 2020 CAC GHG scope and methodology to know what the new level of emissions will be.

Regardless of what we learn from the FY 2020 inventory, it is clear that achieving the goal of zero net carbon emissions will require meeting other goals, including: 100% renewable electricity (~50-55% reduction of emissions), transition to steam plant natural gas (~10% reduction), energy system efficiency (~5%), improved building efficiency (~10-12% reduction despite campus growth), carbon neutral agriculture (~4-5%), commuting and transportation efficiency (~2%), and other means (~3%). We would still emit about 10% of our new scope 2019 GHG estimate in 2030, or about 32,000 MT. To achieve carbon neutrality, these emissions would have to be balanced by carbon offsets. If purchased, these offsets would cost about \$160,000 at \$5/MT. There are better uses for these funds, so every effort should be made to drive down GHG emissions even further (see 3.2.12 below).

3.2 University Budget & Finance

This section describes the possible financial implications of many of the pathways and initiatives recommended by the CAC.

3.2.1 GHG Software Platform

While the *VT GHG Master Spreadsheet* has facilitated analysis of VT's carbon footprint in past years, it is recommended that VT purchase an annual license for a formal GHG assessment software platform. SIMAP® is a carbon and nitrogen-accounting platform that can track, analyze, and improve campus-wide sustainability. This platform is the most widely used by universities for their carbon and/or nitrogen footprints; the current version or its predecessor is used by 10 of the 12 peer institutions we reviewed. It has customizable carbon emissions coefficients, flexibility in data import and export, and includes a third-party data review, which provides additional points in the AASHE Sustainability Rating System. A tier 2 software license is \$600/year.

3.2.2 Costs and benefits of University Compost Facility at Kentland

Both the Agriculture/Forestry/Land Use and Waste/Recycling/ Composting subcommittees strongly recommend a University Compost Facility at Kentland. The facility would reduce net animal waste GHG emissions, support soil health, relieve the need to purchase new land (estimated at \$3 million) for future land application of animal wastes, and support sustainable agriculture education and research. The Facility will also provide significant benefits in management of campus organic wastes from dining halls, athletics, the vet school, and campus tree trimmings. Capital cost is estimated at \$1.4-1.8 million with net operating cost of about \$165,000/year.

3.2.3 Cost and benefits of Renewable Energy Certificates

In 2020, Virginia Tech purchased renewable energy certificates (RECs) from Appalachian Power Company (APCO) for \$1/MWh of electricity purchased. Virginia Tech Electric Service (VTES) electricity purchases from APCO in FY 2019 were 327,452 MWh, of which 212,600 MWh were for campus use, with the remainder for town customers. For 2019, VT bought RECs for 10% of its purchases (32,745 MWh x \$1/MWh=\$32,745) and for 2020, VT bought RECs for 20% (65,490 MWh x \$1/MWh = \$65,490). APCO has 10% renewables in its power portfolio, so the total VT renewable electricity for 2019 was 20% and for 2020 30%.

Using APCO's 2018 GHG emissions rate (0.676 MT CO₂e/MWh (includes APCO's 10% renewables), the **2020 GHG benefits of 20% RECs** of VT purchases from APCO = 20% x 212,600 MWh x 0.676 MT CO₂e/MWh = **28,744 CO₂e or 12% of total 2019 VT emissions**. The **REC price per MT CO₂e offset** = \$1/MWh / 0.676 MT CO₂e/MWh = **\$1.48/MT CO₂e**. Some argue that buying RECs seems like we are simply throwing money at the problem, but the \$1.48 cost per MT CO₂e reduction is actually a good deal compared to carbon offsets, which currently run \$5-10/MT CO₂e.

Nonetheless, we would rather generate or purchase renewable electricity than buy RECs, and indeed our pathways wean us from RECs as we move forward. But the 2020 RECs purchase makes a serious statement about our climate commitment, and we achieve two years early the Governor's E.O. 43 requirement that state agencies procure 30% of their electricity from renewable sources by 2022 and 10 years early the 30% by 2030 requirement for utilities.

3.2.4 Costs and benefits of 100% renewable electricity and financing/ownership options

Pathways for Goal #2— 100% renewable electricity—show it can be achieved through a combination of:

- **Solar energy projects on VT lands and campus building rooftops.** These can be VT owned or 3rd party owned with a VT power purchase agreement.

- **Power purchase agreements (PPA)** with utility or 3rd party-owned projects in Southwest Virginia
- Other PPAs or virtual PPAs.
- **Appalachian Power's increasing renewable portfolio**, which is now 10% and by new state law must be 14% by 2025 and 30% by 2030.
- **Renewable energy certificates (RECs)** (purchased MWh credits) from utility or 3rd party.

Achieving 100% renewable electricity by 2030 assumes **60% renewable generation plus 30% APCO renewable portfolio and 10% RECs** for VT steam plant cogeneration. The pathways assume a combination of solar on **VT buildings and land (15 MW)** owned by VT or 3rd-party PPA and 3rd-party-owned and APCO-owned SWVA **PPA capacity (130 MW+15 MW=145 MW)**. **Capital costs** of VT owned solar systems are assumed to be \$2/W for <0.5 MW projects and \$1.50/W for >1MW projects. This works out to:

- Total capital cost for 15 MW on VT buildings/lands would be about \$25-30 million.
- Total capital cost for 145 MW would be over \$200 million.
- The best PPA contract rates on the market are 20-year, non-escalating flat rate of ~7¢/kWh.

While utility/3rd party PPAs are assumed to be the preferred approach for off-campus solar projects, on-campus projects can be either VT-owned or utility/3rd party owned with PPAs.

- The advantages of VT owned and managed renewable systems are greater control, reduced long-term electricity cost and greater financial return; and disadvantages are high initial capital investment and operation/maintenance requirements. VT has the unique advantage of having its own utility VTES to do this.
- The advantages of PPAs are little or no initial capital costs and no operation/maintenance cost; and disadvantages are potentially higher electricity costs and less operational control.

Considering the effects of the Covid-19 pandemic on university resources, it may make sense to initiate solar development through 3rd party PPAs, which would preserve university capital to invest in energy efficiency or other priorities.

3.2.5 Costs and benefits of steam plant improvements and chiller upgrades

Operating and upgrading the campus energy systems is a costly but necessary enterprise. Upgrades and modifications like the natural gas pipeline, new boilers, and new central and upgraded chillers require significant investment. However, the benefits, including a more modern energy system, greater efficiency, reduced operating costs, and reduced GHG emissions, make these smart investments. Further upgrades and modifications will be necessary, and they are part of the cost of running an institution the scale of Virginia Tech. Incorporating the energy goals of CAC to fully replace coal with natural gas and improve the efficiency of VT energy systems can be part of these necessary upgrades with marginal increase in cost, but with substantial additional benefits to the university.

3.2.6 Costs and benefits of 10-year energy management plan including auxiliary buildings

The 2015-2020 5-year Energy Management Plan was a great energy and economic success, as the university invested \$14.2 million in energy efficiency improvements that resulted in an average 5.3-year payback or 19% return on investment (ROI). There are more opportunities for improvements in VT buildings, especially Auxiliary buildings, and the proposed 2021-2030 10-year Energy Management Plan should be funded at a level of \$5-8 million per year and allowable average 8 year payback or 12.5% ROI. Retrofit of Auxiliary buildings may require a special financing mechanism.

However, additional energy management staff may be needed in Facilities to develop and implement the Plan effectively. The position of Energy Manager is still vacant and additional staff expenditures would be easily recouped by energy cost savings.

3.2.7 Energy efficiency retrofits in Leased buildings

1.4 million square feet of off-campus building space in Blacksburg is leased to Virginia Tech department operations, and we are now including this space in our 2020 VT GHG inventory. Therefore, it is subject to the goals of our CAC. The VT Foundation owns much of this space and the VT Office of Real Estate Management pays rent and utility bills.

The Foundation operates on a revenue neutral basis, so that any investment it makes in energy efficiency improvements in its leased buildings must be recovered by increasing rent. With prudent efficiency investments, the resulting increased rent for the university should be more than offset by a decrease in utility bills. The Foundation CEO is willing to engage in energy retrofits under these terms on a pilot basis, starting with the Corporate Research Center once a new CRC president is hired.

3.2.8 Implementing LEED-Silver and ASHRAE 90.1 Standards, New VT Design Standards

Facilities Capital Construction Design personnel have long incorporated LEED-Silver and ASHRAE standards in design and construction of new VT buildings and major renovations, so this part of the CAC will likely not be changed. Newly adopted VT Design and Construction Standards reflect CAC goals and are expected to streamline design decisions. Adding energy efficiency benchmark goals for energy intensity (energy/gsf) in newly initiated buildings in 2022 (20% below 2020 existing building average) and 2028 (40% below 2020 existing building average) may require some staff energy analysis, but it is intended to be a collective benchmark and not a design tool for individual buildings.

3.2.9. Waste Management: Costs and Benefits of a Zero Waste Campus

Waste management at Virginia Tech is a functional but fragmented enterprise, and an audit by a zero-waste consultant could yield recommendations to improve the efficacy and efficiency of operations. *Table 3.1* breaks down the \$1 million/year cost associated with waste management, not including Facilities Waste Management Trash and Recycling unit personnel.

Waste audits typically reveal that about 50% of the material placed in trash containers could be recycled. By improving the infrastructure (e.g., appropriate collection containers throughout campus) and educating our students, faculty and staff on how to use them with appropriate signage and education on the cost and benefits of recycling, we would be in a position to realize reduced costs and increased waste diversion and recycling rates.

Table 3.1 Calendar Year 2019 Costs (excluding Virginia Tech Trash & Recycling Unit):

Republic Services:	\$ 130,000
Meridian Waste Virginia:	\$ 572,000
MRWSA Trash Tipping Fee:	\$ 218,859
MRSWA Recycling Tipping Fee:	\$ 11,518
<u>ROF Food Waste Composting</u>	<u>\$ 84,900</u>
Total Cost	\$1,017,277

In CY 2019 the university reported 6,000 tons of waste: 4,000 tons of trash and 2,000 tons of principal recycling materials (PRMs). Shifting 1000 tons from trash to recycling would reduce our

MRSWA Tipping Fee from \$229,500 to \$208,560 and increase our waste diversion rate and recycle rate to 81% and 55% respectively. The goal to become a Zero Waste Campus by 2030 requires a 90% waste diversion rate, defined as 90% of total waste kept out of landfill.

It is noteworthy that as of this writing the national recycling market is in disarray, and to keep VT recycling vendors afloat, our recycling costs will increase 50% and approach trash tipping fees in June 2020. As President Steger said in 2008 when the cost of recycling grew and advocates feared canceling the recycling program, “Yes it’s costly, but it’s a necessary cost of doing business.”

3.2.10 Costs and benefits of transportation pathways

Transportation goals and pathways aim to reduce single-occupancy vehicle commuting and to reduce overall transportation related GHG by 40% by 2030. The benefits of these goals are numerous and far reaching. Moving people away from single-occupancy vehicles toward more sustainable mobility can enhance the quality of campus life by reducing congestion, noise, and pollution of vehicles. Improving trails, sidewalks, and mobility infrastructure will increase access for all, boost campus livability, enhance emergency access, and improve health, safety and sustainability. The reduction in vehicles also reduces roadway repair and maintenance costs and curbs the need to build costly parking structures (upwards of \$25,000/space).

Costs associated with these goals and pathways include increased parking permit costs (ideally on a sliding scale based on salary), a cultural shift for those accustomed to driving, upfront costs associated with infrastructure improvements, and increased maintenance costs for existing and new alternative transportation infrastructure.

Parking Services is entirely self-funded. The revenue from parking permits and citations pays for parking structure debt, maintenance of parking lots, and salaries of employees. Therefore, any loss in revenue would have to be supplemented by a subsequent increase in revenue elsewhere. This might seem like a huge barrier to overcome, but fortunately VT parking permit prices are already comparatively low. Student resident and commuter parking permit fees are about at the median of peer institutions, but employee parking permit cost is the least expensive of peer schools, and 30% less than UVA’s fees.

3.2.11 Costs and benefits of a testbed Agrivoltaic project at the Catawba Sustainability Center and/or Kentland Farm

The Agriculture/Forestry/Land Use and Renewables subcommittees recommend developing a dual-use farmland-solar project at Catawba and Kentland. Such a system would likely have capital costs of about \$1.65 million/MW installed capacity, require 8 acres/MW, produce 1340 MWh/MW or **168 MWh/acre**, offset 1000 MT CO₂e/MW or **125 MT CO₂e/acre**, and have a levelized cost of electricity of about **7 cents/kWh for 25 years**, assuming 3% cost of money. This would be a cost-effective arrangement for VTES.

3.2.12 Costs of carbon offsets

Achieving the overall CAC goal of a carbon neutral VT campus by 2030 may require the purchase of carbon offsets. Many of the goals and pathways will drive GHG emissions down to near zero by 2030, especially 100% renewable electricity, energy efficiency retrofits to energy systems and buildings, replacing coal with natural gas, and reduction of transportation, agriculture, and waste emissions. But the CAC specifically calls for carbon offsets in 2030 to negate remaining emissions from agriculture, business air travel, and newly initiated buildings. Pathways for goals 3 and 15 call for the CAC 2025 update to plan for renewable heating and promotion of zero-emissions

options by including upstream natural gas methane leakage in our carbon neutral goal by 2035. This may initially increase the need for offsets after 2035.

Most universities use carbon offsets to reduce their GHG emissions and approach carbon neutrality. The purchase of carbon offsets can be costly. Current offset prices are \$5 - 10/MT CO₂e. Carbon offsets to cover 2020 VT CAC GHG emissions of about 300,000 MT would be \$1.5 – 3 million. As calculated in section 3.2.1, if we achieve our goals and pathways, we may still emit about 10% of our new scope 2019 GHG estimate in 2030, or about 32,000 MT. To achieve carbon neutrality, these emissions would have to be balanced by carbon offsets. If purchased, these offsets would cost about \$160,000 at \$5/MT.

There are better and more efficient uses for this money. Every effort should be made to avoid the need for offsets by investing in energy efficiency and renewable energy on campus. This type of investment not only reduces emissions and the need for offsets, but also provides local and long-term financial benefits.

3.3 University Educational Mission

As a Land Grant university, Virginia Tech has comprehensive educational instruction, research and outreach programs. Several of these programs focus on sustainability and its many dimensions related to the physical, natural, and social sciences; technology; humanities; and economics, policy, and politics. The 2020 VT Climate Action Commitment and its implementation provide a wide range of educational opportunities for these programs, faculty, and students.

The VT Climate Action Commitment is a bold initiative. It calls for aggressive changes in the campus physical plant and energy sources by applying cutting-edge technologies and designs. It calls for innovative partnerships and financial arrangements to fund and implement these changes. It calls for structuring cultural change to effect sustainable behavior in living, be it commuting to campus, recycling and composting, or overall consumption. It calls for engagement of all faculty, staff, students, and the larger community to work toward a common goal of climate action, social equity, and justice.

This bold initiative is ripe for study, for analysis, and for learning. As with many experiments, the CAC will have gotten some things wrong. We invite students, faculty and staff to engage with the CAC as a living document and with the campus as a living system, discovering what works and what does not. There is much to learn from this experiment and many lessons that Virginia Tech will be able to share with others.

The Climate Action Living Laboratory (CALL) aims to provide supportive infrastructure for various projects and initiatives. Some projects may be as small as a term paper or class project while other initiatives may be as large as well-funded research programs or new initiatives of Cooperative Extension. Regardless of size and complexity, the goal is to apply experiential learning to the implementation of the CAC using the living physical and human campus as its focal point. Since the 2009 VT CAC, the university has implemented programs to engage students in campus sustainability, mostly through the Office of Sustainability in the Facilities Division. The Sustainability Internship and the Green RfP programs have been very successful. The 2020 VT CAC builds on this experience and calls for broadening the effort to engage more students, faculty, departments, and colleges directly in the University's climate action endeavors.

Therefore, if CALL is to be effective, academic leaders, including the Provost, the college deans, and relevant department heads, will need to support the effort. Implementation Goal 13 calls for restructuring operations and governance to do this.

3.4 University Operations and Staffing

The goals and pathways of the 2020 VT CAC will require changes in some operations and staffing to pull them off.

3.4.1 Operations

The most important potential operations change proposed in the 2020 CAC involves the **Office of Sustainability (OS)**, which has played a significant role in implementing the 2009 VT CAC and engaging the campus in sustainability programs. For its accomplishments with limited staff, the Office deserves great praise. The 2020 VT CAC calls for an expanded campus effort for engagement and to integrate climate action into the University's educational mission as recommended in goals 10 and 13. As a unit in the Facilities Department, the OS is somewhat constrained in its ability to engage the academic, student affairs, and auxiliary sides of campus to achieve both the concrete climate action goals and the Climate Action Living Laboratory (CALL) goal.

Goal 13 calls for implementation of the CAC “at a high level of university operations and governance.” It recommends **restructuring the OS as a university wide unit**, and renaming it the **University Office for Climate Action and Sustainability (OCAS)**. The OCAS would have primary responsibility for CAC oversight, with strong connections to Facilities units as well as to related activities in academic units (including the goal 10's Climate Action Living Laboratory), student life and student affairs, and other units.

The OCAS would be directed by a new University **Chief Climate Action and Sustainability Officer (CCASO)**. The CCASO would report jointly to the Senior Vice President and Chief Business Officer and to the Executive Vice President and Provost. The CCASO would chair the restructured Climate Action, Sustainability and Energy (CASE) committee, which would be a restructured version of the current Energy & Sustainability committee (see 3.5 below).

Goal 13 pathways also recommend supporting the CCASO with CAC implementation in Facilities, by creating a director position in the Division of Campus Planning, Infrastructure, and Facilities (DCPIF), who would oversee strategic Facilities initiatives including climate action and sustainability and other strategic goals.

A second implication for operations is included in Goal #7 pathways. **VT waste management**, including trash, recycling, composting, construction waste, and specialty waste, is functional but fragmented across several departments. The CAC calls for a zero-waste consultant to do a waste and management audit and recommend organizational changes to improve efficiency to achieve CAC goals. The Working Group considered recommending hiring a **Waste Manager** for all of campus or forming a **Waste Council** of all departments currently involved, but ultimately decided to rely on the consultant study to determine the best outcome.

3.4.2 Staffing

Some of the Facilities departments are already understaffed, and implementation of the 2020 VT CAC will add to their requirements. The CAC specifically identified some areas in need of staffing:

- Create a university **Chief Climate Action and Sustainability Officer (CCASO)** to direct the new University Climate Action and Sustainability Office (CASO) to oversee implementation of the VT CAC. The CASO would elevate and replace the existing Office of Sustainability, and the CCASO would report jointly to the Senior Vice President and CBO and the Executive Vice President and Provost. The CASO would require sufficient staff to support CAC implementation.
- Fill the VT **Energy Manager** position and supplement staff as needed. This position has been vacant for more than one year and is critically important for implementing the entire Climate Action Commitment. The new energy manager should have sufficient staff.
- Sufficient **engineering and design staff** to achieve CAC goals for buildings

3.5 University Policies and Governance

The principal governance committee currently dealing with the CAC is the Energy & Sustainability Committee (E&SC). Since its creation in 2007, it has played an important role in climate action and sustainability. A subcommittee of the E&SC developed the 2009 VT Climate Action Commitment and Sustainability Plan, and another developed updates in 2013 and 2014. Indeed, the charge letter to the Working Group requires informing the E&SC of progress, and governance approval of the 2020 VT CAC will commence with E&SC review.

Like the current Office of Sustainability, the E&SC is positioned in the university's facilities world. Although it has faculty and students in addition to staff as members of the committee, it reports to the non-academic Commission on University Support (CUS), which reports to University Council.

2020 CAC Goal #13, and the associated pathways, calls for a reconstitution of the E&SC, renaming it the **Climate Action, Sustainability, and Energy (CASE) Committee**, and revising its charge, membership, standing subcommittees, and reporting lines not only to CUS but also to academic and student affairs commissions (see section 4.1).

3.6 University Culture

The 2009 VT CAC and Sustainability Plan aspired to create a campus “culture of conservation,” understanding how important engagement and behavior were to the achievement of its goals. The same is true today as we develop the 2020 version of the CAC. We look around and while many students, faculty, and staff are dedicated to actions and behavior to enhance climate action and sustainability, we see people making choices about waste generation, littering, transportation, energy use, and overall consumption that are not consistent with sustainable living or necessary climate action. The actions of an individual will not save the world, but the world cannot be saved without their collective action.

In response, the Working Group established a subcommittee on Structuring Sustainable Choices to explore programmatic opportunities to create conditions where institutional barriers to sustainable behavior are reduced and sustainable choices are made easier, cheaper, and quicker. Our focus is not on changing people's values, but on improving information and opportunities for alternative transportation, waste recycling, proper waste handling, reducing energy waste, and other choices. Along with better choices comes conscious sustainable behavior and cultural change.

4. Implementing, Engaging, Monitoring, Reporting, Updating VT CAC

4.1 Structure, Operation and Governance of VT CAC Implementation

The governance and operations of climate action and sustainability at Virginia Tech has led to substantial progress during the last decade. However, the comprehensive nature of the VT 2020 CAC will require a broader approach than existing arrangements. Currently, the Office of Sustainability (OS) in the Facilities Department has primary responsibility for sustainability operations and the Energy & Sustainability Committee (E&SC) is the primary governance unit.

Both are positioned in the Facilities world, with OS reporting to the Chief Facilities Officer and the E&SC reporting to the Commission on University Support (CUS). Goals 1-5, 7, 9, and 15 are the most important actions to reduce GHG emissions and are all dependent on initiatives by the Facilities departments. Facilities must play a critical and key role in CAC implementation.

However, the CAC goals go farther than the physical plant and call for action through the university's educational mission, campus culture, social equity and justice, and engagement of all departments, faculty, staff and students. Both the OS and the E&SC have engaged a broader perspective than Facilities. For example, with a limited staff, OS has operated effective student internship and student-initiated Green RfP programs, and the E&SC has a diverse membership of faculty, students, and Facilities staff.

But to fully implement the VT 2020 CAC, modification of both operations and governance must be considered. *Goal #13* and the associated pathways suggest operational and governance structures that aim to elevate the university's commitment and better reflect the comprehensive nature of the 2020 CAC.

4.1.1 Structure and Operations for VT CAC Implementation

Goal #13 and the associated *implementation* pathway call for changes in the direction, responsibilities, staffing, location, and reporting lines of the operational **unit charged with oversight in implementing the CAC**. CAC implementation includes goals related to the physical plant and facilities and those relating to academics, student affairs, and campus culture. The Office of Sustainability (OS) has been a logical unit for CAC implementation, but its location in Facilities will constrain its effectiveness. Given the proposed breadth of the CAC, Goal #13 calls for:

- Making the OS a university-wide unit, renamed the **University Office of Climate Action and Sustainability (OCAS)**. The OCAS would have primary responsibility for CAC implementation, with strong connections to Facilities units as well as to related activities in academics (including the Climate Action Living Laboratory), student life and student affairs, and other units.
- A new **University Chief Climate Action and Sustainability Officer (CCASO)**. The CCASO would **report jointly** to the Senior Vice President and Chief Business Officer and to the Executive Vice President and Provost. The CCASO would direct the OCAS and chair the restructured Climate Action Sustainability and Energy (CASE) committee (see below).
- Recognizing the critical work to be done within Facilities, creating a **director position in the Division of Campus Planning, Infrastructure, and Facilities (DCPIF)**, who, working with the CCASO and appropriate staffing, would oversee strategic facilities initiatives including climate action and sustainability and other goals such as campus safety and accessibility and inclusion.

4.1.2 Governance for VT CAC implementation

The *governance* pathway in goal #13 calls for restructuring **the university Energy and Sustainability Committee (E&SC)**, including its name, charge, membership, and reporting, to oversee the implementation and review of the CAC goals and progress involving all stakeholders.

- Rename the E&SC the **Climate Action, Sustainability, Energy (CASE) Committee**.
- Revise the **reporting lines** of the CASE committee to include, in addition to CUS, relevant commissions for student life, academics, faculty and staff.
- Modify the current charge of the E&SC for the CASE Committee. Consider the following:
“To review and provide guidance to all facets of University Administration on implementation opportunities and issues relating to the university's Climate Action Commitment and the pursuit of environmental quality and social sustainability, through policy, infrastructural and operational changes, education, and broad engagement.”
- Modify the **membership** of the new CASE committee to include additional representation of the VP for Campus Planning, Infrastructure & Facilities (VPCPIF), the Provost’s Office, Student Affairs, student environmental organizations, and local community partners.
 - Current E&SC membership:
Six Ex-Officio; Two from Facilities Services; One from Environmental Health & Safety; Four from Faculty Senate; Two from Staff Senate; One College Dean; Two graduate students (GSA); Two undergrad students (SGA)
 - Suggested additional members:
Ex-Officio (Chief Climate Action & Sustainability Officer (CCASO), Chair; Sustainability Manager, Dining Residence Life; Asst. VP for Utilities; Executive Vice Provost; Director, Parking & Transportation; Sustainability Manager, Town of Blacksburg); student representing environmental group (by SGA); student representing frontline communities (by Vice Provost for Inclusion/Diversity)
- Create **CASE subcommittees** (SC) that may include: CAC Implementation SC, GHG Inventory SC, Climate Action Living Laboratory (CALL) SC, Climate Justice SC, Engagement & Sustainable Choices SC, Education & Student Involvement SC, Town-Gown Sustainability SC. Subcommittees may include participation beyond formal CASE membership.
- **Process for renaming, reconstituting E&SC to CASE:** Changes to VT governance structure, names, membership, charges are not straightforward and take some time with annual appointments. It is recommended that the following process be used:
 - In fall 2020, E&SC forms a task force or subcommittee to explore CAC operations and governance recommendations, including developing paperwork for changing committee name, charge, membership, and subcommittees.
 - Provided the BOV approves the 2020 CAC update, the E&SC will submit proposed changes in spring 2021 for University Council approval. The new CASE would begin in fall 2021.

4.1.3 Duties of Operations and Governance units

- **Collect data** relevant to the CAC (energy use, GHG inventory, and other pathway metrics) and prepare an **Annual Report** of CAC Progress each fall semester for the previous fiscal year.
- **Evaluate CAC goals according to best practices** in light of new information and standards and lead **five-year update review of CAC** (2025 and 2030)
- **Establish mechanisms to engage and educate** the Virginia Tech community on the CAC and climate action
- Establish ad hoc committees to develop instructional, research and outreach programming for the **Climate Action Living Laboratory (CALL)**

- Broaden the geographic scope of the **CAC to all Virginia Tech properties** in future 5-year updates to include other University properties/locations
- **Advocate** for allocation and prioritization of resources to support the CAC

4.2 Engaging the Community

Implementation of the CAC requires major changes in the campus physical plant. But it also requires involvement of the entire community including students, faculty and administrators, staff, and academic and auxiliary departments in order to:

- Develop innovative instructional, research, and outreach initiatives incorporating these physical changes as part of the **Climate Change Living Laboratory (CALL)**,
- **Structure sustainable choices** by the community to enhance the campus sustainability culture,
- Participate in **annual reviews and 5-year updates** of the Climate Action Commitment.

Goal #13 describes the means for this engagement through the restructured **University Office for Climate Action Sustainability (OCAS)** for operations and the **Climate Action, Sustainability, and Energy (CASE) Committee** for governance.

Under the direction of a university **Chief Climate Action and Sustainability Officer (CCASO)**, the restructured OCAS and CASE Committee would not only monitor developments related to the CAC in Facilities but also develop and promote academic and student life CAC initiatives through engagement groups of academic departments and faculty for CALL programs and student affairs and student life representatives for campus culture programs. These latter initiatives would engage existing student life programs, including student orientation, VT Experience, Dining and Residence Life, and others to promote sustainable choices and behavior.

4.3 Annual Report of Progress and AASHE STARS Reporting

Each fall semester, the current Office of Sustainability has prepared an annual sustainability report describing climate action and sustainability activities in the prior fiscal year (FY) using the VT 2009/2013 CAC framework. Indeed, the annual report was called for in the original CAC and has been very effective in not only documenting progress for all to see, but also enhancing performance.

The new OCAS would prepare an **Annual Report on VT Climate Action & Sustainability**.

In addition, the OS conducts the AASHE STARS assessment every three years. The Association for the Advancement of Sustainability in Higher Education (AASHE) monitors and evaluates college sustainability programs. AASHE's Sustainability Tracking, Assessment & Rating System (STARS) is used to assess sustainability progress. More than 400 institutions have earned a STARS rating, making the program the most widely-recognized framework in the world for publicly reporting comprehensive information related to a college or university's sustainability performance.

Participants report achievements in five overall areas: academics, engagement, operations, planning and administration, and innovation and leadership. The 2014 update of the VT Sustainability Plan adopted the STARS assessment as the main evaluation tool for overall VT sustainability.

Because of demonstrated effectiveness of the annual report and the AASHE STARS assessment, the Working Group recommends their continued use to monitor and evaluate progress in achieving the VT 2020 CAC. As described in section 4.2, the restructured OCAS would continue to take the lead for these reviews with enhanced engagement of stakeholders through review groups and through the CASE Committee in governance.

4.4 GHG Inventory Procedures

The GHG Inventory Subcommittee Report details data collection scope, method, and process recommendations. They call for annual review of various data sources and assumptions including:

- Geographic Boundaries
- Global Warming Potentials
- Electricity
- Other energy Fuels
- Transportation
- Business Travel
- Water Use and Waste Water
- Waste Disposal
- Food and Dining
- Agricultural and Forestry Operations
- Use of Climate Action Living Laboratory to assist in GHG Inventory

While the *VT GHG Master Spreadsheet* has analyzed VT carbon footprint in past years, it is recommended that VT purchase a formal GHG assessment software platform. **SIMAP** (Sustainability Indicator Management and Analysis Platform) is a carbon and nitrogen-accounting platform that can track, analyze, and improve your campus-wide sustainability. It is the most widely used GHG inventory method of analysis and is used by 10 of the 12 peer institutions we reviewed. It has customizable carbon emissions coefficients, flexibility in data import and export, and includes a third-party data review, which provides additional points in the AASHE Sustainability Rating System.

4.5 Timing of Recommended Pathways and Implementation Milestones

4.5.1 Timing of Recommended Pathways

The VT 2020 Climate Action Commitment provides a long-term vision of Virginia Tech progressing in its duty to contribute to a carbon neutral world. But every long-term journey begins with initial steps. Therefore, our goals below identify not only aspirations but also Pathways to achieve them. These Pathways identify actions in following three timeframes:

a. Immediate Actions, 2020-2022

It is critical that the university take some action quickly, not only to show it is serious about the commitment, but also because climate change is upon us and it is time to act. **Chapter 9** presents several “shovel ready” initiatives ready for action in this timeframe.

b. Mid-term Actions, by 2030

Other aggressive actions will require developing partnerships, detailing strategies, and securing funding that will take time, but we believe 2030 to be a critical target since it is a key milestone of the VT 2020 CAC and the Virginia Clean Economy Act of 2020.

c. Long-term Actions, by 2050

Some significant actions that affect the overall infrastructure of the university will require more time for affordable technology to develop, energy markets to evolve, and state and federal policies to advance, including a meaningful price on carbon.

4.5.2 Implementation Milestones

The VT 2020 CAC calls for an annual review and report of progress conducted by the new UOCAS and a five-year update to the CAC conducted by the reconstituted E&SC, the Climate Action, Sustainability and Energy (CASE) Committee. The five-year updates should occur in 2025 and 2030. The following milestones in table 4.1 are taken from the goals and pathways.

Table 4.1 VT 2020 CAC Implementation Milestones

Date	Goal	Milestone
2020	2	30% Renewable Electricity
		BOV approves VT 2020 CAC
2021	13	E&SC renamed Climate Action, Sustainability & Energy (CASE) Committee
	11	Operation plan for Climate Action Living Laboratory (CALL)
	5	Candidate identified for Zero-Net-Energy new building to be built by 2026
	3,4	1st year of 10-year 2021-2030 Energy Management Plan
	2	Fishburn Forest student-led wind assessment
2022	2	2.3 MW solar PV on VT rooftop and land
	2	VTES Solarize program for Town customers, 250 kW net metered
	4	Electricity use 10% below 2006 (Governor's E.O. 43)
	5	Newly initiated buildings EUI 20% below 2020 existing average
	8	Sustainable Procurement Policy v.2
2023	14	VT Foundation energy efficiency plan for leased buildings (CRC)
	2	VTES Community Solar project for Town customers 0.5-1 MW
2024	3	Chiller Phase II Upgrade complete
2025	3	Total conversion to natural gas in steam plant; plan for transition to renewable fuel
	15	5-year CAC update: Explore options for 2030-2040
	7	Recycling rate 55%; Waste diversion rate 85%; reduce trash to landfill/capita by 25%
	9	Reduce Single-occupancy-vehicle commuting by 20%
	2	10 MW solar PV on VT lands
	3	Explore geothermal heat pump hot water heating options for new districts
2026	5	Signature Zero-Net-Energy (ZNE) building on campus
2027	2	10 MW battery storage for VT Smart Grid research by VT PEC-VTES partnership
	2	35 MW solar PPA with Apco/3rd party
2028	5	Newly initiated buildings EUI 40% below 2020 existing average
2029	2	100 MW solar PPA with Apco/3rd party
2030	15	5-year CAC update: Explore options for 2040-2050
	1	Carbon neutral campus operations
	2	100% Renewable Electricity
	4	Total building energy use down 10%, EUI down 20% below 2020
	5	Newly initiated buildings carbon neutral operations
	6	Carbon neutral agriculture/forestry operations
	7	Zero Waste campus
	9	Transportation emissions reduced 40% from 2020
2050	15	Fossil fuel free campus

4.6 Five-year CAC Update

The VT 2020 Climate Action Commitment is our best effort for today, but the world is changing rapidly in technology, economy, policy, and priorities. It is important to keep the CAC current by providing annual reviews and updates on a five-year cycle. The update process should not be as intense as that of the 2020 CAC Working Group, but it should engage a committee of faculty, students, and staff stakeholders. The update would be led by a subcommittee of the CASE Committee in governance. The annual reports will ease the pain of data gathering, but there is a need to assess the conditions and assumptions of the 2020 CAC process and modify goals and pathways as needed.

Our focus in the 2020 CAC has been on 2030, mainly because it is difficult in these changing times to envision the world of climate change, its effects, mitigation strategies, and the state of technology and policy beyond the next decade. For this reason, 2020 CAC goal 15 provides a vision for a fossil fuel free campus in 2050 without much detail because we just don't know what the next three decades will bring. Therefore, the Five-year CAC Update gives the opportunity to take stock of the world, of the nation, of the Commonwealth, and of the university, as well as of technology, economy, policy and priorities, to revise as needed the CAC goals and pathways. Goal 15 recommends the 2025 update assess preliminary prospects for the 2030-2040 decade, and the 2030 update do the same for 2040-2050. It also suggests the 2025 update begin to initiate climate action at other Virginia Tech locations beyond Blacksburg.

5. What We Learned from Community Engagement

The 2020 Climate Action Commitment (CAC) update process placed great emphasis on genuine and meaningful community engagement. Engagement provides opportunities to: crowdsource good ideas; collect feedback, including on implementation challenges and different impacts, from as wide and diverse a swath of the population as possible; inform the community of our efforts, including options being considered; and build support for the recommendations the CAC working group will ultimately make.

The Engagement Subcommittee chose various means of participation that ranged from ‘informing’ to ‘involving’ on the International Association for Public Participation’s Spectrum of Participation.¹ The CAC update process overall--with its robust network of subcommittees--may be considered a true ‘collaborative’ enterprise, with over 100 students, staff, faculty, and community members involved.

In terms of wider outreach, the Engagement Subcommittee originally planned on holding a major half-day town hall event on campus. Unfortunately, COVID-19 made that impossible. Nonetheless, the group facilitated the implementation of a range of ‘physically distanced’ engagement activities:

- Created a dedicated website portal introducing the CAC process and sharing committee materials²
- Shared videos focused on progress updates regarding the work of the WG and the subcommittees
- Crafted VT News stories
- Managed a dedicated email address for the initiative
- Distributed a survey widely throughout the community, which received 242 unique responses
- Convened a series of 12 Zoom meetings, 3 general and 9 focused on subcommittee topics, which involved over 226 people³

Each of these streams of engagement is further detailed in this section, and insights and information collected through them is summarized. Even more information is available in the Engagement Subcommittee final report. **Key findings from these various engagement efforts are:**

- **Aggressive action to tackle climate change is broadly supported** throughout the community
- Various **good ideas both emerged and were affirmed** through this process, underscoring their potential value to the community

¹ International Association for Public Participation (2018). IAP2 Spectrum of Public Participation.

https://cdn.ymaws.com/www.iap2.org/resource/resmgr/pillars/Spectrum_8.5x11_Print.pdf

² The central engagement website is: <https://svpoa.vt.edu/index/VTACACRevision.html>

³ These are not unique people, as many participated in more than one session

- Emphasis was placed on **systemic or “upstream” solutions** rather than placing the onus on behavior change of individuals
- **Key champions and additional stakeholders** important for propelling further action were identified
- There is **broad support for key actions proposed through the CAC update** process, including:
 - A shift to **carbon neutrality and 100% renewable energy**, with an emphasis on increased solar energy
 - **Alternative transportation** and reductions in private automobile usage
 - A **reduction in overall energy demand** via improved building efficiency standards
 - Better **waste and energy management**, including through a comprehensive composting system and a more sustainable (i.e. circular and local) procurement system
 - **Partnering with the local community** and municipal governments to implement climate solutions
 - **Structuring VT as a ‘living laboratory’** for sustainability, integrating sustainability into academics, research, and operations and engaging faculty, staff, students, partners, and the community through action-focused networking
 - **Incorporating environmental justice** (including climate justice, energy justice, and food justice) considerations into all decision-making processes pertaining to the procurement and consumption of resources.

5.1 Means of Engagement: Webpages, Videos, and VT News Coverage

The CAC 2020 update web pages and videos play critical roles in both disseminating information and encouraging community members to further engage. Thanks to the generous involvement of the communications team in the Office of the Senior Vice President and Chief Business Officer, the initiative established a network of webpages. The various pages setup for the CAC 2020 update convey the following:

- Central webpage - <https://svpoa.vt.edu/index/VTACRevision.html>
- Working Group information (process and interim products) - <https://svpoa.vt.edu/index/VTACRevision/VTACWorkingGroup.html>
- Engagement process - <https://svpoa.vt.edu/index/VTACRevision/VTAC-Convene.html>

A key outreach activity for information dissemination is a series of videos introducing the scope, preliminary findings, and proposed strategies of the overall workgroup and each subcommittee. In total, ten videos were prepared; these are available through the ‘Engagement Process’ page.⁴ These videos were created by subcommittee members themselves and authentically reflect the breadth of issues and ideas being tackled by subcommittees.

The site also contains working group and subcommittee files.

⁴ <https://svpoa.vt.edu/index/VTACRevision/VTAC-Convene.html>. The videos are permanently available through YouTube at: www.youtube.com/playlist?list=PLNp2Qle0vp7spOjgZxcQvyie56MQCvBfN

5.2 Survey Process and Results

A survey was designed and deployed to engage community members--including students, staff, faculty, and residents of Blacksburg and the wider region--to collect their feedback on the issue of climate change, VT's prior and ongoing efforts to address the issue, and potential future actions. Best practices in survey design were employed to ensure that questions adequately met the research objectives of the Climate Action Commitment update process. A copy of the survey instrument is attached to the Engagement Subcommittee report as *Appendix 1*. The survey was hosted on Qualtrics, a VT-supported survey management system.

The survey was distributed through a variety of channels, with the dual goals of reaching both a wide and diverse audience. Distribution channels included various departmental email lists, community email lists, student emails lists, and constituency organization email lists. The Engagement Subcommittee placed emphasis on getting a diverse set of opinions *and* ensuring that various communities were engaged.

Calls to participate were also included in the various versions of the VT Newsletter, and were sent multiple times to students, faculty and staff, and community members and alumni. All were invited to watch the videos prepared by the various Climate Action Commitment subcommittees (see section above), complete the survey, and register for one or more of the Zoom convening sessions (see next section). The exact questions asked are outlined in *Appendix 1* of the Engagement Subcommittee report.

5.2.1 Survey Responses

In total, 242 people completed the survey. Note that not everyone answered all questions, so the response rate per question (N) is provided in this analysis as appropriate. Given COVID-19 and all of the distractions that entailed, the Engagement Subcommittee was very satisfied with this response rate. This cannot be considered a representative sample of the university community by any means; however, it suggests that a significant number of community members are concerned about this issue and feel that action is necessary. The following subsections summarize survey findings.

Perspectives on climate change

The vast majority of respondents (92% of the 205 that answered that question) feel that “most scientists do think climate change is happening”. Ten responded that there is “still significant disagreement among scientists”. In terms of their own views, a similar number (91%) believe that “climate change is mostly caused by human activities”. 11 respondents believe that “climate change is happening, but is mostly caused by natural processes, not human activities”. Only one respondent believes that “climate change is not happening”.

Participants were also asked how serious of a threat they believe climate change is to human existence within the next 50 years, on a scale from 1 (not happening) to 5 (major threat). The mean response was 4.41 (N=205), indicating overwhelming belief that climate change is a critically important issue to the vast majority of respondents.

When asked to rank in order who is responsible for slowing climate change, a large proportion (129 out of 199 respondents) chose ‘public sector organizations (governments)’. This suggests a strong degree of support for government intervention to tackle a problem of this complexity and magnitude. An even larger proportion (136) chose ‘private sector organizations (corporations)’ as second most responsible; this would suggest that respondents feel that companies must shoulder significant responsibility for implementing necessary changes to their business practices and operations to address climate change. Roughly equal proportions ranked ‘individuals’ and the ‘nonprofit sector’ third most responsible (81 and 76 respectively), and fourth most responsible (71 and 107).

When asked to assess how important it is that VT act to address climate change--on a scale from not important (1) to top priority (5)--the vast majority (140 of 199) chose ‘5’. The mean choice was 4.52. Participants were also asked *why* it is important that VT in particular acts (or should not) in an open-ended question. Representative responses include:

- “VT is a land grant university, and as such, has a responsibility to take care of the land and those who dwell on it, and to direct its teaching and research for the improvement of all of Virginia's citizens.”
- “I think the most important role is doing climate-change-related education. Make every Virginia Tech community member realize how serious this issue is and the importance of taking actions.”

These are just two examples of the almost 200 comments submitted. Many are longer, reflecting the thoughtfulness of respondents. The raw submissions to this and the other questions throughout this section may be found in *Appendix 2* of the Engagement Subcommittee report.

When asked how familiar they are with Virginia Tech’s current climate commitments on a scale from 1 (not at all) to 5 (extremely familiar), responses were mixed; the mean response was 3.2. Ten respondents out of 201 reported they had no familiarity at all (1). This relatively low rating among a response pool that presumably has a higher than average level of concern and awareness about this issue suggests that more should be done to inform and engage the community around VT’s climate plans and actions.

Respondents also feel that Virginia Tech is not doing enough to meet its climate commitments. When asked how well they would say Virginia Tech is doing at meeting its current climate action commitments on a scale from 1 (extremely poor) to 5 (excellent), the mean response was 2.99. Only nine respondents think VT is doing ‘excellent’. A similar number (10) said ‘extremely poor’, with the rest between those two polls. When asked *why* they feel that way with an open-ended follow up question, participants gave thoughtful responses; three that reflect differing views are:

- “Being a student involved in the Climate Action Commitment Subcommittee for [agricultural] GHG emissions I believe that the University is meeting the goals of the commitment. Introducing proposals for a greener future at Virginia Tech is important and following through on those goals is also important.”

- “I think we could do more to enact policies that promote sustainable energy use and procurement practices. I think we are lacking some of the systemic pieces that will actually make large changes. I think this is also hard because most changes that are made require departments to front the cost - which is challenging.”
- “I haven't seen a lot of visible examples of VT taking action to combat climate change”

In an effort to better understand the degree to which respondents would prioritize climate action vis-a-vis other important issues the community faces, they were asked: *If Virginia Tech were to receive a million-dollar gift, what percentage would you allocate to addressing climate change versus other interests VT faces (e.g., housing, diversity scholarships, etc.)?* The mean response was quite high at 49%, with individual responses ranging all the way from zero to 100%. The standard deviation was 26.9%.

Climate actions and barriers

Participants were also asked what they would recommend that Virginia Tech do as an organization to address climate change (through an open-ended question). Here too, respondents provided a rich set of responses that are informative to the Climate Action Commitment update process. Sample responses are:

- “Set goals and stick to them. For instance, the commitment to having a carbon neutral campus by 2030 is a great goal. Having committees and institutional accountability to ensure that VT is on track to meeting this goal is imperative. The specific ways by which these goals can be achieved are highly variable, but there seems to be obvious areas where a huge difference can be made from an institutional level, such as decreasing the energy consumption of campus buildings, pursuing construction practices with a lower carbon footprint, initiating renewable and/or lower emissions energy use for campus power, investing in more sustainable transportation infrastructure around campus and Blacksburg.”
- “Remove single use plastic bags (banned), support Blacksburg transit in transitioning to electric busses, all buildings should be powered by renewables much sooner than 2040.”

Participants were also asked what they would recommend that we as individuals do to address climate change. Responses crossed a wide variety of areas, including but not limited to transportation, energy consumption, waste production, and diet. Two sample responses are:

- “Be the change! Get involved with groups that are creating policies that will help the entire VT community adopt and engage in the efforts. We need to embrace the goals and do our part to achieve them.”
- “We as individuals should simply do the "small things". We've seen that, with the spread of COVID-19, things so small as washing your hands and staying 6ft apart make MASSIVE differences in the spread of the disease. Climate change is the same way. Small, little contributions such as turning the lights off, getting more efficient systems, or potentially switching to a solar system, makes a huge difference when everyone does it.”

Participants were asked what barriers prevent them from using alternative forms of transportation. 92% of respondents identified ‘convenience’ as a reason why they drive or get a ride to campus. Comments provided included:

- “During the morning time (8:00-9:00AM) and afternoon time (4:00-5:00pm), the bus is too crowded. And sometimes already full. So it might take me 30-40 minutes to get onto a bus.”
- “12 min commute from [Christiansburg] vs. 40+ min by bus and only intermittent service.”

72% said ‘access (e.g., no bus stop near me)’ is a primary barrier. An example comment here: “Nearest bus stop would be several miles walk, along busy roads, with no sidewalks”. 60% said ‘safety (e.g., no bike lanes)’. Safety concerns expressed in the comments included:

- “When it snows sidewalks are often not clear. One has to either walk in the street or risk falling on the sidewalk.”
- “No showers at the Northern Virginia Center”
- Drivers are not used to leaving room for pedestrians or bikers here. Prices Fork over 460 is especially dangerous.”

Participants were asked a similar question around diet: “What barrier(s) prevent you from having a more ‘sustainable’ diet, which may include eating more organics, eating local products, being vegan or vegetarian, and/or eating fair trade or similarly certified foods?” Price was identified as the largest barrier here. “Grad school stipend isn't enough to consistently buy high quality fair trade foods - produce is no issue though”, said one respondent. Preferences was the second-highest reason chosen. One respondent shared that “I'm a meat and potatoes guy. That ain't changing.” Another lamented that “If there were taxes/ restrictions on eating meat I would follow them, but I'm not convinced one person makes much of a difference by themselves”.

Participants were asked what barriers prevent them from being able to reduce (e.g., less packaging), reuse (e.g., travel mug), repurpose (e.g., composting) and/or recycle their waste. This was a purely open-ended question; sample responses include:

- “Lazy”
- “Some apartment complexes do not have recycling programs that allow tenants to recycle their waste.”
- “Companies packaging choices are poor for many things (single use plastic)”
- “Most of my waste comes from the lab and field work that I do for my job at VT. One use throw away sampling and processing methods tend to be cheaper and easier, which is a shame! And when working with micro-organisms, you often don't have a choice. It would be great to have a composting facility for the town. I have to do all of my composting in my backyard.”

Participants were also asked what barriers prevent them from conserving energy. As with all questions throughout this section, the rich set of responses may be found in *Appendix 2* of the Engagement Subcommittee report. Sample responses include:

- “My biggest energy usage is from lab equipment and driving to field sites.”
- “Not having enough money to energy proof my place. I am trying to do what I can saving money and conserve energy.”
- “I don't have control over the excessive energy use of the building where I work. I don't have access to community-owned solar or wind power.”

A key proposal emerging from the 2020 Climate Action Commitment process is that the university shift to 100% renewable energy. Survey respondents overwhelmingly support this. When asked how important it is, ranging from not important at all (1) to top priority (5), the mean response rate was 4.48. 122 of 187 people that answered this question chose 5.

Demographics

Demographic questions were asked to get a sense of what the response pool looked like. In terms of various constituent groups, the sample was fairly well distributed - 30% are undergraduate students, 21% grad students, 16.6% teaching or research faculty, 6.4% staff, 7% alumni, 4.8% community members without VT-affiliations, 0.5% postdocs (1 person), 9% administrative & professional faculty, and 4.8% other. Based on zip code, the vast majority of respondents live in Blacksburg (at least during the academic year). Those with VT affiliations come from a very wide range of departments. Age-wise, the largest group (38%) are 18-25. Gender-wise, most respondents identify as female.

Unfortunately, there was not a good mix racially or ethnically - 81% of respondents identify as white. 7.7% identified as asian, and there were only two respondents that identify as ‘American Indian or Alaska Native’ and two as ‘Black or African American’. A very high proportion (50%) have professional or graduate degrees, underscoring how different the response poll in this university environment is from the wider public. Politically, the largest proportion (33.5%) identify as ‘liberal’ politically. 18% identify as ‘very liberal’. Only 11% identify as either conservative or slightly conservative. 15.4% identify as ‘moderate/middle of the road’.

5.3 Zoom Convening Ideas and Exit Survey

The Engagement Subcommittee sought to go beyond simply sharing information and collecting feedback to engage community members in a more deliberative process, exploring options together. The Subcommittee had originally planned to hold a face-to-face town hall event, but COVID-19 necessitated a quick pivot to virtual engagement. A series of 12 convenings were subsequently held via Zoom over a five-day period in April. There were at least 226 instances of participation across the 12 sessions, with many individual participants partaking in multiple sessions.

There were three “general” sessions and nine sessions aligned with the following VT Climate Action Commitment subcommittee topics:

- General Sessions: April 22 (21 participants), April 22 (13), and April 28 (22)
- Agriculture, Forestry & Land Use: April 27 (21)
- Building Opportunities: April 24 (13)
- Climate Justice: April 24 (17)

- Energy Opportunities: April 24 (14)
- Greenhouse Gas Emissions Inventory: April 27 (12)
- Renewable Energy Opportunities: April 24 (20)
- Structuring Sustainable Choices: April 23 (21)
- Transportation Opportunities: April 27 (40)
- Waste, Recycling & Procurement: April 28 (21)

Although the topics differed, the process for each Zoom convening session was the same:

- Upon registration for each session, participants were invited to
 - Watch a short video produced by the associated subcommittee, and
 - Respond to the VT Climate Action Commitment survey.
- The virtual engagement sessions each lasted an hour and included the following steps:
 - Brief introductory comments by a member of the subcommittee, which included background research, preliminary findings, and proposed strategy themes;
 - Individual ideation, which was collected through a Google form and then shared back with the group;
 - Small group deliberations on one to three ideas chosen collectively within each small group, again facilitated with guiding questions provided through a Google form;
 - Small group report-outs to the larger group of participants, accompanied by some Q&A and discussions on each small groups' work; and
 - An exit survey participants were asked to complete.

Below is a synthesis of the key collective takeaways from the sessions by topical area. The Community Engagement SC report presents session-by-session results of the Convenings, including ideas generated and small group report-outs.

5.3.1 Climate Action Living Laboratory

This idea of a 'living lab' with opportunities for collaborations between campus operations, research, and teaching generated the most discussion and excitement during several of the Convening sessions. Specific opportunities were discussed relating to energy systems, renewables, buildings, waste management:

- The need to *integrate sustainability in to educational opportunities*, and make sustainably and climate action a reason to come to VT.
- *Energy showcase* - senior design projects or Living Lab w/ operations to show potential donors and alumni. Signals commitment to sustainability.
- Use our *green buildings as learning tools* through virtual tours. Net Zero Energy Buildings + Joint Project with Students.
- *Sustainability education office* - Education for students, staff, and faculty. Way to foster longer-term behavior change with lasting impacts.
- *Focusing on educational programs* - Implement in freshmen orientation so students feel they have a part (duty) in this. Possibly a 1-credit class that all students take so they can navigate what they are interested in & opportunities to learn more. This could be a Pathways requirement.
- One group emphasized opportunities for a 'living lab' for *new technology development*, circular design, and pilot demonstrations.

- VT as a Living Lab setting an example of a healthy ecosystem, *living in harmony with the region*. Involve classes in sustainability implementation.
- The Living Lab is particularly exciting. It puts learning and sustainability into perspective (not just being in a green building).

5.3.2 Renewable Energy

The prospect for renewable electricity development received significant support in the general, energy, and renewables sessions. A few of the statements of support:

- *Integrate renewables into building design*...Install rooftop gardens and solar panels on existing and future campus buildings...Use roof space on buildings for green roofs, photovoltaics... Integrate solar panels into future building design... Put solar on every new building, and on off-campus structures too (e.g., apartment complexes)
- The need to shift to *100% renewable energy*. The focus is on shifting the electricity system first, then all energy, including transportation fuels.
- *More renewable electricity* on campus, accelerating movement away from natural gas.
- Develop *community solar project* with VT Electric Service town customers
- *Agrivoltaics* was listed as the #2 idea for 4 out of 5 groups, with one identifying it as a viable dual use of land, educational opportunity, research funding, engineering and agriculture instructional benefits, showcase development.
- Solar was identified as a viable option by a group, and in particular on new buildings. There was some overlap with the *energy opportunities* session with groups flagging the need to both reduce peak demand and reduce consumption.
- Take a 'systems approach' that mixes micro-renewable energy generation, battery storage, and a *campus and town micro-grid to increase resilience*. Energy storage was also emphasized as a way to overcome current challenges with the intermittency of renewables.
- *Solar from former coalfields* - Seek opportunities to invest in and source solar power from photovoltaic farms built in formal coalfields as a means of jump-starting an alternative economy in lower-income communities currently dependent on climate damaging industries, stimulating industry in region... VT role in coalfields, payback to region... Revenue sharing with siting communities of renewable energy outputs to wholesale markets.

5.3.3 Transportation

Transportation issues especially alternative mobility and reducing single occupancy vehicle use were prominent topics in the transportation and general sessions. Here are some of the statements heard:

- *Decarbonize transportation by enhancing alternatives* besides driving solo...Need to reduce number of incoming students driving personal vehicles on-campus.
- *Restrict freshman from having cars on campus* - Set habits and norms early on, well supported with Blacksburg Transit, car sharing and other infrastructure.
- Expand *bike lanes and paths* and extend a good bike network into the community, especially to major residential neighborhoods...Enhance safety...Normalize biking over driving...Covered bike parking on campus, which incentivizes biking on campus... Collaborate with the Town of Blacksburg to improve alternative transportation infrastructure.

- Creating ‘*wheel only*’ sections, which permit bikes, scooters etc. (not on sidewalks).
- Move to an *all-electric fleet of Blacksburg Transit (BT)* buses...Expand bus routes in and around Blacksburg, Christiansburg and the New River Valley
- *Reduce private vehicle access and speed limits* in central areas of campus and Blacksburg
- *Pedestrianize the Drillfield loop*, banning and separating cars from accessing central campus during specified times, but making allowances for needs of staff and accessibility
- *Increase parking fees* while creating waivers or sliding scale for low wage employees for parking passes...Fewer parking spaces on campus
- *Game-ify* alternative transportation options on social media to make it fun for students
- Greater accountability for *business air travel*, given that air travel has a large carbon footprint.
- Implement more electric vehicle charging stations on campus.

5.3.4 Energy systems

There was strong support for replacing coal with natural gas in the steam plant, but also for weaning VT from natural gas.

- Strong support for *eliminating coal* from the steam plant right away.
- *Navigating transition away from natural gas* - Natural gas is not a climate-friendly solution and thus should not be seen as such. Transition from natural gas, potentially with geothermal energy
- Switch the campus (centralized) heating system to *geothermal*. Opportunities to go to electric heat on parts of campus as we expand, infrastructure is there already (time, energy, and money)
- *Heating Buildings* - Might need more expertise, maybe use a company that knows geothermal
- *Use geothermal energy*, while recognizing that it can be expensive as a retrofit. There may be opportunities with new buildings, including at a ‘district’ scale as the campus expands.

5.3.5 GHG emissions/inventory

The Convening GHG inventory session raised issues about GHG sources and geographic scope and the inventory process.

- GHG sources *Scope boundaries* (e.g., adding leased space, like the North End Center and Math Emporium).
- Include *upstream methane leakage* in order to put this out front for consideration
- Effectively measuring GHG emissions by, among other things, adopting and managing effective *GHG accounting software*, and using a standard assessment tool to measure GHG emissions
- *Getting more people involved* in the GHG monitoring process. Educating students, including with a ‘carbon footprint test’
- Support for the expansion of *scope boundaries* to inventory partner GHGs and other VT sites...*Expanding the scope* - Expand scope of the CAC to other campuses

5.3.6 Buildings

Ideas for buildings opportunities included using VT buildings including green labs and zero-net energy showcase building in the Living Laboratory, existing building retrofit, building real-time energy monitoring including an Energy Dashboard, and the net-zero-space-growth concept.

- Value of engaging students around *green labs* best practices...Energy efficiency opportunities, including through 'greening labs.'
- Sustainable design methodologies and goals, including a '*zero net energy*' building and integrating biophilic features. Building carbon neutral buildings (and renovations/retrofits).
- Focus on *existing buildings*, not just new buildings...Retrofit buildings, monitoring for efficiency...
- *Lighting solutions* - Lighting strategies + Include students in exploration + LED Retrofits. Improving lighting through both passive & active designs.
- *Online real-time monitoring* of building performance...*Increase monitoring to prompt behavioral change* - Improve operational efficiency and monitoring to increase knowledge and awareness of occupants...Building-level energy dashboard to encourage occupant behavior...Improve energy efficiency (reduce usage), including by improving monitoring and sharing data
- *Accountability and oversight*- Build a "Hokie Team" that focuses on building and energy projects
- *Net zero space growth*. Need to optimize space usage...Better utilization of campus space. ...*Growth Plan* - Net zero space growth on campus. If you tear down a building, the new one shouldn't be bigger. Keeps energy use down. Re-educate people about space as an asset, not to be wasted. Think more about shared space.

5.3.7 Agriculture and Forestry

Three issues dominated Convenings discussions related to agriculture and forestry: the proposal for the University Compost Facility at Kentland, tree policy and planting, and sustainable agriculture education.

- Broad support for much more composting as a sustainable way to manage waste...Support for a *compost facility* was listed as the #1 idea for 4 out of 5 groups...There is strong support for a composting facility on campus (or satellite university lands) that can serve the entire campus and Blacksburg
- Integrate with waste management with a *biodigester* at new compost facility
- *Campus tree policy*: Increase tree conservation/planting and increase coverage/canopy cover
- *Sustainable agriculture and local food*. Get the College of Agriculture and Life Sciences to focus research on sustainable agriculture and sustainable food systems. The integration of a *living laboratory* as a pathway towards making these changes using Kentland Farm and Catawba Sustainability Center

5.3.8 Waste management

Waste management including trash, recycling, composting, construction waste, and specialty waste produced several supporting ideas about operations, administration, and compost facility.

- Hire a waste consultant to conduct a campus wide waste audit...Centralize waste management operation under one unit...Hire a Full Time Waste Manager;
- Broad support for the University Compost Facility at Kentland...much more **composting** as a sustainable way to manage waste...Support for a compost facility was listed as the #1 idea for 4 out of 5 groups...Strong support for a composting facility on campus (or satellite university lands) that can serve the entire campus and Blacksburg.
- Improve waste management practices by *improving the infrastructure* across campus...Recycling bins should be separated and labeled...Better bin signage
- Get Athletics more involved in zero waste and promoting it...Host a zero waste event then enhance policies, signage training based on findings
- Integrate with waste management with a biodigester at new compost facility
- Educate students about zero waste at orientation; promote student organizations and other university events to go zero-waste, including with 'game-ification'...Education, training, and outreach to university staff, students, faculty to ensure broad participation
- Offer composting opportunities to residence halls, with weekly collection...Decrease student waste - have to change the culture to get rid of single use plastics and disposable things...Promote student organizations and other university events to go zero-waste.
- Breakout Group Idea: Composting facility widely discussed in all groups

5.3.9 Procurement

Procurement was addressed in the waste/recycling and general sessions because of its importance to both in-flow of materials and services and out-flow of waste and recyclables.

- *Sustainable purchasing policy* with our office supplies, food and beverage, and all other materials to reduce packaging waste...Add an interface directly to HokieMart for sustainable products
- Procurement, purchasing things that are recyclable, sustainably made...Encouragement of "*circular economy*" products through procurement
- Need to integrate social justice by, among other things, adopting ethical sourcing guidelines for purchasing solar and wind tech
- Focus on *lab-specific* waste management
- *Measurement* - Life cycle analysis for purchased products. Also data dashboards displayed on campus showing energy, water, waste, and other key metrics

5.3.10 Climate Justice and social equity

Climate Justice is advanced as a core value of the CAC, and the Convening sessions provided significant support:

- *Community engagement* - Involve community members through focus groups on climate justice matters as well as on ethical issues...Direct engagement with *underrepresented groups on campus* - Importance of actively seeking diverse perspectives while not overburdening under-represented groups.
- Consider social justice implications in purchasing and all other decisions including adopting ethical sourcing guidelines for purchasing solar and wind tech

- *Affordability* - Need to improve energy efficiency at low/no cost for low-income users. Energy cost protections for low-income residents; tiered rate structures... VTES could provide incentives/support for marginalized groups to add rooftop solar
- *Repairing historical harms* - Need to bring non-profit/advocacy leaders from marginalized frontline communities into planning immediately

5.3.11 Sustainable Choices

Some good ideas emerged regarding campus behavior in both sustainable choices and general Convening sessions:

- The need to foster both *structural and individual behavior changes*, including through persuasive design, upping the ‘coolness factor’ of sustainability, and using a mix of incentives and disincentives (i.e., carrots and sticks)
- *Nudging* changes in transportation behaviors, including by banning freshmen from bringing cars to campus and using various prompts to encourage alternative transport
- *Gamifying Transportation* in Blacksburg - Healthy competition to motivate behavior change, builds community, better utilization of existing services, very low cost.
- *Persuasive, intentional design* - Making sustainable choices easier, e.g., safer bike options, co-benefits for other groups. Promote behavioral change through building design and operation
- *Ban stuff*: no straws, no freshman cars, meatless Mondays, travel carbon caps, no single use plastics
- *Promote stuff*: transportation alternatives, diet alternatives, nudges towards reducing energy consumption, travel, etc.
- *Student Life: Dining and Dorms*- Dining halls: composting, food waste reduction, vegetarian food option days and education for why that is.
- *Waste* - Advance and incentivize waste recycling/composting. Meet aggressive goals for zero waste, touting educational benefits.
- *Food*: Potential behavioral prompts in campus dining; *Expanding sustainable food options on campus* - Aligns well with the agricultural history of the University.

5.3.12 Engagement and Partnerships

Collaboration emerged as a theme in several Convening sessions. Discussion of partnerships with other VT campuses, other universities, the Town of Blacksburg, and other organizations was very useful.

- *Partnerships* with other schools (universities), branching out to other organizations in the future
- *Cross-campus coordination* - Promotes cohesion across campuses (Blacksburg, NOVA, Roanoke, and beyond)
- *Getting more of the community involved* - Improving town-gown and private businesses’ linkages to energy management. Shared projects with VT Electric is a great starting place ...Need to include the whole community beyond the university’s borders
- *Direct engagement with underrepresented groups on campus* - Importance of actively seeking diverse perspectives while not overburdening under-represented groups.

5.3.13 Implementation, Administration and Financial

Some issues related to administration and finances also emerged from participant discussion, including:

- *University Administration* - Increase staff and elevate the Sustainability Office to have reporting lines to both operational and academic sides - office can serve as a bridge between these entities
- Create a *revolving fund* to continually finance energy efficiency projects
- *Divestment* from fossil fuels Divestment from fossil fuels...A call for the university to take a stand, including through divestment... Get rid of coal by 2024. Divest from fossil fuels.

5.3.14 Exit survey outcomes

Participants in all 12 Zoom sessions were asked to complete an exit survey as they wrapped up. The survey had three goals: Evaluate the Zoom Convenings themselves; give participants a final opportunity to provide substantive feedback on the ideas and discussions that emerged during the session; and ask for their ideas on how engagement might take place moving forward, as the updated Climate Action Commitment is implemented.

Of the approximately 226 Zoom session participants, 98 completed exit surveys. Of those that responded, 40 identified as graduate students, 23 as undergraduate students, 17 as administrative/professional faculty, 19 as teaching and research faculty, 7 as staff, 17 as community members, and 27 as alumni. Note that N (150) is greater than the survey response rate (98) because many people identified more than one affiliation. Some also identified ‘other’ affiliations, including a few people that work for local agencies (e.g., Blacksburg Transit, regional planning commission) and a couple of retirees. While happy with participation rates overall, the relatively low number of undergraduate and staff participants underscores the need to reach out to those key constituencies as implementation moves forward.

Participants were asked what **ideas they thought were best coming out of the sessions**. Not surprisingly, their responses tend to mirror the topics that received the most attention within the sessions. A few common themes are: Better use of rooftops for both energy and greening; the need for broad engagement, including through a ‘living laboratory’; shifting to 100% renewable energy; gamification as a way to promote behavior change around transportation and in other domains; the construction of a new VT composting facility; a new campus-wide waste coordinator and regular audits; a new ‘net zero’ building, while recognizing the need to retrofit existing buildings; the need for climate justice; restricting cars further in the center of campus; not selling parking permits to new freshmen; and coordinating more frequently and deeply with the Town of Blacksburg and other local partners to more effectively achieve objectives, including but not limited to transportation and waste management goals.

The next question asked participants if they have any **concerns with ideas discussed**. Most respondents expressed no real concerns. Among those that were expressed, common themes include: Feasibility of implementing in practice, including getting resources. Some participants were clearly not aware of what has already been done; potentially significant pushback will need

be overcome, for example to implement a freshmen car ban. And the emphasis was on shiny new things (buildings, renewables projects) rather than on conservation, efficiency, and restoration.

When asked any **ideas they wish had been discussed**, the most common response was a desire to go into further detail on those that did come up. Unfortunately, an hour per Zoom session was not sufficient to go in depth. Some wished that we could have learned more about what other universities are doing. A few respondents wished more attention had been devoted to the justice considerations, including the implications of adopting policies. Transportation and waste reduction were also common themes, including outside of the respective sessions devoted specifically to those topics.

The Zoom Convenings were organized on a very short timeline as COVID-19 rendered previous face-to-face plans impossible. Given uncertainty around when and how we will be able to return to in-person deliberative engagements, the organizers seek to learn from these experiences. To that end, participants were asked to rate how **productive the Zoom sessions were**, on a scale from 1 (not at all) to 5 (extremely). The average was 4.3, indicating a very positive take on the experiences. Digging deeper, participants were asked for **feedback on how the sessions could be improved**. Both of the two participants that rated the productivity at ‘2’ (there were no ‘1’s’) suggested that the goals should have been clearer; one lamented that their group seemed to focus on ‘old’ topics while (s)he wanted to explore new ideas. A few others felt that the sessions were too short. A couple suggested that there could have been more facilitation in the breakout groups.

When asked what **other ways we could involve people in the CAC update process** in these times of physical distancing, respondents felt that *social media* could be more effectively harnessed. Other respondents noted that Zoom sessions and other means of engagement should be better promoted, especially to students and more broadly in the community. It is too late to use that advice with the current process, but it is useful to keep in mind as implementation moves forward. More importantly, we asked respondents **how the administration could best involve people in implementing the CAC moving forward**. Responses included:

- Keeping everyone *informed* of what exactly is happening and how they can be involved through various channels, including:
 - Regular email updates
 - A strong social media presence
 - Spreading both information and engagement opportunities through classes
 - Keeping the CAC websites up-to-date
- Zoom sessions like those run here to continue the *consultation* process
- Expanding the *network* by, among other things:
 - Personally reaching out (by phone, since emails can be ignored) to ask people to be intensively involved
 - Forming strong connections with frontline communities, including with a climate justice advisory committee
 - Strengthening relationships with both community leaders (e.g., elected officials) and residents and neighbors more widely
- Ensure that there is adequate *resourcing* and *expertise* by:
 - Allocating dedicated staff resources (or faculty buyout) to support implementation

- Finding resources to support others that engage in implementation (e.g., ‘comp’ time for faculty and staff)
- Taking advantage of alumni, and in particular their expertise
- Make the *carbon neutral by 2030* commitment a major part of the university’s branding in all arenas
- Be open, admitting and discussing challenges

In general, respondents expressed a strong desire to remain involved and see other stakeholders join the effort as implementation moves forward. It is clear that there is a strong foundation for broad community engagement in the implementation of the CAC, but that the network must be significantly expanded.

5.4 Conclusion

The extensive engagement process organized for the 2020 Climate Action Commitment update yielded important insights and provided the community with updates on the work of the group. A few new ideas emerged from participants through the survey and Zoom Convenings, which served as opportunities to assess the viability and support for various options. All signals—including the ‘climate strikes’ and governance resolutions that precipitated this work, the level of intensive involvement in the working group and various subcommittees by more than 120 students, staff, faculty, and community members, and the significant response to outreach efforts despite the pandemic—suggest that there is a strong desire to see climate action at VT *and* that stakeholders are keen to be involved.

Engagement should not stop with the submission of the 2020 CAC update report. Rather, this should be a living process that features ongoing opportunities for students, staff, faculty, and other stakeholders to access information on how VT is progressing against the ambitious goals, contribute and deliberate on new ideas, and find ways to get involved in implementation. The reorganized University Climate Action and Sustainability Office (CASO) and Climate Action, Sustainability, and Energy (CASE) Committee should make ongoing engagement a top priority as the CAC works through governance and hopefully moves into an implementation phase.

6. Progress in Implementing 2009 VT Climate Action Commitment

In April 2008, President Charles Steger charged the **Energy & Sustainability Committee (E&SC)** to develop a Virginia Tech Climate Action Commitment and Sustainability Plan (VTCAC&SP). The E&SC was formed in 2007 to address growing university needs for energy efficiency and interests in sustainability among students, faculty and staff. Because of the strong relationship to the university's physical plant, the committee reported to the Commission on University Support.

The E&SC engaged over 75 stakeholders in preparing the CAC&SP, which was approved by University Council on Earth Day, April 22, 2009, and by the Board of Visitors on June 1, 2009. While the VTCAC&SP was 100 pages with another 100 pages of appendices, the Climate Action Commitment was boiled down to 14 key elements.

In 2012-13, the E&SC decided to review the 14 elements and made minor modifications and added a sustainability definition, vision, and mission, which were approved in May 2013. The E&SC reviewed the Sustainability Plan in 2014 and made modifications that were approved in May 2014. The principal change was tying VT sustainability tracking to the nationally recognized Association for the Advancement of Sustainability in Higher Education's (AASHE) Sustainability Tracking and Rating System (STARS).

6.1 Summary and Introduction

Virginia Tech has made considerable progress implementing its 2009/2013 Climate Action Commitment (2009 VT CAC) during the past decade. The 2009 VT CAC & Sustainability Plan was a leading effort for its time, but a decade later it falls short of both necessary action and recent initiatives of many peer universities.

Virginia Tech is a recognized leader in campus sustainability with a Sustainability Tracking and Rating System (STARS) Gold score that is highest among Virginia and ACC peer schools. VT has won numerous awards and recognitions since 2010, including Princeton Review's top 50 Green Colleges (twice), Governor's Environmental Excellence Award (7 times), Best Workplaces for Commuters (every year, gold in 2019-20), Bicycle Friendly Campus (every year, silver level in 2019), Tree Campus USA certification (every year), and many others.

We have reduced greenhouse gas (GHG) emissions by 24% from 2006 to 2019, despite 22% growth in campus building size and enrollment. This reduction is faster than the 2009 CAC targeted trajectory. It resulted from investments in energy efficiency in existing and new buildings, and most importantly from replacing steam plant coal with natural gas enabled by a new gas pipeline. We now have 36 LEED certified buildings constructed or in process, amounting to 30% of campus space, and in 2015-2020 we invested \$14 million in energy efficiency improvements resulting in energy and dollar savings with a 5-year payback.

We have done much to develop alternative transportation choices, from bike racks and dual use trails; to bike share, ride share, car share programs; to increased ridership on our partner Blacksburg Transit; to innovative plans for campus mobility. We have a functional, although fragmented, waste management program with a 80% waste diversion rate (waste diverted from landfill) and 40% recycling rate, although shy of the 50% by 2020 goal of the 2013 VT CAC. In April 2020, our Procurement Department unveiled a Sustainable Procurement Policy, and in May, Facilities

produced new Design and Construction Building Standards, both of which reflect the ideals of the Climate Action Commitment.

We have an enviable array of sustainability-related academic programs, majors, coursework, and research, in green engineering, natural resources, energy systems, and environmental policy, and many others. In the STARS rating system, VT scores 89% of possible points in academic categories. It also scores 95% of possible points in campus engagement. We have a rich campus life for students with a wide array of opportunities, including strong environmental student organizations. Indeed, these student groups have pushed the university to move forward on climate action, both in 2008 and in 2019.

Our Facilities Department has embraced sustainability and climate action as part of its mission, and our Office of Sustainability is second to none, even with limited staff. We have the one-of-a-kind Virginia Tech Electric Service (VTES), a university-owned independent utility that serves not only campus but also 6000 Blacksburg customers.

6.2 Progress Implementing the Virginia Tech 2009 Climate Action Commitment

The 14 elements of the 2009/2013 VT CAC are given in their entirety in Table 6.1. The CAC has served the university well. But the world has changed, and in President Sand's words, "Virginia Tech has a duty to respond." This section reviews the progress toward meeting the VTCAC. It relies on the Sustainability Annual Reports as well as additional data and information developed by the Working Group. This review addresses the elements individually or in groups below.

Table 6.1 Virginia Tech Climate Action Commitment, as revised May 2013

1. Virginia Tech will be a **Leader in Campus Sustainability**. 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.
2. Virginia Tech will represent the **VTCAC&SP in the university Strategic Plan**.
3. Virginia Tech will establish a target for reduction of **campus GHG emissions to 80% below 1990 emission level** of 188,000 tons by 2050, and interim targets from 2006 emissions of 316,000 tons for 2012, 295,000 tons (on path to 2025 target); for 2025, 255,000 tons (2000 emission level); and for 2050, 38,000 tons (80% below 1990 emission level).
4. Virginia Tech will work toward these emission reduction targets **through improved energy efficiency, reduction of energy waste, replacement of high-carbon fuels**, and other measures identified in the VTCAC&SP.
5. Virginia Tech will maintain a **sustainability office** to:
 - a. Coordinate programs for campus sustainability;
 - b. Oversee implementation of the VTCAC&SP;
 - c. Monitor annual electricity and other energy use and GHG emissions;
 - d. Working with faculty and departments, manage a campus-wide student internship and undergraduate research program using the campus as a sustainability laboratory; and
 - e. Coordinate communication regarding campus sustainability initiatives and programs to the university community and external audiences.
6. Virginia Tech will improve the sustainability of its **built environment** by:
 - a. Achieving **LEED Silver certification or better** for all eligible & applicable new buildings and major renovations;
 - b. Evaluating the feasibility of LEED for Existing Buildings certification for its existing buildings.
7. Virginia Tech will **improve electricity and heating efficiency of campus facilities** and their operations by:
 - a. Exceeding the most current version of ASHRAE 90.1 energy performance by 10% for all new buildings and major renovations. Capital budgets should account for future energy price, life cycle cost of building operation, and environmental benefits of achieving this level of performance;
 - b. Improving the heating and cooling infrastructure and operation, lighting efficiency, equipment efficiency, and metering and controls of its existing buildings.
8. Virginia Tech will **minimize waste and achieve a 50% recycle rate by 2020**.
9. Virginia Tech will:
 - a. Require **purchase or lease of Energy Star rated equipment** and maximum practicable recycled content paper, in accordance with University Policy 5505, with exceptions for special uses;
 - b. Consider a product's life cycle cost and impact when making purchasing decisions.
10. Virginia Tech will **engage students, faculty, and staff** through education and involvement to develop and implement innovative strategies for efficient and sustainable use of energy, water, and materials in all university-owned facilities.
11. Virginia Tech will **improve transportation energy efficiency** on campus through parking, fleet, and alternative transportation policies and practices. The university will continue to implement programs that encourage the use of alternative transportation methods and will continue to implement programs and services that promote eco-responsible fleet management.
12. Virginia Tech will continue to **develop and implement innovative sustainability-related academic programs** in instruction, research, and outreach, and will coordinate and communicate these programs to the university community and external audiences.
13. Virginia Tech will **monitor energy use and GHG emissions** as well as changing internal and external conditions, prepare an annual 'report card' showing progress towards targets, and periodically re-evaluate targets, making adjustments to targets as appropriate based on changing internal and external conditions and evolving technologies.
14. Virginia Tech will work to **provide funding to support sustainability programs**. With regard to all the items in this resolution, major personnel and investment decisions, including capital projects, associated with implementing the VTCAC&SP will be based on a joint review of costs and benefits by university financial and facilities staff and be subject to availability of funds.

6.2.1

UTCAC #1: *Virginia Tech will be a **Leader in Campus Sustainability**. 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.*

Virginia Tech has continued to be recognized as a campus sustainability leader. Table 2.1 lists the numerous sustainability-related awards and recognitions received in 2010-20. Prominent among them are the 2019 APPA Sustainability Innovation Award For Facilities Management, the Princeton Review "Top 50 Green Colleges" Ranking, several Governor's Environmental Excellence Awards (including gold in 2011 and 2013), and AASHE STARS Gold Rating in 2014 and 2017.

Table 6.1. Virginia Tech, Leader in Campus Sustainability: Selected Awards and Recognition, 2010-2020

2019-20

2019 APPA Sustainability Innovation Award For Facilities Management

Princeton Review "Top 50 Green Colleges" Ranking #14

Best Campus Food in America, #2 Ranking, Niche

Best Workplaces for Commuters, Gold Level

Sierra Club 2019 Cool Schools Ranking

Tree Campus USA Certification (received every year 2010-2020)

Princeton Review Guide to Green Schools List (received every year 2010-2020)

Best Workplaces for Commuters Gold Rating (received every year 2010-2020)

2018-19

Governor's Environmental Excellence Award, Honorable Mention, "Sustainability Program"

AASHE 2018 Sustainable Campus Index

Sierra Club 2018 Cool Schools Ranking

The Best College Dining Program in Each State, FoodService Director

2017-18

STARS Gold Rating from AASHE

Governor's Environmental Excellence Award, Honorable Mention, "Reusable To-Go Program"

Top 10 Best Universities for Healthy Eaters, Healthline

2016-17

Governor's Environmental Excellence Award, Silver, "Sustainability Week"

2015-16

NACU Food Service Sustainability award for Reusable To-Go container program

2014-15

Governor's Environmental Excellence Award, Bronze, "Student Engagement Programming"

STARS Gold Rating from AASHE

2013-14

Governor's Environmental Excellence Award, Silver, "Dining Services Sustainability Programs"

STARS Silver Rating from AASHE

RecycleMania Pledge Recycling Drive Champions

America Recycles Day Photo Contest First Place

Keep America Beautiful Recycling Bin Grant Recipients

USGBC Best of Green Schools, Best Collaboration, "Sustainability Week Program"

RecycleMania Case Study Competition, First Place, "Caught Green Handed Selfies"

2012-13

Governor's Environmental Excellence Award, Gold, "Sustainability Program"

Princeton Review Guide to Green Schools Honor Roll—Top 16 Schools

2011-12

STARS Silver Rating from AASHE

2010-11

Governor's Environmental Excellence Award, Gold, "Sustainability Plan Implementation"

Tree Campus USA Certification (received every year through 2019-20)

Princeton Review Guide to Green Schools List (received every year through 2019-20)

Best Workplaces for Commuters Gold Rating (received every year through 2019-20)

The Association for the Advancement of Sustainability in Higher Education (AASHE) monitors and evaluates college sustainability programs. AASHE's Sustainability Tracking, Assessment & Rating System (STARS) is used to assess sustainability progress. More than 400 institutions have earned a STARS rating, making the program the most widely-recognized framework in the world for publicly reporting comprehensive information related to a college or university's sustainability performance. Participants report achievements in five overall areas: academics, engagement, operations, planning and administration, and innovation and leadership.

This program is open to all institutions of higher education. Because STARS ratings are based on credits earned and are transparent and accessible, the program allows for both internal comparisons as well as comparisons among similar institutions. The STARS protocol consists of over 60 topical areas (credits). Data and information submitted are measured against a national standard. Points are earned for each credit. Total points yield an overall rating, Platinum, Gold, Silver, or Bronze.

In 2013, Virginia Tech adopted the AASHE STARS protocol as the foundation of its Sustainability Plan. Virginia Tech has received 4 STARS ratings (2011: Silver; 2013: Silver; 2014: Gold; and 2017: Gold). For the 2017 Gold rating, Virginia Tech earned 71.94 points, which at that time represented the highest achieved for any college or university in the Commonwealth of Virginia, and the highest achieved by peer institutions in the Atlantic Coast Conference. The STARS Gold Rating is good for three years.

VT has received its high rating based on excellent results in Academics and Engagement scoring 87% of possible points and in Coordination/Planning and Diversity/Affordability scoring 90%. However, in specific criteria related to climate change, VT has not fared so well: Operations overall was 43%, drawn down by **Air & Climate (23%)**, **Energy (21%)**, and **Food and Dining (25%)**. A 2% score in **Investment & Finance** was due to lack of information on investment portfolio of the Foundation.

Table 6.2. 2017 Virginia Tech STARS Score

Topical Areas (Credits)	Points Earned	Maximum Points	Percentage
Academics	51.45	58	89%
Curriculum	35.01	40	88%
Research	16.44	18	91%
Engagement	34.89	41	85%
Campus Engagement	20.00	21	95%
Public Engagement	14.89	20	74%
Operations	29.40	69	43%
<i>Air & Climate</i>	<i>2.52</i>	<i>11</i>	<i>23%</i>
Buildings	4.25	8	53%
<i>Energy</i>	<i>2.12</i>	<i>10</i>	<i>21%</i>
Food & Dining	2.00	8	25%
Grounds	1.88	3	63%
Purchasing	4.59	6	77%
Transportation	3.90	7	56%
Waste	5.29	10	53%
Water	2.85	6	48%
Planning & Administration	20.14	32	63%
Coordination & Planning	7.75	8	97%
Diversity & Affordability	8.42	10	84%
Investment & Finance	0.12	7	2%
Wellbeing & Work	3.85	7	55%
Innovation & Leadership	4.00		

6.2.2

VTAC #2: Virginia Tech will represent the VTCAC&SP in the university Strategic Plan

In 2009, the committee wanted the university to formally recognize the Climate Action Commitment in the Strategic Plan that was revisited a few years earlier. The Plan had not mentioned sustainability previously, and the committee wanted reference. Thereafter, university plans have represented the CAC in general terms, and the president's annual report often highlighted sustainability accomplishments. But strategic planning changed in subsequent years and other plans including a variety of master plans were more specific to the needs of the CAC.

The latest Strategic plan *The Virginia Tech Difference: Advancing Beyond Boundaries*, approved in June 2019, recognizes the 2009/2013 CAC in Strategic Priority 4:

Approved by the Board of Visitors on June 1, 2009, the Virginia Tech Climate Action Commitment envisions Virginia Tech as a model community for a sustainable society. The Virginia Tech Climate Action Commitment affirms that Virginia Tech will be a leader in campus sustainability and outlines several goals and milestones for improving sustainability. Areas of focus include reducing emissions, improving sustainability of the built environment, minimizing waste, and improving electricity, heating, and transportation efficiency. Virginia Tech engages and involves the university community in these efforts through multiple activities including the development and implementation of sustainability-related academic programs and innovative strategies for efficient and sustainable use of energy, water, and materials in all university owned facilities.

The *Campus Master Plan Beyond Boundaries 2018*, approved November 2018, gets more specific. It includes a network of amenities and services designed to improve the student experience; an integrated approach to accessibility and mobility; and a series of mixed-use districts featuring new cross-disciplinary academic, research, and partnership facilities. It has five overarching goals (1) enhance learning and research environments; (2) expand strategic partnerships; (3) protect the land grant legacy; (4) facilitate accessibility and mobility; and (5) foster an inclusive campus experience. Still pretty general, but it gets more specific in the Sustainability Outcomes section. The intent is to

- Minimize consumption of natural land and reduce vehicular emissions via a land use strategy focusing on infill development rather than sprawl (including a growth boundary established by the proposed Western Perimeter Road);
- Reduce vehicular emissions via an alternative transportation-focused mobility system (e.g. transit, walking, bicycles), the relocation of parking to the perimeter of campus, and the construction of a transit hub at the academic core;
- Advance green stormwater and carbon sequestration efforts through strategic reforestation along major campus corridors and the integration of substantial landscape elements into the proposed accessible pathway system (particularly the Green Links);
- Conserve energy by promoting energy-efficient building siting and design, as well as conversion to alternative energy sources (in keeping with the university's climate action commitment).

This reference is the most specific reference to the 2009/2013 CAC of any university plan to-date. But other more focused plans and standards have embraced the spirit and intent of the CAC, including the Parking and Transportation Master Plan (2014), the Five-Year Energy Management Plan (2015), the Bicycle Parking Master Plan, the Electric Vehicle Master Plan, among others. And other related plans are in the works and have been embraced by our current 2020 VT CAC,

including Building Design and Construction Standards (2020), Sustainable Procurement Policy (2020), Campus Tree Policy, and Utility Master Plan.

6.2.3

VTCAC #5: *Virginia Tech will **maintain a sustainability office** to:*

- a. Coordinate programs for campus sustainability;*
- b. Oversee implementation of the VTCAC&SP;*
- c. Monitor annual electricity and other energy use and GHG emissions;*
- d. Working with faculty and departments, manage a campus-wide student internship and undergraduate research program using the campus as a sustainability laboratory; and*
- e. Coordinate communication regarding campus sustainability initiatives and programs to the university community and external audiences.*

VTCAC #13: *Virginia Tech will **monitor energy use and GHG emissions** as well as changing internal and external conditions, prepare an **annual 'report card'** showing progress towards targets, and periodically re-evaluate targets, making adjustments to targets as appropriate based on changing internal and external conditions and evolving technologies.*

The Sustainability Office had been initiated before the 2009 CAC&SP, but element #5 was intended to define its mission and to firmly establish it in university organizational structure and governance. Over the last decade, it has been one of the most successful outcomes of the VT CAC&SP, largely as a result of its long time head, Denny Cochrane.

With a staff of two plus a graduate assistant, the office has provided all of the specified duties listed above, although it leans on the energy manager's office for data on energy and GHG emissions. The Office is instrumental in nominating the university for various sustainability recognitions, operates the very successful sustainability internship program and Green RfP program, and performs the Herculean task of preparing and submitting data and information for the AASHE STARS rating system, which as discussed previously, is critical to Virginia Tech's standing in sustainability.

The **Sustainability Internship Program** and Green RfP Programs are worth highlighting. For many years, the office has accepted 20 students each year to create lasting, sustainable change at VT while developing professional skills through experiential learning. The program uses the campus and the community as a living-learning laboratory.

The Sustainability Office and the Energy & Sustainability Committee (E&SC) operate the **Green RfP program**, which funds student-proposed sustainability projects on campus. From 2010-2019, the university has provided more than \$1 million to support these projects, giving students an important voice in campus sustainability and climate action.

The Office of Sustainability prepares the **Sustainability Annual Report**, the “**annual report card**” of element #13. It gives a comprehensive assessment of annual progress of the CAC element by element. The report is mainly descriptive and complimentary of VT progress, but the effort resulted in a re-evaluation and revision of the 2009 CAC in 2013. The revision process by a subcommittee of the E&SC mostly validated the elements with a few changes including shortening the deadline for achieving 50% waste recycling rate from 2025 to 2020. The following year, the Sustainability Plan was revised by embracing the AASHE STARS protocol as the principal means of monitoring VT sustainability progress.

6.2.4

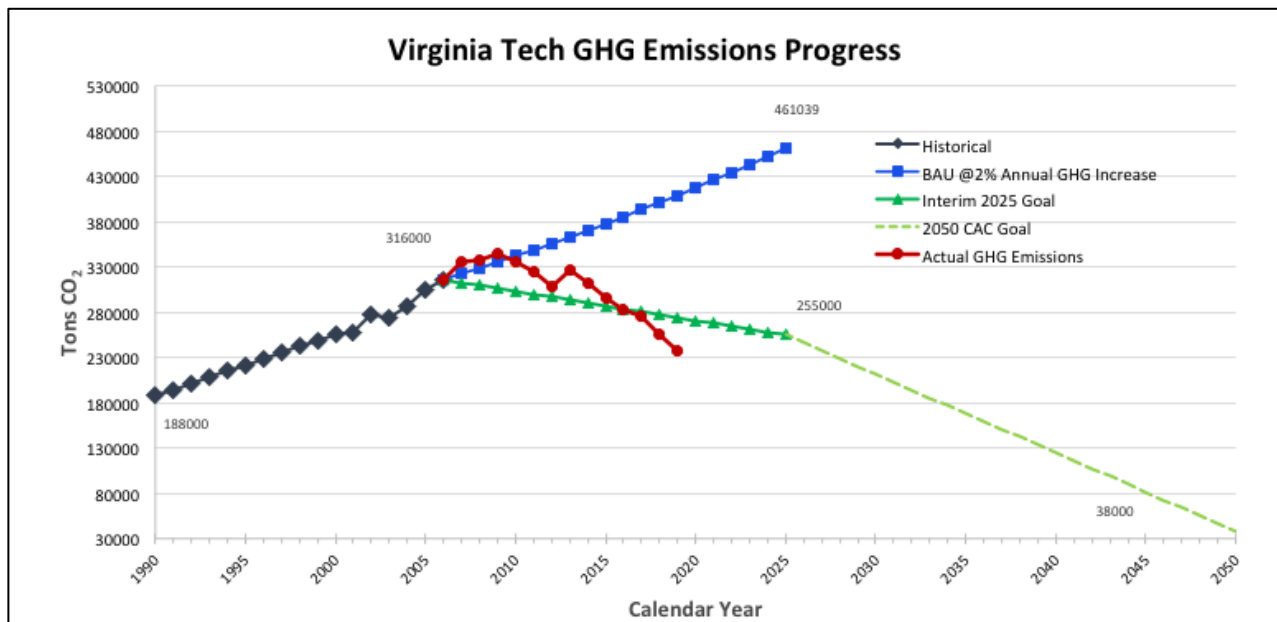
VTCAC #3: *Virginia Tech will establish a target for **reduction of campus GHG emissions to 80% below 1990 emission level** of 188,000 tons by 2050, and interim targets from 2006 emissions of 316,000 tons for 2012, 295,000 tons (on path to 2025 target); for 2025, 255,000 tons (2000 emission level); and for 2050, 38,000 tons (80% below 1990 emission level).*

Figure 6.1 from VT Facilities Office graphs the VT GHG calendar year emissions against this commitment. From this plot, it is seen that VT has already met the 2025 target. It should be noted that the data in Figure 6.1 includes the addition of new buildings on campus over time. Table 6.3 below shows the main campus building gross square footage (gsf) and the student body enrollment for the first year of the GHG inventory and 2019. GHG emissions have dropped 24% while campus gsf and enrollment increased 22%. Figure 6.2a gives emissions 2011-19 and Figure 6.2b normalized the data to campus square footage to show GHG intensity.

Table 6.3 VT Campus Emissions, Square Footage, Enrollment

Year	2006	2019	Change (%)
GHG Emissions (tons CO ₂)	316,000	240,959	-23.7%
Main Campus Square Footage (ft ²)	8,712,895	10,615,927	+21.8%
Main Campus Enrollment	28,259 (2008)	34,131	+20.8%

Figures 6.1: GHG Emissions Progress



Figures 6.2a-b: Carbon Footprint, and Carbon Footprint per gross square foot (gsf)

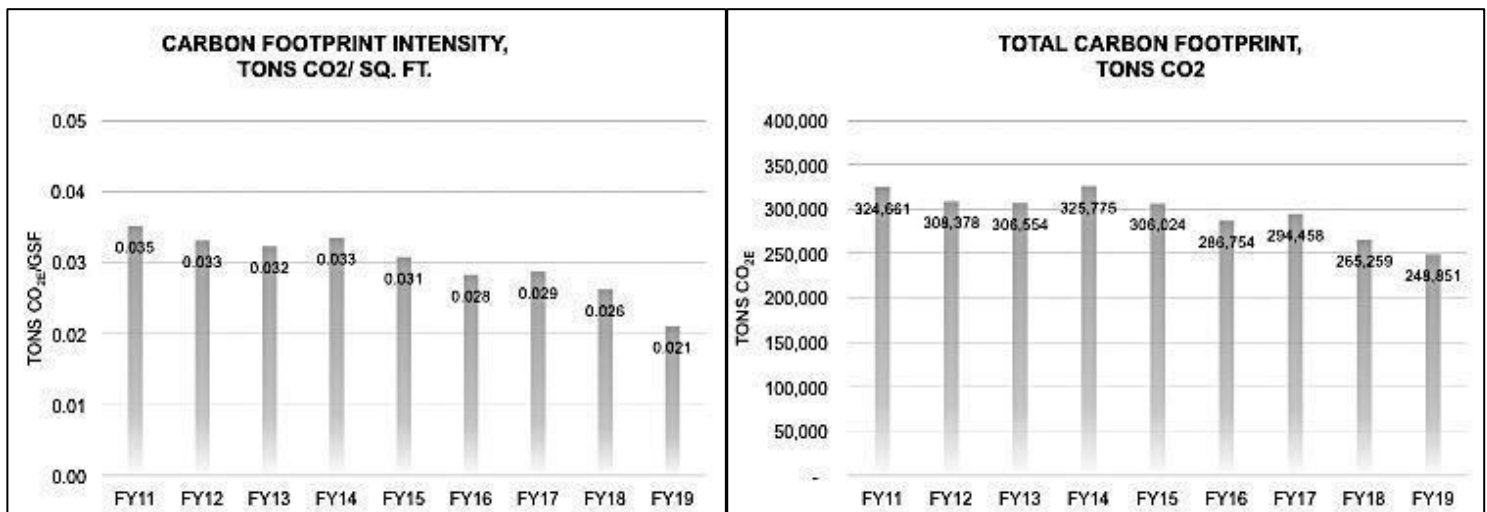


Figure 6.3. Breakdown of VT 2019 GHG Emissions

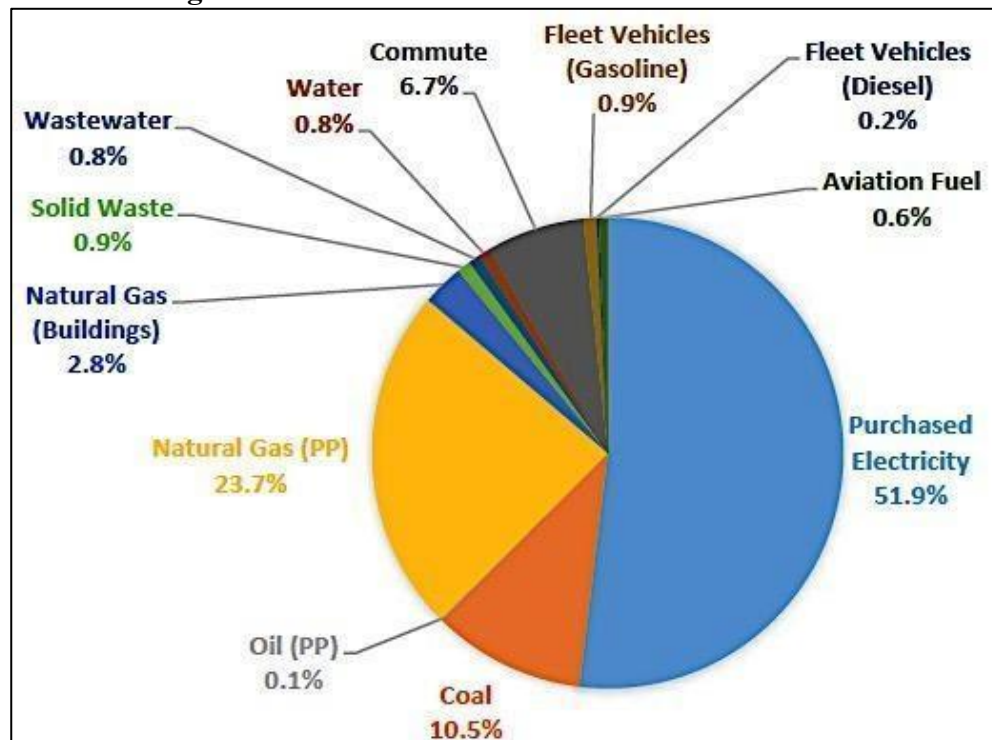


Figure 6.3 gives GHG sources in 2019. Purchased electricity from APCO is the dominant source of GHG emissions at 52%, with coal and natural gas in the steam plant 34%, and other natural gas 3%. Transportation fuel for commuting and VT operations is about 8%.

The good news from Figure 6.1 is that despite significant growth in enrollment and building area (+20+%) Virginia Tech has reduced its absolute CO₂ emissions (-20+%) to 2019 at a rate faster than the trajectory to the 2009/2013 VTCAC interim goal for 2025, and indeed is 5% below that goal six years early. The reasons for the decline are because efficiency improvements and fuel switching related to VTCAC #4, 6, and 7.

6.2.5

VTCAC #4 *Virginia Tech will work toward these emission reduction targets through improved **energy efficiency, reduction of energy waste, replacement of high-carbon fuels, and other measures identified in the VTCAC&SP.***

VTCAC #6 *Virginia Tech will improve the sustainability of its built environment by:*

- a. Achieving **LEED Silver certification or better** for all eligible and applicable new buildings and major renovations;*
- b. Evaluating the feasibility of LEED for Existing Buildings certification for its existing buildings.*

VTCAC #7 *Virginia Tech will improve **electricity and heating efficiency** of campus facilities and their operations by:*

- a. Exceeding the most current version of **ASHRAE 90.1 energy performance by 10%** for all new buildings and major renovations. Capital budgets should account for future energy price, life cycle cost of building operation, and environmental benefits of achieving this level of performance;*
- b. Improving the heating and cooling infrastructure and operation, lighting efficiency, equipment efficiency, and metering and controls of its **existing buildings**.*

There are three primary reasons for the 24% reduction of campus GHG emissions from 2006 to 2019 despite a 20% increase in square footage and enrollment:

1. Fuel switching from mostly coal to mostly natural gas in the steam plant,
2. APCO's electricity fuel mix becoming less carbon-intensive,
3. Investment in efficiency: LEED-Silver new buildings and retrofit of existing buildings.

1. Fuel Switching from Coal to Natural Gas in the VT Steam Plant, Steam Plant Upgrades

Virginia Tech's nearly 1 trillion Btu/year steam plant has long provided central steam to heat most of the campus and cogenerated about 10% of VTES electricity. Coal was the primary fuel until 2015 when Tech worked with ATMOS Energy to install a larger gas pipeline to the plant, and natural gas has become the plant's primary fuel. This conversion and its effects are described in Figure 6.4a-d. Between 2009-10 and 2018-19 coal use declined 79% (Figure 6.4a). In 2009-10, natural gas supplied only 3% of steam plant fuel; in 2018-19 it supplied 80% and in 2019-20 93% (6.4b, 6.4d). This has led to a significant reduction of steam plant CO₂ emissions per campus gsf, down 41% from 2009-10 to 2018-19 (6.4c). Steam plant CO₂ of 140,000 tons in 2009-10 halved to 72,000 tons in 2019-20.

In addition to fuel switching, the steam plant fuel use has become more efficient through replacing old boilers with new, efficient gas boilers. While this is all good news, future GHG reduction from fuel switching is limited as we are close to full conversion to natural gas.

2. APCO Electricity Fuel Mix from 90% coal to 63% coal

VTES buys 90% of our electricity from APCO. The utility and its parent American Electric Power (AEP) are converting from coal to cleaner fuels. APCO's fuel mix was 90+% coal in 2006 and 63% in 2018, with continuing movement from coal to renewables according to plans of APCO's parent AEP. Figure 6.5 shows overall AEP fuel mix in 1999, 2005, and 2019, and "Future" fuel mix with expected changes for 2030. APCO's fuel mix now is more coal and carbon intensive (1.57 lbCO₂/kWh) than AEP system-wide (1.38 lbCO₂/kWh), so APCO's future may have slightly more coal than Figure 6.5. However, Virginia's Clean Economy Act enacted in 2020 will accelerate APCO's movement to renewables, requiring 30% renewables by 2030 and 100% renewables by 2050. The greater APCO's renewable mix, the lower are VT's GHG emissions and the less renewables we have to build/buy.

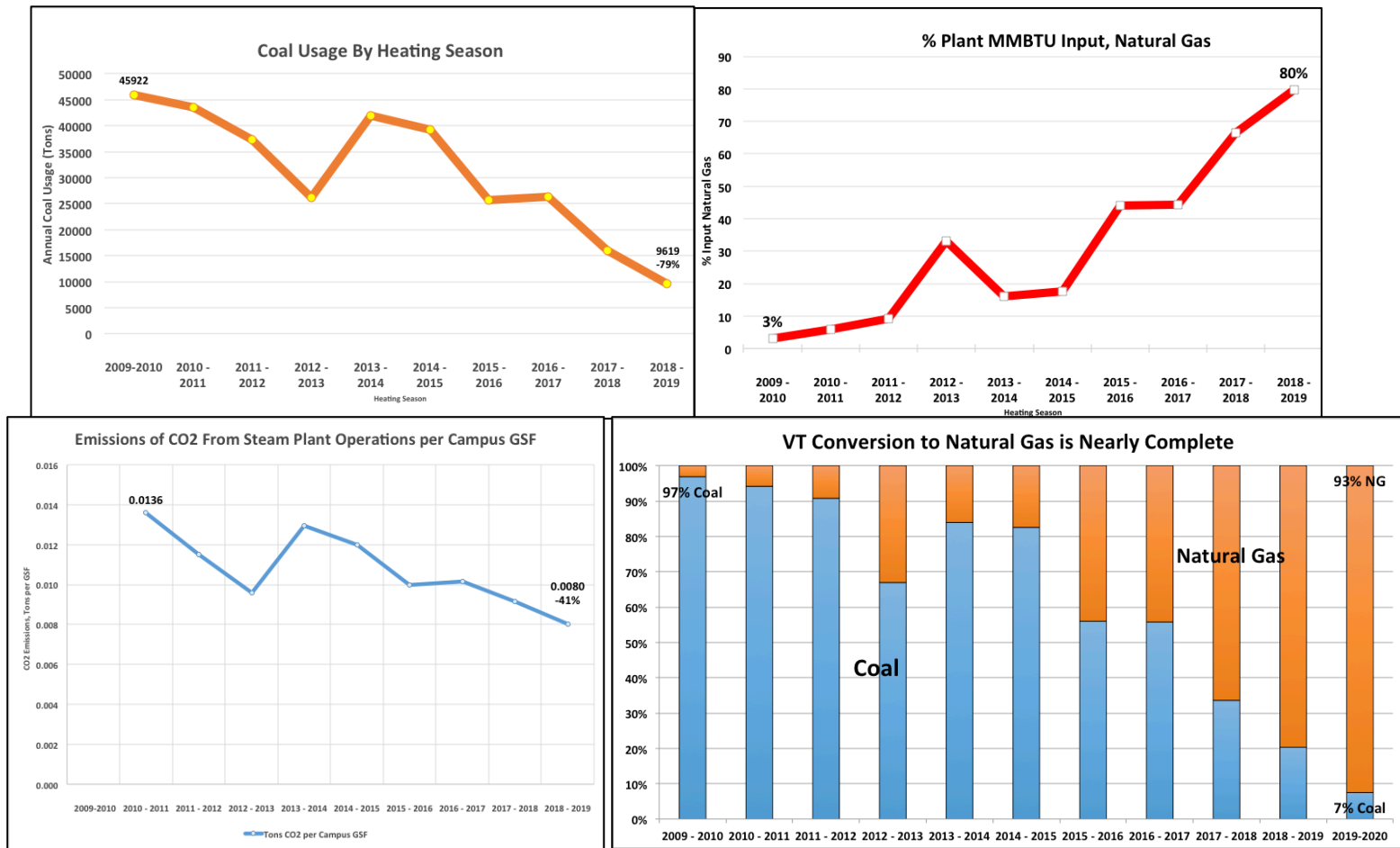
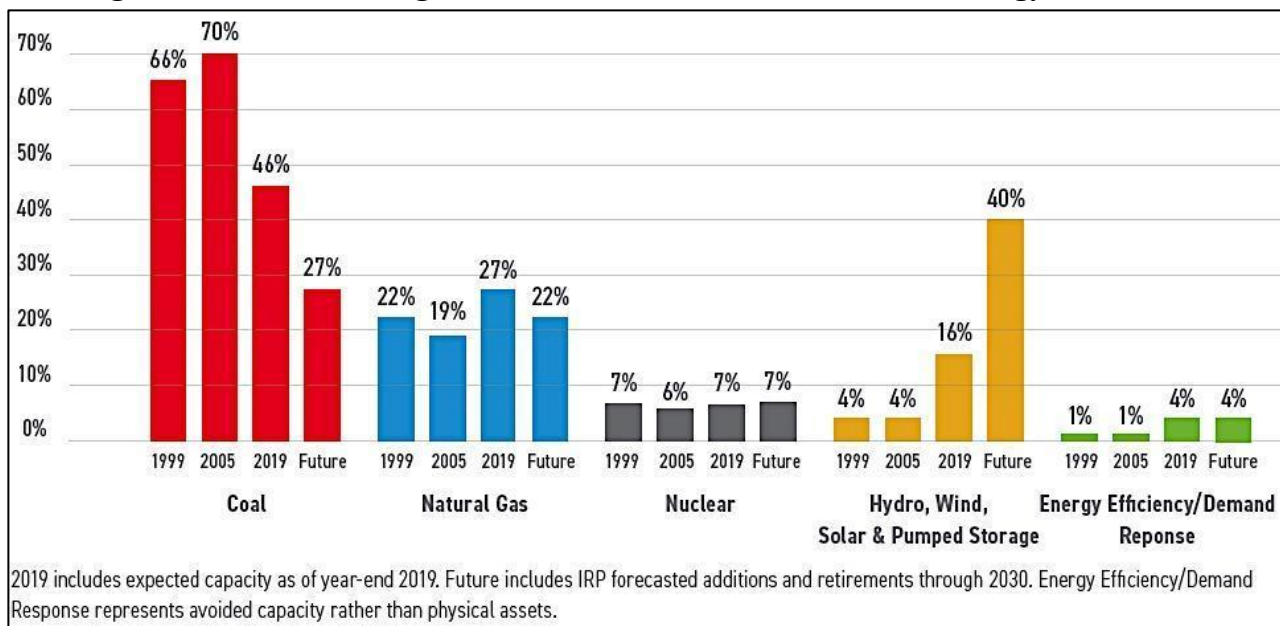
Figure 6.4a-d: Steam Plant Fuel and CO₂ Emissions, 2009-2019

Figure 6.5: Transforming AEP's Power Plant Fleet for a Clean Energy Future



3. Investment in Efficiency: LEED Buildings and Five-Year Energy Management Plan 2015-20

3a. The 2009 VTCAC item #6 required all new VT buildings and major renovations, including E&G and auxiliary buildings, to be built to **LEED-Silver standards** and to meet **ASHRAE 90.1 energy performance + 10%**. Figure 6.6a gives the 2-25-2020 status of VT LEED projects about 3.1 million ft² or 30% of campus building space. Figure 6.6b illustrates 16 of VT's LEED certified buildings.

LEED standards are continually upgraded and the latest version is LEED 4.0. To achieve Silver rating, projects must score 50-59 points out of a possible 110. Zero-point prerequisite for Silver is to exceed ASHRAE 90.1 by 5%. The largest single category is Energy & Climate (E&C, 33 points) and the largest single criterion in that category is Optimize Energy Performance (OEP, 18 points). To get just half of the OEP points requires demonstrating 22% better energy performance over baseline code building. There are other categories and criteria to get LEED points, but it is difficult to achieve Silver status without scoring well in OEP, which requires significant energy performance above code.

Figure 6.6a. VT LEED Project Status as of 2-25-2020. Figure 6.6b. 16 LEED Buildings, 2010-18

	Number of Buildings	Gross Sq. Ft. (GSF)
<input type="checkbox"/> Projects Completed:		
✓ LEED Certification - Attained	16	1,302,345
▪ LEED Certification - Pending	7	295,730
<input type="checkbox"/> Projects under Construction:		
▪ LEED Registered	5	504,253
<input type="checkbox"/> Projects under Design:		
▪ LEED Registered	4	439,106
▪ LEED Registration Pending:	4	592,500
<input type="checkbox"/> Total:	36	3,133,934



3b. Energy efficiency and reduced emissions in new buildings are essential, but to reduce overall emissions we must address efficiency of our existing buildings. In 2015-16, the Facilities Department conducted a benchmarking analysis of campus buildings and identified about fifty energy intensive buildings or “energy hogs”. ***Representing only 35% of the university’s grounds, these facilities collectively account for approximately 70% of campus utility costs.***

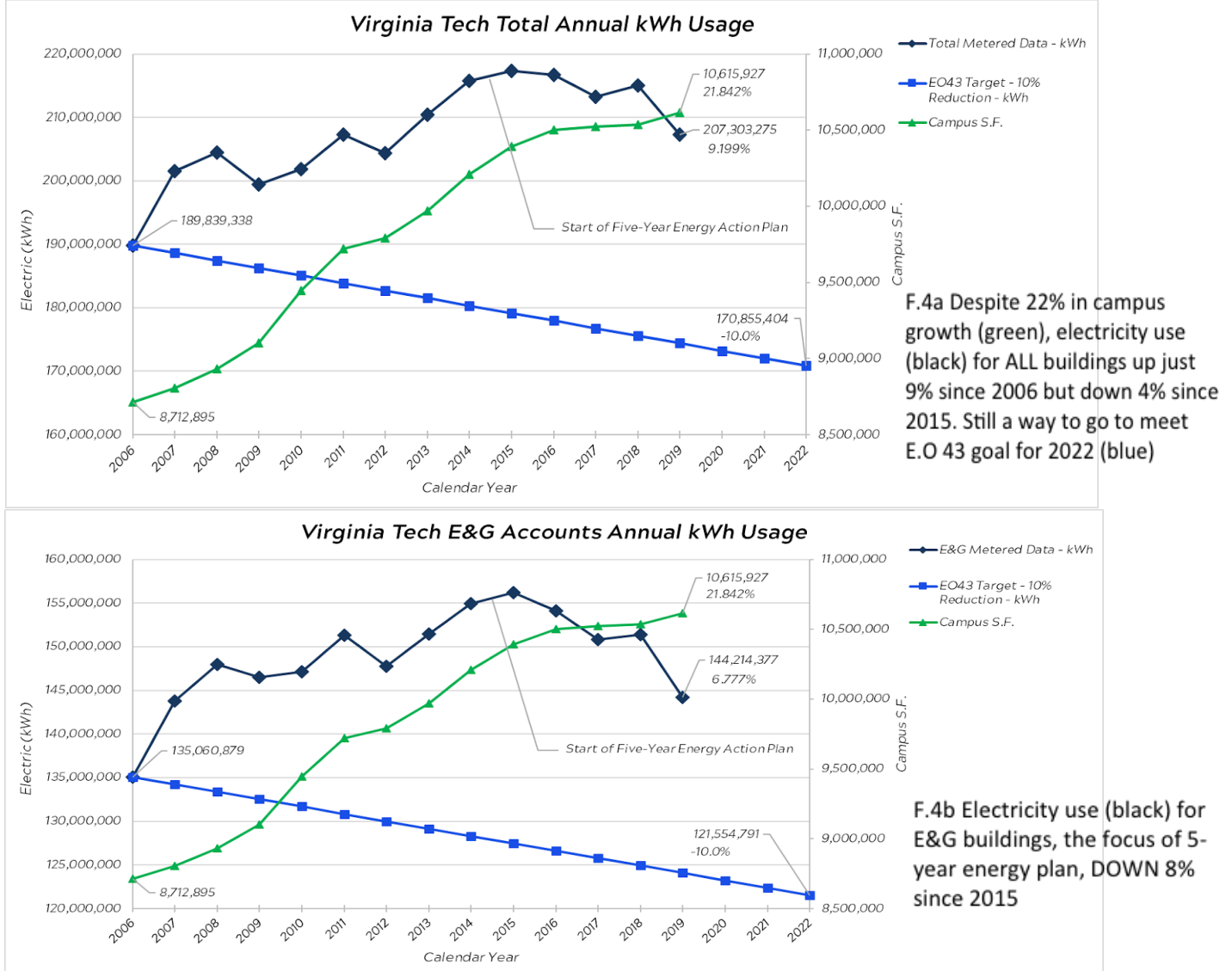
In 2015, VT initiated a **Five-Year Energy Management Plan**, 2015-2020 to focus on ten of these buildings per year and make other improvements for metering and chiller efficiency. Now in its fifth year, the program has invested \$14.2 million or about \$3 million per year and resulted in energy savings that are estimated to pay back the investment in 5.3 years, as shown in Figure 6.7, which anticipates 2020 projects. Many of these improvements will have a 10-20 year life. Projects included LED lighting retrofits, new steam meters on buildings, retro-commissioning (thorough inspection of old building systems), and putting more buildings on energy monitoring soft-ware, among others.

Figure 6.7 Five-year Energy Management Plan, 2015-2020: Estimated/As-built Costs, Savings, Payback

Energy Conservation Measure/Program	Estimated Cost, \$	Estimated Savings, \$	As-built Cost, \$	As-built Savings, \$	Payback, Yr
Implement various energy retrofit projects identified in Phase 1	1,975,000	295,000	1,917,790	337,691	5.7
Implement various energy retrofit projects identified in Phase 2	2,700,000	645,000	2,537,534	581,905	4.4
Implement various energy retrofit projects identified in Phase 3	2,535,000	710,000	2,641,609	594,694	4.4
Implement various energy retrofit projects identified in Phase 4	2,200,000	540,000	1,686,081	315,506	5.3
Implement various energy retrofit projects identified in Phase 5	1,750,000	425,000	1,676,124	309,140	5.4
Install new steam meters in the buildings	1,985,000	255,000	2,092,414	0	-
Integrate more buildings to ICONICS	775,000	320,000	751,067	0	-
Retro-commissioning program	840,000	315,000	624,057	539,054	1.2
Sterrett PV Rooftop Solar Project	1,130,000	59,500	-	-	-
Part-time Students/Energy Engineer + Auditor/Field Controls Tech	480,000	-	277,155	0	-
TOTAL	16,370,000	3,564,500	14,203,831	2,677,989	5.3

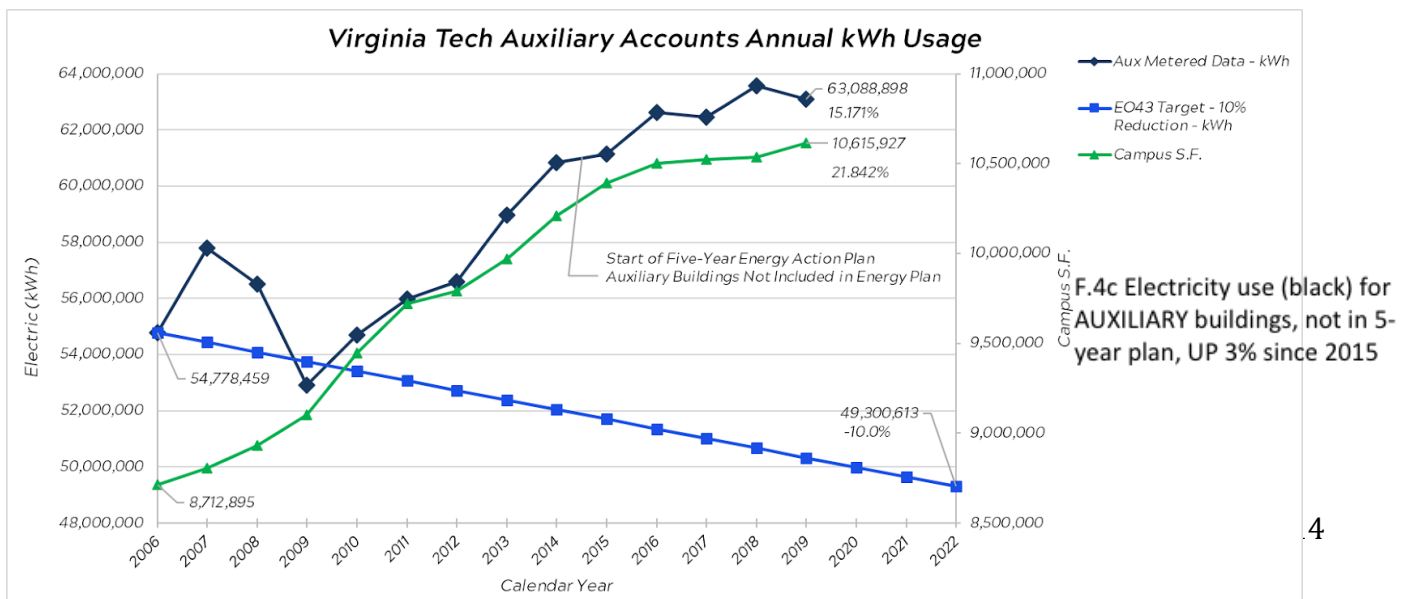
The last year of the Five-year Energy Management Plan is this year 2020. The success of the program is apparent in Figure 6.8a-c below, which shows VT annual electricity usage and campus growth in building area from 2006 to 2019. F.6.8a gives electricity use for all buildings: it increased significantly from 2006 to 2015, but has declined sharply since 2015, despite continued campus growth. This decline is largely due to the Five-Year Energy Plan. The effect of the plan is even more dramatic as shown in F.6.8b and 6.8c, which show the same data but for E&G buildings (6.8b) that have been part of the Five-year Plan and Auxiliary buildings (6.8c) that have not been. E&G buildings electricity use has fallen sharply since the Plan started. Auxiliary buildings have risen.

The figures also show, in blue, the goal of the Governor’s Executive Order 43 calling on all state agencies to reduce their electricity consumption in 2022 by 10% compared to 2006. VT has some work to do to achieve this 2022 goal. Upgrading the Energy Management program is essential and a similar program needs to be implemented on Auxiliary buildings probably using a different financing mechanism.

Figure 6.8a-c Virginia Tech Electricity Consumption, Campus GSF, E.O. 43 goal (10% below 2006 by 2022)

3c. Chiller efficiency planning

The steam plant provides heating, but cooling is provided by the campus chiller network. As shown



in Table 6.2a, chillers consume about 16% of total campus electricity. There are two central chillers, others serving more than one building, and several serving individual buildings, as shown in Table 6.2b. Facilities has been studying means of improving efficiency, which can be achieved with efficiency improvements and shifting more buildings to central chillers.

Table 6.2a Chiller Electricity Consumption**Table 6.2b Chiller Data**

Summary - 2016-2019 Annual Average Chiller Electric Consumption		
Chiller Electric Accounts	23,398,346	kWh
Estimated Chiller Electric Usage from Building	10,029,662	kWh
Other Chillers Estimated	91,000	kWh
Total Chiller Estimated Usage	33,519,008	kWh
Total Annual Electric Bill - E&G & Aux 4-Year Avg	212,598,203	kWh
Chiller % of E&G & Auxiliary Buildings Bills	15.77%	

VPI & SU CHILLER SUMMARY

Location	Capacity (tons)		
Ag Forestry #1	450	Lane End Zone	330
Ag Forestry #2	450	Lane West #1	500
Agnew	240	Lane West #2	500
Anerobe	300	Litton Reaves (Process)	310
Basketball Practice Facility	140	McComas #1	100
Bioinfomatics 1 #1	175	McComas #2	110
Bioinfomatics 1 #2	175	McComas #3	110
Bioinfomatics 2 #1	310	Merryman	130
Bioinfomatics 2 #2	310	New Residence Hall West	185
North Chiller Plant #1	3000	Owens #1	400
North Chiller Plant #2	3000	Owens #2	400
North Chiller Plant #3	1480	Pamplin #1	650
North Chiller Plant #4	1480	Pamplin #2	600
North Chiller Plant #5	1500	Plantation Road - ARDF	30
Cheatham	350	Plantation Road - ARDF	20
Dietrick #1	750	Sandy	40
Dietrick #2	750	Southwest Chiller Plant #1	1500
Football Locker Rm	275	Southwest Chiller Plant #2	1500
Fralin #1	275	Southwest Chiller Plant #3	3000
Fralin #2	275	Squires #1	550
Grove, The	23	Squires #2	350
Henderson Hall	169	Vet IDU	80
Hillcrest	40	Vet Med #1	650
IDRF	120	Vet Med #2	600
Inn Conf CTR #1	450	Vet Med #3	580
Inn Conf CTR #2	450	Visitor Center	65

Serves multiple buildings

3d. Design and Construction Standards, May 2020

The Virginia Tech Design and Construction Standards (DCSM) is a continually revised document to keep up with increasing sustainability goals and requirements as well as the ever changing construction industry. The DCSM is required for all Virginia Tech projects, both capital and non-capital. One of the requirements set forth in the DCSM is to follow the Virginia Tech Climate Action Commitment (CAC) and its goals and standards. This requirement allows Virginia Tech to modify our sustainability goals through the CAC and the DCSM will stay on target for designers and contractors. The DCSM also has specific requirements that are in conjunction with the goal of the CAC, such as a minimum of LEED-Silver being the standard for sustainability on new buildings. This standard brings in all different aspects of sustainability and keeps Virginia Tech at the forefront of green building development.

6.2.6

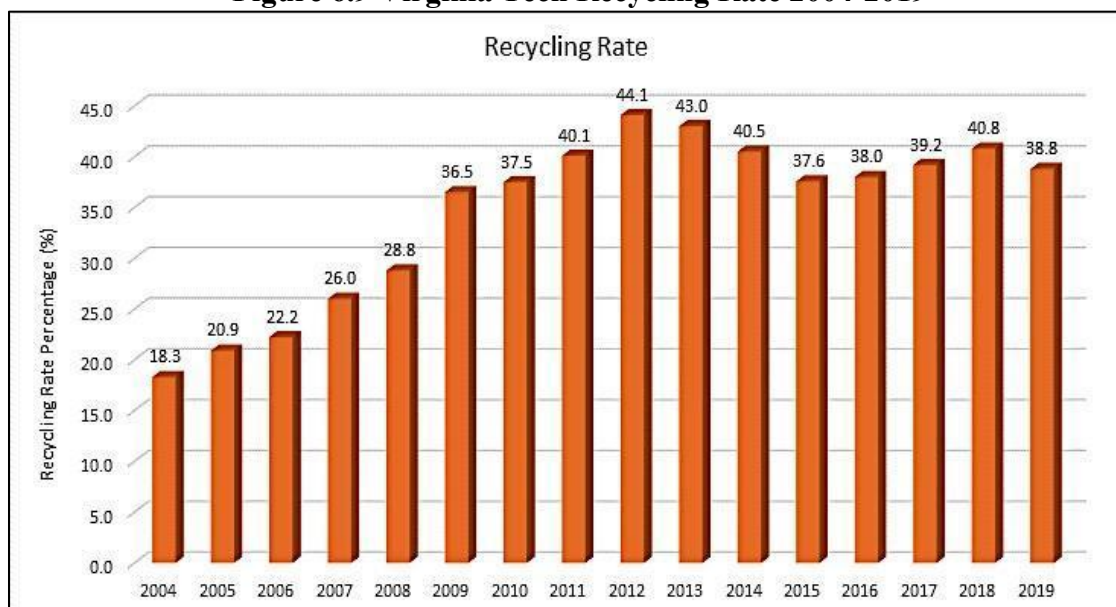
VT CAC #8: Virginia Tech will minimize waste and achieve a 50% recycle rate by 2020.

Figure 6.9 gives Virginia Tech's recycling progress since 2004. In 2004, Virginia Tech had a recycling rate of 18% and doubled it by 2009. The 2009/2013 Virginia Tech Climate Action Commitment (VTCAC) Point #8 stated: "Virginia Tech will adopt a goal of 35% recycle rate by 2012 and 50% by 2025." By 2012, the rate had increased to 44% as a result of food waste composting, so the 2013 revision to the VTCAC moved up the target date for 50% recycling rate from 2025 to 2020.

However, the recycling rate peaked at 44% in 2012, and subsequently dropped mostly due to the unexpected 2015 closing of the Poplar Manor Enterprises composting facility, located in nearby Riner. It took two years to establish a composting contract with Royal Oak Farm (ROF), 77 miles from Blacksburg, the only permitted composting facility within 100 miles of Virginia Tech.

In 2019 the university generated 2,031 tons of principal recyclable materials (PRMs), and achieved a 39% recycle rate. Our food waste composting (566 tons) represents nearly 28% of our PRMs. Our waste diversion rate was 80%, including Hokie Stone waste rock crushed to usable gravel.

Figure 6.9 Virginia Tech Recycling Rate 2004-2019



Despite the dip in recycling rate, Virginia Tech has made considerable improvements in waste management since 2009. Management is functional but is complex and fragmented across a number of departments, including **Facilities Building & Grounds** (trash and recycling from all buildings), **Dining Services** (food waste composting from 11 dining halls), **Environment Health & Safety** (hazardous and electronic waste), animal waste by relevant departments, **Procurement** for disposition of surplus property, and **construction contractors** for construction waste.

Virginia Tech partners with local jurisdictions in the Montgomery Regional Solid Waste Authority (MRSWA), through which solid waste is sent to the New River Resource Authority's landfill near Dublin and principal recyclable materials (PRM) are sent to Recycling and Disposal Solutions in Roanoke. Food waste composting, considered a recyclable material, is transported 77 miles to Royal Oak Farm (ROF) near Lynchburg.

While waste management at Tech is functional, there are notable opportunities for more efficient organization and management of trash, recycling, food waste, and other wastes. A big upgrade would be a University compost facility to process all campus food waste and animal and other organic waste.

6.2.7

VTAC #9 Virginia Tech will:

*Require **purchase** or lease of **Energy Star rated equipment** and maximum practicable recycled content paper, in accordance with University Policy 5505, with exceptions for special uses;
Consider a product's **life cycle cost and impact** when making purchasing decisions.*

Policy 5505 reinforced CAC #9 on procurement and the University made progress in centralizing recycled paper purchasing and purchasing Energy Star equipment. Procurement Department also handles surplus property and Hokie Swap and Surplus that facilitates reuse of office furniture and equipment. In 2019, Procurement initiated development of a Sustainable Procurement Policy that aimed to conform to the goals of the 2009/2013 VT CAC. It was adopted in April 2020.

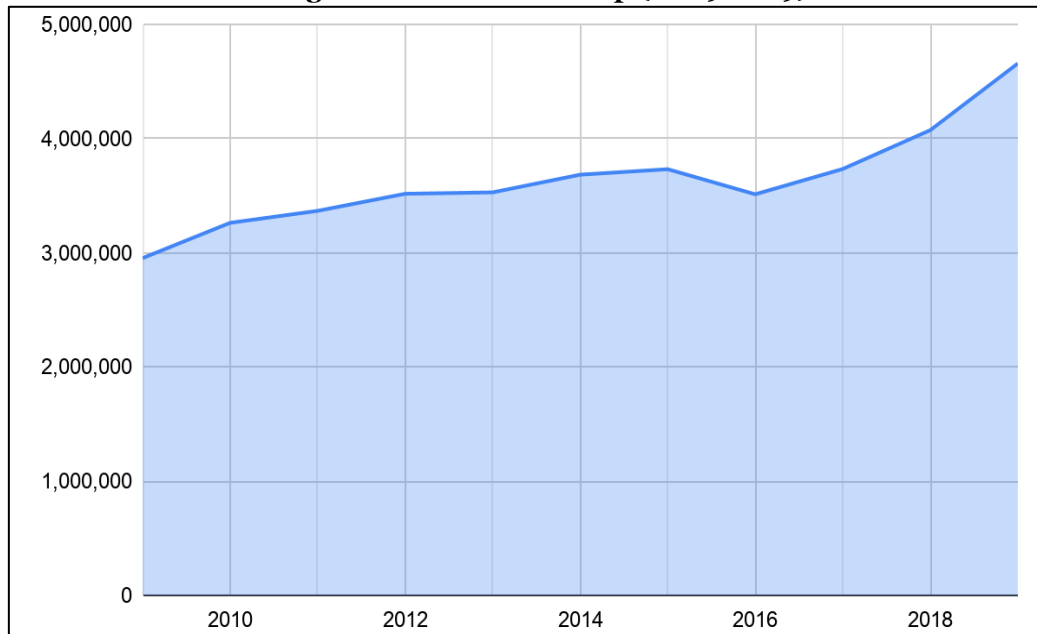
6.2.8

VTAC #11: Virginia Tech will improve **transportation energy efficiency on campus** through parking, fleet, and alternative transportation policies and practices. The university will continue to implement programs that encourage the use of alternative transportation methods and will continue to implement programs and services that promote eco-responsible fleet management.

Alternative Transportation began in a 2007 as a subsidiary of Parking Services, and became an independent department in 2015 within Virginia Tech Parking and Transportation. In close coordination with partners, the program provides a robust array of travel options and resources, targeted at reducing single-occupancy vehicle (SOV) reliance on campus. Many of those options have been added since the first Climate Action Commitment (CAC) was adopted.

These options include:

- **Carsharing** (first offered in 2013, now 3-5 Zipcars on campus with over 2,000 active members).
- **Ridesharing** (first offered in 2012, now provided locally through RIDE Solutions, who also manages the region's Guaranteed Ride Home Program.
- **Blacksburg Transit** (Town of Blacksburg)
 - Prepaid for students through student fee and for employees through general fund
 - Ridership grew from 2.95 million in 2009 to 4.66 million in 2019 (Figure 6.10)
 - 9 of 53 buses are diesel-hybrid electric and five total electric buses to be added by end of 2020
 - Named 2019 Outstanding Transit System for North America by APTA.

Figure 6.10: BT Ridership (2009-2019)

- **Other Transit**
 - Smart Way Express (2012) Blacksburg to/from Roanoke campuses;
 - Campus Connect (2017) Blacksburg to/from Roanoke and Ballston/Arlington
 - Coordinated services (Virginia Breeze intercity bus (Blacksburg to D.C), Amtrak to Roanoke)
- **Bicycling**
 - 349 bike racks, 5,202 capacity (up from 3,924 in 2013), 11% are covered. 20 miles of shared-use paths on campus more than road network. 4,500 daily bikes on campus.
 - Hokie Bike Hub (2013) free, assisted, bicycle repair/maintenance facility (3,000 users/yr)
 - Five bicycle Fix-IT Stations across campus (2013)
 - Roam NRV Bike Share system (2018). 4,000 sign-ups, 11,000 trips, 28,000 miles. Plan to double fleet from 75 to 150 and replace with electric-assist bikes.
- **Carpooling** (carpool park permits (988 sold in 2019)
- **Van Pooling** (mixed results: 3 van pools in 2017, now only one)
- **Teleworking/Alternative Work Schedules**
 - Early 2020: 113 telework and 83 alternative work schedule agreements;
 - During Covid-19 73% of faculty/staff (~8,000) teleworking demonstrated the viability
- **University Motor Pool** (replacing older vehicles with more efficient newer vehicles)
- **Transportation Plans** (*Parking and Transportation Master Plan; Beyond Boundaries 2047: The Campus Plan; Bicycle Parking Master Plan; and Electric Vehicle Master Plan*).
- **Road Network** (roundabouts, Southgate Interchange)

Since 2009 the university has been recognized as one of the **Best Workplaces for Commuters**, receiving the “Best of the Best” in the university category in 2014. The university has also been recognized as a **Bicycle Friendly University (BFU)** from the League of American Bicyclists since 2012. From 2012-2018, the university was a bronze-level BFU, and in 2019 the university moved up to the silver level.

6.2.9

VTAC #10 *Virginia Tech will **engage students, faculty, and staff** through education and involvement to develop and implement innovative strategies for efficient and sustainable use of energy, water, and materials in all university-owned facilities.*

a. Engagement by the Office of Sustainability

Engaging Virginia Tech's in implementing the 2009/2013 VT CAC has fallen mostly on the Office of Sustainability, which tracks and reports progress, operates student and community involvement, and nominates the university for various sustainability awards and recognitions.

Sustainability Tracking and Reporting

- ***Sustainability Annual Reports*** - In compliance with the 2009 Commitment approved through governance, the Office has prepared and disseminated these reports annually since 2010 to show the university's progress in meeting climate and sustainability goals. The key sustainability metrics these reports cover include: greenhouse gas (GHG) emissions, energy use intensity, alternative transportation use, recycling, and water consumption.
- ***Sustainability Tracking, Assessment & Rating System (STARS) reporting*** - The Office of Sustainability prepares evaluations following the STARS framework, which is the prominent national tracking systems of the Association for the Advancement of Sustainability in Higher Education's (AASHE). The tracking system considers five core areas when measuring a university's sustainability standing: Education & Research, Operations, Planning Administration & Engagement, Innovation, and Supplemental Data. It is noteworthy that VT has performed well according to this metric--achieving a 'gold rating--but does have room for improvement in the 'engagement' category; VT's 'campus engagement' score is quite high (20/21) but 'public engagement' is rated at only 14.89/20. The weakest sub-categories in this area are 'continuing education' and 'community service'.

Student & Community Engagement

- ***Sustainability Internship Program*** - One of the Office of Sustainability's key tasks is to oversee a campus wide student sustainability internship program. The Office is committed to providing valuable experiences that foster rapid personal and professional growth. The student projects are paired with Career and Professional Development curriculum and other training, and allow students to sharpen and expand their environmental professional skill sets. For the past several years this office has had 20 student interns from all colleges with many disciplines.

Each intern cohort is broken into teams of 5 members based on topic areas of interest, such as energy, water, waste, and food. Each team has 5 members; one student serves as team leader and another as a communications representative. The team leader is responsible for facilitating meetings, tracking success of projects, and reporting progress to the team advisor (an Office of Sustainability employee). The communications representative is responsible for social media management, graphic design, photography, and content creation.

Intern teams work on a variety of tasks, including:

- ***Partner Projects***: Teams partner with departments such as Energy Management, Stormwater Management, Sustainable Dining, and Housing & Residence Life to complete technical projects.
- ***Education & Outreach***: Teams plan and execute outreach events in partnership with community organizations such as the YMCA, Town of Blacksburg, and Blacksburg Farmers Market. Past events have included Thrift Swaps, a Pop-up Farmers Market, and seed plantings.

- *University-Wide Campaigns:* Teams assist in executing large-scale campaigns, including Earth Week and Sustainability Week.
- **Green Request for Proposals (RFP) Program.** Recognizing that good ideas often come from the community and that “student engagement is the driving force for advancing sustainability at Virginia Tech”, students are invited to develop proposals in response to the annual *Request for Proposal for Sustainability Initiatives from Student Organizations Program* (a.k.a. the Green RFP Program). Proposals submitted are evaluated based on their projected environmental benefits, feasibility, and cost considerations (including return-on-investment). Launched in academic Year 2010-2011, the university has sponsored this program for ten consecutive years. To date, 83 student proposals have been approved with funding exceeding \$1.2 million, and estimated saving approaching \$1 million and growing.

The Green RFP was established as an alternative to a proposed ‘student green fee’ to solicit proposals from recognized student organizations that support the goals of the Virginia Tech 2009 CAC&SP. The Office of Sustainability manages and coordinates the program soliciting and reviewing of all proposals. The university established a fast track formal review and approval process with the goal of having the results announced and implementation initiated in the same academic year. VT’s formal Energy and Sustainability Committee reviews and prioritizes select proposals, the Office of Budget and Financial Planning identifies potential funding sources, and the Senior Vice President and Chief Business Officer approves and funds the projects.

Virginia Tech was awarded the 2019 APPA – Leadership in Educational Facilities Sustainability Innovation Award for the Green RFP program.

- **Green Workplaces.** While most Office of Sustainability initiatives have focused on students, the **Green Office Certification Program** is targeted at helping faculty and staff (and graduate students) to make their offices more sustainable. Offices interested in participating are asked to identify a ‘Green Representative’ that completes a training program in order to most effectively support and coordinate implementation. Participating offices are scored based on six criteria: Recycling & Events, Energy, Purchasing, Waste Reduction, Transportation, and Innovation.

Other Events and Initiatives

- **Sustainability Week** is a flagship series of events held in Blacksburg that engages the whole Virginia Tech campus and the wider community each fall. Sustainability Week was first established in 2006, and now represents a lasting partnership between the VT Office of Sustainability, the Town of Blacksburg, and Sustainable Blacksburg, a citizen-led organization, along with many other community and student groups.
- Another key annual series of sustainability-themed events take place each **Earth Week**. While largely student-organized, the Office of Sustainability plays an important supporting role.
- The Office of Sustainability **Game Day Green Team** promotes recycling during tailgates. Students collect bottles and cans, distribute recycling bags, and work to build awareness around sustainability, recycling, and waste reduction. The Office has 80–100 different student volunteers per year, potentially reaching hundreds of VT football fans before games.
- The **Green Graduates of Virginia Tech** program asks graduating students to take a pledge that they will address environmental impacts and strive to make sustainable choices as they move on to their future careers and wider lives. Pledgers receive a free green cord to wear at graduation.

b. Student groups lead the charge for climate action and sustainability

The Sustainability Office is prolific in supporting a wide variety of initiatives on campus that promote sustainability. However, other organizations - and in particular student groups - also play key roles in advocating, promoting, and implementing changes to advance sustainability on campus and beyond.

Environmental stewardship has been part of Virginia Tech's mission for decades, and ensuring that environmental justice is part of these efforts has long been a priority for its students. As early as the late 1960s, student- and community activists' fought against pollution from the Radford Army Ammunition Plant. In 2008, it was students in the **Environmental Coalition** who met with President Charles Steger and convinced him to have the university develop its own Climate Action Commitment, which it did in 2009.

In recent years, Virginia Tech student groups have renewed their focus on local environmental issues, with a particular focus on climate justice. The Environmental Coalition participated in the student fight against the Mountain Valley Pipeline (MVP), a 303 mile natural gas pipeline currently under construction just miles from Virginia Tech's campus. In 2016, the club took a road trip along the proposed route to speak with impacted residents and to see the land, water, and forests that are threatened by the project. MVP opposition is also fueled by effects of local residents and an understanding of the climate effects of the project operating for a 50-year period as proposed. In 2017 and 2018 the Environmental Coalition campaigned on campus against the MVP through tabling, flyering, information sessions, and fundraising for resistance efforts.

In August 2019, a group of students, faculty, and Blacksburg community members met to plan a strike for climate action at Virginia Tech. The mobilization was held in solidarity with the September 20th International Day of Climate Action organized by the Youth Climate Strike Coalition. Blacksburg's strike drew nearly a thousand people, including Virginia Tech students, faculty and staff, high school students, and community members, who gathered for a rally and march for climate action. Organizers wrote and delivered six demands for climate action to Virginia Tech's President Tim Sands. Following the march, student leaders spoke with Provost Cyril Clark regarding next steps. The student organizers formed **Virginia Tech for Climate Justice (VT4CJ)**, a coalition of Virginia Tech students, faculty, staff, and Blacksburg community members that further refined recommendations for climate action at Virginia Tech. President Sands met with VT4CJ representatives twice and agreed to convene a Climate Action Commitment working group to update the University's Climate Action Commitment. The Climate Justice Subcommittee was the first subcommittee of the Climate Action Commitment Working Group to be formed, and its membership is composed of many of the original members of VT4CJ.

6.2.10

***VTAC #12** Virginia Tech will continue to develop and implement innovative sustainability-related academic programs in instruction, research, and outreach, and will coordinate and communicate these programs to the university community and external audiences.*

Sustainability Academic Offerings

Virginia Tech's STARS report earned the University 89% of possible points in academics. 71 VT departments (90%) offer 525 sustainability courses and an additional 341 courses that include sustainability in class topics. Over 22 percent of VT faculty are engaged in sustainability research. 83 percent of students adopt at least one sustainability learning outcome prior to graduation and

new student orientation continues to be a focus of the Office of Sustainability. Every July, the Office of Sustainability staff help train orientation leaders to equip them with the most accurate information on sustainability programs and offerings. The Office of Sustainability also sets up an informational table at “Gobblerfest,” the premier festival to introduce students to community, clubs, and other organizations on campus in the fall.

Most colleges have academic and research programs related to sustainability and climate action, including the colleges of Engineering, Natural Resources & Environment, Architecture & Urban Studies, Agriculture & Life Sciences, Sciences, and Liberal Arts & Human Sciences.

6.2.11

***VTCAC #14** Virginia Tech will work to **provide funding to support sustainability** programs. With regard to all the items in this resolution, major personnel and investment decisions, including capital projects, associated with implementing the VTCAC&SP will be based on a joint review of costs and benefits by university financial and facilities staff and be subject to availability of funds.*

The last item of the 2009/2013 VT CAC dealt with was money. The committee spent considerable time word-smithing this item and it ended with the paltry statement that the university would “work to” provide funding... “based on a joint review of costs and benefits” and “subject to availability of funds.” It cited no specific funding and provided conditions that could be interpreted as no commitment at all. Despite this, the university came through with adequate funding for CAC-related programs.

Investments led not only to a reduction of emissions at a rate exceeding the 2009 CAC target trajectory, but also to a positive financial return due to reduced energy costs. Many of the investments were part of “the cost of doing business,” i.e. necessary maintenance and modern upgrades of energy systems, building design, and campus life infrastructure to keep the campus operating. Most of these investments incorporated the 2009 CAC goals with a modest increase in cost, such as shifting from coal to natural gas in the steam plant and building LEED certified buildings. Investment in student-initiated projects has led to energy cost and GHG savings while providing students with a voice in campus sustainability.

Some details:

- The last decade was one of considerable growth on campus as building square footage and enrollment each increased by about 22% from 2006 to 2019, but **GHG emissions actually decreased 24%**. This resulted from university investments in energy efficiency in new and existing building, fuel switching, waste recycling, and other sustainability measures.
- VT has **36 LEED certified buildings** now totaling about 30% of campus space, most built to Silver standard based on the 2009/2013 VTCAC.
- The **Five Year Energy Management Plan** (2015-2020) invested \$14.2 million and achieved \$2.7million/year in energy savings for an average 5.3-year payback or 19% return on investment.
- The university invested in **steam plant upgrades** including a dedicated natural gas pipeline and new natural gas boilers that led to shifting from 97% coal in 2009 to 93%% natural gas in 2019-20 and resulting drop in GHG emissions.
- The university is investing in **chiller upgrades** that will reduce chiller energy use by 20% when commissioned in 2023.
- The **Green RfP program** funds student-proposed sustainability projects. From 2010-2019, the university has provided more than \$1 million to support these projects, giving students an important voice in sustainability and climate action.

- Funding for **numerous initiatives** in alternative mobility, waste recycling, campus grounds and woodlands, and agricultural practices have enhanced the quality and sustainability of campus life.
- **University plans** build on this experience with a sustainable vision for the future, including the *Beyond Boundaries 2047: the Campus Plan*, and master plans for parking and transportation, bicycle parking, and electric vehicles.

6.2.12 Other Progress: Virginia Tech Electric Service

One of the university's most valuable energy resources is its electric utility, Virginia Tech Electric Service (VTES). VTES is unique: it is the only "municipal" electric power system owned by a research university, serving campus as well as retail customers in Town. VTES has been an integral part of the university since the 1890s, and its recently appointed director envisions the utility playing an instrumental role in the implementation of the 2020 VT Climate Action Commitment.

6.3 Structure, Partnerships, and Arrangements to address Sustainability

6.3.1 Structure and Arrangements

The 14 VTCAC points remain University policy today. The intent was for implementation to be shared throughout the university but, with the exception of elements #10 (engagement of all students, faculty, staff) and #12 (sustainability related academic instruction, research, and outreach), implementation has rested largely on Facilities dealing with energy, buildings, transportation, waste management, and monitoring greenhouse gas (GHG) emissions.

The **Office of Sustainability** in Facilities, as called out in CAC element #5, plays a key role in implementing the CAC&SP, coordinating campus sustainability, monitoring and reporting annual energy and GHG emissions, and partnering with sustainability related programs on campus and in the community. (See section 6.2.3 above).

Other units in Facilities (now **Division of Campus Planning, Infrastructure, and Facilities** (DCPIF)) are critical to success of the CAC, including

- **Virginia Tech Electric Service** provides electricity to campus and 6000 customers in Blacksburg;
- **Utilities** operates the steam plant, chillers, and distribution systems;
- **Energy Manager's Office** monitors energy and GHG emissions and plans and oversees energy efficiency projects;
- **University Planning** develops campus transportation, landscape, space, and master plans.
- **Capital Construction** oversees design and construction of campus buildings;
- **Buildings and Grounds** maintains buildings, grounds, and manages waste and recycling; and
- **Real Estate** manages leased properties

Beyond Facilities, several other departments are critically important to the implementation of the Climate Action Commitment, especially with its goals of engaging the entire university including student life and academics.

- **Administration:** President, Executive Vice President & Provost, Senior Vice President & Chief Business Officer (CBO)
- **Academics:** Provost's office, College Deans, Academic Departments, faculty, students
- **Operations:** Budget & Finance, DCPIF
- **Student Affairs:** Housing & Residence Life, Dining Services, Student Engagement
- **Auxiliaries:** Residence, Dining, Athletics

- **University Governance:** Board of Visitors, University Council, Committees, Commissions, Student Government, Faculty Senate, Staff Senate
- **Student Organizations**

6.3.2 Partnerships

It is difficult to list all of the critical partners that have contributed to the university's implementation of the 2009 CAC, and who will also be key participants as we move forward.

- **Virginia Tech Foundation**
- **Town of Blacksburg:** Town Council, Town Administration, Blacksburg Transit, Sustainability Office, Housing and Community Development
- **Energy service utilities:** AEP/APCO, ATMOS
- **Regional Authorities** for Waste, Water, Sewerage: MRSWA, BVPISA, BCVPIWA

7. Critique of Virginia Tech Progress in Climate Action

Although the 2009/2013 VT CAC was a leading effort for its time, from the perspective of 2020, it is limited in both scope and ambition. It does not include several sources of campus GHG. It does not even mention renewable energy. Its overall goal of 80% reduction of GHG from 1990 levels by 2050, while a typical goal for its time, is not aggressive enough compared to the current need for climate action and the national movement of our peer institutions. There is much more we can do improving energy, buildings, waste management, transportation, and campus behavior and engagement. This chapter summarizes the limitations of the 2009/2013 CAC and areas where we could improve substantially.

7.1 GHG Scope of 2009/2013 CAC

The 2009/2013 VT CAC was limited in both its GHG footprint and in its vision for necessary GHG emission reduction. The footprint scope did not include agriculture operations, business travel, or leased building space. The vision aimed to reduce GHG by 80% from 1990 by 2050, still would leaving us with substantial GHG emissions in 2050. Our 2020 VT CAC aims to correct these limitations by adding previously omitted operations in the GHG footprint and becoming carbon neutral by 2030.

7.2 Renewables: 2009 VT CAC did not even mention Renewable Energy

An indication of how the world of energy has changed in a decade, renewable electricity is a centerpiece of the 2020 VT Climate Action Commitment, while the 2009 VT CAC did not mention renewable energy at all. The closest mention of renewables was in CAC point 4:

“Virginia Tech will work toward these emission reduction targets through improved energy efficiency, reduction of energy waste, **replacement of high-carbon fuels**, and other measures identified in the VTCAC&SP”

7.3 Energy

Virginia Tech has made considerable progress in managing its energy systems and reducing GHG emissions by 24% from 2006 while the campus has grown by 22%. Most of this progress was achieved by converting from coal to natural gas in the steam plant; the steam plant fuel was 97% coal in 2009-10 and down to 7% in 2019-20. There is still some GHG reduction to be had as we move completely to natural gas by 2025, but this source of reduction is now limited. We will be dependent on the fossil fuel natural gas for some time, and emissions from natural gas, including upstream methane leakage from gas operations and transport, will be difficult to reduce.

While our AASHE STARS sustainability score was very good (71.94/100) and earned a Gold rating, our points for Operations (43% of maximum points) and especially operations categories Air & Climate (23%) and Energy (21%), brought us down.

7.4 Buildings

The 2009/2013 VT CAC was instrumental in improving the quality and efficiency of new building construction on campus, and in influencing the successful energy efficiency improvements of existing E&G buildings through the 5-year energy plan. However, in two building categories these efforts were less successful:

- **Existing auxiliary buildings** were not part of the 5-year energy retrofit plan and as a result, as Figure 6.8 well demonstrates, electricity efficiency in these buildings lags behind academic buildings that were part of the plan. These buildings make up 45% of academic + auxiliary square footage. The reason auxiliaries were not included was that academic funds were used to finance the retrofit plan and thus were applied to E&G buildings only. A means of financing auxiliary building retrofit is needed.
- The 2009/2013 VT CAC did not include **leased space off campus** used by university department operations. Most of these buildings, amounting 1.45 million ft² or 13% of total square footage, are included in the 2020 VT CAC GHG footprint. To reduce emissions from these buildings is a challenge since Virginia Tech does not own them. However, the VT Foundation owns 70% of the space, and they can play a role in improving energy efficiency and reducing emissions.

7.5 Agriculture, Forestry, Land Use

Agricultural and forestry operations GHG emissions were not included in 2009/2013 CAC and this was a critical omission. However, these operations are included in the 2020 VT Climate Action Commitment and GHG inventory. To understand the potential significance of this addition, the subcommittee provided a detailed analysis of emissions from agricultural operations as well as sequestered CO₂ from agriculture conservation tillage and Virginia Tech forested lands in the region.

Total net A/F/LU GHG emissions in 2019 are 8,046 MT CO₂e or about **3.3% of 2019 VT GHG emissions**.

7.6 Waste/Recycling/Composting

- **We will likely fail to meet VT CAC 2020 recycling rate goal.** The original 2009 VT CAC included a goal of 50% by 2025 and in the 2013 revision of the CAC the date was moved up to 2020 since in 2012 we were already at 44%. However, in subsequent years the recycle rate went down and has averaged about 40% from 2013 to 2019.
- **Waste Management Program is functional, but fragmented.** There are notable opportunities for improvement of waste management. The current organization is fragmented with multiple units having only a portion of the overall responsibilities. We need to conduct a comprehensive zero-waste audit in order to streamline operations to enhance efficiencies, reduce costs, and meet existing and future waste management needs.
- **No local composting facility.** Our food waste composting operation is limited in that there is only one state permitted facility within 100 miles of campus. Food waste composting must be expanded to include the Athletic Department. We need to develop a university composting facility near campus that can process campus food waste, other campus organic waste, and agricultural animal waste.

7.7 Transportation

While there was progress developing commuting options other than single occupancy vehicles (SOVs), there are other areas that have lagged behind. Most notably, SOV commuting increased by 10% from 2014 to 2018, there is an oversupply of parking, parking permit prices are cheap and provide no incentive for alternative commuting, VT is one of only a few universities that allow freshmen to bring cars to campus, motor pool vehicles do not use alternative fuels, and business air travel was not included as a source of GHG in 2009 CAC.

- VT lacks policies and programs to incentivize more shifts to non-SOV modes.
- **2009 VT CAC point 11 is incomplete.** The 2009 CAC point pertaining to transportation is not time bound, makes it difficult to measure success.
- **Oversupply of parking** (2000 spaces sit empty on any given day)
- **Parking permit prices** are too low to discourage driving to campus. Getting people out of their SOVs and into other modes is largely about incentives and disincentives.
- **On-campus freshmen are allowed to bring their cars to campus.** Nearly all universities in Virginia prohibit on-campus freshmen from bringing cars to campus. This forces students to explore other transportation options available to them.
- **Student orientation and employee onboarding processes include little education on transportation options.**
- **University motor pool vehicles do not use alternative fuels.** Several years ago there were a few hybrid vehicles in the motor pool, but they have since been replaced with standard gasoline-powered ones. There is not a policy mandating the purchase of vehicles that utilize alternative fuels.
- **Behind on implementing parking demand management strategies.** The university has used some parking demand management strategies (i.e., metered parking in select lots, the Perry Street Area commuter/graduate permit, and preferred parking for carpools and vanpools) but is behind other universities. Parking demand management reduces parking demand, preserves parking for certain trips, and promotes a shift away from SOV trips. It includes both parking pricing (raising parking fees) and supply-side (restricting parking supply) strategies.
- **Unmaintained shared-use paths and inconsistent bicycle lanes.** Across the over 19 miles of paved paths, many examples of poor path conditions (e.g., holes and cracks) result in low use of the network. As mentioned earlier in this report, only .1 miles of the 1.8 miles of bicycle lanes on campus meets the AASHTO standard of ≥ 4 feet wide.

7.8 Sustainable Choices

The idea of creating the Sustainable Choices subcommittee emerged later in the Working Group process from the recognition that many of the challenges discussed involve, at their core, **behavior change**. That is to say, they are about the various choices individuals make that enhance or inhibit progress in meeting our climate and other sustainability goals.

Subcommittee members started by making a short list of “problematic” or unsustainable behaviors evident within the Virginia Tech community based on the Greenhouse Gas Inventory data. Although there have been good efforts to make easier decisions about recycling and alternative transportation, this problematic list still included: unnecessary car commuting, improper disposal of waste, unsustainable food choices in dining halls, and low return rates of reusable to-go containers in dining halls.

The subcommittee recognized that behavioral choices are not just about individuals being educated and expected to make good decisions, but, perhaps more importantly, about how they are supported and **nudged** into making better or worse choices. Recognition of this approach led to exploring how structures could be changed to discourage unsustainable behavior, and more importantly, facilitate sustainable behavior. This served as the basis for CAC Goal 12.

7.9 Community Engagement and Climate Justice

Virginia Tech has made progress in engaging students through the Sustainability Internship and Green RfP programs, and student groups have done much to raise awareness on campus about climate and environmental issues. In addition, there are faculty who developed exceptional instruction and research programs related to climate action and sustainability, and many staff who have been engaged in efforts to reduce their departments' environmental impacts.

However, these initiatives involve only a **small proportion of the campus population**, and they fall short of the level of involvement necessary to create a sustainability culture. The 2020 Climate Action Commitment envisions climate action and sustainability to become a more integral component of campus life, work, and culture. The CAC aims to achieve this by setting aggressive goals, elevating climate action to higher levels of university administration, integrating the exciting campus physical climate action projects into the university's educational mission, and engaging more students, faculty, staff, alumni, and community members in the implementation of the CAC.

8. Comparison to Peer Universities

One of the Working Group's deliverables is a comparison of Virginia Tech progress in climate action to peer universities. There are three good reasons for this:

1. To offer an evaluative reference point (To see how we are doing),
2. To adopt effective plans and avoid ineffective ones (To borrow and steal good ideas), and
3. To demonstrate that what we're proposing is feasible and in line with similar universities (To show we are not crazy with our bold and aggressive climate action)

Knowing that our perspective is comprehensive and that other universities have different strengths in different areas, we decided to have our specialty subcommittees select the peer and exemplary universities to assess in their specialty area. Those areas include

- Carbon neutrality and GHG inventory
- Renewable Energy
- Buildings
- Energy Systems
- Transportation
- Waste-Recycling-Composting
- Agriculture, Forestry, Land Use
- Climate Justice
- Community Engagement
- Budget and Finance

In most areas we selected 3-8 universities that we consider as peers or exemplars in that area. Some are from Virginia, some are Land Grants, some are from the ACC, some are far away, but all offer good examples and benchmark our progress to-date and our aspirations for our 2020 Climate Commitment.

Our peer review told us that, while our **2009 Climate Action Commitment** was right for its time and has led to improved energy efficiency and reductions in GHG emissions, it now **lags behind many of our peers**. This deficiency is most notable in the quest for carbon neutrality, 100% renewable energy, zero waste, zero-net-energy buildings, robust alternative transportation, and community engagement to advance climate action and sustainable behavior.

Many of our related programs do standup well in comparison to others, but if Virginia Tech is to regain its leadership role in climate action and sustainability, we need to move to a new Climate Action Commitment that is right for this time.

We believe that we have found the right balance of aggressive, yet pragmatic climate action. Our goals are for carbon neutrality by 2030, 100% renewable electricity by 2030, investment in energy efficiency in existing and new buildings, carbon neutral agriculture, zero-waste campus by 2030, sustainable procurement, sustainable mobility, climate justice as a core value, ongoing community engagement avenues, and the Climate Action Living Laboratory to integrate these goals into the fabric of the university.

Relative to the peer and exemplary universities reviewed in this analysis, this 2020 VT Climate Action Commitment sets the stage for Virginia Tech to shine as an exemplar and leader in university climate action. Beyond our climate neutrality and zero-waste campus goals, **six areas of the 2020 CAC stand Virginia Tech above the rest:**

1. The detail and **specificity of the pathways** developed to achieve the CAC goals
2. Our own **unique utility VTES** leading our way to 100% renewable electricity, while most other universities are totally dependent on private utilities and companies
3. Using our considerable **land resources** not only to manage our agricultural climate impacts, but also to sequester carbon and develop renewable energy

4. Incorporating in our carbon neutral goal **scope 3 GHG emissions relating to behavior** (e.g., commuting, waste/recycling, business travel), while most others include just scope 1 & 2
5. Integrating our physical climate action into the **university's educational mission** through the Climate Action Living Laboratory (CALL).
6. Specifically addressing **community engagement, sustainable behaviors, and social equity and justice** as core elements of our climate action.

8.1 Carbon Neutrality and GHG Inventory

As part of this review, the GHG assessment scope and methods were compiled for the peer institutions listed in Table 1. This list includes state universities, research peer institutions, and a number of exemplary institutions from farther away.

Table 8.1 – Peer Institutions for GHG Analysis

Peer Institutions	Second Nature Reporting	AASHE GHG Score (0 - 10)	GHG Software Platform	Carbon Neutrality Date / Emissions Goal
Virginia Tech (VT)	No	2.02 (2017)	Internal Excel	80% reduction from 1990 by 2050
University of Virginia (UVA)	No	5.18 (2018)	SIMAP	2030
University of North Carolina (UNC)	Yes	3.58 (2017)	SIMAP	2030
College of William & Mary	No	1.5 (2016)	UNH CCC*	2050
Virginia Commonwealth Univ. (VCU)	Yes	3.25 (2018)	UNH CCC*	2050
James Madison University (JMU)	No	3.4 (2018)	UNH CCC*	Through 2025, JMU will maintain annual adjusted net Scope 1, 2 GHG emissions less than 0.02 MtCO ₂ e /gross square foot of energy use intensity-adjusted floor area
George Mason University (GMU)	Yes	5.07 (2017)	Clean Air Cool Planet	2040
Radford University (RU)	Yes	3.38 (2019)	SIMAP	2050
University of Maryland	Yes	7.16 (2019)	SIMAP	80% reduction from 1990 by 2050
University of Tennessee	Yes	8.11 (2018)	UNH CCC*	2050
Penn State University (PSU)	No	4.37 (2017)	Internal Excel	2061
Purdue University	No	complete (2013)	NA	
North Carolina State Univ. (NCSU)	Yes	4.87 (2016)	Clean Air Cool Planet	2050
Univ. of California Berkeley	Yes	6.52 (2018)	UNH CCC*	2035
Arizona State University (ASU)	Yes	6.04 (2017)	UNH CCC*	2025

*University of New Hampshire Campus Carbon Calculator (excel-base) was replaced by SIMAP (online) in January 2018.

There are many metrics that one could use for peer institution comparisons. However, these types of comparisons are difficult due to the individualized nature of universities with regard to characteristics like student enrollment, land area, age of buildings, urban or rural setting, research level, professional schools and hospitals, etc. In general, overall GHG emissions or even GHG emissions per student or building area are not particularly useful.

Table 8.1 shows the schools' AASHE subscores for the GHG Assessment only. This gives a relative comparison of how well each school is doing for GHG Assessment based on the same third-party rating system. There are a number of requirements in this rating and it is compiled on a 10 point basis, where a higher score represents a more thorough GHG Assessment. Note that **VT is in the bottom third of the schools** based on this metric.

Table 8.1 also shows either the most recent Carbon Neutrality Date or Emission Goal. **VT is in the lower tier in this regard and its 2013 CAC goal is an 80% reduction goal rather than carbon neutrality.**

Schools vary widely in their reporting of Scope 1, 2, and 3 GHG emissions. It was difficult, in fact, to even find the GHG scope for some of these schools. It should be noted, however, that 2 schools

with very aggressive Carbon Neutrality Goals (ASU and UC Berkeley in 2025 and UVA in 2030) are **limiting their initial carbon neutrality goals to Scope 1 and 2**, though they are reporting some scope 3 goals in their GHG assessments. UC Berkeley aims to reduce Scope 1 & 2 emissions by 80% by 2025 and use carbon offsets for the remainder (see sections 8.3 and 8.4). This causes them to miss out on accounting for some common sense GHG emissions that we intend to include in our analysis.

Most of the schools in the table are including the scope 3 emissions of bus systems and airline travel in their GHG assessment. Only a few of these schools are including food emissions or leased spaces in their estimates. Most of the schools do include electricity Transmission & Distribution (T&D) losses, mainly because this is calculated automatically by formal GHG Assessment software. The only institution that mentions upstream methane leakage was the University of North Carolina at Chapel Hill. No details were provided and this was part of an emissions category of “Other,” which represented 6% of the total GHG emissions.

All of these scope 3 emissions have been under consideration for future VT GHG Assessments, and the **Working Group recommends that that our carbon neutral by 2030 goal include scope 1, scope 2 (including leased buildings), and scope 3 emissions related to sustainable choice (commuting, bus system, business travel, waste/recycling, water/wastewater)**. Other scope 3 emissions including upstream natural gas methane leakage and emissions related to dining hall food are not included in carbon neutral by 2030 goal, but they will be estimated, monitored, and minimized.

Finally, 10 out of 13 schools in this table use either the Sustainability Indicator Management and Analysis Platform (SIMAP) or its predecessor, the University of New Hampshire Campus Carbon Calculator. The University of North Carolina specifically mentioned a change from an internal spreadsheet to SIMAP to analyze its GHG emissions in a more accurate and repeatable way.

8.2 Renewable Energy

Many universities have committed to 100% renewable electricity. Although not a complete list, *Environment America* gives 33 universities committed to 100% renewables including Florida State, Maryland, Wisconsin, Michigan State, among others. Our Virginia peers have made good progress in this area. UVA partnered with Dominion Power to build two solar farms in late 2018. Dominion built the solar farms and under the power purchase agreement (PPA) UVA is the sole owner of all produced power and renewable energy credits for 25 years. The College of William & Mary announced a similar project with Dominion in 2020. These schools are described below.

Table 8.2 presents a comparison of universities identified as Virginia Tech peers. Considering other universities with respect to renewable energy generation, we identify three exemplary schools in our region: the University of Virginia, William & Mary, and Penn State.

One common trend with all three of these schools is the use of **Power Purchase Agreements (PPA)**. These agreements enable the schools to have little to no upfront costs, which makes them attractive options. The universities then pay for the power that comes from the renewables, in all three of our cases solar farms. The rates that the power costs vary, and some of the agreements can have complicated cost structures, but most indicate that the power coming from these agreements is likely cheaper than what they would normally pay from a utility.

It is important to understand that renewable energy projects benefit greatly from subsidies through tax credits and sales of RECs; since state universities cannot directly benefit from tax savings, they

Table 8.2: Peer and Exemplary Universities for Renewable Electricity

School	VTES Equivalent	Steam/Power Plant	Energy Center	Renewable Energy
University of Virginia	Power and Light office in Utilities Department	Natural gas, coal & oil produce 84% of UVA's heat energy.	Renewable Energy Tracker and Energy Working Group	2 PPA's with Dominion: 32 MW total, 21% of UVA's electricity; solar substation; rooftop lease with Dominion
Penn State	Utility Services	2 Combined Heat & Power (CHP) plants with a capacity of 13MW	EMS Energy Institute	70 MW solar farm PPA (25 years) with Lightsource BP; provides 25% of electricity
William & Mary	None	Currently use natural gas and oil. New steam, hot & chilled water plant under construction	Commonwealth Center for Energy and the Environment	PPA with Dominion for 20 MW solar farm that will produce ~50% of W&M load; online in 2021; savings after 6 years
UNC Chapel Hill	Energy Services	Cogeneration facility, 50/50 coal & natural gas	Institute for the Environment	20 kW solar roof, residence hall with solar heated water, 34 geothermal wells, plans for 0.5 MW solar
James Madison University	Partner with Harrisonburg Electric	East Campus Power Plant	Center for the Advancement of Sustainable Energy	10 kW solar project (2003); small wind training - 100 kW solar, 126 kW wind
University of Texas, Austin	Utilities & Energy Management-Electrical Dist.	100% natural gas	Energy Institute	500 kW solar
Ohio State	Partner with Ohio State Energy Partners	CHP plant construction starting in May 2020	Center for Energy Res., Training, and Innovation	Purchase of RECs (18 MWhr in 2010)
Purdue	Energy and Utilities Office	Wade Utility Plant, 3 natural gas and 1 coal boiler	Energy Center	Duke leases from Purdue for 1.6 MW solar- electricity to "Indiana Customers"
NC State	Energy Systems Office	CHP plant with 2 gas turbines	Clean Energy Technology Center	Various small-scale projects
VCU	None	2 heating plants	Electric Power & Energy Syst. Res. Lab	6.6 kW solar array on steam plant
University of Maryland	Engineering & Energy Department	CHP (natural gas)	Energy Innovation Institution	5 solar arrays: 1 rooftop and 4 carports: total of 3.07 MW
University of Tennessee	Electrical Services	Steam plant; mixture of natural gas and diesel, 5 boilers		5 MW west Tennessee solar farm (owned and operated by the university)
Notre Dame	None		Center for Sustainable Energy	Geothermal; solar (150 kW array); hydroelectric (2.5 MW, 7% of load)

***bold = exemplary universities**

can indirectly benefit from for-profit owners using the tax incentives, lowering the project cost, and therefore lowering the cost of electricity produced by the project. Here we can see why these PPAs are so attractive for universities, no upfront cost, often cheaper power, and greener power.

Penn St took a slightly different route in its PPA than UVA or W&M. Penn St's PPA is with a renewable energy contractor, Lightsource BP, while UVA and W&M have their PPAs with a utility, Dominion Energy. Despite this difference the PPAs still function the same. Penn St's contract with BP is for 70MW solar over 25 years. UVA's for 32MW solar, and W&M's for 20MW solar with Dominion. These solar agreements will provide about 25%, 21%, and 50% of this electricity at these universities, respectively. Although PPAs are important, they are not the only aspect that set exemplar universities apart from the rest.

William and Mary has plans to **use their solar farms for educational outreach** as well. Two demonstration solar projects are being planned on campus for educational purposes. W&M's Director of Sustainability has said, "we want this to be a teaching and learning opportunity" about the solar projects. They are taking their renewable projects a step further and want to use them as a chance to educate the public and their students on the importance of environmental sustainability.

The University of Virginia and Penn State each have an energy center. UVA's Energy Working Group leverages campus and community resources to promote energy conservation at UVA. Penn State's Earth and Mineral Sciences Energy Institute aims to diversify campus energy sources and improve efficiency when generating and using energy. Having a body dedicated to working with the community to promote energy research and implement renewable energy on campus is what sets these schools apart from the rest.

8.3 Buildings

Among 25 Virginia Tech's SCHEV-approved peer universities, most have some ongoing initiatives related to climate mitigation and sustainability that address energy efficiency of campus buildings. Majority of considered options are aligned with our 2020 CAC, for example:

University of California Berkeley's 2009 Climate Action Plan called for reducing **80% of GHG emissions** produced from campus buildings, primarily focusing on lighting, HVAC, and commissioning measures. In 2013, the university "pledged to become carbon neutral by 2025, becoming the first major university to accomplish this achievement." Its [*2025 Carbon Neutrality Planning Framework*](#) was produced in 2016 and upgrades its building efficiency through retrofit projects, behavior change, green building practices, and improved space utilization.

Cornell University's 2015 Climate Action Plan is also striving to be carbon neutral, and is committed to campus zero carbon emissions by 2035 from their 2008 baseline. One of the key pathways to achieve this is adopting an **Earth Source Heat geothermal system** to heat the campus. Other efforts include building high-performance buildings to use less energy and do so more efficiently, improving energy conservation of existing buildings by updating building envelopes, adding automated control systems, improving lighting, and recovering heat.

In their 2015 Illinois Climate Action Plan (iCAP), **University of Illinois at Urbana-Champaign** commits to ensure that **all new buildings and major renovations are net zero energy**. On existing buildings, measures include reducing energy use when spaces are unoccupied and incentivizing behavioral changes that would encourage energy conservation, retro-commissioning, HVAC improvements, scheduling and control strategies, lighting improvements, and Energy Performance

Contracting (EPC). Their earlier 2010 iCAP also established a **“no net increase in space” policy** that applies to all buildings on campus including auxiliary and rented spaces. Such an approach would reduce GHG emissions that drive the peak energy demand for utilities. Among other energy savings options, iCAP lists centralized conservation efforts, development of campus fume hood efficiency program that would consider use schedules, disassemble unused and antiquated units, and convert system to variable-air-volume systems.

In February 2020, **University of Pittsburgh** announced their carbon neutrality commitment and committed to achieving a net zero carbon footprint by 2037. Under this plan, the university will improve building efficiency by pursuing **50% energy reduction of existing and 80% of new buildings**.

Rutgers, the State University of New Jersey, developed a new Pathway toward a Carbon Neutral, Climate Resilient Rutgers in February 2020. Proposed initiatives include upgrades to building automation for real time monitoring and scheduling, various conservation efforts such as energy audits, retrofits, HVAC upgrades, envelope improvements, operations and maintenance improvements and training, time use shifts in class times and used spaces, and **behavioral interventions such as training and education of users of spaces and labs**.

As a part of their efforts, Gov. Cuomo announced in 2019 that **State University of New York at Buffalo** will add the first new \$33.5 million, 257-bed **zero-net, carbon-certified Residence Hall** on campus.

The University of Virginia set a 2016-2025 Energy and Emissions Action Plan, and it has a staff of **three engineering technicians and several controls technicians** to develop and implement it. UVA's Delta Force program has invested \$15.5 million in energy projects and has saved \$25.6 million and 180,000 metric tons of carbon dioxide emissions (MTCDE) since 2009.

The University of Maryland set a goal for efficiency upgrades in existing buildings that will reduce campus electricity use 20% by 2020, and it invested \$21.5 million to save \$1.7 million/year to reduce campus energy by 6%. UMD utilizes an **Energy Dashboard and Solar Dashboard** to display accessible data for the campus community.

As a part of the Climate Action strategies and projects, Penn State University implemented many Energy Conservation Measures such as improving steam traps, reprogramming thermostats and upgrading control systems in buildings, **shutting down spaces that are not in use** for extended periods of time, and installing room occupancy sensors. In addition, around 350 buildings on campus have Building Automation Systems that control the buildings' climate and lighting based on the occupancy patterns.

According to their energy performance/Climate Action Plan, the University of North Carolina at Chapel Hill aims to minimize energy demand in their buildings by implementing various energy conservation measures such as improved standards for heating and cooling of campus buildings, **optimized occupancy schedules**, use of energy efficient equipment, **behavioral changes** among users of campus spaces, compliance of renovation and construction projects with the UNC Design and Construction Standards, NC State Building Codes and North Carolina General Statute 143-64, and overall better management of indoor spaces.

8.4 Energy Systems

As part of this review, we have researched and compiled the peer institutions listed in Table 8.3 below. This list includes exemplary institutions that have a diverse and resilient energy portfolio. Exemplar institutions are defined by their use of renewables and energy conservation. In our region, the

University of Virginia, Penn State University, and the University of Maryland stand out. In addition, University of California Berkeley and Stanford University are exemplars worthy of watching.

The following areas were analyzed during this research process:

- Key Climate Action Energy targets
- Implementation of renewables
- Designated energy management office

Exemplar universities were identified through their aggressive climate action goals and their plan to achieve those goals. The University of Virginia aims to be carbon neutral by 2030 and fossil fuel free by 2050. Penn State and the University of Maryland are committed to reducing GHG emissions through energy usage. Penn State aims to reduce GHG emissions by 35% by 2020 and UMD plans to reduce 60% by 2025. To achieve these targets each of these universities has a clear plan and completed projects. The University of Virginia and Penn State have incorporated Power Purchase Agreements into their climate action plans. Penn St's PPA is with a renewable energy contractor, Lightsource BP, while UVA's is with a utility, Dominion Energy. Penn St's contract with BP is for 70MW solar over 25 years and UVA's is for 32MW solar. These solar agreements will provide about 25% and 21% of electricity at these universities, respectively. These institutions have incorporated renewable energy throughout the campus, as well.

High visibility of solar projects is important to Virginia Tech's success. UVA, Penn State and UMD provide examples of successful renewable energy projects. Penn State has developed a solar array on campus, which powers 100% of its electric fleet vehicles. This represents how one renewable energy project can impact multiple campus entities. UMD has 9,000 solar panels on their campus, which is effective and illustrates the university's commitment to sustainability.

A **designated energy management office** is another key component of an exemplar institution. The University of Virginia and Penn State each have an energy center. UVA's Energy Working Group leverages campus and community resources to promote energy conservation at UVA. Penn State's Earth and Mineral Sciences Energy Institute aims to diversify campus energy sources and improve efficiency when generating and using energy. It is also important to note the tools used by the energy management office. The University of Maryland utilizes the **Energy Dashboard and Solar Dashboard** tools to manage its energy. Having a body dedicated to working with the community to promote energy research and implement renewable energy on campus is what sets these schools apart from the rest.

On the west coast, UC Berkeley and Stanford may offer useful lessons. [UC Berkeley](#) claims to be the first major university to pledge carbon neutrality by 2025. As mentioned in section 8.1, they include only GHG scope 1 & 2 emissions in this pledge and reduce emissions by 80% with the remainder addressed by carbon offsets; they aim to reduce scope 3 emissions to net zero by 2050. Among their interesting strategies is to rely on **biogas to replace natural gas**, which is their largest source of emissions mostly from their cogeneration steam plant owned by a third party. If they supplied 100% of natural gas with biogas they would achieve 91% of their 2025 goal.

Like Berkeley's, Stanford's cogeneration plant produced 90% of its GHG emissions. In 2012, after three years of study called the [Stanford Energy Systems Innovations](#), it began construction on its new Central Energy Facility (CEF) which was completed in 2015. The CEF converted the central heating system from **steam to hot water** and incorporated **heat recovery from the cooling system** and both hot water and cold water **thermal storage**. Stanford also entered into a power purchase agreement with SunPower to build 78.5 MW of solar PV, 5.5 MW of which will be on the Stanford Campus. GHG emissions in 2017 dropped 68% from 2014 levels.

Table 8.3 Energy Opportunities Peer Universities

School	Carbon neutral goals	Renewable Energy Goals	Plan to achieve renewable goals	Renewable projects completed	% RECs	Energy Management Office	Energy Management Plan
UVA	1. Reduce greenhouse gas emissions 25% below 2009 levels by 2025. 2. As of CY 2015, a 7% reduction had been achieved. 3. UVA to be carbon neutral by 2030. 4. Fossil fuel free by 2050.	1. Increase the % of UVA's energy derived from renewable sources (2020)	1. About 21% of UVA's electricity comes from renewable sources.	1. Solar PPA, 25 Yr, 17 MW, with Dominion Energy (UVA Hollyfield Solar facility); 12% of electricity used at UVA. 2. Solar PPA...	Not buying RECs directly but through the PPAs	1. 2016-2025 Energy and Emissions Action Plan. 2. Three engineering technicians and several controls technicians.	1. UVA's Delta Force program has invested \$15.5 million in energy projects and has saved \$25.6 million and 180,000 metric tons of carbon dioxide emissions (MTCDE) since 2009.
Penn State	1. Penn State is on track to reduce its greenhouse gas emissions by 35% (from its peak in 2005) by 2020. 2. 85% reduction by 2050.	1. Diversify the university's energy portfolio by 2020.	1. Establish a 70 MW solar PPA w/ Lightsources BP	1. Solar PPA, 2 MW, On Site, 25 Yr - Alternative Energy Development Group (AEDG). 2. Solar array, 215, Main Office of Physical Plant Facility to provide power to charge its 100% electric vehicles. 3. Hydroelectric PPA, 2013, 10 Yr, Mahoning Creek Hydroelectric Company, 6 MW.	N/A	1. Energy Savings Program, 100 million invested to date 2. Continuous Commissioning (CCx), 2 CCx Engineers and (3) 2-person technical service crews. 3. Energy Conservation Measures (ECM), <5 Yr, Smaller Scope 4. Green Design, LEED	Utilize the Energy Enterprise Management tool. 20% reduction in building energy intensity by 2024 via DOE's Better Building Challenge.
UMD	1. In 2017, 49% reduction in net carbon emissions compared to 2005. 2. Goal: 60% reduction in carbon emissions (from 2005 levels) by 2025. 3. The university is committed to achieving carbon neutrality for all scopes of emissions by 2050.	1. 85% of UMD purchased power was renewable in 2017. 2. By 2020, all electricity delivered to campus by regional power plants will come from renewable sources.	1. 9000 Solar Panels on Campus 2. Campus buildings and parking produce ~1.5 million kWh, 3 MW		N/A	Utilize Energy Dashboard and Solar Dashboard.	1. Efficiency upgrades in existing buildings will reduce campus electricity use 20% by 2020. 2. Investing \$21.5 million to save \$1.7 million to reduce campus energy by 6%

8.5 Transportation

Peer Comparison — Outside Virginia

Four universities identified as **Platinum-Level Bicycle Friendly Universities** by the League of American Bicyclists (considers factors related to engineering, education, enforcement, encouragement, evaluation and planning, and equity), and that had a Climate Action Plan adopted within the last 10 years, were chosen for comparison on pathways being recommended for VT by the Transportation Opportunities Subcommittee. One of these universities is urban (Portland State University (PSU)) while the other three (Colorado State University (CSU), Stanford University (Stanford), and University of California, Davis (UC Davis)) have more suburban campuses. Data for the table (see Table 8.4) was gleaned from the most recent Climate Action Plans and the university websites.

Table 8.4: Comparison of Selected Recommended Pathways for Reducing Transportation-Related GHG Emissions Among Peer Universities*

Metric from VT goals/pathways	VT	CSU	PSU	Stanford	UC Davis	UVA	JMU	W&M
Sustainable transportation goal or strategy is part of most recent climate action plan	Y	Y	Y	N	Y	N	U	U
Freshmen prohibited from bringing cars to campus	N	N	N	Y	Y	Y	Y	Y
Cars restricted on campus roads	N	U	U	U	Y	N	Y	N
Utilizes parking demand management	Y	Y	Y	Y	Y	Y	Y	N
Remote discount parking available	Y	Y	N	N	N	Y	Y	N
Campus speed limit is 15 MPH or less	Y	N	N	Y	Y	Y	N	N
Major non-vehicle pathways on campus	F	Y	U	U	Y	U	Y	Y
Allows faculty/staff to telework	Y	F	Y	Y	Y	Y	Y	Y
Carpool/vanpool incentives offered	Y	Y	Y	Y	Y	Y	Y	Y
High-efficiency motor pool vehicles available	N	Y	Y	U	Y	Y	Y	N
Air travel offset program in place	N	F	Y	Y	U	U	U	U
Public EV charging stations on campus	N	Y	Y	Y	Y	Y	Y	Y

Y = Yes, N = No, U = Unknown, F = Future plans

Within their Climate Action Plan, three out of the four comparison universities included goals related to transportation (CSU, PSU, UC Davis). Of the three universities with transportation goals, the recommendations included increasing the fuel efficiency of campus motor pool vehicles (CSU, UC Davis), **increasing reliance on teleworking and teleconferencing** (CSU, PSU, UC Davis), **offsetting air travel** (CSU, PSU, UC Davis), **improving data on commute modal split** (PSU), improving carpooling (CSU, PSU), improving education on climate impact of travel (PSU), removing barriers in state system for choosing lower carbon forms of travel (PSU) as well as continuing/improving various programs such as **free public transport**, bike share programs, and bicycle parking/maintenance programs.

Data derived from their websites demonstrates that one university (UC Davis) **restricts freshmen from registering a car on campus**. One university (CSU) utilizes remote parking with a lower permit cost. Although all have some type of parking demand management, they varied in their specific options. For example, CSU and Stanford have parking options ranging from a daily charge

to an annual permit. The former is a strategy that may reduce total days driven to campus. PSU provides prime parking spots for those who utilize carpooling. Even more unique, UC Davis offers “**easy park personal parking meters**” (placed on a car’s dashboard) that will charge for parking by the hour from a prepaid account. All four universities appear to have policies that allow teleworking but the use of these policies is unknown. UC Davis offers a “GoClub” membership that connects commuters with lower cost and stress commute options, transit subsidies, and 24 day parking passes. All peer universities have **electric vehicle (EV) charging stations**. It is free to park at CSU’s EV charging stations. PSU has four EV charging stations on campus that have an hourly charge and a four-hour maximum. Stanford has 80 EV charging stations.

Peer Comparison — Within Virginia

In Virginia, three universities were used in peer comparisons. University of Virginia (UVA), William and Mary (W&M) and James Madison University (JMU) were reviewed to compare transportation programs aimed at reducing GHGs through promoting alternative transportation.

Virginia Tech and these three universities all have the following aspects: pre-paid transit through student fees, teleworking, carpool/vanpool incentives, and electric car charging stations. JMU was the only school that **restricted regular vehicle traffic on core campus** roads during heavy pedestrian periods. W&M was the only school that did not have bike share and remote discount parking. VT and UVA have some speed limits below 25 MPH, but W&M and JMU did not.

Virginia Tech does allow freshmen to have cars, which the other schools restricted. It is worth noting that of the nearly **10,000 on-campus residents, only 1,400 permits (14%)** were purchased. It is unknown how many of those residents are freshmen. It was unclear or hard to find metrics for aspects such as: parking demand management, air travel offsets, quality/quantity of non-vehicle pathways, or fuel efficiency of campus motor pool vehicles. In general, VT compared well against these Virginia schools.

8.6 Waste-Recycling-Composting

Using the Sustainability Tracking, Assessment, and Rating System protocol, we compared Virginia Tech’s waste management program to that of eight land grant institutions, and six colleges and universities in the Commonwealth of Virginia (Table 8.5).

While we have made significant progress in the past two decades, clearly we have room for improvement. Institutions with very impressive waste management programs include North Carolina State University (NC State), The Ohio State University (OSU), Penn State University, and the University of Maryland (UMD). George Mason University (GMU) and the University of Virginia (UVA) have the leading in-state waste management programs. These universities offer a mix of urban and suburban campuses, providing a range of options for Virginia Tech to choose from to boost our waste management operations.

All of these universities have an updated climate action plan and STARS scores with the exception of NC State. The STARS scores of these universities provided rankings of waste management that were similar to Virginia Tech’s, with only George Mason surpassing the university. GMU has the **Patriot Green Fund**, which offers \$100,000 for campus innovation in several sectors, including recycling services. In addition, all of these universities have **zero waste plans for events**. In particular, OSU has selected zero-waste buildings on its campus and has devoted its football games that it hosts as zero waste events. Campuses such as UMD have backed this effort.

Virginia Tech has a unique opportunity to exemplify its leadership in waste management by adopting these efforts and striving to be a zero waste campus. Furthermore, Virginia Tech is presented with an opportunity to emulate more innovative leaders in waste management such as OSU through the university's pulping system to turn composted food waste into usable energy.

Many of these universities, such as UVA and Penn State, have sustainability student internship programs that treat the university as a living laboratory, similar to Virginia Tech. VT has an opportunity to expand its programs.

Table 8.5 Peer Institution Waste Management Comparison - 4/16/2020

Institution	Waste Management Organization	Student Population	Faculty and Staff	STARS Year	STARS WM Score (OP-18-21)	A Recycled Materials (tons)	B Composted Materials (tons)	C Landfill (tons)	D= A + B + C Total Waste (tons)	(A+B)/D Basic Recycle Rate (%)	Recycled Construction Waste (tons)	Landfill Construction Waste (tons)	Landfill Construction Diversion (%)	Notes of Interest
Virginia Tech	Office of Sustainability	34,000	7,700	2017	5.29	1,488	416	3,867	5,771	33	2,285.84	590	80	Using the Virginia DEQ formula, our Final Recycle Rate was 38% (5% above the Basic Recycle Rate).
Land Grant Institutions														
Penn State	Sustainability Institute - entire staff unit dedicated to sustainability	46,000	17,000	2017	4.81	2,529	4,780	5,895	13,299	56	18,298.00	3,256	85	Old ceiling tiles are recycled, "Recycling Roadshow", waste audits
Ohio State	Two offices: Energy Services and Sustainability and Office of Energy and Environment	68,000	27,000	2019	3.33	3,689	2,242	14,803	20,733	29	10,196.49	1,293	89	Zero waste facilities, zero waste football games, 50 tons of coffee compost
Auburn	Waste Reduction and Recycling Department	29,000	5,900	2019	4.42	845	0	4,408	5,263	16	31,580	2,505	93	GameDay Recycling challenge, RecycleMania
NC State	Program manager, operations manager, coordinators, operators, and interns	36,000	9,700	2016 (expired)	4.15	2,537	1,475	4,282	8,294	48	1,970	1,066	65	Zero waste event planning, zero waste guide, RecycleMania
Maryland	Office of Sustainability	39,000	10,000	2019	6.6	3,808	1,438	3,993	9,933	60	45,125	3,138	94	75% carbon neutral on 2013, green office program, waste audits, "Terrapin Trader", partners with Goodwill
Clemson	Recycling services program	23,400	5,000	2018	5.52	802	442	2,969	4,255	30	146	57	72	Carbon neutral by 2030
Florida State	Sustainable Campus Office	36,000	6,700	2019	4.58	1,323	406	3,244	6,439	50	6,212	7,487	45	Move out collection bank
Tennessee	Office of Sustainability	28,300	24,500	2018	3.52	1,635	1,572	7,935	12,138	35	534	398	57	Zero Waste campus by 2028
Virginia Colleges and Universities														
UVA	Office of Sustainability	23,000	16,000	2018	4.3	6,157	747	4,895	11,812	59	371	41	90	zero waste guides for events, waste audits, reusable office supply exchange, Hoos Reuse program
William & Mary	Office of Sustainability - Even less faculty than VT	9,500	3,000	2016	3.89	386	174	1,258	1,959	36	-	-	-	Very similar initiatives as VT with an intern program. In general, smaller scale.
VCU	Office of Sustainability - organized through coordinators	32,000	12,000	2018	4.75	2,985	0	3,101	6,183	50	95	37	72	Generally a smaller operation, one thing we could be doing from them is a garden program
JMU	Office of Environmental Stewardship and Sustainability	24,000	4,000	2018	4.95	807	493	1,939	3,257	40	1,621	203	89	Focused more around sustainability in courses
GMU	Slightly larger office than VT - 3 full time and 5 intern groups	45,000	6,000	2017	7.32	698	0.50	2,128	2,857	60	3,432	361	90	https://green.gmu.edu/
Radford	Office of Sustainability	11,000	2,000	2019	4.08	422	0.00	918	1,346	32	2,435	916	73	

8.7 Agriculture, Forestry, Land Use

8.7.1 Agricultural Operations and Tree Cover Policies

Agricultural operations provide challenges for sustainability due to, for example, contributions of greenhouse gas emissions from animal agriculture. Accordingly, **many peer institutions have omitted agricultural operations** from their climate action plans. Offset strategies include reduced emissions, carbon storage, and the implementation of alternative energy strategies.

Most VT peer institutions have adopted management practices that reduce the production of methane from agricultural animals and carbon storage approaches. Several peer institutions use **composting to reduce the impacts of food waste** (Table 8.6), which is often **co-composted or-digested with animal waste** (e.g., at Purdue and Ohio State). A noteworthy example is North Carolina State that just launched a compost facility using an aerated static pile composting system with capability to process 1,200 tons organic waste annually. Expected expansion will enable the university to meet its 70% waste diversion goal.

Increasing tree cover is another strategy to mitigate GHG emissions, with 20.9% of colleges and universities in the US currently achieving (8.7%) or developing (12.2%) campus tree cover goals (Table 8.6).

Table 8.6. Sustainable land use strategies of seven VT peer institutions which have adopted composting to manage wastes.

University	Alternative Agriculture practices	Waste management	Tree Cover
University of Washington	NA	Anerobic digester Food waste >3k tons	20.9% goal of 23%
University of California, Davis	Active	Anerobic digester Food waste > 20k tons Off campus	21% goal of 30%
Cornell University	Active	Windrow Food waste >4k tons	Goal 25%
University of Maryland	NA	Windrow Food waste 450-550 tons, Off campus partnership with local government	24% goal of 40%
The Ohio State University	Active	Anerobic digester ~2k tons via 3 rd party	13% goal of 26%
Purdue University	Active	Anerobic digester Off campus, partnership with local government	14.2% goal of 20%
North Carolina State University	NA	Aerated static pile composting system with capability to process 1,200 tons organic waste annually. Expected expansion will enable university to meet its 70% waste diversion goal.	

8.7.2 Agrivoltaics: Co-use of farmland for solar arrays and agriculture

Exploring renewable energy sources leads most campus climate action plans. In this arena, agrivoltaics have arisen as a renewable energy source that is compatible with existing agricultural practices. Arizona State University is **coupling the use of solar panels with vegetable production** wherein the solar array reduces the negative impacts of high light and low moisture in the desert environment. Oregon State and Colorado State Universities are using **agrivoltaics in forage and pasture settings**, a strategy being considered by VT. Penn State is currently developing a 70 MW solar installation that incorporates **agrivoltaics with pollinator species habitat** for bee colony honey production and grazing sheep. Both crop and animal agriculture can co-exist under a properly designed solar array, resulting in little or no reduction in agricultural efficiency.

8.8 Sustainable Choices

As part of this review, we have researched and compiled for the peer institutions listed in Table 8.7 below. This list includes exemplary institutions that have committed to Climate Action and engaging their university community. Exemplar institutions are defined by their “top down” approach to climate action projects, strong engagement and cross-campus partnerships.

The following areas were analyzed during this research process:

- Key Climate Action **Behavior targets**
- **Cross-campus collaboration** partnerships
- **Student engagement** strategies
- **Sustainability curriculum integration**
- Examples of how the university is **measuring its success**

8.9 Climate Justice

Virginia Tech has the opportunity to become a leader among peer institutions by incorporating climate justice goals into its Climate Action Commitment. Currently, there are **very few examples of peer institutions that have formally acknowledged the importance of climate justice**, let alone organized their sustainability initiatives around it. Most climate justice efforts at universities have been initiated by students, and sometimes by faculty, but we were unable to find any institutions of higher education that have included climate justice in a university-wide climate commitment. As a result, our comparison to peer institutions focuses on student and faculty-led climate justice initiatives.

Students at the University of California-Berkeley initiated a [Student Environmental Resource Center \(SERC\)](#) that operates under the framework of environmental justice. Like the recent climate action commitment, SERC [was founded](#) as a result of student activists’ calls for the university to take issues of environmental injustice and climate change seriously. The students’ leadership is the primary reason SERC became an **award-winning environmental justice organization** within the first two years of its founding and continues to be a leader in tackling issues of environmental injustice. Another example is the [Environmental and Climate Justice Studies Research Hub](#) at the University of California-Santa Barbara, which works to “advance scholar-activism across the horizon of globalization, in defense of vulnerable human communities, fragile environments, and a just climate future.” Other top-tier universities with climate justice programs include [University of Washington](#), [University of Colorado](#), and [University of Arizona](#).

Table 8.7 Sustainable Choices Peer Universities

Peer University	Key Climate Action Behavior Targets	Cross-campus partnerships	Student engagement strategies	Sustainability curriculum integration	Examples of measuring success	Website links
University of Maryland	Integrate sustainability into education, Use the university as a living laboratory	Energy Innovation Institute,	Sustainability Studies Minor, First year students must enroll in a sustainability class, Funds available for sustainable learning programs,	20 Sustainability Teaching Fellows, 200 Courses include sustainability	undergraduate and graduate students participate in a Sustainability Literacy Assessment every three years	Sustainability Goals Climate Action Plan
UC Berkeley	Achieve buildings and fleet vehicle carbon neutrality by 2025	UC Berkeley Extension Education, UC Sustainability Fellowships	Sustainability Walking Tour, Local restoration volunteer projects, Student Environmental Resource Center,	600 sustainability courses Sustainable Extension courses (sustainable design and energy in sustainability)	Monitor energy usage in conjunction with energy saving programs (2015 Cool Campus Challenge)	Student Engagement and Student Environmental Resource Center
University of Michigan			Student Sustainability Ambassadors, Sustainability Showcase in the fall, Zero waste,		Developing programs to track behavior change	
University of Virginia	Foster public service related to sustainability initiatives, utilize orientation programs, establish the “Sustainability Fellows” program	Energy Working Group, Partnership with Dominion Power	Environmental Stewardship and Civic Engagement Subcommittees of the Sustainability Office.	Teaching & Research Subcommittee, Sustainability Summer Internships, Sustainability Course Development Grants	“Smart Labs” program which measures sustainability in research labs,	Sustainability Committees Curriculum Integration Engagement Projects Monitoring Sustainability

There are also many models of **university-community partnerships** focusing on specific environmental or climate justice issues. Groups like [Shield the People](#) and [UPROSE](#) are community groups that center the people most affected by environmental injustices and who work with public institutions, like universities, to address these injustices. Furthermore, national groups like the [Climate Justice Alliance](#) work on applying specific strategies of environmental justice, such as “just transition” or “energy democracy,” alongside universities to provide economic relief in areas that have traditionally relied on fossil fuel industries. Additionally, [many environmental justice groups](#) have worked to connect the harms of climate change to the recent outbreak of COVID-19, which demonstrates how [environmental justice is a broad approach that can positively inform almost all operations of a university—even those not immediately and obviously connected to the environment](#). This is to say that, despite the small number of comparisons available, there are successful models that can guide the way for incorporating environmental and climate justice into sustainability efforts and university planning.

Despite these examples of community-campus partnerships for environmental and climate justice, we have not found examples of other universities that have incorporated climate justice goals into their climate action plans. Thus, **Virginia Tech is poised to become a leader among peer institutions by establishing climate justice as one of the core values** of the Climate Action Commitment.

8.10 Community Engagement

As part of the Climate Action Commitment update process, we have researched and compiled information on peer and/or exemplary institutions to get a better sense of best practices. The institutions profiled have committed to Climate Action in ways that engage their respective university and wider communities. Additional information is available in the Community Engagement subcommittee report.

The following areas were analyzed during this research process:

- Key Climate Action Behavior targets
- Cross-campus collaboration partnerships
- Student engagement strategies
- Sustainability curriculum integration
- Examples of how the university is measuring its success

8.10.1 The University of Virginia <https://sustainability.virginia.edu/engage>

The University of Virginia (UVA) communicates its work around sustainability and climate action via its webpage. A subpage focuses specifically on engagement activities. This subpage describes the various efforts the university takes to engage students, faculty & staff, alumni, and community partners. Relevant highlights from their work in engaging the community include:

1. Establishment and prominent placement of clear engagement goals on their community engagement webpage

- a.*** The University will educate and engage its students, faculty, staff, and the larger community; contribute to knowledge through research; promote health and well being; and foster public service related to these sustainability principles.
- b.*** Partner with the community to accelerate collaborative initiatives to advance sustainable, equitable, and healthy places for all.

2. Development and support of student groups for sustainability

- a. *Sustainability advocates program* - A program to develop student leaders for sustainability by supporting sustainability projects that engage the UVA community.
 - b. *Sustainability student organizations* - Over 30 groups that include sustainability initiatives in their mission.
3. ***Creation of cross campus committees engaging faculty, staff and students to develop and lead sustainability efforts***
 - a. Environmental Stewardship Subcommittee
 - b. Civic Engagement Subcommittee
 - c. Teaching and Research Subcommittee
4. ***Dispersing grants to faculty, staff, and students that engage the community in sustainability efforts***
5. ***Partnerships with local sustainability and climate action efforts***
 - a. *Climate Action Together*- City, county, and UVA effort to engage and inform the community around GHG reduction and the development of community wide climate action plans.
 - b. *LEAP* - Local non-profit focused on energy efficiency and the expansion of solar energy within residential spaces. LEAP partners with the University by providing audits of campus housing and residential spaces.
6. ***Previous year hosted 92 events to promote sustainability with over 5000 attendees.***
7. ***Integration of three pillars of sustainability: equity, economy, and the environment into over 150 undergraduate courses***
 - a. *Key examples:*
 - Within a green engineering course, students evaluated 500+ rooftops on campus for the potential placement of solar panels.
 - Students in a Solid Waste Management course contributed directly to the University's Waste Action Plan.
8. ***Development of academic programs, minors, and certificates:***
 - Global Studies - Environments & Sustainability | BA
 - Environmental Sciences | BA, BS, MA, MS, DMP, Ph.D.
 - Environmental Thought & Practice | BA, DMP
 - Civil & Environmental Engineering | BS, ME, MS, Ph.D.
 - Urban & Environmental Planning | BUEP, MUEP
 - Environmental & Land Use Law | JD
 - Innovation for Sustainability | MBA
 - Global Studies - Environments & Sustainability | Minor
 - Environmental Sciences | Minor
 - Technology & the Environment | Minor
 - Sustainable Business | Online Certificate
9. ***Utilization and prioritization of the grounds as a living lab to allow students to directly implement engagement and stewardship efforts within the immediate environment.***
10. ***Support of various research centers and groups across disciplines that focus on sustainability:***
 - a. Creation of a teaching and research subcommittee within the Committee on Sustainability provides oversight for the disbursement of seed grants on a semester by semester basis.
 - b. Highlighted research groups:
 - Alliance for Research on Corporate Sustainability
 - Biophilic Cities
 - Center for Design and Health
 - Convergent Behavioral Science Initiative
 - Environmental Humanities at UVA
 - Green Building & Public Health Innovation Partnership

- Institute for Environmental Negotiation
- Nitrogen Footprint Network
- Virginia Coast Reserve Long-Term Ecological Research

11. Measurement and communication of success efforts

- a. Case studies are developed and shared to highlight successes and describe replicability and scalability of efforts.
- b. Sustainability reports on quarterly and annual basis

8.10.2 University of California Berkeley <https://sustainability.berkeley.edu/engage>

The University of California Berkeley campus has a dedicated webpage for climate action and sustainability efforts (sustainability.berkeley.edu). Efforts to engage the various community stakeholders are described in a subpage focused on engagement. Relevant highlights regarding UC Berkeley's approach to engaging the community in their climate action and sustainability efforts include:

1. Engagement in efforts to encourage behavioral change activities

- a. *Cool campus challenges* - A UC-wide competition to reduce carbon emissions across the system of campuses. Engaged 4215 participants or 7.5% of campus community. Reduced 2026 metric tons CO2 emissions according to self-reported actions.
- b. *Real-time energy dashboards* - These energy dashboards were installed in 137 buildings to help community members monitor energy and water usage. This allowed the community to easily visualize the savings in energy and water through behavioral change efforts.
- c. *Development and strategic placement of tips and strategy guides* - Booklets focused on energy saving strategies specifically for labs, offices, residence halls, and homes.

2. Easily accessible communication channels via social media and newsletter sign-up links

- [Facebook](#), [Instagram](#), Newsletter-[sign up](#)

3. Campus wide engagement to assess sustainability efforts in submission to the Sustainability, Tracking, Assessment, and Rating System (STARS).

- a. This effort culminated in the 11th highest rating of 349 universities with active STARS ratings. See engagement scores for UC Berkeley in Community Engagement SC report.

4. Extensive integration of sustainability into curricula

- a. The catalogue of courses includes over 600 offerings focused on environmental, social, and economic sustainability. This constitutes 18% of all campus courses.
- b. The cross-disciplinary nature of these courses is indicated by the fact that they represent over 45 different departments.

5. Development and promotion of degrees focused on sustainability

- 30 graduate programs, 25 undergraduate programs, 20 minors

6. Establishment of grant funds to support student and campus sustainability projects

- The Green Initiative Fund (<http://tgif.berkeley.edu/>) provided \$2.8 million in grants to 208 grant projects. 350 student internships were created through these grant projects.

7. Community education promoted through Green Campus Walking Tour

- This walking tour exists virtually on the dedicated webpage. There is also a printable map to engage in the highlighted destinations available on their dedicated webpage. (<https://sustainability.berkeley.edu/engage/green-campus-walking-tour>)

8. Office of Sustainability certification for labs, departments, and events, recognizing their sustainability efforts:

- Green Labs: [Green Labs Checklist](#), [Green Studios Checklist](#), [List of certified and prospective labs](#), [Green Labs Guide](#), [Green Labs Newsletter: Summer 2018 Edition](#), [Green Labs in Sustainability News](#), [Green Labs Product Guide: Sustainable Alternatives](#)

- Green Departments: [Green Department Checklist](#), [Green Department Profiles](#)
- Green Events: [Green Event Checklist](#), [Sustainable Food Flyer](#), [Green Events Resource Guide](#), [Healthy Meeting and Event Guide](#), [Zero Waste Caterer Guidelines and Certification](#)

9. *Development of a Student Environmental Resource Center*

- There are over 50 organizations and clubs focused on sustainability efforts.

8.10.3 University of Michigan <https://ocs.umich.edu/sustainability-goals/community-engagement/>

University of Michigan's Office of Campus Sustainability consolidates its sustainability efforts. The department has its own dedicated webpage at <https://ocs.umich.edu/>. Their efforts for community engagement are described on a focused subpage for community engagement at <https://ocs.umich.edu/sustainability-goals/community-engagement>. Highlights of their community engagement efforts include:

1. *A well defined and visible goal on their community engagement focused webpage:*
 - Invest in programs to educate our community, track behavior, and report progress over time toward a campus-wide ethic of sustainability.
2. *Identification of sustainability cultural indicators to assess attainment of community engagement goal*
 - a. A cross-campus collaboration to measure community sustainability behaviors and attitudes.
 - b. Indicators include waste prevention behavior, conservation behavior, travel behavior, and awareness of sustainability initiatives.
 - c. Two annual surveys sent to the faculty & staff community and student community since 2015. More than 3500 students and 1500 F&S respondents annually.
3. *Establishment of the Planet Blue Ambassador program to enlist community members to support and participate in sustainability efforts*
 - a. 6500+ community members are designated as Planet Blue Ambassadors
 - b. Entry into the program requires an introductory training and then further commitments are individual selected and not required.
 - c. The program distributes a monthly newsletter
 - d. Ambassadors are also engaged via monthly meetings and book club discussions.
4. *Designated sustainable workplaces on campus*
 - a. Online assessment to request designation as a sustainable workplace: [Sustainable Office Assessment](#), [Sustainable Lab Assessment](#)
 - b. Over 380 sustainable workplaces on campus, involving 20,400 staff
5. *Annual community engagement event known as Earthfest* taken place for 25 years.
6. *Utilize campus as a living/learning laboratory to advance student led sustainability efforts*
 - Examples: Michigan Dining has partnered with 140 student sustainability projects annually; ENVIRON 391 course led to the creation of the Campus Farm.
7. *Establishment of a wide range of organizations and fellowships to encourage and support sustainability projects (<http://sustainability.umich.edu/students>).*
 - [Planet Blue Student Leaders](#): peer-to-peer sustainability behavior change
 - [U-M Sustainable Food Program](#): student led program that supports sustainable food
 - [Student Sustainability Coalition](#): manages the [Planet Blue Student Innovation Fund](#) which provides up to \$50,000 annually to sustainability projects.
 - [Undergraduate Sustainability Scholars](#): fosters sustainability leadership & engagement. Participants receive up to \$3500 and training.
 - [Dow Sustainability Fellows](#): graduate students engaged in solutions to sustainability concerns
 - [Sustainable Living Experience Theme Community](#): dedicated living community

8. *Orientation modules focused on the university's commitment to sustainability principles*

8.10.4 University of Maryland <https://sustainability.umd.edu/progress/climate-action-plan>

As with other institutions, the University of Maryland has a dedicated Office of Sustainability with their own webpage at sustainability.umd.edu. There is not a dedicated webpage for their community engagement goals and efforts, but the respective efforts are acknowledged and described throughout the Office of Sustainability site. Highlights of their community engagement efforts include:

1. ***Engagement goals focus primarily on education rather than community engagement***
 - Integrate sustainability broadly across the curriculum and student life so that all students demonstrate skills and knowledge related to the Sustainability Learning Outcomes.
 - Use the campus as a living laboratory by enhancing opportunities for students, faculty, and staff to work together to develop and implement solutions to campus sustainability challenges.
 - Adhere to strategies outlined in the Education for Sustainability Report.
 - One greater community engagement goal stated as: Expand sustainability knowledge and collaboration through demonstration and outreach projects, joint agreements, professional conferences, and participation in university-agency initiatives.
2. ***Partnerships for Action Learning in Sustainability (PALS) established to integrate action learning within the local community focused on cross-discipline approaches to sustainability***
 - In 2017-2018, 23 PALS courses included 350 students in disciplines including Business, Architecture, Agriculture and Natural Resources, and Public Health
3. ***Dedicated social media pages for sustainability efforts*** [Facebook](#), [Instagram](#), [Twitter](#), [YouTube](#)
4. ***Dedicated majors, minors, and graduate programs that specifically address climate and sustainability issues:*** 15 Undergraduate Majors, 13 Undergraduate Minors, 20 Graduate programs
5. ***The university has 14 research centers with missions to find solutions to environmental issues***
6. ***Establishment of a Sustainability Teaching Fellows program***
 - The program provides training and mentoring for faculty in their pursuits of integrating sustainability issues into their courses.
 - Since its inception, 210 professors participated leading to the revising of 217 courses to integrate sustainability topics across 71 disciplines.
7. ***Support a Student based Lead, Educate, Act, Facilitate (LEAF) program:*** In 2017-18, 14 students reached 3,229 students via 77 events promoting sustainability.
8. ***Evaluative criteria to measure their education efforts around sustainability include:***
 - First year sustainability education (% of students engaged)
 - Sustainability studies minor students (# of students)
 - Sustainability teaching fellows participation (# of faculty)
 - LEAF outreach team impact (# of students reached)
 - Green housing program participants (# of students)
9. ***Creation of a Green Office Certification program***
 - A tiered certification program for individual offices to achieve sustainable principles/practices.
 - Stated goals of the program:
 - Engage campus community in activities to strengthen position as a leader in sustainability, Recognize and reward leadership in sustainability; Educate participants about how and why to take action; Support the University's [Climate Action Plan](#) and Strategic Plan; Further integrate sustainability into campus culture; Conserve water, save energy, minimize waste and save money; Promote campus policies that support sustainability

8.11 Budget and Finance for Climate Action

The 2020 VT Climate Action Commitment calls for investment in energy efficiency and climate action. Those investments are consistent with what many peer universities are doing. Let's review some of the examples.

Renewable energy. Considering other universities with respect to renewable energy generation, we identify three exemplary schools in our region: the University of Virginia, William & Mary, and Penn State. One common trend with all three of these schools is the use of **Power Purchase Agreements (PPA)**. These agreements enable the schools to have little to no upfront costs, which makes them attractive options. The universities then pay for the power that comes from the renewables, in all three of our cases solar farms.

Buildings. The University of Virginia set a 2016-2025 Energy and Emissions Action Plan, and it has a staff of **three engineering technicians and several controls technicians** to develop and implement it. UVA's Delta Force program has invested \$15.5 million in energy projects and has saved \$25.6 million and 180,000 metric tons of carbon dioxide emissions (MTCDE) since 2009. The University of Maryland set a goal for efficiency upgrades in existing buildings that will reduce campus electricity use 20% by 2020, and it invested \$21.5 million to save \$1.7 million/year to reduce campus energy by 6%.

Energy systems. A **designated energy management office** is a key component of an exemplar institution. The University of Virginia and Penn State each have an energy center.

Transportation. Parking demand management varies among peer universities. For example, CSU and Stanford have parking options ranging from a daily charge to an annual permit. The former is a strategy that may reduce total days driven to campus. UC Davis offers "**easy park personal parking meters**" (placed on a car's dashboard) that will charge for parking by the hour from a prepaid account. All peer universities have **electric vehicle (EV) charging stations**. It is free to park at CSU's EV charging stations. PSU has four EV charging stations on campus that have an hourly charge and a four-hour maximum. Stanford has 80 EV charging stations.

Waste-Recycling-Composting. GMU has the **Patriot Green Fund**, which offers \$100,000 for campus innovation in several sectors, including recycling services. Several universities have composting facilities for their food and other organic wastes. North Carolina State that just launched a compost facility using an aerated static pile composting system with capability to process 1,200 tons organic waste annually. Expected expansion will enable the university to meet its 70% waste diversion goal.

Agriculture/Forestry/Land Use. Related to waste management, composting and/or waste digestion are used at seven peer universities evaluated.

Community Engagement and Sustainable Choices. The many examples reviewed in these areas indicate the innovative programs by our peer institutions, ranging from student initiatives, living laboratory programs, green lab upgrades and certification, green office certification, sustainable workplaces certification, community partnerships, student organizations, sustainable academic program development, and others, all supported financially by the university

9. Conclusion and Proposed Immediate Actions

This chapter provides some concluding comments and identifies actions that can be taken in the short term (2020-2022) to get us going and demonstrate right away the university's commitment to climate action.

9.1 Concluding Comments

In January 2020, with great hope and opportunity, the Working Group began its task of evaluating Virginia Tech's current position and future role in addressing climate change. The stars seemed to align with growing promise for a new and bold Virginia Tech climate action commitment. Student Climate Strikes and activism raised awareness of the existential threat, faculty and staff senates and student government passed resolutions in support of the student demands, our Facilities staff showed remarkable interest, the university had available resources, our peers UVA and William & Mary were taking bold steps, the Virginia Governor and General Assembly were initiating major policy changes, and, in the words of President Sands, "Virginia Tech had a duty to respond."

Six weeks later, as the Working Group completed its Interim Report in early March, the world dramatically changed. The Covid-19 pandemic closed the university campus and, at this writing in late June, continues to be a global crisis and poses great uncertainties for the university.

Still, the climate crisis has not gone away, and during this time we are learning important lessons. People are learning to trust science and use it to inform policy-making, shape responses, and guide action. This public health crisis has exposed uneven vulnerabilities in our economy and society, raising calls for recovery efforts to redress inequities. Similarly, our actions to combat climate change and strengthen our community's resilience must be guided by an equitable transition to sustainable action. As a new world dawns, we must bounce "forward," not "back," to seize the hope and promise of this moment.

Our work focused on the smart ways the university can advance genuine climate action, even in this age of uncertainty. And through the multitude of working group, subcommittee, and community zoom meetings, our discussion has reflected on the opportunity for Virginia Tech to reinvent itself, not only in its commitment to climate action, but also in its responsiveness to the needs of the world around us.

Our recommended climate action commitment is bold, aggressive, and comprehensive. Its 15 goals and pathways to achieve them aim to engage the entire university.

- They include restructuring our operations and governance of climate action and sustainability through a new university-wide **Climate Action and Sustainability Office, Chief Climate Action & Sustainability Officer**, and governance **Climate Action, Sustainability & Energy Committee**.
- They require necessary upgrades to the campus physical plant and operations to reduce GHG emissions to achieve **carbon neutrality by 2030**, including steam plant and chiller energy systems, new building energy efficiency, efficiency retrofit of existing buildings, improved agricultural operations, sustainable mobility, and better management of waste and recycling.
- They include partnering and investing our way to **100% renewable electricity by 2030** through 15 MW (~100 acres) of solar PV capacity on Virginia Tech buildings and lands and

130 MW (~650 acres) of solar PV farms developed by utility or 3rd-party firms with our own utility, Virginia Tech Electric Service (VTES), the power purchaser.

- They include integrating these improvements into the educational mission through a **Climate Action Living Laboratory**, which engages colleges, departments, faculty and students in experiential learning using the campus physical plant upgrades as a focus for instruction, research, and outreach.
- They include **engaging everyone in climate action** through better and more visible information on campus progress and enhanced involvement in CAC annual reviews and updates.
- They include creating a **culture of sustainability** by making sustainable choices by students, faculty, and staff easier and more desirable through social media campaigns and structural changes, including campus procurement policy.
- They include assuring that climate action considers not only financial, environmental, and reputational effects, but also the **social equity and justice** impacts and benefits of our goals and pathways.

In several areas, our VT 2020 CAC sets the stage for Virginia Tech to shine as an exemplar and leader in university climate action. Beyond our climate neutrality and zero-waste campus goals, **six areas of the 2020 CAC can place Virginia Tech above other universities:**

1. The detail and **specificity of the pathways** developed to achieve the CAC goals
2. Our own **unique utility VTES** leading our way to 100% renewable electricity, while most other universities are totally dependent on private utilities and companies
3. Using our considerable **land resources** not only to manage our agricultural impacts, but also to sequester carbon and develop renewable energy
4. Incorporating in our carbon neutral goal **scope 3 GHG emissions relating to behavior** (e.g., commuting, waste/recycling, water/wastewater, business travel), while most others include just scope 1 & 2
5. Integrating our physical climate action into the **university's educational mission** through the Climate Action Living Laboratory (CALL).
6. Specifically addressing **community engagement, sustainable behaviors, and social equity and justice** as core elements of our climate action.

9.2 Climate Action Project/Initiatives for Near Term (2020-2022)

Although the 2020 VT Climate Action Commitment focuses on 2030 as the target date for most of its goals, the pathway to those goals begins the day the CAC is adopted, if not before. The Working Group has identified a number of initiatives and projects that can and should be acted on in the short term from now until 2022 to get a jump start on necessary action and to demonstrate the university's commitment, with full understanding of the university's current budget constraints and uncertainties.

These proposals are listed below sorted by (a) low-cost/no-cost/revenue-neutral initiatives, (b) ongoing and budgeted projects, and (c) new priorities in need of funding and/or approval.

9.2.1 Low/no cost/revenue neutral project/policy/planning initiatives

- **GHG Software Platform**

Purchase an annual license to a formal GHG assessment software platform. SIMAP (Sustainability Indicator Management and Analysis Platform) is a carbon and nitrogen-accounting platform that can track, analyze, and improve your campus-wide sustainability. This platform is the most widely used method of analysis by Universities for their carbon and/or nitrogen footprints. It has customizable carbon emissions coefficients, flexibility in data import and export, and includes a third-party data review, which provides additional points in the AASHE STARS Rating System.

- **Reconstitute the Energy & Sustainability Committee (E&SC) in governance to the Climate Action, Sustainability, and Energy (CASE) Committee.**

Broaden the mission of E&SC to provide governance oversight of CAC implementation; rename E&SC the Climate Action, Sustainability, and Energy (CASE); modify the charge, membership, and reporting lines, and establish new subcommittees including Climate Action Living Laboratory, Climate Justice, Climate Action Engagement, Sustainable Choices, among others.

- **Establish an alternative mobility subcommittee of the Transportation and Parking Committee**

- **Establish framework for Climate Action Living Laboratory (CALL) through Provost's Office, College Deans, and Facilities Department**

One of the most important goals of the 2020 VT CAC is integrating the goals and pathways into the educational mission of the university. Many of the CAC goal pathways focus on the opportunities for the Climate Action Living Laboratory (CALL) including renewables, energy systems, buildings, agriculture/forestry/land use, waste/recycling/composting, transportation, climate justice, sustainable choice, and community engagement. What is needed is a framework for designing, implementing, and operating the CALL to take full advantages of the opportunities.

- **Promote VTES-PEC partnership as part of Climate Action Living Laboratory**

VTES and the Power and Energy Center (PEC) have collaborated and agreed on a partnership to use VTES as a testbed for research projects on what may become the VT Smart Grid. The **VT Smart Grid** can also be supported by VT solar development and VT battery storage as key components of the initiative currently being discussed with APCO.

- **Initiate partnership with APCO on renewables**

The best opportunity for growing our renewable electricity base, especially before the power purchase contract expires in 2027, is to partner with APCO as they must grow their renewables in response to new state mandates. This mutually beneficial partnership should be initiated immediately.

- **Initiate community relations with VTES Town customers**

Virginia Tech is closely tied to its Blacksburg community in many ways. One important way is through VTES, the electric utility for 6000 Blacksburg customers. As VTES moves toward 100% renewable electricity, it should engage its town customers, both to be part of the discussion of prospective changes and be part of the development through rooftop and community solar projects.

- **Develop plan for resilience/redundancy in steam plant for full conversion to natural gas by 2025**
Based on the new natural gas contract, develop a plan for steam plant backup fuel and boiler redundancy by 2025.
- **Develop a Utility Master Plan**
The 2020 CAC provides a set of goals and pathways that should be incorporated into a Utility Master Plan, which describes a long-term vision of Virginia Tech energy systems and identifies initiatives and projects.
- **Adopt Campus Tree Policy**
The proposed Tree Policy will ensure that a sustainable urban tree canopy is maintained on the Virginia Tech campus and will contribute to our national recognition as a Tree Campus USA. Projected results if a 25% urban tree canopy goal is achieved include: an increase in annual carbon sequestration to help offset University operations, and lower energy use, cleaner air, more pleasant summer air temperatures, and enhanced stormwater mitigation.
- **Implement and Evaluate Sustainable Procurement Policy 2020-2022**
Implement the April 2020 Sustainable Procurement Policy, which is based on the 2009/2013 CAC. Over two years, the Procurement Department in conjunction with the E&SC will evaluate the policy in light of the 2020 VT CAC <https://www.procurement.vt.edu/>. [The Policy](#):
- **Engage VT Foundation in energy management plan for buildings in Blacksburg leased to VT department operations**
The Foundation operates on a revenue neutral basis, so that any investment it makes in energy efficiency improvements in its leased buildings must be recovered by increasing rent. With prudent efficiency investment, that increased rent for the university should be more than offset by a decrease in its utility bills. The Foundation CEO is willing to engage in energy retrofit under these terms on a pilot basis, starting with the Corporate Research Center when a new CRC president is hired.
- **Identify candidates for Zero-Net-Energy building on campus and develop fundraising plan**
If a signature marque ZNE building is to be completed on campus by 2026, project identification and fundraising need to commence in 2020-21.
- **Seek external funding for agrivoltaics test array at Catawba Sustainability Center and/or Kentland Farm**
Co-use solar and farmland agrivoltaics provides educational and research opportunities. The best sites for agrivoltaic projects are at Kentland Farm and Catawba Sustainability Center (CSC). Because siting studies and community engagement for a CSC solar project has already taken place in Catawba, the CSC is the best initial site for such a project.
- **Student Project for Fishburn Forest Wind Energy Assessment**
Although Blacksburg has limited wind resources, one prospect is Virginia Tech's Fishburn Forest atop Price Mountain. This would make an excellent student project in conjunction with James Madison University's wind resources program that leases necessary equipment and provides technical support.

9.2.2 Ongoing budgeted projects

- **Implement ongoing projects to improve steam plant and upgrade chiller system.** Steam plant upgrades including additional of boiler #12 will provide sufficient natural gas boiler capacity to eliminate coal boilers. Chiller upgrade project, when complete in 2023, will reduce cooling energy use by 20%.
- **Evaluate new natural gas contract on implications for CAC goals and pathways**
The new natural gas contract was effective July 2020. It affects several factors related to the CAC goals and pathways for steam plant operation. The new contract has favorable terms for natural gas availability, price, prospects for renewable gas, and need for steam plant backup fuel and boiler redundancy.
- **2020 RECs for 30% Renewable Electricity**
Done. Virginia Tech purchased RECs from Apco for \$1/MWh for 20% of its electricity in 2020 to achieve 30% renewable electricity. The 2020 RECs purchase makes a serious statement about our climate commitment, and we achieve the Governor's E.O.43 requirement to procure 30% of their electricity from renewable sources two years early for state agencies like VT (by 2022) and ten years early for utilities like VTES (by 2030).
- **Implement Building Design and Construction Standards in light of CAC Goals**
The comprehensive Building and Construction Design Standards were adopted in May 2020 and provide an exceptional resource to streamline the design process. The standards incorporate compliance with the basic elements of the CAC.
- **Fill the VT Energy Manager Position and supplement staff as needed**
This position has been vacant for more than one year and is critically important for implementing the entire Climate Action Commitment. The new energy manager should have sufficient staff.
- **Implement budgeted projects in Parking & Transportation Plan**
Several projects are under various stages of development and should be developed, including the Multi-Modal Transit Facility, the Kent Street bicycle lane towards the Drillfield.

9.2.3 Priority projects requiring funding/approval

- **Create University-wide Climate Action and Sustainability Office (CASO) led by a Chief Climate Action and Sustainability Officer (CCASO).**
Convert the current Office of Sustainability in Facilities to the university-wide CASO, which would be responsible for VT 2020 CAC implementation. The CCASO would report to the Senior Vice President and Chief Business Officer and the Executive Vice President and Provost.
- **Develop the University Compost Facility at Kentland**
Developing and operating the University Compost Facility at Kentland will reduce net animal waste GHG emissions, support soil health, relieve the need to purchase new land for future land application of animal wastes, and support sustainable agriculture education and research. The Facility will also provide significant benefits in management of campus organic wastes from dining halls, athletics, the vet school, and campus tree trimmings. Capital cost is estimated at \$1.4-1.8 million with net operating cost of about \$165,000/year.

- **Initiate the 10-year Energy Management Plan**

This plan to retrofit existing buildings and energy systems will have significant effects on reducing energy and GHG emissions while providing a financial return on investment of 10-15%. It's a no-brainer. Let's get on with it. The first step is to formulate projects for Year 1 of 2021-30 plan focusing on electricity efficiency to meet Governor's goal of reducing agency electricity consumption by 10% from 2006 by 2022.

- **Develop solar projects on campus: 2.35 MW by 2022**

Finalize plans for addition of solar projects on campus buildings and lands, evaluating options for university-owned and operated systems or 3rd party-owned and operated projects with VT power purchase agreements (PPA). Because of Covid-19 impacts on university financial resources, a preferred option may be PPAs that would preserve university capital for other needs including funding the 10-year energy management plan.

- **Contract Zero-Waste Consultant to conduct VT Waste Audit**

We propose the university hire a zero-waste consultant to conduct a waste audit to objectively evaluate waste management organization, staffing, procedures, and equipment for administration and academic facilities, and auxiliary enterprises, and to identify opportunities to streamline operations, maximize efficiencies and reduce costs.

- **Implement Campus-wide Green Lab Program**

Because of the energy and economic savings potential of the Green Lab improvements, Virginia Tech should officially develop a Green Lab program to ultimately achieve Green Lab certification for 80% of VT science and engineering labs.

- **Implement current transportation infrastructure plans**

Construct green bicycle lanes in strategic areas where known safety problems exist, the green link from the Perry Street area to Burruss Hall, replacing the 16 remaining substandard bicycle racks, improving lighting and accessibility of existing trails, sidewalks, and crosswalks, install/improve bicycle lanes on Washington Street and Kent Street.

- **Require University fleet vehicle purchases to emphasize fuel efficiency** through zero-emission, hybrid, and electric vehicles.

- **Parking permit restructuring:**

Prohibit on-campus freshmen from purchasing a parking permit. Increase the price of a faculty/staff parking permit and implement an income-based sliding scale for permit fees.

Virginia Tech 2020 Climate Action Commitment Working Group

Final Technical Report

Appendix A: Working Group Subcommittee Reports Contents and Executive Summaries

Agriculture, Forestry, Land Use GHG subcommittee

Budget and Finance Subcommittee

Buildings Opportunities Subcommittee

Climate Justice Subcommittee

Community Engagement Subcommittee

Energy Opportunities Subcommittee

Greenhouse Gas Inventory Subcommittee

Peer Institutions Comparison Subcommittee

Renewables Opportunities Subcommittee

Structuring Sustainable Choices Subcommittee

Transportation Opportunities Subcommittee

Waste, Recycling, and Composting and Procurement Subcommittee

Full Subcommittee reports available in WG report Volume II

Virginia Tech 2020 Climate Action Commitment Working Group Agriculture, Forestry, Land Use Subcommittee Report

Patrick Hilt, Jody Booze-Daniels, Greg Evanylo, John Randolph, John Seiler,
Nick Copeland, David Haak, Jamie King, Nathan King, Adam Taylor,
Tessa Hawley, Kathlynn Lewis

Executive Summary	1
1. Progress and critique implementing 2009 CAC	4
a. Agriculture/Forestry/Land Use not included in 2009/2013 CAC	
2. Comparison to Peer Universities	4
3. Goals and Pathways to Reducing Agricultural Operations GWP	6
a. Summary Goals and Pathways	
b. Expanded Pathways	
4. Impacts of Agriculture, Forestry, Land Use Goals and Pathways	8
a. GHG emissions: compost facility, tree policy,	
b. Virginia Tech Composting Facility at Kentland Farm	
i. Economic costs and benefits	
ii. University benefits from compost facility	
c. Cost and benefits of Tree Policy and Urban Tree Canopy Goal	
d. Costs and benefits of agrivoltaics	
e. Climate Action Living Laboratory benefits	
f. VT reputational benefits	
5. Background, Analysis, Rationale	14
a. Data on Agriculture, Forestry, Land Use Operations	
b. Analysis of data and options	
i. GHG emissions inventory	
ii. Compost facility GHG analysis	
iii. Methane digester GHG analysis	
iv. Agrivoltaics solar production analysis	
6. Proposed immediate initiatives and projects	20
a. University Compost Facility at Kentland	
b. Agrivoltaics test array at Catawba Sustainability Center	

Executive Summary: Agriculture, Forestry, and Land Use

The VT CAC Subcommittee on Agriculture, Forestry and Land Use explored opportunities for these Virginia Tech operations to reduce GHG emissions, improve efficiency, produce clean energy, and promote climate action and sustainability educational programs. The subcommittee developed an aggressive goal to **achieve carbon neutral agriculture, forestry and land use operations by 2030** in the Blacksburg region.

Virginia Tech owns and manages **considerable land area** in the Blacksburg region and in the Commonwealth. In the region, in addition to the main campus footprint, VT owns and manages 3,500 acres of agricultural lands including the 1,950-acre Kentland Farm. There are about 1,300 acres of additional VT forested land in the area including the 1,150-acre Fishburn Forest on Price Mountain. The 377-acre Catawba Sustainability Center in Roanoke County is included in our inventory.

Campus trees, including several old growth stands like Stadium Woods, play an important role in the campus environment with educational, recreational, environmental, and aesthetic benefits. Canopy cover is currently 14.7%, lower than average among peer universities in our region.

Campus lands play an **historic and important part of the university's** educational programs especially in agriculture and forestry, as well as the natural and physical sciences, engineering, and other disciplines. Incorporating these lands and operations in the Climate Action Commitment can enhance another of our CAC goals, the campus Climate Action Living Laboratory.

Agricultural and forestry operations GHG emissions were not included in 2009/2013 CAC but are part of the 2020 VT CAC GHG inventory.

- In 2019, emissions totaled 11,297 metric tons (MT) CO₂e and came from animal enteric fermentation CH₄ (58%, 45% from dairy cows), manure management CH₄ (31%), land application of manure and fertilizer N₂O (6.5%), and equipment and vehicle fuel and electricity CO₂ (4.8%).
- Conservation tillage in VT cropland sequesters an estimated 1,271 MT and VT forested land has carbon sequestration benefit of 1,980 that is well documented. Total net A/F/LU GHG emissions in 2019 are 8,046 MT CO₂e or about **3.3% of 2019 VT GHG emissions**.

Animal enteric fermentation emissions amount to 58% of total VT agriculture emissions, about 2% of total VT GHG, and 3% of global emissions. Animal scientists at Virginia Tech are investigating practices that reduce methane generation, such as increasing ruminant digestion efficiency by adjusting feed rations and provision of dietary additives that reduce metabolism of rumen CH₄-producing bacteria. Such scientific breakthroughs have the potential to reduce not only VT CH₄ emissions but also global animal GHG emissions.

Manure management CH₄ amounts to 31% of agricultural GHG emissions and 1% of total VT GHG. Two options for reducing GHG manure emissions that could be used in combination are composting and anaerobic digestion (AD) to produce usable methane.

- AD of VT livestock manure could produce about 200,000-220,000 m³/year of CH₄ (7 billion Btu). If combusted for heat or a micro-turbine, this would offset the GHG emissions from the estimated 225,000 m³ CH₄ from manure handling or 1% of VT GHG.

Composting would reduce GHG emissions from, not only agriculture, but also from campus dining hall and other compostable organic waste. The GHG reduction value of composting depends on its landscape application, from 0.036 to 4.58 MTCO₂ per MT compost. Based on an assumed

reduction of 0.42 MT CO₂e per MT of food composted, composting the current 550 MT of VT dining hall food waste would yield a reduction of 230 MT CO₂e, 0.1% of VT GHG. If compost were applied to disturbed, marginal soils the estimated reduction could be as high as 1% of VT GHG.

Agriculture, Forestry, and Land Use CAC Goal and Pathways

CAC Goal #6. Carbon neutral agricultural, forestry, and land use operations by 2030

Pathways

a. Develop the University Compost Facility at Kentland

- Developing and operating the University Compost Facility at Kentland will reduce net animal waste GHG emissions, support soil health, relieve the need to purchase new land for future land application of animal wastes, and support sustainable agriculture education and research. The Facility will also provide significant benefits in management of campus organic wastes from dining halls, athletics, the vet school, and campus tree trimmings. Capital cost is estimated at \$1.4-1.8 million with net operating cost of about \$165,000/year.
- Composting campus dining hall food waste at the facility would yield a reduction of GHG of 0.1-1% of VT emissions depending on type of land applied, with the higher estimate for disturbed, marginal soils.

b. Adopt Campus Tree Policy

- Campus trees, including several old growth stands like Stadium Woods, contribute benefits to the campus environment. Forested cover comprises about 1300 acres of VT land, including 1150 acre at Fishburn Forest on Price Mountain. Canopy cover, currently at 14.7%, could be expanded to 25% through a Campus Tree Policy for additional environmental benefits.

c. Reduce agricultural and forestry net GHG emissions

- The source of most VT agriculture/forestry/land use emissions is enteric fermentation from livestock, especially from the dairy herd. Animal emissions of methane are a global problem, and animal science research can increase ruminant digestion efficiency via adjusting rations and the use of additives that reduce metabolism of rumen CH₄-producing bacteria.
- Agricultural and forestry programs can reduce net GHG emissions by increasing C sequestration; reducing manure GHG emissions via composting and, possibly, anaerobic digestion with methane recovery; increasing efficiency of operations; improving energy and fuel efficiency; and implementing agrivoltaics solar production.
- Expand the collection of manure data (volume/mass and composition) to provide more accurate estimates of GHG contributions from animal operations and GHG reductions via the adoption of composting and/or anaerobic digestion.

d. Develop solar energy projects on VT agricultural lands

- The 2020 VT CAC goal #2 is 100% renewable electricity by 2030, which it expects to achieve with at least 15 MW of solar capacity on Virginia Tech buildings and lands in the area. Land area on campus, Kentland Farm, Fishburn Forest, and Catawba Sustainability Center are prime candidates for solar development. 15 MW would require about 75-100 acres.
- Develop solar farms on VT agricultural land to provide “agrivoltaic” multiple use solar and usable grazing/cropland. These agrivoltaic farms would provide unique research and educational opportunities, part of the campus Climate Action Living Laboratory.

e. Employ agricultural and forestry CAC projects as living laboratories

- Increase climate awareness and implementable actions of students through sustainable agriculture experiential education programs at Catawba Sustainability Center and Kentland’s Homefield Farm.
- The University Composting Facility at Kentland will provide a living climate action research and education laboratory for VT students and hands-on educational programming for waste management and composting professionals from Virginia and nearby states.

f. Expand the use of outreach and Virginia Cooperative Extension (VCE) to address educational and implementation of climate action commitments

- VCE programming to elicit beneficial economic, ecological, and environmental changes draws upon science-based results through proven research. VCE should hire additional faculty and agents to promote sustainable cropping and animal agricultural practices that enable VT and Virginia State University to facilitate climate action change throughout the state and region. Adoption of such practices will reduce the vulnerabilities of our food systems and environment to climate change and associated crises, e.g., plant and human and other animal disease development and spread.

g. Offset any remaining net GHG emissions

- In order to achieve zero net GHG emissions by 2020, credits developed by the agriculture and forestry sectors via solar agrivoltaic adoption, energy generated from anaerobic digestion of manure and other wastes, and C sequestration may need to be supplemented by purchasing carbon offsets.

Proposed Immediate Initiatives and Projects

The Subcommittee has identified two initiatives and projects that can and should be pursued between now and 2022 to jump start action that demonstrates the university’s commitment. Understanding the current budget constraints of the university, the Buildings Opportunities subcommittee identified five actions to implement as soon as practicable, including the following agriculturally-related:

- **University Compost Facility at Kentland:** the compost facility will provide a needed organic waste management system with benefits to agricultural operations and several campus organizations.
- **Agrivoltaic Solar/Farmland Project** at Catawba Sustainability Center should be part of VT’s initial stage of solar development because of its visibility and educational benefits.

Virginia Tech 2020 Climate Action Commitment Working Group Budget & Finance Subcommittee Report

John Randolph, Tim Hodge, Debbie Greer,
Jim Hillman, Nancy McGehee, Allie Kahl

Executive Summary	1
1. Introduction	4
2. Assessment of Progress Since 2009/2013 VTCAC	6
3. Peer University Comparison	7
4. VT CAC Renewables Goals and Pathways	9
4a. The Fifteen 2020 VT CAC Goals	
4b. Summary Budget & Finance Goal and Pathways	
4c. Expanded Budget & Finance Goal and Pathways	
5. Budget & Finance Impacts of Goals and Pathways	12
5a. GHG Software Platform	
5b. Costs and benefits of University Compost Facility at Kentland	
5c. Cost and benefits to Renewable Energy Certificates	
5d. Economic costs and benefits of 100% renewable electricity and financing/ownership options	
5e. Costs and benefits of steam plant improvements and chiller upgrades.	
5f. Costs and benefits of 10-year energy management plan including auxiliary buildings	
5g. Arranging for energy efficiency retrofit in Leased buildings	
5h. Implementing LEED-Silver and ASHRAE 90.1 Standards, New VT Design Standards	
5i. Waste Management Costs and Benefits of Zero Waste Campus	
5i. Costs and benefits of transportation pathways	
5j. Costs and benefits of testbed Agrivoltaic project at Catawba Sustainability Center.	
5k. Costs of carbon offsets	
6. Proposed Immediate Initiatives and Projects	17
6a. Ongoing budgeted projects	
6b. New priority projects in need of funding/approval	
6c. Low/no cost/revenue neutral project/policy/planning initiatives	
7. Background, Analysis, Rationale	18
7a. Economic Analysis of Climate Action and Energy Options	
7b. Recent Virginia State Energy & Climate Policies Affecting VT CAC	

Executive Summary

The 2020 Climate Action Commitment (CAC) prescribes substantial action to address climate change. Achieving the CAC will require financial and staffing resources. With limited university resources, especially as a result of the Covid-19 pandemic, CAC financial needs will be in competition with other needs and priorities of the university, including health, safety and security; academic excellence; quality student experience; affordable tuition and fees; competitive faculty salaries; and others. Concurrently recognizing these challenges and the need to act, CAC Goal #14 specifically focuses on the budget and finance issues associated with CAC implementation:

CAC Goal #14: Develop innovative budgeting and financing mechanisms to generate funding and staffing to achieve Climate Action Commitment goals

Various potential pathways have been identified for meeting this goal:

- Strategically **invest university E&G and Auxiliary funds to implement the 10-year Energy Management Plan** targeting academic and auxiliary buildings at a level of \$5 million/year in energy efficiency projects with a cumulative 8-year financial payback.
 - The 2015-2020 Five-year Energy Management Plan invested nearly \$3 million/year of academic (E&G) funds that resulted in efficiency improvements that averaged about a 5-year payback with energy cost savings. More creative funding mechanisms can address energy efficiency needs in auxiliary buildings (e.g., residence halls, dining halls, athletics). These buildings account for 45% for campus gross square footage.
- Major investment is needed to implement the **pathways for renewable electricity** both on VT buildings/lands and in the SWVA region. Options for development include:
 1. **VT owned** and developed projects on VT buildings/land, and
 2. **Utility or 3rd party owned** and developed projects on VT buildings/land and in SWVA with VT power purchase agreement (PPA).
 - Option (1) provides major VT capital investment but greater long-term return and control, while option (2) requires no VT capital but less long-term financial return. A combination of the two options may be necessary to meet the CAC renewables goals.
- As a unique **power utility**, **VTES** has opportunities, in partnership with APCO and 3rd parties, to invest in renewable energy projects that serve both campus and town customers.
- The **Virginia Tech Foundation** helps the university achieve its goals and can be a valuable partner in adopting and implementing the CAC in the following ways:
 - The VT Foundation should assess efficiency opportunities in its properties **leased to VT operations** and invest in cost-effective energy efficiency measures in these properties, lowering university utility bills to offset increased lease cost to finance improvements.
 - The VT Foundation should **invest in projects to implement the VT CAC** that provide a return to the Foundation. These may include solar projects on Foundation buildings, and/or solar projects on VT or Foundation-owned land.

- As the university moves toward carbon neutrality and the economy turns toward clean energy, the VT Foundation should assess the **fiduciary risk associated with its investment in fossil-fuel-reliant industries** as part of its portfolio.
- The Foundation should broaden its investments to achieve **triple-bottom-line goals (financial, social, environmental)**. It is noteworthy that the CAC Working Group vigorously debated the issue of Foundation divestment from fossil fuels and different opinions are held among group members and the wider university community. However, consensus was reached among the WG on the need to strongly consider triple bottom line values in investment and other decisions.
- **Additional sources of funding** to implement the CAC should be pursued, including:
 - **Federal and state grants and research funding** for the Climate Action Living Laboratory
 - **Development donor funds** are also a potential source for some of the initiatives and projects needed to implement the CAC. Naming rights for a signature Zero-Net-Energy (ZNE) building or a signature solar farm located at the entry to campus are options.
 - **State funding** is also available for university project development such as Virginia DMME's cost-sharing solar development fund to cover half the costs of solar projects.
 - Funding from **foundation and philanthropic organizations** can support implementation of the CAC especially elements related to innovation and academic programs.
- In addition to project funding, implementation of the CAC needs to **upgrade staff capacities** so that they can adequately tackle the needs of the commitment, especially in energy management, energy and utility systems, building design, waste management, compost facility operation, and campus sustainability.

Implementation: Short-Term Initiatives & Projects (2020-2022)

Although the 2020 VT Climate Action Commitment focuses on 2030 as the target date for its goals, the pathway to those goals begins the day the CAC is officially adopted by the university if not before. The Working Group has identified a number of initiatives and projects that can and should be acted on in the short term (i.e., from now through to 2022) to get a jump start on necessary action and to demonstrate the university's commitment with full understanding of the current budget constraints.

Proposed initiatives are listed below sorted by (a) ongoing and budgeted projects, (b) new priorities in need of funding and/or approval, and (c) low-cost/no-cost/revenue-neutral initiatives.

(a) Ongoing budgeted projects

- Implement ongoing steam plant and chiller upgrade projects
- Evaluate new natural gas contract considering implications for CAC goals and pathways
- Purchase renewable energy certificates (RECs) to reach the 30% renewable electricity target in 2020
- Implement Design & Construction Standards in light of CAC Goals
- Fill the VT Energy Manager position and supplement staff as needed
- Implement budgeted projects in Parking & Transportation Plan

(b) New priority projects in need of funding/approval

- Develop a University Compost Facility at Kentland Farm
- Initiate 10-year energy management plan, 2021-2030, and develop first year projects
- Develop solar projects on campus (2.3 MW by 2022), including the Sterrett and other rooftop projects
- Fund and implement a zero-waste management consultant study
- Fund and implement Green Lab Program
- Dedicate consistent, annual funds to maintain existing trails, sidewalks, bicycle infrastructure
- Fund and implement transportation infrastructure plans (e.g., Multi-Modal Transit Facility)

(c) Low/no cost/revenue neutral project/policy/planning initiatives

- Establish framework for Climate Action Living Laboratory (CALL) through Provost's Office, deans, and Facilities Department
- Revise mission and make-up of Energy & Sustainability Committee to oversee 2020 VT CAC
- Establish an alternative mobility subcommittee of the Transportation and Parking Committee
- Develop plan for steam plant resilience/redundancy needs to eliminate coal by 2024
- Develop a Utility Master Plan
- Initiate student project for Fishburn wind energy assessment
- Promote VT Electric Service (VTES)-Power and Energy Center (PEC) partnership as part of Climate Action Living Laboratory
- Initiate a partnership with Appalachian Power Co (our electricity provider) on renewable electricity development
- Initiate community relations with VTES Town customers
- Identify candidates for a new Zero Net Energy building on campus and develop fundraising plan
- Engage the VT Foundation in an energy efficiency retrofit plan for leased buildings
- Adopt Campus Tree Policy
- Seek external funding for agrivoltaics test array at Catawba Sustainability Center
- Implement and evaluate the 2020 Sustainable Procurement Policy

Virginia Tech 2020 Climate Action Commitment Working Group Buildings Opportunities Subcommittee Report

John Randolph, Paul Ely, Scott Kerklo, Georg Reichard, Mike Vellines, Erin Hopkins, Kim Briele, Anamaria Bukvic, Julia Gohlke, Emma Lineberry, Christine Labuski, Catie Grayson, Erin Nuckols, Yasmine Sikder, Allie Kahl

Executive Summary	1
1. Assessment of Progress achieving 2009/2013 VT Climate Action Commitment	5
1a. Progress	
1b. Critique of Progress	
2. Building Energy Efficiency: Peer and Exemplary Universities	10
3. VT CAC Buildings Goals and Pathways	11
3a. Summary Goals and Pathways	
3b. Expanded Goals and Pathways	
4. Impacts, Benefits, and Costs of Building Goals and Pathways	16
4a. 10-year energy management plan including auxiliary buildings	
4b. Leased building energy retrofits	
4c. LEED-Silver and ASHRAE 90.1 standards, Design Guidelines	
4d. Energy-carbon neutral new construction	
4e. ZNE Showcase building	
5. Background, Analysis, Rationale	18
5a. Energy-Carbon Neutral Buildings	
5b. ASHRAE, LEED pathways to ZNE buildings	
5c. 2020 Design and Construction Standards	
5d. Signature ZNE Building	
5e. Energy savings through occupant evaluation and preference	
5f. 10-year energy management plan	
5h. Leased buildings included in 2020 GHG inventory	
5i. Green Lab Program	
6. Proposed Immediate Initiatives and Projects	24
6a. Formulate projects for Year 1 of 2021-30 10-year Energy Management Plan	
6b. Fill the VT Energy Manager Position and supplement staff as needed	
6c. Implement Design Standards in light of CAC Goals	
6d. Identify candidates for a ZNE building on campus and develop fundraising plan	
6e. Engage VT Foundation in energy efficiency retrofit plan for leased buildings	
6f. Green Lab Program	
6g. Relevant faculty and staff formulate Climate Action Living Laboratory (CALL) educational program for buildings	

Executive Summary: 2020 VT CAC Buildings Opportunities Subcommittee

At Virginia Tech, buildings are places where we work, teach, research, learn, live, eat, and play. They are the Campus, the physical home and symbol of the Hokie Nation.

In addition, VT buildings account for more than 90% of campus energy use and GHG emissions. And they continue to expand. Construction projects in the pipeline will increase the occupied space on campus by 20% in the next five years.

As a result, the climate action commitment must begin with buildings. Although our 2020 CAC aims to achieve 100% renewable electricity, eliminating coal, and improving energy systems, they all serve building operations, and the pathway to carbon neutrality by 2030 depends on building energy use.

The Buildings Opportunities subcommittee evaluated progress made since the original 2009 CAC, reviewed related initiatives at peer institutions, developed new CAC goals and pathways to achieve them, assessed their implications, and identified initiatives that can be implemented in the next two years. This report summarizes those findings.

Progress. Since 2009, Virginia Tech has made significant progress in building energy efficiency and related GHG emission reductions even as the campus has grown by 24%. It has built new buildings and major renovations to LEED-Silver standards and invested \$14 million in efficiency upgrades from 2015-2020. This has been a strong response to the 2009 CAC. But the commitment was limited by not including leased buildings, which encompass 13% of department space. In addition, the efficiency upgrades successfully focused on academic E&G buildings, but did not include auxiliary buildings, which make up another 45% of campus space.

Peer Comparison. While we have made progress in reducing energy and GHG emissions in buildings, other universities appear to have done more. For example, UVA has a larger energy management staff, UC-Berkeley has an 80% reduction goal for building emissions, Pittsburgh has a 50% energy reduction goal for existing buildings, SUNY-Buffalo is building a zero-net-carbon-certified residence hall, Cornell is developing an Earth Source Heat geothermal system to heat the campus, and Illinois-Urbana-Champaign established a “no net increase in space” policy.

2020 VT CAC Building Goals & Pathways. There are two principal 2020 VT Climate Action Commitment goals related to buildings, which are Goal #4 for new buildings and Goal #5 for existing building upgrades. Each goal has subgoals and a number of pathway steps to implement them, described in summary form on the next page. More detail is provided in chapter 3.

Immediate Projects/Initiatives. To get a jump start on necessary action and to demonstrate the university’s commitment, there are a number of initiatives and projects that can and should be acted on in the short term from now until 2022. Understanding the current budget constraints of the university, the Buildings Opportunities subcommittee identified six actions to implement as soon as practicable.

- Formulate projects for Year 1 of 2021-30 **10-year Energy Management Plan**
- **Fill the VT Energy Manager** Position and supplement staff as needed
- **Implement Design and Construction Standards** which incorporate CAC Goals
- **Identify candidates for a ZNE building** on campus and develop a fundraising plan
- **Engage VT Foundation** in energy efficiency retrofit plan for leased buildings
- Implement **Green Lab Program**
- Faculty and staff formulate **Living Laboratory educational program for buildings**

2020 VT Climate Action Commitment Summary Goals and Pathways for Buildings

Goal #4. Reduce Building Energy Consumption to Enable Carbon Neutrality By 2030

- 4.1. By the end of 2022 reduce electricity consumption (kWh) by 10% and electricity intensity (kWh/gsf) by 20% below 2006 levels.**
- 4.2. By 2030 employ energy management retrofit to reduce total energy consumption in buildings by 10% and energy use intensity (Btu+kWh/gsf) by 20% below 2020.**

Potential pathway:

- Implement an **aggressive 2021-2030 10-year Energy Management Plan** updated annually can reduce total energy consumption in all buildings including auxiliaries by 10%.
- For **leased buildings** owned by the VT Foundation, work with the Foundation to develop financial arrangements to improve efficiency and reduce emissions.
- By 2021, use buildings and labs in the CAC **Climate Action Living Laboratory**, such as using Energy Dashboard online building data for instruction and research and a Green Lab program to reduce energy, emissions, and materials in our most energy-intensive facilities.
- **Reduce building energy and GHG emissions by smart operations**, such as demand response, digital controls, thermostat settings, occupant behavior, and innovative space scheduling especially in summer and to vacate space for invasive energy efficiency projects.
- Achieving these goals will require sufficient **staffing in energy management**.

Goal #5. Operations of new buildings initiated after 2030 will be Carbon Neutral

- 5.1 Continue to upgrade new building efficiency guidelines conforming to latest adopted LEED-Silver standards and ASHRAE 90.1 energy performance standards + 10%**
- 5.2 By 2022, reduce total energy use intensity (EUI) in newly initiated buildings by 20% compared to 2020 existing buildings.**
- 5.3 By 2026, build a signature zero-net-energy (ZNE) building on campus as a showcase and learning model for the Living Learning Laboratory**
- 5.4 By 2028, newly initiated buildings' efficiency improvements will reduce total energy use intensity (EUI) in new buildings by 40% compared to 2020 existing buildings**

Potential pathway:

- In 2022, identify candidate new buildings for **showcase zero-net-energy (ZNE) building** and begin fundraising to attract donors to help fund the project to be completed by 2026.
 - Electricity currently contributes 50% of total CO₂ emissions. **100% renewable electricity** by 2030 will reduce building CO₂ emissions by more than 50%.
 - By 2030, all newly initiated building design will have **carbon neutral** operations through 100% renewable electricity, improved energy efficiency, and carbon offsets
 - **Post-occupancy evaluation (POE)** should become standard practice to fine tune building operations and engage occupants to better serve users and reduce emissions.
 - New buildings offer opportunities for **Campus Living Learning Laboratory** research and instruction by faculty and students through use of emerging technologies, monitoring energy use, air quality, and occupant perceptions, and other projects.
 - Achieving these goals will require **sufficient engineering and design staffing**.
-

Virginia Tech 2020 Climate Action Commitment Working Group Climate Justice Subcommittee Report

Shannon Bell (co-convenor), Rachel Spector (co-convenor), Jack Leff, Carl Zipper, Jason Chavez, John Shewchuk, Erin Nuckols, Amber Wendler, Alexandra Kahl, Brandon Burkey, Owen Callahan, Aparna Cheran, Heidi Hahn, Shayla Utzinger, Ryan Berotti.

Executive Summary	1
1. Assessment of Progress Since 2009 VT Climate Action Commitment	3
1a. Overview of Climate Justice	3
2. CAC Climate Justice Goal and Pathways	6
2a. Goal and Summary Pathways	6
2b. Goal and Expanded Pathways	6
3. Background and Rationale	7
4. Impacts, Benefits, and Costs of Goals and Pathways	10
4a. Contextualizing Impacts, Costs and Benefits in Light of the COVID-19 Pandemic	10
4b. Impacts, Costs and Benefits to Virginia Tech	11
5. Comparison to Peer Universities	13
6. Public Feedback	14
7. Proposed Immediate Climate Justice Actions	15
8. Appendix 1:	
Letter of support from Virginia Tech's American Indian Studies Program Faculty	16

Executive Summary: Climate Justice Subcommittee

Climate change will not impact all people equally. Historically marginalized and vulnerable groups will be (and indeed, already are) disproportionately burdened with the negative consequences of both climate change and also with the mitigation and adaptation approaches proposed to address the climate crisis. These groups, commonly referred to as “frontline communities,” often include Indigenous communities, people of color, low-income individuals, and people living in Global South nations.

The inequitable distribution of harms related to the climate crisis was the rallying cry for Virginia Tech for Climate Justice (VT4CJ), a group of students and faculty which, in September of 2019, organized a climate strike and advocated for the University to revise its Climate Action Commitment. The Climate Justice Subcommittee was the first subcommittee to be created as part of the Climate Action Commitment Working Group, and many members of VT4CJ have participated in the work of this and the other eleven subcommittees. The Climate Justice Subcommittee urges the University to embrace climate justice as a core value of the Climate Action Commitment. Climate justice, broadly defined, is a set of actions taken to address the economic, social, and institutional injustices against communities most affected by climate change and climate-change mitigation. Specifically, following Harlan et al. 2015¹, we propose a four-pronged understanding of climate justice to be incorporated into the University’s climate planning:

1. Sharing the benefits and distributing the burdens of climate change mitigation and adaptation efforts *equitably* within and among communities and nations.
2. Engaging currently or previously marginalized groups as *participants* in decision-making processes aimed at mitigating and adapting to climate change.
3. Maximizing *opportunities* for marginalized groups to survive and thrive now and in the future.
4. *Repairing historical harms* against marginalized groups in the development of climate mitigation and adaptation efforts.

Taken together, these four elements of climate justice constitute a guidepost for university planning. Each builds upon the previous point to create a holistic consideration for dealing with climate injustices. Adopting this definition of climate justice, and incorporating it into climate-related planning, will place Virginia Tech as a leader among its international peers. Very few colleges and universities consider climate justice in institutional level-planning, and we have found no other universities with as robust a community responsibility as we propose.

Below, we provide a summary of the pathways we propose to place climate justice as a core value of Virginia Tech’s Climate Action Commitment. The body of our report further elaborates on and analyzes these pathways with specific recommendations. However, our recommendations represent only the beginning. Climate justice, like all forms of justice, must be an ongoing consideration, woven throughout the action plans of the other subcommittees, and built into future iterations of the Climate Action Commitment.

¹ Sharon L. Harlan, David N. Pellow, J. Timmons Roberts, with Shannon E. Bell, William G. Holt, and Joane Nagel. “Climate Justice and Inequality: Insights from Sociology.” Chapter 5 in Riley E. Dunlap and Robert J. Brulle (Eds.) *Climate Change and Society: Sociological Perspectives*, (New York, Oxford University Press, 2015).

Goal 11: Establish climate justice as one of the core values of the Climate Action Commitment

Pathways:

- Encourage an accelerated transition to carbon-neutral status as a climate-justice imperative.
 - Assess the viability of renewable energy sources, such as geothermal, solar, and wind, for heating and cooling new buildings constructed on Virginia Tech's campus.
 - Seek opportunities to transition the steam plant's primary fuel source away from natural gas to renewable energy sources.
- Ensure that the social impacts of Virginia Tech's climate mitigation choices (e.g. energy, land use, and waste) are identified and addressed to the greatest extent possible.
 - Consider the lifecycle impacts of all renewable energy procured systems to ensure they are sourced ethically and sustainably, manufactured with high standards for worker safety, and include a decommissioning plan for responsible, end-of-useful-life recycling.
 - For example, solar photovoltaic manufacturers should receive a score of 80 or higher on the Silicon Valley Toxics Coalition's annual Solar Scorecard.²
- By 2021 establish a Climate Justice Advisory Board or Subcommittee to the revised Committee on Climate Action, Sustainability, & Energy (formerly the Energy & Sustainability Committee) with representation from students, faculty, and community members from frontline groups.
- Ensure that Virginia Tech's climate action implementation plans recognize and assist vulnerable or frontline groups adversely affected by those plans.
 - Groups potentially affected by VT CAC plans include low-wage VT employees, tuition-paying students, Virginia Tech Electric Service (VTES) town-resident ratepayers, historically marginalized people of color and Indigenous communities, coalfield communities, and others.
 - Low-wage employees who cannot afford to live in Blacksburg should have access to affordable commuting options with low climate impact and local work-force housing.
 - VT CAC implementation should identify ways to mitigate potential increases of electricity costs for low-income VTES town customers and of tuition and fees for low-income students, should such increases result from the University's climate-action commitments.
 - VT CAC renewable energy development should work with coalfield communities to establish locations for utility or 3rd party owned solar farms for Virginia Tech power purchase agreements.
- Establish education, research, and outreach programs to assist vulnerable and historically marginalized groups in their efforts to mitigate and adapt to climate change and thrive in the new energy economy. These efforts should specifically target Virginia Tribes, African Americans in the New River Valley, coalfield communities in southwest Virginia, and coastal Virginia communities threatened by climate-related hazards.

Many of these recommendations can be initiated immediately, and we recommend that the first immediate action taken be the establishment of a Climate Justice Advisory Board as a subcommittee of the Committee on Climate Action, Sustainability, and Energy (formerly called the Energy & Sustainability Committee). This Climate Justice Advisory Board should then begin a plan for the implementation of these recommendations.

² Silicon Valley Toxics Coalition, Annual Solar Scorecard. <http://www.solarscorecard.com/2018-19/>

Virginia Tech 2020 Climate Action Commitment Working Group Community Engagement Subcommittee Report

Todd Schenk, Carol Davis, Bryan Hanson, Jessica Hardy, Ceara Redd,
Alexa Briehl, Sarah Myers, Heidi Hahn, Rachel Spector, Catherine Piper,
Hannah Pajewski, Alexandra Kahl, John Randolph

1. Executive Summary	1
2. Assessment of Progress in Implementing the 2009 Climate Action Commitment and Sustainability Plan	6
3. Comparison with Peer/Exemplary Universities	10
4. Engagement: Process, Findings, and Analysis	17
5. Goals and Pathways	41
a. Goal and Pathways	41
b. Recommendation #1: Governance <i>Create a new Climate Action, Sustainability & Energy (CASE) Committee</i>	41
c. Recommendation #2: Operations/Implementation <i>Chief CAS Officer to oversee all aspects of implementation</i>	44
d. Recommendation #3: Learning <i>Establish a new Climate Action Living Laboratory (CALL)</i>	45
e. Recommendation #4: Annual review of Climate Action Commitment	46
6. Appendices	
a. Appendix 1 - VT Climate Action Commitment Update - Engagement Survey	
b. Appendix 2 - Raw responses to community survey	

1. EXECUTIVE SUMMARY

The Engagement Subcommittee was established to lead the 2020 Climate Action Commitment update's outreach and engagement efforts. Outreach to the wider community--including students, staff, faculty, alumni, and our neighbors--was deemed critically important to devising the best possible recommendations that account for the various interests, needs, and ideas among different stakeholders. Engagement involved information sharing, the collection of feedback, and the involvement of at least some stakeholders in deeper deliberations. The subcommittee also took responsibility for devising how governance and engagement should be structured as implementation moves forward.

One of the first tasks of the Engagement Subcommittee was reviewing **progress to-date**, which focused on identifying stakeholder involvement in previous climate action efforts. We found that the Office of Sustainability has been doing a laudable job of tracking progress, sharing the results, and supporting action, while successfully encouraging very strong student involvement. As expanded upon below, one recommendation is to elevate the Office to increase its profile and influence, particularly within VT governance. Student and community groups also play integral roles in advancing climate and sustainability initiatives on campus.

It is clear that Virginia Tech can **learn from other peers and exemplary institutions** as we move forward with climate action. To this end, activities at various peer institutions were examined, including the University of Virginia, UC Berkeley, the University of Michigan, the University of Maryland, and Pennsylvania State. Key lessons learned from this review include:

- Establish clear engagement goals and processes
- Prominently identify goals and processes on relevant websites
- Nurture student groups as a way to foster change and engagement
- Create prominent cross-campus committees that bring together faculty, staff, students, and others to deliberate and advance efforts
- Establish funding mechanisms including grants to support efforts
- Form partnerships with local (neighboring communities and organizations) climate and sustainability efforts
- Integrate climate and sustainability principles/lessons into curriculum, both across different subjects and with explicit climate and sustainability programs
- Create 'living laboratory' infrastructure to foster operations-academic collaborations for teaching and research
- Design infrastructure, programs, and policies to effectively foster behavior change
- Enlist university community members (students and faculty/staff) as 'ambassadors' to spread awareness and promote change
- Create a high-level position (like a Chief Sustainability Officer) to champion action and push for resources and attention at the highest levels
- Comprehensively measure and communicate progress in meeting climate and sustainability goals

Engagement Process, Findings, and Analysis

The primary activities of the Engagement Subcommittee centered around facilitating information sharing, feedback collection, and deliberation with the wider VT community (and our neighbors). To this end, the following activities were conducted:

- Created a dedicated website portal introducing the CAC process and sharing committee materials¹
- Shared videos focused on progress updates regarding the work of the WG and the subcommittees
- Crafted VT News stories
- Managed a dedicated email address for the initiative
- Distributed a survey widely throughout the community, which received 242 unique responses
- Convened a series of 12 Zoom meetings, 3 general and 9 focused on subcommittee topics, which involved over 226 people²

Each of these streams of engagement is further detailed below in this subcommittee report. Many involved substantial work on the part of the Engagement Subcommittee, and in particular the organization of the Zoom convenings in short order when COVID-19 made an in-person town hall meeting impossible. It is also noteworthy that the CAC process itself was broadly collaborative with more than 100 students, staff, faculty, and community members involved in the working group and various subcommittees.

Various good ideas both emerged and were affirmed through these processes, underscoring their potential value to the community. **Key findings from these various engagement efforts include:**

- The vast majority of (survey) respondents believe that **climate change is a serious threat**, and thus support aggressive action on the part of the university. In fact, many feel that VT is not doing enough
- The importance of **setting ambitious goals and sticking to them** was emphasized.
- Emphasis was placed on **systemic or “upstream” solutions** rather than placing the onus on behavior change of individuals, given that many of the barriers to action are infrastructural and institutional (e.g., poor cycling infrastructure)
- The above notwithstanding, many did see **individual actions as important** and needing of attention. Creative ideas emerged around how to, for example, ‘gamify’ desired actions
- **Key champions** are important for propelling further action, including potentially a higher-level champion within university administration. This may be partnered with a **stronger Office of Sustainability**
- There is strong support for taking a more holistic view of **understanding our greenhouse gas emissions**, accounting for emissions associated with community behaviors like commuting
- There is **broad support for key actions proposed** through the CAC update process, including:
 - A shift to **carbon neutrality and 100% renewable energy**. This would include integrating renewable energy infrastructure into campus design (e.g., solar on all new buildings). Agrovoltatics (integrating solar panels and agriculture) was also a popular proposal
 - **Alternative transportation** and reductions in private automobile usage, including with a ban on freshmen cars
 - **Improved waste management**, including with a new compost facility, consistent waste management systems across campus, and reductions at the source through purchasing decisions that minimize waste and promote sustainability
 - The creation of a **‘living laboratory’** to foster partnerships between campus operations, local partners, and the academic (teaching and research) enterprise. This should be part of concerted academic efforts to integrate climate change and sustainability into the classroom

¹ The central engagement website is: <https://svpoa.vt.edu/index/VT-CACRevision.html>

² These are not unique people, as many participated in more than one session

- A ‘**green lab**’ system, and similar programs to promote sustainable behaviors within work and student life spaces
- Optimize **building design**, including with energy, water, and waste monitoring
- The need to account for **climate justice** in any and all actions taken, including accounting for and ameliorating differential impacts of actions taken
- **Stronger partnerships** with other institutions, including the Town of Blacksburg and other local governments (in particular with transportation and waste management)
- There is a strong desire to see **engagement continue as the university shifts to implementation**. In addition to the regular reporting already conducted, stakeholders are interested in ongoing engagement opportunities, yearly (or more frequent) flagship events like a ‘town hall’, and further ways to directly take ownership over actions.

Goal and Pathways

The engagement activities outlined above, research on peer institutions, collaborations with other subcommittees, and other research and brainstorming among the Engagement Subcommittee yielded the following recommendations. These recommendations are largely in service of **goal #13 of the 2020 Climate Action Commitment update**, which calls on the University to:

Establish the VT Climate Action Commitment as a dynamic process through deeper integration into university governance and operations at all levels, and regular evaluation of goals and progress with ongoing stakeholder engagement

The **pathways recommended** to achieve this goal are:

Recommendation #1 - Governance: Restructure the current Energy and Sustainability Committee (E&SC) to emphasize responsibility for university-wide oversight of implementation and evaluation. We propose that the E&SC committee be renamed the **Climate Action, Sustainability & Energy (CASE) committee** to emphasize the attention that must be paid to climate change, and be restructured in terms of membership, working subcommittees, and its place in governance. As part of this update, we recommend a slightly revised committee charge:

To review and provide ~~advice~~ concrete guidance to all facets of the University Administration on broad policy and implementation opportunities and issues relating to the implementation of the university's Climate Action Commitment and pursuit of environmental quality and social sustainability through policy, infrastructural and operational changes, education, and broad engagement. ~~action, education, and engagement to address current needs without compromising the capacity and needs of future generations.~~

We also recommend that a set of standing subcommittees be created to support the work of the CASE Committee, including: Implementation committee; GHG Inventory; Climate Justice; Town-Gown Collaboration; Engagement & Structuring Sustainable Choices; and Education & student involvement.

Recommendation #2 - Implementation/operations: Appoint a high-level Chief Climate Action and Sustainability Officer (CCASO) to oversee and coordinate all aspects of implementation across the entire university. This person would be responsible for:

- Leading the development and implementation of university-wide climate and sustainability action plans
- Leading efforts to monitor implementation of climate and sustainability action plans

- Leading engagement efforts to ensure wide participation in climate and sustainability planning and implementation
- Coordinating a network of key climate and sustainability actors across all university units
- Leading climate and sustainability educational initiatives (both in the classroom and extracurricular)
- Facilitating partnerships between operational and research and educational units
- Managing a grant fund to allocate resources for climate and sustainability enhancements
- Chairing the CASE Committee and overseeing the Office of Climate Action, Sustainability, and Energy (OCASE), which would be elevated to become a university-wide unit
- Fostering meaningful town-gown and wider regional collaborations to advance shared climate, sustainability, and energy goals

This person would report jointly to the Provost and the Senior Vice President and Chief Business Officer. It is notable that the creation of the new CASE Office and CCASO position should not be at the cost of attention within the various operational and academic units. The goal of the office and officer should be to support these various efforts, not replace them.

Recommendation #3 - Learning: Establish a new Climate Action Living Laboratory (CALL) to foster and support relationships between operational units implementing new climate and sustainability initiatives (including but not limited to Facilities departments) and academic and research units both developing and teaching new technologies and approaches. The goals of the new CALL should be to:

1. Support collaborative educational opportunities on campus in the areas of climate action and sustainability.
2. Build bridges between operational and academic departments, and external community partners, facilitating and supporting opportunities.

The CALL should be situated under the reorganized OCASE. It should be structured to provide resources and other forms of support to achieve the above two goals. The work of the CALL may extend into curriculum development (e.g., creation of a new ‘pathways minor’ or even a core sustainability-focused pathways requirement). It is expected that the CALL would provide templates and best-practice guidelines for collaborative projects.

Recommendation #4 - Annual Review: Conduct an in-depth annual review of the CAC goals and implementation progress that involves student, staff, faculty, and community stakeholders. The results of this review will be shared publicly in an accessible and easy-to-read format. The newly reconstituted CASE committee will be charged with supporting the implementation of annual reviews. The GHG Inventory subcommittee will play a particularly important role by tracking emissions on an ongoing basis. However, other subcommittees are expected to play critical roles, and in particular those focused on engagement and outreach. A full-blown engagement process is not expected each year, but it is very important that the results of ongoing monitoring and assessment are widely disseminated. In addition to the traditional written assessment reports, we recommend that the CASE Committee and associated staff find novel ways to inform campus and the wider community, including through social media. Going beyond informing, the Committee should employ effective techniques to gather feedback from the community. Furthermore, we recommend that the university does consider holding more robust updates with some frequency - perhaps every five years.

These four pathway recommendations are outlined in further detail below in the Engagement Subcommittee report. As a next step, we recommend that the **current E&SC committee be tasked with creating two ad hoc committees charged with fleshing out more complete proposals.** One ad hoc committee would focus on how the new CASE committee and CCASO position could be structured and scoped. The other would focus on the design of the new CALL.

Virginia Tech 2020 Climate Action Commitment Working Group Energy Opportunities Subcommittee Report

John Randolph, Rob Glenn, John Beach, Kim Briele, Mary-Ann Ibeziako,
Lowell Jessee, Shannon Bell, Amanda Morris, Gaurav Anand,
John Shewchuk, Ryan Berotti

Executive Summary	1
1. Progress Assessment (VTCAC 2009 #3, #4, #6, #7)	4
1a. Energy Progress: Reduction of GHG emissions despite campus growth	
1b. Steam Plant natural gas pipeline, conversion from coal to gas	
1c. APCO fuel mix	
1d. Investment in energy efficiency: new LEED buildings; 5-year Energy Management Plan	
1e. Chiller efficiency planning	
1f. Virginia Tech Electric Service	
1g. Critique of Progress: Limited GHG, limited VT CAC goals	
2. Peer University Comparison	12
3. CAC Energy Goals and Pathways	
3a. Goals and Summary Pathways	
3b. Goals and Expanded Pathways	
4. Impacts, Benefits, and Costs of Goals and Pathways	14
4a. Costs and benefits of steam plant improvements and chiller upgrades.	
4b. Costs and benefits of 10-year energy management plan	
4c. Fill Energy Manager position, provide sufficient staff	
4d. Develop renewable electricity through power purchase agreements (PPA) and save capital to invest in energy efficiency	
5. Background, Analysis, Rationale	17
5a. Data on energy and electricity use	
5b. Virginia Tech Steam Plant History and Transformation	
5c. Chiller upgrade	
5d. 10-year energy management plan	
6. Immediate Energy Initiatives/Projects	21
6a. Implement ongoing steam plant and chiller upgrade projects	
6b. Evaluate new natural gas contract on implications for CAC goals and pathways	
6c. Develop plan for steam plant resilience/redundancy needs to eliminate coal by 2024	
6d. Initiate 10-year energy management plan, 2021-2030, and develop first year projects	
6e. Develop solar projects on campus: 2.3 MW by 2022	
6f. Develop Utility Master Plan	

Executive Summary: Energy Opportunities Subcommittee

Virginia Tech's direct energy use and consumption of electricity amounted to 90% of its GHG emissions in 2019. The campus centralized energy systems and electric utility date back to the founding of Virginia Tech and provide a proud history with continual improvement and integration within the university's educational mission. For the last five years, VT energy systems are being transformed, and the 2020 Climate Action Commitment (CAC) sets the stage for further innovation.

The VT CAC Energy Opportunities subcommittee evaluated the energy progress made in response to the 2009/2013 VT CAC; compared that progress to our peer universities; and developed new climate action goals and potential pathways to achieve them. It also identified some energy initiatives and projects that should be pursued in the short term between now through 2022.

Progress: Virginia Tech has made considerable progress in managing its energy systems, called for by items 3, 4, 5 and 7 of the 2009/2013 VT CAC. It has reduced GHG emissions by 24% from 2006 while campus space and enrollment have grown by 22%.

There are **three primary reasons** for this reduction of emissions:

1. **Fuel switching** from coal to natural gas in the steam plant. The 2015 natural gas pipeline shifted coal dependence (97% in 2009) to natural gas (80% in 2019) with a significant decrease in GHG emissions.
2. **Apco's electricity fuel mix** became less carbon-intensive, shifting from 90+% coal in 2006 to 63% in 2018. Apco electricity still amounted to 52% of VT GHG emissions in 2019.
3. **Investment in efficiency** has led to
 - a. 36 new buildings and major renovations totalling 3 million square feet built to LEED green building standards; and
 - b. Energy efficiency retrofit of energy systems and existing buildings through the 5-year 2015-2020 Energy Management Plan that invested \$14.2 million in academic (E&G) buildings and resulted in energy savings estimated to pay back the investment in 5.3 years. E&G buildings reduced electricity use by 8% from 2015 to 2019 despite 1% space growth.

Still, the **2009/2013 VT CAC was limited** in both its GHG footprint and in its vision for necessary GHG emission reduction. The footprint did not include agriculture operations or leased building space and the vision still would leave us with considerable GHG emissions in 2050. Our 2020 VT CAC aims to correct these limitations by adding previously omitted operations in the GHG footprint and choosing a bold and aggressive goal of becoming carbon neutral by 2030.

Comparison to Peer Universities. For energy systems peer review, we selected the University of Virginia (UVA), Penn State University, and University of Maryland (UMD). UVA aims to be carbon neutral by 2030 and fossil fuel free by 2050, and Penn State and the UMD respectively aim to reduce GHG emissions by 35% by 2020 and 60% by 2025. Each university has a clear plan with completed projects. UVA and Penn State incorporate renewable energy Power Purchase Agreements into their climate action plans. UMD has 9,000 solar panels on their campus. All three have a designated energy management office, and UVA and Penn State have an energy center. UMD utilizes the Energy Dashboard and Solar Dashboard tools to help manage its energy and display data for faculty, students, and staff.

2020 VT CAC Energy Goals and Pathways (see also Goals 1, 2, 4, 5)

Goal 3: Eliminate Coal after 2024 and Improve Efficiency of Campus Energy Systems

- **2015 natural gas pipeline** enabled steam plant coal fuel to drop from 97% in 2009 to 20% in 2019. With addition of gas boiler #12, we will have natural gas thermal capacity to be coal free.
- **For reliability and resilience**, to eliminate coal, the steam plant will need
 - **Backup fuel** (such as liquefied natural gas (LNG), biochar, or other fuel) when natural gas market is tight or unavailable, and
 - **Boiler redundancy** (termed “n+1”) in case of a boiler outage at a critical time. Converting a coal boiler to biochar or natural gas can provide this.
 - Scheduled upgrades to the steam plant will incur necessary costs of doing business. Eliminating coal and reducing GHG emissions should be part of those plans.
- VT’s **natural gas service contract** will be renewed June 2020 and the new contract will determine the conditions and need for backup, price terms, and possibility of some renewable gas.

Potential pathway:

- By 2023, develop a **plan eliminating coal while providing resilience backup fuel** in cold weather or interrupted natural gas supply. The backup fuel need will be affected by the terms of the 2020 natural gas contract. Options include:
 - Liquefied natural gas (LNG). This can be provided by LNG storage at Old Southgate site where it can be tapped into the existing ATMOS pipeline (\$1 million) or better yet at the steam plant if coal storage and baghouse emission control can be removed.
 - Renewable fuels, such as syngas or biochar.
- **Improve chiller efficiency:**
 - By 2023 the Chiller Plant Phase II project will reduce central chiller energy usage by 20% from 2020.
 - Ten-year 2021-30 Energy Management Plan will improve efficiency of stand-alone chillers.
 - Future campus growth needs for chilled water will be met from central plants where possible.
- By 2023, develop a plan for **boiler n+1 resilience** backup, dependent on decision for back-up fuel.
- Continue to explore **options for renewable gas** from service provider’s contract as a means to reduce natural gas emissions and/or offset natural gas electricity from the steam plant cogeneration.
- As part of the Campus Climate Action Living Laboratory, engage faculty, staff and students to develop an online **Energy Dashboard** for users to obtain and analyze energy use data for campus facilities
- After 2025, explore geothermal and ground source heat pump systems and other **non-fossil-fuel options for heating new districts of campus**.

- In advance of moving toward a 2050 goal of being fossil-fuel free, the University should evaluate options for non-fossil fuel heating.
- New districts being considered on campus should evaluate hot water rather than steam heating systems. Understanding the extreme cost of extending steam tunnels, hot water systems sourced by the existing steam loop are already being explored for new districts.
- Conversion of steam to hot water central heating systems is being considered at other universities and offers the prospect of efficient geothermal and ground source heat pump heating and cooling systems in conjunction with renewable electricity.

Immediate Energy Initiatives/Projects. Although the 2020 VT Climate Action Commitment focuses on 2030 as the target date for most of its goals, the pathway to those goals begins the day the CAC is adopted, if not before. While understanding the current budget constraints of the university resulting from the Covid-19 pandemic, the Energy Opportunities subcommittee identified six actions to be considered for implementation as soon as practicable.

- Implement ongoing projects to improve steam plant and upgrade chiller system
- Evaluate new 2020 natural gas contract on implications for CAC goals and pathways
- Develop plan for resilience/redundancy in steam plant to eliminate coal by 2024
- Initiate the 10-year 2021-2030 Energy Management Plan, formulate Year 1 projects
- Develop solar projects on campus using PPA: 2.3 MW by 2022
- Develop a Utility Master Plan

VT GREENHOUSE GAS (GHG) FINAL REPORT: CLIMATE ACTION COMMITMENT PROGRESS REVIEW AND RECOMMENDATIONS

VT CAC WORKING GROUP - GHG SUBCOMMITTEE

SEAN MCGINNIS, JOHN RANDOLPH, KRAY LUXBACHER, ROB LOWE, LOWELL JESSEE,
MARY-ANN IBEZIAKO, VALENTINA D’ATRI, OWEN CALLAHAN, ALEX DE JONG, CONOR
DOANE, DREW HARRIS, ALEXANDRA KAHL, NATALIE KOPPIER, JACK LEFF, DANIEL WEBB

Spring 2020

EXECUTIVE SUMMARY	2
I. PROGRESS ASSESSMENT	
1. INTRODUCTION	4
2. METHODOLOGY, SCOPE, DATA AND ASSUMPTIONS	4
3. ANALYSIS AND EMISSIONS RESULTS	11
4. IMPLEMENTATION PROGRESS CONCLUSIONS FOR CAC GHG ASSESSMENTS	13
II. PEER UNIVERSITY COMPARISON	14
III. 2020 CLIMATE ACTION COMMITMENT GOALS AND PATHWAYS	15
IV. BACKGROUND, ANALYSIS, AND RATIONALE	17
1. GHG SCOPE EXPANSION AND ESTIMATES	17
2. DATA COLLECTION SCOPE, METHOD AND PROCESS RECOMMENDATIONS	25
3. COMMUNITY ENGAGEMENT MEETINGS AND FEEDBACK	28
V. REFERENCES	29
VI. APPENDIX	30

EXECUTIVE SUMMARY

VT has completed a Greenhouse Gas (GHG) Inventory and Assessment since 2007 as part of its Climate Action Commitment (CAC). GHGs are chemicals which, when emitted into the atmosphere, absorb heat and lead to global warming. A GHG Assessment, often called a *carbon footprint*, is a critical component of the CAC since it sets a baseline for campus emissions and goals. It also provides a means to quantify the various sources of emissions so that detailed plans can be developed for future emissions reductions. Without a good GHG Assessment, plans and goals may or may not reduce emissions and there is no accountability. Claims of carbon neutrality, which requires reducing or offsetting all included scope emissions to zero, require a GHG assessment to confirm compliance.

It is important to acknowledge that all GHG assessments are incomplete at some level. It is not possible, nor a good use of time and energy, to compile all GHGs over the life cycle of campus operations. Difficult choices are required to select the campus elements which are considered in and out of scope for carbon neutrality goals. Selecting a scope that is too large requires time-consuming analysis and efforts for minimal emissions, while selecting a scope that is smaller can miss significant emissions and opportunities to highlight and reduce some emission sources. Historically, campus carbon footprints generally include all of so-called Scope 1 (direct campus fuel use and fugitive sources) and Scope 2 emissions (utility electricity generation carbon emissions), and some Scope 3 emissions (all other emissions due to campus activities as well as utility transmission & distribution losses and upstream methane leakage). A wide range of decisions have been made for Scope 3 campus emissions among the peer institutions researched.

In-scope elements in the VT GHG Assessments have included campus purchased electricity, steam plant and building fuels, faculty/staff/student commuting, fleet vehicle and aviation fuel, water, wastewater, and solid waste. Using this scope, the VT carbon footprint has been dominated by purchased electricity and steam plant and building fuels which have accounted for approximately 90% of the campus footprint. Through aggressive campus energy system improvements, the transition of the steam plant fuel away from coal to natural gas, and a similar fuel switch by our electricity utility, VT emissions have been reduced almost 24% while campus square footage and enrollment have increased by more than 20% since 2006.

These significant improvements, however, are based only on carbon dioxide (CO₂) emissions. They do not include any methane (CH₄) emissions from upstream leakage of natural gas. Methane is a much more powerful GHG than carbon dioxide, and its omission from the scope of these assessments is important to note since much of the reductions are attributed to the use of natural gas which has lower combustion emissions than coal. Estimates of the overall emissions, including leakage of 2.0 - 2.5%, suggest that including their effects would increase the VT carbon footprint by approximately 7 - 9%. Natural gas extraction/distribution and the associated methane leakage is a controversial topic, especially in East Coast communities near hydraulic fracturing sites or close to new natural gas pipelines as is the case for Blacksburg. However, most universities consider these emissions out of scope and do not include them for carbon neutrality goals.

Past VT GHG Assessments have also left out of scope several other emission sources. Only carbon dioxide emissions have been estimated while methane (CH₄) and nitrous oxide (N₂O), primarily from agricultural operations as well as natural gas leakage, have been omitted. Emissions from the BT bus system, business air travel, dining service food, upstream utility transmission and distribution losses, and VT Foundation properties occupied by VT have also been omitted. Including all of these elements in scope is estimated to increase the VT carbon footprint by 41 - 54%.

Based on the GHG Assessment and analysis, the 2020 CAC recommends a Carbon Neutral Virginia Tech Campus by 2030, where carbon neutral is defined as net-zero emissions of CO₂, CH₄, and N₂O by VT operations for all Virginia Tech owned lands and buildings on the main campus, all buildings leased by university departments in Blacksburg, and agricultural/forestry operations and lands in the Blacksburg region. The GHG scope for carbon neutrality will include all Scope 1 and 2 emissions. The following Scope 3 emissions will also be included based on the availability of data and feasibility of analysis: faculty/staff/student commuting, Blacksburg Transit (BT) bus fuel, waste/recycling/compost, water/wastewater, and commercial business travel.

Other Scope 3 emissions will not be included in 2030 carbon neutral scope, primarily due to challenges in and significant uncertainties in the accuracy of the data analysis. These include upstream leakage of methane from natural gas extraction and distribution and upstream emissions for dining hall food. These are the two emissions sources found to be excluded from the majority of peer institutions GHG assessments and carbon neutrality goals. However, since these emissions may be significant, can be controlled by operational or student choices, and are very important to some stakeholders on campus, these will be tracked and analyzed as part of the annual GHG inventory.

Emissions from other Virginia Tech locations across the state and in other countries will not be included in the 2030 carbon neutral scope. However, methods and protocols developed for the VT GHG Assessment will be shared by 2022 to other VT operations in the Commonwealth that will be encouraged to establish their own GHG reduction targets, goals, and pathways.

Feasible pathways to this 2030 carbon neutrality goal based on GHG analysis include:

- 100% renewable electricity by 2030 which can reduce emissions by 50% below 2019
- The elimination of coal use by 2024 can reduce GHG by 10% below 2019
- The reduction of energy use in existing and new buildings which can further reduce emissions by 10% despite campus growth
- The implementation of pathways in waste/recycling, transportation, agriculture, forestry, and land use which can reduce emissions by 10%

Remaining GHG emissions in 2030 can be negated by carbon offsets, preferably on campus or regionally.

Virginia Tech 2020 Climate Action Commitment Working Group Peer Comparison Subcommittee Report

All Subcommittees, John Randolph, Allie Kahl

Executive Summary-Peer Comparison	1
1. Carbon Neutrality and GHG Inventory	2
2. Renewable Energy	3
3. Buildings	5
4. Energy Systems	7
5. Transportation	8
6. Waste-Recycling-Composting	11
7. Agriculture, Forestry, Land Use	13
8. Sustainable Choices	14
9. Climate Justice	16
10. Community Engagement	17
11. Budget and Finance	22

Executive Summary--Peer Comparison

One of the Working Group's deliverables is a comparison of Virginia Tech progress in climate action to peer universities. There are three good reasons for this:

1. to see how we are doing,
2. to borrow and steal good ideas, and
3. to show we are not crazy with our bold and aggressive climate action.

Knowing that our perspective is comprehensive and that other universities have different strengths in different areas, we decided to have our specialty subcommittees select the peer and exemplary universities to assess in their specialty area. Those areas include

- Carbon neutrality and GHG inventory
- Renewable Energy
- Buildings
- Energy Systems
- Transportation
- Waste-Recycling-Composting
- Agriculture, Forestry, Land Use
- Climate Justice
- Community Engagement
- Budget and Finance

In most areas we selected 3-8 universities that we consider as peers or are exemplary in that area. Some are from Virginia, some are Land Grants, some are from the ACC, some are far away, but all offer good examples and benchmark our progress to-date and our aspirations for our 2020 Climate Action Commitment.

All in all, our peer review told us that, while our 2009 Climate Action Commitment was right for its time and has led to improved energy efficiency and reductions in GHG emissions, it now lags behind the actions of many of our peers. This deficiency is most notable in the quest for carbon neutrality, for renewable energy, for zero waste, for zero-net-energy buildings, for alternative transportation, and for community engagement to advance climate action and sustainable behavior.

Many of our related programs do stand up well in comparison to others, but if Virginia Tech is to regain its leadership role in climate action and sustainability, we need to move to a new Climate Action Commitment that is right for this time.

Of course, that is what we have set out to do, and we believe that we have found the right balance of aggressive, yet pragmatic climate action. Our goals are for carbon neutrality by 2030, 100% renewable electricity by 2030, investment in energy efficiency in existing and new buildings, carbon neutral agriculture, zero-waste campus, sustainable procurement, sustainable mobility, climate justice as a core value, and community engagement and the Climate Action Living Laboratory to integrate these goals into the fabric of the university.

Relative to our peer and exemplary universities reviewed in this analysis, this 2020 VT Climate Action Commitment is not crazy, it does borrow and steal great ideas from those exemplars, and it not only compares well to others but actually sets the stage for Virginia Tech to be an exemplar and leader in university climate action.

Virginia Tech 2020 Climate Action Commitment Working Group Renewables Opportunities Subcommittee Report

Rob Glenn, John Randolph, Chen-Ching Liu, Kim Briele, Mary-Ann Ibeziako,
Lowell Jesse, Sean McGinnis, Shannon Bell, John Chermak, Ron Meyers,
Carol Davis, Rachel Spector, Heidi Hahn, Paul O'Horo

Executive Summary	1
1. Progress Assessment	4
1a. Virginia Tech Electric Service: Proud History and Future Opportunities	
1b. Renewable Energy Progress Since 2009 VT CAC&SP	
• 2009 VT CAC did not even mention Renewable Energy	
• Draft Alternative Energy Plan (1/28/2020)	
• 2017 Geothermal Heating Study	
• Sterrett Solar PV and other pending rooftop projects	
2. Peer University Comparison	7
3. VT CAC Renewables Goals and Pathways	9
3a. Goals and Pathways	
3b. Expanded Pathways	
4. Impacts/Benefits/Costs of Goals and Pathways	12
4a. Benefits and costs of renewable energy certificates (RECs)	
4b. GHG emissions benefits of 100% renewable electricity	
4c. Economic costs and benefits of financing/ownership options	
4d. Impacts on VT and Town customer rates	
4e. Campus Climate Action Living Laboratory benefits	
4f. VT reputational benefits (VT Leader in Climate Action and Sustainability)	
5. Background, Analysis, Rationale	14
5a. Potential Pathway to 100% Renewable Electricity in Three Graphs	
5b. Potential Partnerships and Provision of Renewable Electricity	
5c. VT Smart Grid and Solar + Storage: VTES-Power & Energy Center (PEC) Collaboration	
5d. Renewable Electricity and Campus Climate Action Living Laboratory (CALL)	
5e. Agrivoltaics: Productive Farmland + Solar	
5f. Economic Analysis of Energy Options	
5g. Recent Virginia State Energy & Climate Policies Affecting VT CAC	
6. Proposed Immediate Initiatives and Projects	22
6a. 2020 RECs for 30% Renewable Electricity	
6b. Sterrett and other Rooftop Solar Projects	
6c. Student Project for Fishburn Wind Energy Assessment	
6d. Promote VTES-PEC partnership as part of Climate Action Living Laboratory	
6e. Initiate partnership with APCo on renewables	
6f. Initiate community relations with VTES Town customers	

Executive Summary

Virginia Tech is unique in having its own electric utility **Virginia Tech Electric Service (VTES)**, dating back to the 1890s when it made Blacksburg the first town in SWVA with electric power. The steam and power plant became instructional tools for electrical and mechanical engineering departments. The 2020 Virginia Tech Climate Action Commitment (CAC) calls for VTES to continue that role of advancing new technology integrated with the university's educational and research mission.

The CAC Working Group's Renewables Opportunities subcommittee of 14 faculty, staff, students and community members explored the possibilities for Virginia Tech to provide leadership in climate action by advancing renewable energy from non-carbon sources. It reviewed progress to-date; compared VT to peer universities; developed an aggressive goal and pathways to achieve it; and evaluated their impacts. The subcommittee also identified some energy initiatives and projects that should be pursued to demonstrate VT's commitment in the short term between now through 2022.

Our aggressive goal is to have 100% renewable electricity by 2030. **We have a long way to go.** We have done little so far to develop renewables, and we lag well behind our peers including the University of Virginia and the College of William & Mary. We are constrained by a long term purchase agreement with Appalachian Power Company (Apco, a part of American Electric Power (AEP)). And we have been dealt a financial blow as a result of the Covid-19 pandemic.

But our pathways to 100% renewable electricity recognize these constraints and provide a **realistic scenario for success in the next decade**, supported by new state mandates and initiatives, a mutually beneficial partnership with Apco, creative financing through power purchase agreements (PPAs), and instructional and research benefits of renewable energy projects for the campus Climate Action Living Laboratory (CALL). Already VTES has formed a partnership with VT Power & Energy Center (PEC) to collaborate on **VT Smart Grid research**.

A collaborative partnership with Apco is a key component of our strategy, since the utility is now mandated to achieve 100% renewable electricity by 2050 with interim requirements for 14% by 2025, 20% by 2027, 30% by 2030, and 65% by 2045. VTES believes it can negotiate the 100% goal prior to the expiration of the current 2027 contract with AEP for no more than it is currently paying. Various opportunities of mutual benefit are already being discussed by VTES and AEP.

VTES can utilize a Portfolio Approach to achieve the renewable energy goal that include campus-based, VT-owned or 3rd-party-owned solar; direct purchase of power or PPA from Apco/AEP renewable sources, solarized customers within the Town, and a financial tool called Renewable Energy Credits (RECs). ***As a first step toward VT's CAC leadership and renewables goal, VTES purchased RECs from Apco in March 2020 that achieved 30% renewable electricity for VT--two years ahead of the Governor's 2022 deadline for state agencies.***

Other short term initiatives recommended by the subcommittee include:

- 2020 RECs for 30% Renewable Electricity
- Implement Sterrett and other Rooftop Solar Projects
- Initiate student project for Fishburn Wind Energy Assessment
- Promote VTES-PEC partnership as part of Climate Action Living Laboratory
- Initiate partnership with APCo on renewables
- Initiate community relations with VTES Town customers
- Obtain external funding for agrivoltaics test array at Catawba Sustainability Center

Here is the 100% Renewable Electricity goal and pathways to achieve it:

VT CAC Goal #2: 100% Renewable Electricity by 2030

- **Solar energy projects on VT lands and campus building rooftops.** These can be VT owned or 3rd party owned with a VT power purchase agreement (PPA).
- **Power purchase agreements (PPA)** with utility or 3rd party-owned projects in Southwest Virginia
- Other PPAs or virtual PPAs.
- **Assist Appalachian Power's increasing of its renewable portfolio**, which is now 10% and by new state law is required to be 14% by 2025 and 30% by 2030.
- **Renewable energy certificates (RECs)** or purchased MWh credits from utility or 3rd party.

Achieving 100% renewable electricity by 2030 assumes **60% renewable generation plus 30% APCO renewable portfolio and 10% RECs** in recognition of steam plant cogeneration.

The pathways assume a combination of solar on **VT buildings and land (15 MW)** owned by VT or 3rd party PPA and 3rd party- owned and APCO-owned SWVA **PPA capacity (130 MW+15 MW=145 MW)**. **Capital costs** of VT owned solar systems are assumed to be \$2/W for <0.5 MW projects and \$1.50/W for >1MW projects.

- Total capital cost for 15 MW on VT buildings/lands would be about \$25-30 million.
- Total capital cost for 145 MW would be over \$200 million.
- Best PPA contract rates on the market are 20-year, non-escalating flat rate of ~7¢/kWh.

While utility/3rd party PPAs are assumed to be preferred approach for off campus solar projects, on-campus projects can be either VT-owned or utility/3rd party owned with PPAs.

- Advantages of VT owned and managed renewable systems are greater control, reduced long-term electricity cost and greater financial return; and disadvantages are high initial capital investment and operation/maintenance requirements; i.e. where small campus-based systems make sense and large utility-scale systems do not.
- Advantages of PPAs are little or no initial capital costs and no operation/maintenance cost; and disadvantages are potentially higher electricity costs and less operational control.

Pathway: Potential development timeline and options:

2020: achieve 30% renewable electricity via purchase of 20% renewable energy certificates (RECs) from APCO + APCO 10% renewable portfolio. VT achieves 2 years early the Governor's E.O. 43 requirement that all state agencies procure 30% renewable electricity by 2030.

2020-22: 2.3 MW on VT bldgs/land including "signature" solar array perhaps on Old Southgate Dr.

- Option 1: VT finance and own: 2.3 MW @ \$2/W □ \$4.6 million
- Option 2: 3rd party PPA: no upfront cost, pay per kWh; 25-year contract, 5 year buyback option
- Option 3: Sterrett 0.33 MW and 2nd building 0.67 MW through 3rd party PPA, learn from experience then VT finance and own remaining 1.3 MW (\$2.6 million) signature project

Beginning 2021: Incorporate campus and region VT renewable electricity development by Virginia Tech Electric Service (VTES) into VT educational mission through **Virginia Tech Climate Action Living Laboratory** with faculty, student, and staff instructional, research, and outreach opportunities.

2021: assess VT Fishburn Forest atop Price Mountain and other sites for cost-effective wind energy; engage students/faculty and partner with JMU to conduct a wind study.

2022-27: Continue to work with APCo to be a primary customer of their renewable capacity as they develop it to meet state requirements. APCo just completed an RfP solicitation for 250 MW of renewables in March and as this capacity is developed, VTES could contract for the output. Under Virginia Clean Economy Act, APCo is required to achieve a 14% renewable portfolio by 2025, 20% by 2027, 30% by 2030, 65% by 2049, and 100% by 2050.

2022: 0.25 MW net-metered solar town customers doubled VTES distributed capacity. Customers cover cost but VTES could facilitate/incentivize customers with VTES Solarize program. RECs owned by customers, but VTES could buy their RECs.

2023: 0.5-1.0 MW community solar for VTES customers, possibly located on airport land off of Hubbard Dr. VTES would own RECs.

- Customers buy shares in 100 kWh blocks for \$10/block (10c/kWh) for 20 years.
- Production $500 \text{ kW} = 500 \text{ kW} \times 1,314 \text{ kWh/yr/kW} = 670,000 \text{ kWh/yr}$ (6,700 shares)
- Revenue = $\$67,000/\text{yr} \times 20 \text{ yr} = \1.34 million (present value = \$1 million, 20 yr, 3%)
- Capital cost: $500 \text{ kW} \times \$2/\text{W} = \1 million

2025: add 10 MW solar capacity on campus and on VT land in region in cooperation with APCo (still within 2027. Use solar installations at Kentland Farm and Catawba Sustainability Center to study “agrivoltaics,” or agricultural production on solar farms. 10 MW @ 6 ac/MW = 60 ac.

- Option 1: VT finance and own: 10 MW @ \$1.50/W = \$15 million
- Option 2: 3rd party PPA: no upfront cost, pay per kWh; 25-year contract, 5 year buyback option

By 2027 (APCo contract renewal date), 50% renewable electricity via campus and VT land capacity (10 MW), APCo power purchase agreements (PPA) in southwest Virginia (including reclaimed mine land) (35 MW), APCo renewable portfolio (20%), and virtual PPA (VPPA) and/or RECs (10%) (e.g., 20% production (45 MW)) + 20% APCo portfolio + 10% purchased PPA/VPPA/RECs)

By 2027 or earlier, add 10 MW energy storage to campus renewable capacity and use VTES as a testbed and showcase for innovative smart micro-grid reliability and resilience research through a partnership between VTES and the VT ECE Power & Energy Center using shared SCADA data and in collaboration with APCo.

By 2029 add 95 MW solar capacity via campus and VT land capacity (+5 MW, total 15 MW) and PPA with APCo and/or 3rd party in southwest Virginia (+90 MW, total 120 MW).

By 2030, 100% renewable electricity with 60% renewable production (VT solar (15 MW) and APCo+3rd party PPA in southwest Virginia (130 MW)), 30% APCo renewable portfolio, and 10% VPPA and/or RECs

As with all components of this CAC, full **lifecycle analysis** should include the environmental and social justice costs and benefits of procured systems, including sources and decommissioning of photovoltaic systems, requiring end-of-life recycling.

Siting renewable energy systems should employ the best practices of public engagement to identify the most appropriate sites considering compatible uses and economic, environmental, and social effects

VT should **work closely with VDMME** to take advantage of state grant programs for agencies and universities to meet the Governor’s Executive Order 43 and 2020 legislation.

Virginia Tech 2020 Climate Action Commitment Working Group Structuring Sustainable Choices Subcommittee Report

Todd Schenk, Blake Bensman, Nathan King, Jack Leff, Allie Kahl, Drew Harris

Executive Summary	1
1. Introduction: Background & Purpose	3
2. Comparison with Peer/Exemplary Universities	5
3. Goals and Pathways: Structuring Sustainable Choices	7
4. Virginia Tech Climate Action Toolkit (VTCAT)	12
4a. Infrastructure of VTCAT	
4b. Potential Opportunities for Student Engagement	
5. Reputational Benefits and Student Learning Outcomes	15
5a. Reputational Benefits Overview	
5b. Connection to Aspirations for Student Learning	
6. Proposed Immediate Initiatives and Projects	17
7. Covid-19 Addendum and Final Analysis	18

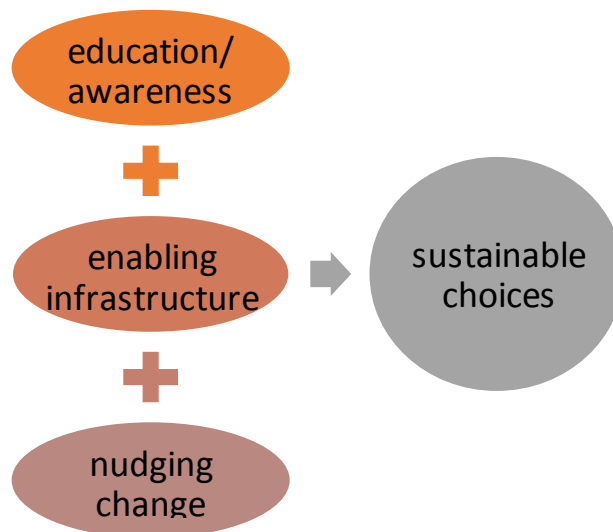
Executive Summary: 2020 VT CAC Structuring Sustainable Choices Subcommittee

The Structuring Sustainable Choices subcommittee was not one of the original groups created to support the 2020 Climate Action Commitment update. The idea of creating this subcommittee emerged later from the recognition that many of the challenges discussed during working group meetings involve, at their core, behavior change. That is to say, they are about the various choices individuals make that enhance or inhibit progress in meeting our climate and other sustainability goals.

Subcommittee members started by making a short list of “problematic” or unsustainable behaviors evident within the Virginia Tech community based on the Greenhouse Gas Inventory data. This list included: unnecessary car commuting, improper disposal of waste, unsustainable food choices in dining halls, and low return rates of reusable to-go containers in dining halls. The next step was to understand the *underlying structures* that enable or encourage these unsustainable behaviors. This is critically important because the group recognizes that behavioral choices are not just about individuals being educated and expected to make good decisions, but, perhaps more importantly, about how they are supported and *nudged* into making better or worse choices. The next step was thus to explore how structures could be changed to discourage unsustainable behavior, and more importantly, facilitate sustainable behavior.

Our model of understanding behavior change was informed by practice and scholarship in behavioral psychology and behavioral economics, and the associated domains of *social marketing* and *choice architecture*. It recognizes that sustainable choices are rooted in three key pillars:

- **education** around *why* certain behaviors may be more or less sustainable and *what* the more sustainable choices entail;
- **infrastructure** to make it easier to engage in sustainable behaviors and harder to engage in unsustainable ones; and
- **timely prompts** that remind people of the (more) sustainable choices they can make at appropriate junctures (i.e., when they are making decisions between behaviors).



The work of the CAC Structuring Sustainable Choices Subcommittee is largely embodied by Goal #12 of the 2020 Climate Action Commitment.

Goal #12. Diminish Barriers to Sustainable Behaviors through Both Institutional Change and Persuasive Social Marketing

Most of the goals of the 2020 Climate Action Commitment deal with strategies to improve the efficiency of buildings and energy systems, replace coal and add renewable energy infrastructure, develop a compost system, and enhance sustainable mobility. However, achieving carbon neutrality also depends on ensuring students and university employees are able to carry out their business sustainably. Including considering how much they recycle, compost, turn off lights, commute using a bike, and make a litany of other choices that reduce the university's carbon footprint.

Recognizing this, the Climate Action Commitment Working Group has intentionally included several *scope 3* emissions in our greenhouse gas inventory and associated carbon neutrality goal. Many of the *scope 3* emissions are those resulting from behaviors, such as waste, water, commuting, and business travel. As discussed in the greenhouse gas inventory subcommittee section, this inclusion of *scope 3* emissions distinguishes Virginia Tech from its peers and taking them seriously through restructuring choices to be more sustainable further solidifies our role as an environmental leader.

Sustainable choices are about structuring institutions and infrastructure to facilitate sustainable individual behaviors. By leveraging structural changes, incentives, disincentives, educational programs, and games, these choices can and must be made much easier, cheaper, safer, and more enjoyable. The Structuring Sustainable Choices group has focused on how university units can 'nudge' community members towards adopting behaviors that will reduce our greenhouse gas emissions.

Potential Pathways

We have identified the following potential pathways to encourage more sustainable behaviors:

- **Modify structures**—from waste management to transportation—to **make sustainable choices easier**
- **Identify unsustainable behaviors** on campus, the **structures that support them**, and then **modify structures** to make **sustainable choices easier**
- Nurture **cross-campus partnerships** to coordinate climate action and enhance sustainability initiatives
- Establish the **Structuring Sustainable Choices Committee** as a working group of the new Climate Action, Sustainability, and Energy (CASE) Committee (currently the Energy & Sustainability Committee (E&SC)) to **facilitate continued dialogue** on structures and programs to **enhance sustainable behavior**.
- Partner with Experience VT and Dining Services/ Housing and Residence Life Sustainability Managers to **integrate sustainability into the new Experience VT app**. Experience VT allows students to **learn more about** the university's commitment to **sustainability** and maximize their opportunity to **engage in sustainability at VT**.
- Craft an **ongoing** university survey that enables university departments to **submit their own university sustainability goals, aspirations, and current infrastructure challenges** that may prevent their goals/aspirations from being achieved.
- Develop a **shared toolkit** of best practices in social marketing, rooted in **behavioral sciences**, for campus groups **initiating** sustainability initiatives
- **Drive engagement** via social media and web pages using **call to action** opportunities, surveys, stories/interviews, facts/figures, event promotions, and ongoing reminders.

Virginia Tech 2020 Climate Action Commitment Working Group

Transportation Opportunities Subcommittee Report

Nick Quint, Mike Dunn, Durrelle Scott, Greg Tew, Janet Rankin,
John Randolph, Brandon Burkey, Jordan Torregrosa, Lydia Patton,
Kali Casper, Erik Olsen, Beth Lohman

EXECUTIVE SUMMARY	0
2020 CAC GOAL #9. REDUCE TRANSPORTATION-RELATED GHG EMISSIONS BY 40% BY 2030	
9.1 Reduce Single-Occupancy Vehicle Commuting To Campus By 20% By 2025	
POTENTIAL PATHWAYS TO ACHIEVING TRANSPORTATION GOALS	
1. ASSESSMENT OF PROGRESS IMPLEMENTING THE 2009 CAC&SP	4
1a. PROGRESS	
1b. CRITIQUE OF PROGRESS	
2. PEER/EXEMPLARY UNIVERSITIES COMPARISON	9
2a. PEER COMPARISON — OUTSIDE VIRGINIA	
2b. PEER COMPARISON — WITHIN VIRGINIA	
3. 2020 CLIMATE ACTION COMMITMENT GOALS AND PATHWAYS	1
3a. SUMMARY GOALS AND PATHWAYS	
3b. EXPANDED GOALS AND PATHWAYS	
3c. POTENTIAL PATHWAYS TO ACHIEVING TRANSPORTATION GOALS	
4. IMPACTS, COSTS AND BENEFITS OF GOALS AND PATHWAYS	4
4a. GREENHOUSE GAS EMISSIONS BENEFITS	
4b. OTHER BENEFITS AND COSTS	
5. BACKGROUND, ANALYSIS AND RATIONALE	7
5a. TRANSPORTATION PLANS	
5b. WHAT THE LITERATURE TELLS US ABOUT ACTIVE TRANSPORTATION BENEFITS	
5c. TRANSPORTATION SURVEY AND RESULTS	
5d. TRANSPORTATION OPPORTUNITIES ZOOM CONVENING	
6. PROPOSED IMMEDIATE INITIATIVES/PROJECTS	24
6a. INFRASTRUCTURE AND POLICIES CURRENTLY UNDER DEVELOPMENT	
6b. NEAR-TERM PRIORITIES	

EXECUTIVE SUMMARY

The 2020 Climate Action Commitment (CAC) subcommittee on Transportation Opportunities included a group of 12 faculty, students, staff, and Town members seeking to enhance Virginia Tech's mobility patterns to reduce environmental effects and improve the livability of the campus community. The subcommittee assessed progress made to implement the 2009 VT CAC and Sustainability Plan (SP), compared the VT experience to peer universities, and developed a new set of transportation goals and pathways as part of the 2020 VT CAC.

The public guidelines in response to the COVID-19 pandemic will likely continue through fall 2020. They present a challenge across the transportation sector to facilitate safe, physically-distant movement through campus between classes and during daily commutes. An immediate priority for the health and safety of our students, faculty, and staff is to provide additional space beyond sidewalks and the limited bicycle lanes for walking and bicycling. Immediate actions taken to improve walkability and bikeability will go towards showing Virginia Tech's commitment to prioritizing health and safety during this crisis. Furthermore, this provides a longer-term platform for alternative transportation, which otherwise may decline if students see driving to campus as their only choice. It should also be noted that teleworking and on-line instruction became the norm in the spring and will be a mainstay for the fall. There are lessons to be learned about patterns of working and instruction that reduce needs for car commuting to campus and resulting reduction of traffic and emissions.

Transportation Greenhouse Gas (GHG) Emissions

The overall goal of the VT 2020 CAC is to achieve carbon neutral campus operations by 2020. How does transportation relate to that goal? Virginia Tech transportation-related GHG emissions for the 2020 VT CAC include:

- Scope 1 GHG: fuel for fleet vehicles and other campus vehicles, aviation fuel for VT airplanes.
- Scope 3 GHG: student, faculty, staff commuting to campus; Blacksburg Transit (BT) fuel; business air travel.

The 2009 VT CAC & SP did not include BT or business air travel. 2019 transportation GHG emissions under this more limited scope were about 20,000 MT CO₂e, 8.4% of total VT emissions. About 80% were from commuting, 13% from fleet vehicles, and 7% from aviation fuel.

The 2020 CAC addition of BT fuel adds 3515 MT CO₂e or 1.4% of total VT emissions and business air travel adds 5000-7500 MT CO₂e or 2-3%. Overall, transportation 2020 GHG scope will be about **12% of total VT emissions**.

Progress. Since the 2009 VT CAC & SP, Virginia Tech and Blacksburg have made considerable progress in developing alternative transportation choices, including

- A 50% increase in BT ridership;
- BT has nine hybrid-electric buses of its 53-bus fleet; BT has also ordered five electric buses;
- A 32% increase in campus bicycle rack capacity (since 2013);
- The launch of Roam NRV bike share (since 2018, 11,000 trips and 28,000 miles);
- Shuttles and bus service to Roanoke and Northern Virginia;
- Car- and ride-share programs; and
- Recognition as a *Best Workplace for Commuters* every year since 2009 (Best of the Best in 2014) and as a *Bicycle Friendly University* at the bronze level (2012-18) and silver level (2019-22).

The 2016 *Parking and Transportation Master Plan* calls for further improvements in bicycle infrastructure and parking management, and *Beyond Boundaries 2047: The Campus Plan* includes the Infinite Loop and Green Links to improve mobility for all users.

However,

- Single-occupancy vehicle (SOV) commuting increased 10% from 2014 to 2018;
- There is an oversupply of parking (2000 spaces sit empty on any given day);
- Parking permit prices are cheap and provide no incentive for alternative commuting;
- Student orientation and employee onboarding do not include education on transportation options;

- VT is one of only a few universities that allow freshman to bring cars to campus; and
- University motor pool vehicles do not use alternative fuels.

The subcommittee's guiding principles in developing goals and pathways were to:

- Prioritize moving the most people over moving the most cars;
- Emphasize safety;
- Consider equity issues;
- Emphasize collaboration with the Town of Blacksburg and other localities; and
- Develop cost-effective solutions.

The principal goal below relates to reduction of GHG emissions in accord with the overall CAC to strive for carbon neutrality by 2030. But the subgoal to reduce SOV commuting, and the pathways to enhance alternative transportation and pedestrian and bicycle mobility, speak more to making the campus a more livable environment.

Goal #9. Reduce Transportation-Related GHG Emissions 40% from 2020 levels by 2030

9.1 Reduce Single-Occupancy Vehicle Commuting To Campus 20% from 2020 levels by 2025

Potential Pathways to Achieve Transportation Goals

- a. **Make walking/bicycling/transit the preferred means of commuting to campus.** Use parking policies, alternative transportation programs, campus mobility planning in collaboration with the Town of Blacksburg, and BT programs to improve safety and convenience and promote walking/bicycling/transit.
 - By 2022, provide **better data on student and staff commuting behavior** and reasons for that behavior through surveys and other means to monitor progress.
 - **Promote sustainable mobility choice** through good marketing including social media, parking permit literature, university promotion literature/website, student orientation materials, and other means.
 - Follow other Virginia universities in **prohibiting freshmen** from being able to purchase a parking permit to help students develop less car-dependent culture and behavior.
 - **Enhance BT** as a commuting choice through education, marketing, coordinating with other transit orientations, development of the Multi-Modal Transit Facility (MMTF), and other means.
 - Upgrade VT's **Bicycle Friendly University ranking** from silver to gold.
 - Parking demand management.
 - **Increase parking permit prices.** For employees, implement on a sliding income-scale. Use additional revenue to fund sustainable transportation improvements.
 - Consider moving away from annual and **toward automated daily fee parking permits** so people have to think about paying for parking every time they drive to campus.
- b. **Promote non-commuting work and learning opportunities**
 - Based on experience from COVID-19 pandemic, promote teleworking, innovative online instruction, video conferencing, compressed workweek schedules, and other means to reduce travel demand.
 - Work with Human Resources to identify opportunities and barriers to increasing teleworking.
- c. **Improve infrastructure and traffic controls to improve mobility choices and safety**
 - **Improve safety** of vehicle, bicycle and pedestrian mobility on campus.
 - Reduce the speed limit on all core campus streets to 15 miles per hour.
 - Improve lighting on walking and bicycle paths.
 - Maintain shared-use paths and bicycle lanes.
 - Improve network connectivity and consistency throughout campus.
 - Limit/restrict vehicles in the core of campus by gating streets at strategic locations (consider Drillfield Drive, Alumni Mall, Kent Street, West Campus Drive, and Stanger Street).

- **Implement infrastructure recommendations** in the *Parking and Transportation Master Plan* and *Beyond Boundaries 2047: The Campus Plan*.
 - Infinite Loop, Green Links, Expand Bicycle Lanes on Kent Street and Washington Street
 - Multi-Modal Transit Facility
 - **Coordinate with Town** transportation and corridor plans to improve connectivity and safety between campus and town.
- d. Improve vehicle efficiency and promote low-carbon emissions vehicles**
- Require **University fleet vehicle** purchases, and encourage BT, to emphasize fuel efficiency through zero-emission, hybrid, and electric vehicles.
 - Although transportation emissions per vehicle-mile will naturally decline with improved vehicle efficiency and increased electric vehicle ownership, changes in commuting mode are necessary to achieve GHG reduction goals and a more livable and less car-oriented campus.
 - **Support electric vehicle use** by installing a mix of charging station types in parking garages, at Fleet Services, and at other locations.
- e. Promote social equity in mobility and parking policy**
- Develop effective and efficient **commuting options for lower-wage employees** who cannot afford to live in Blacksburg, including vanpools, park & ride lots, and other means.
 - Implement **sliding income-scale pricing** for parking permits.
 - Collaborate with the Town to provide **affordable workforce housing** proximate to campus.
 - Build **more residence halls on campus** to free up more off-campus housing for staff.
- f. Reduce and negate business travel GHG emissions**
- **Encourage car sharing and transit use** for business travel.
 - By 2030, **negate business airline travel emission with carbon offsets**.
- g. Establish an alternative mobility subcommittee of the Transportation and Parking Committee to recommend strategies to increase non-SOV mode share on campus.**
-

In addition the subcommittee recommended initiatives and projects that could be implemented in the short term (2020-2022) to get a jump-start on action and demonstrate the university's commitment.

1. Follow through on Infrastructure and Policies Currently under Development

Several projects are under various stages of development and will go a long way toward helping to achieve the goals presented herein:

- **Infrastructure:** Construct the **Multi-Modal Transit Facility**; Extend the **Kent Street bicycle lane** towards the Drillfield; Construct green **bicycle lanes in strategic areas** where known safety problems exist; Construct the **green link** from the Perry Street area to Burruss Hall; Replace 16 remaining substandard **bicycle racks**; Improve **lighting and accessibility** of existing trails, sidewalks, and crosswalks.
- **Policy:** Update **Policy 5005**, regulating personal transportation devices on campus.

2. Near-Term Priorities

- Establish an **alternative mobility subcommittee** of the Transportation and Parking Committee
- Install/**improve bicycle lanes** on Washington Street and Kent Street.
- Dedicate consistent, **annual funds to maintain trails**, sidewalks, bicycle lanes, bus stops, bike racks, etc.
- Require University **fleet vehicle purchases to emphasize fuel efficiency**
- **Parking permit restructuring:** Prohibit on-campus freshmen from purchasing a parking permit; Increase the price of a faculty/staff parking permit and implement an income-based sliding scale.

Virginia Tech 2020 Climate Action Commitment Working Group Waste/Recycling/Composting and Procurement Subcommittee Report

Blake Bensman, Denny Cochrane, Brandon Hendricks, John Randolph, Annie Pearce,
Greg Evanylo, Jody Booze-Daniels, Rob Lowe, Reed Nagel, Casey Underwood, Anthony
Purcell, Anthony Watson, Jennifer Russell, Greg Canaday, Teresa Sweeney, Amy Klinger

TABLE OF CONTENTS

Executive Summary	1
1. Assessment of Progress in Implementing 2009 CAC&SP	5
1a. Progress	
1b. Critique of Progress	
2. Comparison with Peer/Exemplary Universities	8
3. 2020 CAC Goals and Pathways: Waste/Recycling/Compost and Procurement	9
3a. Summary Goals and Pathways	
3b. Goals and Pathways	
4. Impacts, Benefits and Costs of Goals and Pathways	12
4a. GHG emissions benefits	
4b. Waste management costs and benefits of Zero Waste Campus	
4c. Virginia Tech Composting Facility at Kentland Farm	
4e. Climate Action Living Laboratory educational benefits	
4f. VT reputational benefits	
5. Background, analysis, rationale	15
5a. Waste Management at Virginia Tech	
5b. History of Composting	
5c. Green Lab Program	
6. Proposed immediate initiatives/projects	19
6a. Secure Funding and Develop University Compost Facility at Kentland	
6b. Contract Zero Waste Consultant to conduct VT Waste Audit	
6c. Implement and Evaluate Sustainable Procurement Policy 2020-2022	
6d. Implement Campuswide Green Lab Program	

Executive Summary

Virginia Tech to become a Zero-Waste Campus by 2030!

The Climate Action Commitment Work Group's Subcommittee on Waste, Recycling, Composting and Procurement took a fresh look at all aspects of campus waste management and procurement with the intent of identifying opportunities to minimize waste, increase efficiencies, improve environmental effectiveness, and reduce costs. We wish to apply to Virginia Tech the concept of **Circular Economy** or systems that employ reuse, sharing, repair, refurbishment, remanufacturing and recycling to create a closed-loop, minimising the use of resource inputs and the creation of waste, pollution and carbon emissions. To do that we must look at our materials flow, what comes into the university (Procurement) and what goes out (Waste and Recycling).

We began by conducting a comprehensive assessment of Virginia Tech's current waste management program. We critiqued our progress towards meeting the waste management goals as outlined in the university's original 2009 Climate Action Commitment and subsequent revision in 2013. Using the Association for the Advancement of Sustainability in Higher Education's "Sustainability Tracking, Assessment, and Rating System (STARS)" protocol, we compared our progress to that of our peer/exemplary institutions, as well as to those in the Commonwealth of Virginia. The Procurement Department plays a vital role in materials management, and we include their new *Sustainable Procurement Policy*. This report presents the 2020 CAC Waste, Recycling, Composting and Procurement Goals and pathways to achieve them, describes the pathways benefits and costs, and proposes four related initiatives worthy of immediate action.

Waste management at Virginia Tech is functional but is complex and fragmented across a number of departments, including Facilities Building & Grounds (trash and recycling from all buildings), Dining Services (food waste composting from 11 dining halls), Environment Health & Safety (hazardous and electronic waste), animal waste by relevant departments, Procurement for disposition of surplus property, and construction contractors for construction waste.

Virginia Tech partners with local jurisdictions in the Montgomery Regional Solid Waste Authority (MRSWA), through which solid waste is sent to the New River Resource Authority's landfill near Dublin and principal recyclable materials (PRM) are sent to Recycling and Disposal Solutions in Roanoke. Food waste composting, considered a recyclable material, is transported 77 miles to Royal Oak Farm (ROF) near Lynchburg, the only state permitted facility within 100 miles of Blacksburg.

Progress since 2009: In 2004, Virginia Tech had a recycling rate of 18% and doubled it by 2009. The 2009 Virginia Tech Climate Action Commitment (VTCAC) Point #8 stated: "Virginia Tech will adopt a goal of 35% recycle rate by 2012 and 50% by 2025." By 2012, the rate had increased to 44% as a result of food waste composting, so the 2013 revision to the VTCAC moved up the target date for 50% recycling rate from 2025 to 2020.

The local recycling facility Poplar Manor Enterprises went out of business in 2015, resulting in a three-year dip in our recycling rate until the new composting contract with ROF in 2017. The recycling rate has averaged about 40% since 2013. In 2019, 2,000 tons of waste were recycled (including 566 tons of food waste composting), and 4,000 tons of trash sent to the landfill. We achieved a 38.8% Recycle Rate and a 79.9% Waste Diversion Rate (waste diverted from landfill).

The Waste Management Program at Virginia Tech is functional; however, there are notable opportunities for improvement. The Subcommittee recommends having a waste audit to explore options of more efficient organization and management of trash, recycling, food waste, and other wastes. It also recommends the University develop a compost facility to process all campus food waste and animal and other organic waste.

Comparison with Peer and Exemplary Institutions. Based on the [Association for the Advancement of Sustainability in Higher Education's](#) (AASHE) [Sustainability Tracking, Assessment, & Rating System](#) (STARS), recognized at the national level as the best sustainability management tool for colleges and universities, Virginia Tech compares very well to its peers. From 2011 to 2017 Virginia Tech has received four STARS Ratings (2 Silver and 2 Gold). We earned our second STARS Gold Rating on December 19, 2017, with a score of 71.94. To date, this score represents the highest achieved for all colleges and universities in the Commonwealth of Virginia, and at that time was the highest achieved for any institution in the Atlantic Coast Conference.

We used STARS ratings to compare our waste management with peer and exemplary institutions, including: Penn State, Ohio State, Auburn, North Carolina State, Maryland, Clemson, Florida State, and Tennessee. In addition, we compared our performance with several Virginia schools: University of Virginia, William & Mary, Virginia Commonwealth, James Madison, George Mason, and Radford. While we have made significant waste management progress in the past two decades, clearly we have room for improvement. Several of the peer universities have higher recycling rates, many are working toward becoming a zero-waste campus, and some have university compost facilities.

2020 VT CAC Goals and Pathways: Waste/Recycling/Compost + Procurement

2020 VT CAC Goal #7. Virginia Tech to become a Zero-Waste Campus by 2030

As defined by industry, a “Zero-Waste Campus” has a 90% or greater Waste Diversion Rate or waste kept out of the landfill (Source: Zero Waste Alliance).

7.1. Increase waste diverted from landfill-including construction waste- to 85% by 2025.

For CY 2019, Virginia Tech achieved an 80% waste diversion rate. For the past decade the rate has averaged 70%, with a low of 47% (2006), and a high of 84% (2011, 2012). The waste diversion rate takes credit for construction waste from new construction and major renovations. In a robust construction year, the waste diversion rate will increase significantly. The university owned quarry produces about 1,000 to 2,000 tons/month of Hokie Stone scrap material or overburden, which is crushed into useful gravel and can be included in diverted waste.

7.2. Increase waste recycling rate to 55% by 2025.

For CY 2019, Virginia Tech achieved a 39% recycle rate. Recycling rate has remained relatively constant at or near 40% for the past decade.

For CY 2019, Virginia Tech recycled a total of 2,000 tons of principal recyclable materials:

- 750 tons sent to MRSWA at a cost of \$25,875 (\$34.50 per ton) plus contractor cost for storage containers and collection and transport fees; and
- 566 tons of food waste for composting sent to ROF at a cost of \$84,900 (\$150 per ton) plus contractor cost for collection and transport of food waste to the ROF sledge container at Prices Fork Closed Landfill.
- 684 tons sent to a number of other organizations with varying costs

7.3. Reduce waste to landfill per faculty/staff/student by 25% by 2025.

For CY 2019, Virginia Tech sent 4,000 tons of trash (municipal solid waste) to the landfill or 200 pounds per person based on a university population of 40,000. The goal is to reduce this by 25% or to 150 pounds per person by 2025.

Pathways to Goals:

- a. To enhance campus waste management, **hire a Zero-waste Consultant** to conduct a waste audit study and plan to evaluate current organization, equipment, procedures, and staffing.

A third-party zero waste consultant is critically needed to objectively evaluate waste operations for E&G facilities, auxiliaries, and the athletic department to identify opportunities to streamline operations, maximize efficiencies and reduce costs.

b. Improve Oversight of Waste/Recycling/Composting

Based on consultant recommendations, improve organization of waste management with options of hiring a waste manager to manage all aspects of campus waste management or coordinating existing personnel and activities through a Waste/Recycling Council to help streamline operations and reduce redundancies.

- c. **Develop University Compost Facility at Kentland** to process campus organic food waste, veterinary and agricultural animal waste, yard trimmings and other compostables.

For CY 2019, 566 tons of food waste for composting was sent from our 11 dining facilities to Royal Oak Farm (ROF) at a cost of \$150 per ton. ROF is the only state permitted composting facility within 100 miles of campus. The university continues to produce 600 tons of food waste for composting. A University Compost Facility at Kentland would provide composting of, not only dining hall waste, but also other campus organic wastes from athletics, the College of Veterinary, residence halls, and campus landscaping, and potentially local jurisdictions.. The capital cost of the facility is estimated at \$1.4 - \$1.8 million with net operating cost of \$165,000 per year.

- d. **Engage faculty, students, and staff in Campus Climate Action Living Laboratory** to promote Pollution Prevention (P2) concepts of reduce/reuse/recycle to achieve principles of Circular Economy. Include P2 and Circular Economy activities in Sustainability Internships, learning living centers, student orientation programs, and recycling/composting programs.

- e. **Promote awareness of recycling/compost behavior** through marketing, social media, incentives, and innovative approaches. Include CAC sustainable choices pathways including web-based and smart-phone apps, student clubs, roundtables, 1st year experience app, and campaigns for Y-toss, green tailgating, and related programs.

- f. **Evaluate and improve as needed management of specialty wastes**, such as e-waste, laboratory waste, construction debris, and wastes from major sporting and other events.
- By 2021, pilot a campus-wide Green Lab program to better design and manage waste materials in research labs, with an ultimate goal of Green Lab certification of 80% of VT science and engineering labs.
 - Expand programs for reuse of materials, such as Surplus, Hokie-Swap, Y-Toss
 - Expand programs for Green Tailgating and related Athletics recycling/compost initiatives

**2020 VT CAC GOAL #8. Implement and Evaluate the Procurement Department's
Sustainable Procurement Policy 2020-2022**

In April 2020, the Virginia Tech Procurement Department developed a Sustainable Procurement Policy that aims “to make procurement decisions that embody the university’s commitment to sustainability whenever possible.” The purpose of the Virginia Tech Sustainable Procurement Policy is to complement and strengthen our commitment to sustainability to include: identifying those sustainability factors that shall be incorporated into procurement decisions; encouraging vendors to promote products and services that they offer which are most suited to the university’s sustainability principles; and reducing the environmental impacts of materials acquired.

The Policy reflected the elements of the 2009/2013 VT Climate Action Commitment and Sustainability Plan. This Policy is a significant development for Virginia Tech in procurement to reflect sustainability principles in all aspects of materials and equipment acquisition and contracting. Because the 2009/2013 CAC and plan will be superseded by the 2020 VT CAC, we recommend the new Policy be piloted for two years and then be evaluated by the Procurement Department in collaboration with the Energy & Sustainability Committee in 2022 for its conformance with the adopted 2020 VT CAC.

Pathway to goal:

- a. On a pilot basis, the **Procurement Department will implement and evaluate** the 2020 Sustainable Procurement Policy for two years
- b. By 2022, based on the evaluation, the Procurement Department, in collaboration with the Energy & Sustainability Committee, will assess the pilot project and **formulate the Sustainable Procurement Policy v.2.**

Four Immediate projects/initiatives 2020-2022. The Waste/Recycling/Composting and Procurement subcommittee identified four projects/initiatives below for immediate action in the next two years to demonstrate the university’s commitment to climate action.

- Secure Funding and Develop University Compost Facility at Kentland
- Contract Zero Waste Consultant to conduct VT Waste Audit
- Implement and Evaluate Sustainable Procurement Policy 2020-2022
- Implement Campuswide Green Lab Program

**Virginia Tech 2020 Climate Action Commitment
Working Group**

Final Technical Report

Appendix B:

- Dwayne Pinkney Charge Letter to VT Climate Action Working Group
- VT 2020 CAC Working Group Members
- VT 2020 CAC Working Group Subcommittee Members
- Glossary
- VT Climate Justice Demands, December 2019
- VT Faculty Senate Climate Action Resolution, October 2019



Senior Vice President and Chief
Business Officer
Dwayne L. Pinkney, Ph.D.
800 Drillfield Drive
210 Burruss Hall (0153)
Blacksburg, VA 24061
540-231-7912

MEMORANDUM

TO:	John Randolph	Erin Hopkins
	Todd Schenk	Chris Kiwus
	Timothy Baird	Natalie Koppier
	Brooke Baugher	Kray Luxbacher
	Shannon Bell	Sean McGinnis
	Blake Bensman	Phil Miskovic
	Dushan Boroyevich	Annie Pearce
	Angie De Soto	Anthony Purcell
	Carol Davis	Helen Salko
	Brogan Dineen	Peter Sforza
	Rob Glenn	Shayla Utzinger
	Drew Harris	Gustavo Ventura Gargioni

FROM: Dwayne Pinkney

DATE: December 10, 2019

SUBJECT: Climate Action Commitment Working Group Charge

In light of the increasing sense of urgency surrounding climate change, the President has asked me to assemble an ad hoc working group to review the university community's progress on sustainability and to propose an update to the Virginia Tech Climate Action Commitment ([President's Policy Memorandum 262](#)). This memorandum requests your participation in the CAC Working Group. Much good work on sustainability has already occurred, and it is essential that we continue to build on this momentum and draw on the expertise of our faculty who are engaged in these important fields to remain a leader.

Charge

The CAC Working Group should provide two deliverables: 1) a summary of the university's progress on sustainability since the university's first Climate Action Commitment was put in place in 2009 and revised in 2013 and 2) a proposed update to the Climate Action Commitment.

The summary should:

- outline the structure, partnerships, and arrangements that have developed over time to address sustainability;
- include high level data summarizing the institution's progress since 2009; and
- provide perspective on how these achievements compare to those at peer institutions.

The revised Commitment should:

- consider whether updates to the definition, vision, and mission statements are needed;
- outline clear, measureable, and realistic goals;
- consider the long-term impact of the goals on policies, operations, and budget of the university;
- identify broad metrics and elements for determining progress in meeting these goals; and
- follow university policy format.

Membership and Information Flow

John Randolph will Chair the Working Group and Todd Schenk will serve as Vice Chair. To supplement the expertise of the Working Group membership, the Chair should invite other faculty, staff, and/or external resources to inform the Group's work. The Chair may also establish subcommittees as needed to provide additional community perspectives.

Student representatives on the Working Group are also encouraged to assemble a larger advisory group or to use existing mechanisms such as SGA, GSA, and student organizations to provide information, concerns, and questions to the Working Group.

The university's existing governance process includes an Energy and Sustainability Committee. This committee is comprised of subject matter experts and sustainability practitioners from across the institution, as well as broad representation from faculty, staff, and students. It is essential that both this committee and the university administration have opportunities to share developments that may impact the Working Group's efforts and to ensure that many perspectives are considered. Therefore, I am requesting that regular updates be provided by the Working Group Chair or a designee to me and to the Energy and Sustainability Committee as the team's work progresses.

Timeline for Reporting and Revised Commitment Approval

The President has asked that the Committee to complete its work this academic year so that governance approvals can take place during fall 2020 in accordance with the below timeline:

- **December 2019:** Working Group formed and charged
- **March 1, 2020:** Interim report provided to me on your progress
- **May 7, 2020:** Final reports and recommendations provided to me
- **September 2020:** Presentations to the Energy & Sustainability Committee and the Commission on University Support
- **October 2020:** Presentation to University Council
- **November 2020:** Presentation to the Board of Visitors

Thank you, in advance, for your willingness to take on this challenge and bring your ideas and insight to this critical issue. I look forward to receiving regular updates on the team's work and to submitting an updated commitment for University Council and the President's consideration that provides meaningful and realistic goals for enhancing our work and producing enduring results.

Virginia Tech 2020 Climate Action Commitment Working Group

FACULTY (10)

- **John Randolph, Chair**, professor emeritus, UAP
- **Todd Schenk, Vice-Chair**, assistant professor, UAP
- **Tim Baird**, associate professor, Geography
- **Shannon Bell**, associate professor, Sociology
- **Erin Hopkins**, assistant professor of AHRM,, and faculty representative to the E&SC.
- **Chen-Ching Liu**, AEP Professor, ECE
- **Kray Luxbacher**, C.T. Holland professor and assoc. head, MME
- **Sean McGinnis**, associate professor, MSE and director, Green Engineering Program
- **Annie Pearce**, associate professor, BC
- **Peter Sforza**, director, Center for Geospatial Information Technology

STUDENTS (10)

- **Brooke Baugher**, graduate student, former grad assistant in the Office of Sustainability
- **Brandon Burkey**, graduate student representative to the E&SC.
- **Gustavo Ventura Gargioni**, graduate student representative to the E&SC (**withdrew**)
- **Jack Leff**, graduate student representative, GSA at-large
- **Phil Miskovic**, graduate student representative to the Com. on University Support
- **Brogan Dineen**, undergraduate student representative to the E&SC.
- **Drew Harris**, undergraduate student and worker in the Energy Manager's Office.
- **Natalie Koppier**, undergraduate student representative to the E&SC.
- **Jayme Bibbins**, undergraduate, SGA at-large
- **Owen Callahan**, undergraduate, at-large

STAFF (4 non-voting)

- **Blake Bensman**, sustainability manager, Dining Services and Housing/Residence Life.
- **Christopher Kiwus**, associate VP chief facilities officer and ex officio E&SC, CUS
- **Rob Glenn**, director of Virginia Tech Electric Services and facilities representative to E&SC
- **Brandon Hendricks**, assistant director for Dining Services.

COMMUNITY (2 non-voting)

- **Carol Davis**, Town of Blacksburg representative.
- **Shayla Utzinger**, Blacksburg High School liaison

VT CAC 2020 Working Group Subcommittees (+convener, *WG member))

- **Community Engagement Subcommittee** (VT CAC #10): campus involvement during Working Group process (involving stakeholders) and post-WG implementation (engaging campus participants)
 - Todd Schenk*##+
 - Carol Davis*#
 - Emily Satterwhite (Appal Studies)
 - Aparna Cheran# (undergrad, Microbio)
 - Rachel Spector# (undergrad, EnvCons&Soc)
 - Heidi Hahn# (undergrad, EPP)
 - Bryan Hanson (grad school ombudsperson)
 - Alexa Briehl (Dir. Comm. Business Affairs)
 - Sarah Collings Myers" (Comm. Facilities)
- **Climate Justice Subcommittee** (VT CAC #10): opportunity for student advocates to contribute to and monitor WG
 - Shannon Bell*##+
 - Carl Zipper# (CSES retired)
 - Jack Leff* (grad, STS)
 - Ryan Berotti (undergrad, ME)
 - Rachel Spector (undergrad, EnvCons&Soc)
 - Heidi Hahn# (undergrad, EPP)
 - Owen Callahan (undergrad, Psych)
 - Aparna Cheran# (undergrad, Microbio)
 - John Shewchuck# (undergrad, ME)
 - Amber Wendler# (grad, Bio)
 - Erin Nuckols (grad, EDP)
 - Jason Chavez (grad, PoliSci)
 - Shayla Ultzinger*# (BHS student)
- **Renewable Energy Opportunities Subcommittee** (VT CAC #7): faculty/students/staff review renewable energy options including solar, biomass, wind on campus and off-campus VT properties and other sites, and potential partnerships for development.
 - Rob Glenn*##+
 - Sean McGinnis*#
 - Ron Meyers# (Research Tech, UAP)
 - John Randolph*#
 - Chen-Ching Liu# (ECE)
 - John Chermak# (GeolSci)
 - Kim Briele" (Dir, EngAssess)
 - Mary-Ann Ibeziako (AVP, Utilities)
 - Rachel Spector# (undergrad, EnvCons&Soc)
 - Heidi Hahn# (undergrad, EPP)
 - Paul O'Horo# (undergrad, ECE)
 - Nathan Hearne# (undergrad)
- **Peer University Comparison Subcommittee** (VTCAC #1): faculty/students/staff review climate action among peer universities (e.g., in Virginia, ACC, Land Grant institutions) compared to VT:
 - John Randolph*##+
 - Justin Noble (Dir. Internal Audit) or rep
 - Kray Luxbacher (Mining and Minerals) #
 - Ryan Berotti" (undergrad, ME)
- **GHG Inventory Subcommittee** (VT CAC #3, 13): faculty/students/staff review our current practice of monitoring carbon emissions and progress toward our goals.
 - Sean McGinnis*##+(MSE)
 - Drew Harris*# (undergrad, ME)
 - John Randolph*#
 - Kray Luxbacher*# (Mining and Minerals)
 - Rob Lowe# (EnvHealthSafety)
 - Mary-Ann Ibeziako" (Utilities)
 - Gustavo Gargioni*# (grad, AeroEng)
 - Jack Leff*# (grad, STS)
 - Natalie Koppiers*# (undergrad, EPP)
 - Owen Callahan# (undergrad, Psych)
 - Conor Doane# (undergrad, CEE)
 - Marc Stern (FREC)" (continue on list)
- **Energy Opportunities Subcommittee** (VT CAC #4, 7): faculty/students/staff review progress and potential for energy-related issues (electricity efficiency, steam plant, chillers, efficiency and demand reductions, 5-year energy management plan)
 - John Randolph*##+
 - Rob Glenn*#(Dir, VTES)
 - Amanda Morris# (Chem)
 - John Beach#(Dir, Utilities)
 - Kim Briele# (Dir, EngAssess)
 - Mary-Ann Ibeziako (Utilities)
 - Lowell Jesse" (EnergyEng, Facilities)
 - Gaurav Anand# (undergrad, ChemEng)
 - John Shewchuk# (undergrad, ME)
 - Ryan Berotti# (undergrad, ME)

- **Buildings Opportunities Subcommittee** (VT CAC #6, 7): faculty/students/staff review progress and potential for energy efficiency of new and existing buildings (design guidelines, 5-year energy management plan)
 - Scott Kerklo# (Facilities Eng. Ops)
 - Erin Hopkins*# (AHRM)
 - Georg Reichard# (BC)
 - Anamaria Bukvic# (Geog)
 - Julia Gohlke# (Vet Med)
 - Mike Vellines (Const Stds, Facilities)
 - Paul Ely (Capital Const/Renovations)
 - Kim Briele (Eng.Assess.)
 - Emma Lineberry" (undergrad, Arch)
 - Christine Labuski (Soc)
 - Catie Grayson (undergrad, EPP)
 - Erin Nuckols (grad, EDP)
 - Yasmine Sikder (undergrad, ISE)
- **Transportation Opportunities Subcommittee** (VT CAC #11): faculty/students/staff review transportation progress and potential emission reduction (commuting, motor pool, other travel including university business air travel)
 - Nick Quint (Trans. Network Manager)#+
 - Brandon Burkey* (undergrad, Phil)
 - Greg Tew# (Arch)
 - Durelle Scott# (BSE)
 - Janet Rankin# (HNHE, ret)
 - Erik Olsen or Tom Fox (Blacksburg Transit)
 - Kali Casper (Town of Blacksburg planner)
 - Beth Lohman (Blacksburg GW/BW/SW Corridor)
 - Mike Dunn (Trans.Eng. Univ. Planning)
 - Amber Wendler# (grad, Bio)
 - Jordan Torregrosa# (undergrad, ME)
 - Lydia Patton# (Philosophy)
- **Budget and Finance Subcommittee** (VT CAC #14): faculty/students/staff review potential budget and finance mechanisms to achieve prospective VT CAC goals.
 - Nancy McGehee#(Hospitality/Tour. Mngmt)
 - Tim Hodge#(AVP Budget & Finance)
 - Debbie Greer" (SrDir Finance, SVPCBO)
 - Jim Hillman" (Dir. Facilities Finance)
 - Nate Smith# (undergrad, ISE)
 - Development person?
- **Agriculture/Forestry GHG Subcommittee:** faculty/students/staff investigate net emissions from VT NRV land use/ag operations not included in original VT CAC as well as opportunities for emissions reduction and waste digestion/composting.
 - Patrick Hilt#+ (CALS operations)
 - Greg Evanylo # (CSES)
 - Jody Booze-Daniels# (CALS)
 - John Seiler# (FREC)
 - Peter Sforza* (CGIT)
 - Jack Rosenberger" (Campus Landscape Arch)
 - Tessa Hawley (undergrad, AAEC)
 - Nick Copeland
 - David Haak
 - Jamie King
 - Nathan King
 - Kathryn Lewis
 - Adam Taylor
- **Waste/Recycling/Composting and Procurement Subcommittee** (VT CAC #8, 9): faculty/students/staff review progress and opportunities.
 - Blake Bensman*#+ (SustMan. Dning/Housing)
 - Brandon Hendricks*# (AssocDir, Dining)
 - Annie Pearce*#(BC)
 - Greg Evanylo# (CSES)
 - Jody Booze-Daniels# (CALS)
 - Rob Lowe# (EnvHeathSafety)
 - Denny Cochrane# (Sust.Manager)
 - Reed Nagel# (Procurement)
 - Casey Underwood" (Athletics)
 - Jennifer Russell" (Sust.Biomaterials)
 - Greg Canaday" (Bldgs & Grnds)
 - Alan Cummins" (ExDir, MRSWA)
 - Teresa Sweeney" (MRSWA)
 - Amy Klinger# (undergrad, Biochem)"
 - Patrick Hilt
 - Anthony Purcell
- **Structuring Sustainable Choices Subcommittee** (Serve as a support to other subcommittees in tackling institutional behavior)
 - Todd Schenk# (UAP)
 - Alexandra Kahl# (MURP)
 - Drew Harris # (undergrad)
 - Blake Bensman# (SustMan. Dning/Housing)
 - Jack Leff # (grad, STS)
 - Christine Labuski # (Soc)

Glossary—VTCAC

100% renewable electricity: Relying on renewable energy production and/or RECs for all electricity

Behind the meter: Electricity activity (generation, demand response, efficiency) on the customer's side of the meter

Bundled RECs: RECs plus electricity

Carbon credits: Same as carbon offsets

Carbon neutral: Net zero carbon emissions = 0 = emissions – credits/offsets

Carbon offsets: Certificate representing the reduction of one metric ton of CO₂ that can be bought to credit against CO₂ emissions

Carbon sequestration: Proposals for removing CO₂ from the atmosphere, or for preventing CO₂ from fossil fuel combustion from reaching the atmosphere

Climate justice: The recognition that climate change is not just an environmental problem but also an ethical issue, as the nations and people who will suffer the greatest consequences of climate change also tend to carry the least responsibility for causing the climate crisis.

Demand response: reduction of electricity power demand during peak use periods by user or utility

E-waste: Electronic waste and universal “do-not-landfill” waste

Fossil fuel free: eliminate reliance on fossil fuels

Frontline communities/groups: Historically marginalized groups that are disproportionately burdened with the negative consequences of both climate change and the mitigation and adaptation efforts taken to address the climate crisis.

GHG emissions: for the VT 2020 CAC, GHG emissions include CO₂, CH₄, and N₂O by VT operations at Blacksburg campus based on geographic and GHG scope of 2020 CAC. The **geographic scope** includes all Virginia Tech owned lands and buildings on the main campus, all buildings leased by university departments in Blacksburg, and agricultural/forestry operations and lands in the Blacksburg region. The **GHG scope** includes Scope 1 (emissions from campus fuel use and fugitive sources), Scope 2 (emissions related to purchased electricity (generation CO₂ and N₂O, transmission/distribution losses), and Some Scope 3 emissions related to campus behavior (commute driving, transit bus fuel, waste/recycling/compost, water/wastewater, aviation fuel, and commercial business travel).

Green Labs: sustainability program for research labs that spans energy, water, waste, procurement, and user behavior

Net metering: Producer customer (e.g. solar rooftop) relies on grid when needed and excess produced power is sent to the grid and customer pays for only net power from grid

Recycle rate: basic recycling rate = Primary Recycled Materials (PRM) / (PRM + MSW disposed); adjusted recycling rate adds credits to PRM for SW reused and Non-MSW recycled

Renewable energy credits (RECs): Renewable value associated with renewable energy production that can be separated from the energy and sold separately to buyers wishing to increase renewables reliance

RECs additionality: RECs that fund new renewable energy projects

Smart Grid: an electricity network based on digital technology that is used to supply electricity to consumers via two-way digital communication

Sustainable food: Less dependent on red meat and pork and more dependent on poultry, vegetables, grains, nuts

Zero net energy: Super-efficient building with net metered solar rooftop to provide the difference so zero annual net energy from utility

Zero waste campus: campus with a waste diversion rate (waste kept out of landfill) of 90% or more

Virginia Tech for Climate Justice

Demands

Updated 12/17/19

Virginia Tech has a responsibility to the students and the planet to claim our role as a courageous leader for climate justice. We urge Virginia Tech to live up to its reputation as an innovator in the development of tomorrow's technology and to its motto *Ut Prosim* (that I may serve) by establishing strict guidelines and timelines to reduce the university's contribution to climate catastrophe.

The following demands align with the Beyond Boundaries vision, including its [Tech for Humanity](#) initiative, which calls for technology innovation to be guided by values such as equity, ethics, and sustainability.

We Demand:

1. That President Sands make a public statement acknowledging that we are in a climate emergency and that, accordingly, he will advocate for immediate action. This statement will include a denunciation of the Mountain Valley Pipeline, which has already damaged the region's ecologies and, if completed, would emit twice as much greenhouse gas (GHG) as all fixed sources of emissions in Virginia.

(UPDATE 11/8/19: President Sands stated "urgency" but not emergency in his statement on updating the Climate Action Commitment, <https://vtnews.vt.edu/.../11/president-climate-commitment.html>.)

2. That the Virginia Tech Foundation divest from all publicly-traded companies that hold coal, oil, or gas reserves and intend to use or sell them for the purpose of combustion, from all pipelines or other fossil-fuel-related enterprises, and from all financial products that include such companies.

(UPDATE 11/6/19: John Dooley will take our request to the Foundation's January 2020 meeting.)

3. That the university mandate a cap on greenhouse gas (GHG) emissions across all VT facilities, including upstream emissions from energy sources like natural gas. That Virginia Tech's total energy consumption, including with the campus expansion envisioned in the 2047 Master Plan, be capped below the current energy intensity levels, and that the Climate Action Commitment include an annual rate of energy reduction informed by leading peer institutions like UNC Chapel Hill and ongoing UN Climate Action Summits. That Virginia Tech's electric and heating supply to all VT facilities be generated from 100% renewable sources by 2030. That Virginia Tech Electric Service, which serves the Blacksburg campus and 6,000 residential and commercial customers in Blacksburg, provide 100% of its electric supply from renewable sources by 2030. That these transitions be guided by principles of energy democracy, which align

with the “Tech for Humanity” Initiative, and climate justice locally and globally. That once these commitments are in place, President Sands sign on to the SDG [Global Climate Emergency](#) letter. (UPDATED 11/8/19)

4. That Virginia Tech enact comprehensive energy efficiency programming at existing and planned campus facilities informed by strategies from the U.S. Department of Energy’s 2018 Zero Energy University Campuses Progress Update; formalize a commitment to prioritize the renovation of existing buildings before demolition and new construction; ensure all new construction meet net-zero energy ready standards by achieving a source energy use intensity (EUI) of 75 kBtu/ft²yr or less in third party energy simulations with verification through post-occupancy evaluations. (UPDATED 11/8/19).
5. That Virginia Tech appoint student representatives--selected by well-informed members of established student-led environmental organizations--as voting members on all bodies that make decisions concerning energy use, the Climate Action Commitment, and issues with climate justice implications.
6. That Virginia Tech initiate a comprehensive research initiative focused on distributed renewable energy development and energy efficiency. That Virginia Tech expand funding for Cooperative Extension to include community training programs and resources for weatherization, energy efficiency, and renewable energy creation in homes and small businesses throughout Southwest Virginia. That such programs be guided by principles of energy democracy and climate justice locally and globally. (UPDATED 11/8/19)

VT Faculty Senate Resolution - Climate Change (Version: October 25, 2019)

Whereas opinions among faculty senators—and Virginia Tech faculty in general—vary, but there is broad consensus, based on extensive, independent, scientific studies, that climate change poses an existential threat, and that we have a narrowing window of time to curb greenhouse gas emissions in order to avoid devastating increases in the global temperature and acidification of ocean waters.

Whereas Virginia Tech is responsible for significant greenhouse gas emissions and other environmental impacts, and thus has a moral responsibility to act sustainably, including reducing our emissions;

Whereas Virginia Tech students, staff and faculty are calling for action to address climate change and improve upon our environmental footprint in other areas;

Whereas from renewable energy to electric cars, sustainable farming to environmental policy, we are proud of the research our faculty and students are doing to address climate change and other environmental problems;

Whereas the climate crisis is a global issue and taking leadership through action serves Virginia Tech's goal of setting an example and leading innovation as a global land-grant university;

Whereas there are myriad opportunities for virtually all Virginia Tech programs to contribute meaningfully to the development and support of the technologies, policies and socio-cultural shifts necessary to tackle climate change and other environmental problems;

Be it resolved that the Virginia Tech Faculty Senate calls upon the university administration to move swiftly to make a more serious commitment to address our greenhouse gas emissions and to advance environmental stewardship in general;

Be it further resolved that as part of this commitment we ask the administration to engage the wider community in a process of updating and then implementing our greenhouse gas and other environmental commitments;

Be it further resolved that we call for this commitment to include a comprehensive review of Virginia Tech's direct and indirect carbon footprint, and the development and implementation of a plan to significantly reduce our greenhouse gas emissions on a timescale that reflects the urgency of this issue;

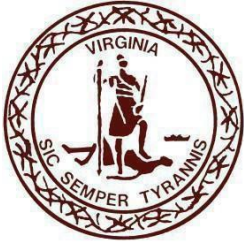
Be it further resolved that we call for this plan to include a roadmap that will lead us to 100% renewable energy usage for our electricity, heating, and transportation services by 2025;

Be it further resolved that we call for this plan to include improvements to our purchasing and waste management practices to both reduce greenhouse gas emissions and lessen our impacts on the environment;

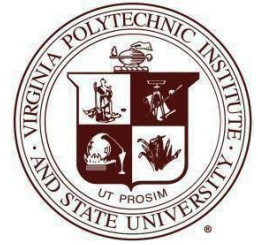
Be it further resolved that we call for this plan to include meaningful and substantial increases in energy efficiency achieved by making it a rigorous and mandatory consideration in all major construction and renovation projects on campus, as well as through a separate program to review and improve energy efficiency in existing buildings and infrastructure;

Be it further resolved that the faculty senate calls on the university to provide greater support for research, teaching and outreach activities that facilitate action to address climate change and other environmental issues;

Be it further resolved that the faculty senate calls upon the Virginia Tech Foundation to find ways to use the endowment to make investments that support and encourage firms to make the changes needed to avert a climate-change disaster in the coming years and advance environmental stewardship.



VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY



2019 JEANNE CLERY ACT REPORT

*THE ANNUAL CAMPUS SECURITY AND FIRE SAFETY REPORT FOR
ALL*

VIRGINIA TECH CAMPUSES
September 2020



**CAMPUS SAFETY:
A SHARED RESPONSIBILITY**

The Virginia Tech Police Department is a Nationally Accredited Law Enforcement Agency

[Table of Contents](#)

Virginia Tech Blacksburg Campus

Mission Statement / University Overview	4
ASR Preparation Policies Campus	5
Security Authorities Virginia	5-6
Tech Police Department.....	6-7
Emergency Alerts	7
Timely Warnings	7-8
Missing Persons	8
Security/Access to Campus Buildings	8-9
Campus Facilities Maintenance	9
Alcohol/Drug Policies	9-10
Pastoral & Professional Counselors	10
Emergency Notification / Preparedness	10-12
Drills/Exercise Chart.....	12
Emergency Evacuation Procedures	13-16
Secure-in-Place Procedures	14
Shelter-in-Place Procedures.....	14
Crime Reporting	16
Emergency Assistance.....	16
Confidential Reporting/Anonymous Reporting	17
Response to Reported Incidents	18
Services & Prevention Information / Safety Security Programs	18-19
Operation Identification, Fingerprinting Services.....	19
Safe Ride	19
Title IX Training	19-22
Sexual Assault Training	22
Sexual Assault Definitions/Prevention.....	22-26
Getting Help & Reporting	26

Sexual Assault/VAWA Procedures & Resources	27-32
Student Conduct Sanctions	32-33
Title IX Employee Rights.....	34-36
Title IX Coordinator/Title IX Contacts	36
Sex Offender Registry.....	37-38
Important Phone Numbers	39
Safety Tips / Risk Reduction	40
VAWA Prevention Programs... ..	41-43
Victims' Rights & Options.....	44-45
Crime Definitions/Geography	46-47
Crime Statistics Chart	48
Fire Safety	49-60
Appendix A: Blacksburg Campus Map	61
Appendix B: Blacksburg Extended Jurisdiction Map	62

ALL OTHER CAMPUS LOCATIONS

VT Research Center Arlington	63-71
VT Carilion	72-82
Hampton Roads Education Center.....	83-92
Marion DuPont Scott Equine Medical Center	93-102
Middleburg Agricultural Research & Extension Center	103-116
Northern Virginia Center.....	117-126
Richmond Center	127-135
Roanoke Higher Education Center	136-145
Southwest Virginia Higher Education Center	146-154
Steger Center for International Scholarship	155-168
Washington-Alexandria Architecture Center.....	169-182



Mission Statement

Inspired by our land-grant identity and guided by our motto, *Ut Prosim* (That I May Serve), Virginia Tech is an inclusive community of knowledge, discovery, and creativity dedicated to improving the quality of life and the human condition within the Commonwealth of Virginia and throughout the world.

University Overview

Virginia Tech's main campus in Blacksburg has 2,600-acres, 213 buildings, an airport, Lane Stadium, Cassell Coliseum, the Moss Arts Center, and an adjacent research park.

As the university meets the global demands of the future, the Blacksburg campus is constantly adapting to fulfill learning and research needs.

On one corner of the campus, a collection of buildings near the downtown area form the Creativity and Innovation District, which will unleash creativity, spark vision and innovation, and instill an entrepreneurial mindset to empower tomorrow's leaders.

On another part of campus, the Global Business and Analytics Complex will cement the university as a world leader in developing methods for analysis and interpretation, using data to address problems faced by industry and society. The complex will bring together students and faculty who share a passion for an analytic approach to problems in collaborative work environments for transdisciplinary research and hands-on learning.

Virginia Tech's Blacksburg campus may seem large at first. But ask any Hokie, and they'll gladly share a memory from the Drillfield, the Duck Pond, Lane Stadium, or one of the other iconic landmarks – covered in Hokie Stone – that form this campus and serve as a home where you're always welcome.

Virginia Tech Annual Campus Security and Fire Safety Report

The Virginia Tech Police Department has been designated as the department responsible for compiling and publishing the university's annual security and fire safety report. This document is intended to serve as the annual security and fire safety report, as required by the Higher Education Opportunity Act and the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act. The purpose of the report is to provide information about security on campus, to include: campus and community crime statistics, fire statistics and safety information, policy information, safety tips, resource phone numbers and a brief overview of the many services the university provides. A map of the campus can be found online at: <https://www.maps.unirel.vt.edu/interactive> and has been added to this report as Appendix A. Keep this information where it can be easily located; it provides you with a useful reference source of information.

Policies for Preparing the Annual Disclosure of Crime Statistics

Information for this report is compiled from reports provided by campus security authorities including, but not limited to, the Office of Emergency Management, Office of Student Conduct, Environmental Health and Safety, the Department of Human Resources, the Dean of Students Office, the Virginia Tech Women's Center, and the Office of Residence Life. Statistics are also compiled from law enforcement agencies in jurisdictions where Virginia Tech owns property, leases property or those with jurisdiction on adjacent property. Information for the main campus in Blacksburg was obtained from the Blacksburg Police Department, the Montgomery County Sheriff's Office, the Christiansburg Police Department, the Virginia Department of Alcoholic Beverage Control, and the Virginia State Police.

Separate Campuses

All policy statements contained in this report apply to all campuses unless otherwise indicated.

Campus Security Authority (CSA)

Under Federal Law CSAs are required to report a crime.

"Campus security authority" is a Clery-specific term that encompasses four groups of individuals and organizations associated with an institution.

- A campus police department or a campus security department of an institution.
- Any individual or individuals who have responsibility for campus security but who do not constitute a campus police department or a campus security. (e.g., an individual who is responsible for monitoring the entrance into university property)
- Any individual or organization to which students and employees should report criminal offenses.
- An official of an institution who has significant responsibility for student and campus activities, including, but not limited to, student housing, student discipline and campus judicial proceedings. An official is defined as any person who has the authority and the duty to take action or respond to particular issues on behalf of the institution.

If someone has significant responsibility for student and campus activities, he or she is a campus security authority.

Individuals who want to report crimes for inclusion in the Annual Report, or for the purpose of making timely warning reports, should report them to the Virginia Tech Police Department, 540-231-6411, NRV Emergency Communications Authority, 911 emergency or 540-382-4343 for non-emergency, or the Title IX Coordinator, 540-231- 1824. Virginia Tech is committed to providing the members of the campus community and visitors with the safest and most secure environment possible: however, even the most extensive initiatives cannot succeed without the awareness and cooperation of the community members who work, study, and live on campus.

Virginia Tech Police Department

The Virginia Tech Police Department (VTPD) is a nationally and internationally accredited professional law enforcement organization staffed by highly trained men and women. The department consists of 51 sworn officers, 8 security officers, 6 security center representatives and 3 full time support staff employees. The Virginia Tech Police Department operates 24 hours a day and provides full police services to the university community. Sworn officers are state-certified and empowered to enforce all federal, state, and local laws on university property, as well as VT policies, and have full authority to make arrests and carry firearms. In addition to patrol, investigation, and crime prevention, the department answer calls for assistance, such as motorist assists. Campus Security officers are state- certified, unarmed and do not have authority to make arrests. Their main purpose is to maintain peace and order. They are responsible for building security, and the safety, security and welfare of students, faculty, staff and visitors on campus.

Virginia Tech police officers have jurisdiction and respond to incidents on the immediate campus in Blacksburg, Virginia, property owned or leased by Virginia Tech, and university related corporations in the Blacksburg area. The Virginia Tech Police Department has jurisdiction on any other public or private institution of higher learning, if requested by the institution. A concurrent jurisdiction agreement was granted by the Circuit Court Judge of Montgomery County and includes the Towns of Blacksburg and Christiansburg, as well as the County of Montgomery. Additionally, the university has several mutual aid agreements with local jurisdictions.

The Virginia Tech Police Department also has a specified enhanced patrol zone in downtown Blacksburg. Officers have the authority to conduct routine patrol and make arrests in the enhanced patrol zone. A map displaying these boundaries has been added to this report as Appendix B.

The Virginia Tech Police Department maintains a close working relationship with the Virginia State Police, the Blacksburg Police Department the Montgomery County Sheriff's Office, and the Christiansburg Police Department, as well as other law enforcement agencies throughout the state. The Virginia Tech Police Department has a written Memorandum of Understanding with the Blacksburg Police Department and the Virginia State Police, as required by Virginia State Law, concerning sexual assault and death investigations. The Virginia Tech Police Department does not have any other written Memorandum of Understanding with any other law enforcement agency concerning the investigation of alleged criminal incidents, as the department has the responsibility and authority to conduct all criminal investigations for crimes that occur on Virginia Tech owned, leased, or controlled property. The monitoring and recording of criminal activity in which students engaged at non-campus locations of officially recognized student organizations, including those with non-campus housing facilities is done through communications with the Blacksburg Police Department, and other local law

enforcement agencies based on addresses of recognized student organizations. As a participant in the National Crime Information Center (NCIC) and the Virginia Crime Information Network (VCIN), the Virginia Tech Police Department is able to transmit and receive crime information with other police agencies throughout the United States. Through its membership in related professional organizations, the department is able to keep abreast of new or developing ideas and has a medium for the exchange of information on law enforcement issues. The Virginia Tech Police Department has a news release called “Daily Crime and Fire Log” that is published each day with the exception of weekends, holidays and when the university is closed. The “Daily Crime and Fire Log” lists actual fires in residence halls and all incidents of crime within the past 24 hours, or over the weekend. The report is available for review 24 hours a day at the Virginia Tech Police Department Security Center currently located at 330 Sterrett Drive, Blacksburg, Virginia 24061 and on the department’s website at www.police.vt.edu. The Blacksburg Police Department notifies the university, via a Referral of Student Conduct, when students or university recognized student groups are involved in criminal activities off campus within the Town of Blacksburg.

In June, 2016 the New River Valley Emergency Communications Regional Authority (NRV911) officially opened. NRV 911 is comprised of Montgomery County, the Towns of Blacksburg and Christiansburg and Virginia Tech to provide quality and reliable 911 dispatch and emergency communication services to the community. This partnership promotes interoperability, collaboration and commitment to excellence in public safety to foster a safe environment and promptly respond to the needs of citizens. The centralized 911 dispatch center more quickly and accurately routes calls to the appropriate local emergency medical, fire and law enforcement agencies by reducing transfers, saving valuable response time and, therefore, lives.

Policies and Regulations

Emergency Alerts

Virginia Tech’s Emergency Notification System (ENS), more commonly known as VT Alerts, is in place to provide rapid incident communication through multiple media outlets to the Virginia Tech community. The ENS addresses the reporting requirements of the 2008 Higher Education Opportunity Act and Section 23-9.2:11, Code of Virginia, as amended.

Timely Warnings/ Crime Alerts

Timely Warnings / Crime alerts will be provided to the community in the event of a reported crime, either on or off-campus, that, in the judgment of the Chief of the Virginia Tech Police Department or a designee, constitutes an ongoing or continuing serious threat to the university community. The Clery crimes for which *Timely Warnings / Crime alerts* include, but are not limited to, major incidents of Arson, Murder & Non-negligent Manslaughter, Burglary, Robbery, Aggravated Assault, Motor Vehicle Theft and Sex offenses (considered on a case-by-case basis depending on the facts of the case, when and where the incident occurred, when it was reported, and the amount of information known by the Chief of Police or designee).

In cases involving Sexual Assault, they are often reported long after the incident occurred, thus there is no ability to distribute a “timely” warning notice to the community. All cases of sexual assault, including stranger and non-stranger/acquaintance cases, will be assessed for potential issuance of a Timely Warning Notice. Aggravated Assault cases involving assaults among known parties, such as two roommates fighting which results in an aggravated injury, will be evaluated on a case-by-case basis to determine if the individual

is believed to be an ongoing threat to the larger Virginia Tech community.

The Timely Warnings / Crime Alerts are generally written by a supervisor or others with the Virginia Tech Police Department as designated by the Chief of Police and are typically distributed to the community via email to anyone who has a vt.edu email address, by the Virginia Tech Police Department or University Relations. If someone from the Virginia Tech Police Department is unavailable, there are several administrators in University Relations who can initiate the email system. The Timely Warnings / Crime Alerts are also posted on the Virginia Tech Police Department website and may be posted on social media outlets. Updates to the Virginia Tech community about any particular case resulting in a Timely Warning / Crime Alert will normally be distributed via email.

Timely Warning Notices will be distributed as soon as pertinent information is available, in a manner that withholds the names of victims as confidential, and with the goal of aiding in the prevention of similar occurrences.

Missing Persons

If a member of the University community has reason to believe that a student who resides in on-campus housing is missing, he or she should immediately notify the NRV911 at 540-382-4343. The NRV911 will notify the Virginia Tech Police Department to generate a missing person report and initiate an investigation. If members of the VT community believe that a student has been missing for 24 hours, it is critical that they report that information to the VTPD by calling 540- 231-6411. Individuals can also notify the Dean of Students at 540-231-3787 or the Office of Student Conduct at 540-231-3790.

Missing Persons Policies/ Procedures

The Virginia Tech Police Department will notify any missing student's confidential contact(s), if provided, within 24 hours of the determination that the student is missing. In the event a student is under 18 years of age and not emancipated, the Virginia Tech Police Department must notify a custodial parent or guardian within 24 hours of the determination that the student is missing, in addition to notifying any additional contact person designated by the student. As required by law, for all missing students, the Virginia Tech Police Department will notify the local law enforcement agency within 24 hours of the determination that the student is missing, unless the local law enforcement agency was the entity that made the determination that the student is missing.

In addition to registering an emergency contact, students residing in on-campus housing have the option to identify, confidentially, an individual to be contacted by Virginia Tech in the event the student is determined to be missing for more than 24 hours. Students who wish to identify a confidential contact can do so through the Hokie Spa web site (www.hokiespa.vt.edu). Annually updating emergency contact information is required through Registrar's office. This confidential contact information will be accessible to authorized campus officials and law enforcement only, and will not be disclosed outside of a missing person investigation.

Security and Access to Campus Buildings

Security and access control design standards have been developed for new and renovated buildings owned by the university. Designs are reviewed by the Virginia Tech Police Department for compliance with security requirements. Exterior doors in all residence hall buildings remain locked at all times except in those buildings that also house university offices. During special circumstances such as student move in, exterior entrances to residence halls are scheduled to be unlocked during specified time periods. Normally, residents of the building and their escorted guests, as well as authorized persons, access the building by utilizing the card access system.

Resident Advisors (RAs) and Campus Security Officers make rounds during evening hours to verify that exterior entrances are locked and secured. Academic and administrative buildings are open to the public during operating hours and are generally secured after operating hours and during extended breaks. For information about the access protocol for a specific building, see the building manager, a department head, or contact the Virginia Tech Police Department at 540- 231-6411. All campus buildings are patrolled daily by the Virginia Tech Police Department in order to monitor and address any security measures needed.

Virginia Tech has designed policies and regulations in order to create a safe and harmonious environment for the members of its community. All campus community members and visitors of the university are required to obey these regulations. These policies not only reflect the university's high standards of conduct, but also local, state and federal laws. Observed and enforced, regulations create a significant degree of safety for the university community.

Security Considerations used in the Maintenance of Campus Facilities

Campus Security Officers also make reports of malfunctioning lights and other unsafe physical conditions that need to be addressed. Information in those reports are forwarded to the appropriate facility/ department for follow-up. Facilities and landscapes are maintained in a manner that minimizes hazardous conditions. When facilities receive maintenance or renovations, security measures such as lighting, landscape and entrance security are included, if it is deemed necessary by the Office of the University Architect and the Virginia Tech Police Department Crime Prevention Specialist. Maintenance issues can be reported to the Security Center by calling 540-231-6411.

Alcohol and Drugs

Virginia Tech recognizes that the misuse and abuse of alcohol is a persistent social and health problem of major proportion in our society and that it interferes with the goals and objectives of any educational institution. Accordingly, Virginia Tech strongly discourages illegal or otherwise irresponsible use of alcohol. Members of the university community are responsible for their decisions regarding their use of alcohol as well as their behavior which occurs as a result of these decisions. In this context, Virginia Tech created a comprehensive policy on Alcoholic Beverages and Other Controlled Substances. This policy can be found in the University Policies for Student Life.

Alcohol Policy

Virginia Tech fully enforces the alcohol regulations of the Commonwealth of Virginia. All state laws apply to Virginia Tech students, faculty, staff, and visitors while in the Commonwealth of Virginia. These laws and the VT policies prohibit possession, use, sale, distribution, and consumption of all alcoholic beverages by persons less than 21 years of age while in the Commonwealth of Virginia and are enforced by the Virginia Tech Police Department. To maintain conditions conducive to a learning environment, and to ensure that all community members are in a safe, productive environment, the university further restricts the use of alcohol within specified criteria. For more comprehensive details, please refer to the University's Policy on Alcoholic Beverages.

Alcohol Effects

Alcohol is a depressant that progressively affects different brain areas. Alcohol first affects the part of the brain that controls inhibitions. When people lose their inhibitions, they may talk more, get rowdy, and do things that they would have otherwise not done. After several drinks, they may feel "high," but really, their nervous system is slowing down. Alcohol acts fast because it moves directly into the bloodstream from the small intestine. It takes approximately one hour for the liver to process the alcohol in one standard drink.

Drug Abuse Effects

Learning to recognize the physical or behavioral signs of drug abuse can aid in preventing the problem from getting worse. Changes in appearance, such as bloodshot or glazed eyes, dilated or constricted pupils, abrupt weight changes, bruises, infections, or other physical signs at the drug's entrance site on the body, can be clues to possible drug abuse. Other clues include increased irritability, lethargy, and depression, sudden changes in a social network, dramatic changes in habits, financial problems, and involvement in criminal activity. Drugs can affect almost every organ in your body and if you already have health issues it can make them worse.

Controlled Substances

The university strictly prohibits the illegal use, sale or possession of any controlled substance. Virginia Tech Police Department fully enforces both federal and state drug laws. The illegal use of controlled substances is incompatible with the goals of an academic community. Students found guilty of possessing, using, distributing, or selling controlled substances will face serious disciplinary action that may include suspension and /or dismissal from the university.

Violations of state law should be reported to the NRV911 who will contact the Virginia Tech Police Department to take appropriate legal actions. In compliance with the Drug Free Schools and Communities Act, Virginia Tech publishes information regarding the University's educational programs related to drug and alcohol abuse prevention: sanctions for violations of federal, state, and local laws and University policy; a description of health risks associated with alcohol and other drug use; and a description of available treatment programs for Virginia Tech students and employees. A complete description of these topics, as provided in the University's annual notification to students and employees, is available online. For more comprehensive details, please refer to the University's Policy for a Drug Free University at: <https://policies.vt.edu/assets/1020.pdf>

Pastoral and Professional Counselors

The Women's Center at Virginia Tech employs counselors. Crimes reported to the Women's Center are confidential but information such as the location, date, and offense type are communicated to the Police Department for inclusion in the annual crime statistics. Counselors at the Cook Counseling Center provide information to survivors about other community services available to them as well as the procedures for reporting crimes to the Virginia Tech Police Department. The Director at Cook Counseling is required to report Clery crimes. There are no formal procedures that require professional counselors to inform persons they are counseling of any procedures to report crimes on a voluntary and confidential basis for inclusion in the annual disclosure of crime statistics. Virginia Tech is not required to provide a timely warning for non-Clery crimes or crimes reported to a pastoral or professional counselor.

Emergency Response and Evacuation Information Compiled by the Office of Emergency Management

Emergency Notifications

Virginia Tech will immediately notify the campus community upon the confirmation of a significant emergency or dangerous situation involving an immediate threat to the health or safety of students or staff occurring on the campus. In accordance with the Higher Education Act of 1965 as amended and Section 23.1-803 of the Code of Virginia, the university has implemented a comprehensive communications system, "VT Alerts," to provide prompt warning notifications and alerts of immediate threats to the health and safety of members of the campus community using a variety of methods. The "VT Alerts" system includes: email

notices: phone, cellular phone, and text messages; classroom electronic message boards; university website notices; campus loud speakers / sirens, building fire alarm annunciators, desktop alerts and twitter feed @vtalerts. In the event all systems are non-functional, face-to-face communications, Sirens/PA or other channels as developed would be utilized. Protocols for emergency notifications, are outlined in the Emergency Notification Systems Protocol document.

Parents and members of the larger community are not eligible to sign up for all of the immediate notifications through Virginia Tech Alerts. However, all Hokie family members, along with members of the community, are able to subscribe to receive real-time VT Phone Alerts to stay informed about the Blacksburg campus and are encouraged to do so. To subscribe, text **HokieFam** to **226787**.

Hokie family and community members are also encouraged to download the free **Hokie Ready mobile safety app**. App users can access important just-in-time emergency information, connect with Virginia Tech emergency services, and navigate the Blacksburg campus quickly and safely. To download the app, search "**Hokie Ready**" in your app store

Information will also be published on the University website during a campus emergency. The Virginia Tech Police Department is primarily responsible for confirming that there is a significant emergency or dangerous situation on campus that could cause an immediate threat to the health and safety of the members of the campus community.

There are other departments on campus that could be in a position to confirm certain types of emergencies. The Office of University Relations, the Virginia Tech Police Department, Virginia Tech Emergency Management and the Associate Vice President for Safety and Security have access to the systems to notify the campus community of immediate threats that have occurred and necessitate evacuation, shelter or secure in place or other action on the part of students, employees, and campus visitors. These departments have the authority to determine the appropriate region or regions of the university community that will receive an alert, to determine the content of the alert, and to initiate the notification system, when applicable. The institution typically provides follow-up information to the community using appropriate communication channels that may include the same systems that were used to send out the original alert.

One of the listed departments above will, without delay, take into account the safety of the community, determine the content of the notification and initiate the notification system, unless issuing a notification will, in the professional judgment of first responders, compromise efforts to assist a survivor or to contain, respond to, or otherwise mitigate the emergency. The typical first responders to an incident that causes an immediate threat to the health and safety of the Virginia Tech community include the Virginia Tech Police Department, Virginia State Police, Blacksburg Police Department, Montgomery County Sheriff's Office, Christiansburg Police Department, Virginia Tech Rescue and the Blacksburg Fire and EMS Department and Virginia Tech Emergency Management. Annually, the Offices of University Relations and Human Resources provide communications to the university community regarding university procedures for authorized closings and receiving emergency alerts. Additional information about the "Alert" process can be found on the university VT Alerts web site.

Emergency Preparedness

Emergency preparedness and information on what to do in an emergency can be accessed by searching “Be Hokie Ready” from the university web site. In an emergency it is important to remember three important things; do not take unnecessary risks, **there is no substitute for remaining calm, and always use common sense.**

University departments are responsible for developing Emergency Action Plans (EAP) and Continuity of Operations Plans (COOP) for their staff and areas of responsibility. The University conducts numerous emergency response exercises each year, including tabletop exercises, functional exercises, drills and tests of the emergency notification systems on campus. These tests are designed to assess and evaluate the emergency plans and capabilities of the institution. Drills and exercises completed during 2019 are listed in table 1. In addition to exercises and drills listed, a silent test of the VT Alerts system is conducted twice daily.

Location	Date	Topic	Description of Exercise	Announced or Unannounced
All Locations -	2/25/2019	VT Alerts	Drill	Announced
VT Main Campus - Alternate EOC Drill	5/24/2019	Response & Recovery	Drill	Announced
VT Main Campus - Student Engagement & Campus Life	5/30/2019	Active Assailant	Tabletop	Announced
VT Main Campus - Joint Information Center	6/12/2019	Response & Recovery	Tabletop	Announced
All Locations	9/12/2019	VT Alerts	Drill	Announced
VT Main Campus - Environmental Health & Safety	10/3/2019	Select Agent Program	Table top	Announced
Virtual with National Capital Region & Main Campus - VT/UVA Joint Building Occupancy	10/23/2019	Response, Evacuation & Recovery	Tabletop	Announced
VT Richmond Center - VT/UVA Joint Building Occupancy	11/7/2019	Response, Evacuation & Recovery	Tabletop	Announced
VT Main Campus - Fall Commencement Workshop	12/3/2019	Situational Awareness	Workshop	Announced
VT Main Campus - Learning Culture Institute	12/6/2019	Response & Recovery	Tabletop	Announced
VT Main Campus - Provost Office	12/12/2019	Office Displacement	Tabletop	Announced

The Virginia Tech Police Department, Virginia Tech Emergency Management and other critical university departments are trained in the Incident Command system and response to campus emergencies. When a serious incident occurs that causes an immediate threat, to the health, safety and security of the Virginia Tech community (Blacksburg campus) responding agencies include: the Virginia Tech Police Department, Virginia State Police, Blacksburg Police Department, Montgomery County Sheriff’s Office, Christiansburg Police Department, Virginia Tech Rescue and the Blacksburg Fire, Blacksburg Volunteer Rescue Department,

Virginia Tech Emergency Management, as well as other university departments and jurisdictions. These agencies work together to manage the incident. At other campuses first responders from local jurisdictions will manage initial incident response.

General information about the emergency response and evacuation procedures for Virginia Tech is publicized each year and is on the Virginia Tech Emergency Management website and as part of the institution's Clery Act compliance efforts. Virginia Tech will notify the university community of its emergency notification protocols, emergency response and evacuation procedures via email, in conjunction with at least one announced or unannounced drill or exercise each calendar year. Each test is documented and includes a description of the exercise, the date and time of the exercise, and whether it was announced or unannounced. Information related to emergency notifications and emergency guidelines can be found at <http://www.emergency.vt.edu>. Information related to evacuation procedures can be found at <http://www.ehss.vt.edu>.

Emergency Management Procedures



GENERAL PREPAREDNESS AND SAFETY TIPS

Being prepared is every Hokies' responsibility. Here are some tips to help you be Hokie Ready!

- » Remember to sign-up for VT Phone Alerts at www.alerts.vt.edu. Download VT Desktop Alerts to your personal computer.
- » Always lock your door to protect yourself and your property.
- » Create a contact in your cell phone called I.C.E. (in case of emergency) with your emergency contact information or download an I.C.E. application for your phone.
- » Get to know where blue light phones are located – they connect directly to the Virginia Tech Police.
- » Use Virginia Tech Safe Ride to catch a ride after dark. Call 540-231-SAFE (7233).
- » Get a kit, make a plan, and stay informed. Find out how at www.emergency.vt.edu.
- » Protect yourself from identity theft by protecting your Social Security number, creating strong passwords, and using trusted internet sites.



HOW DO I REPORT AN EMERGENCY?

Dial 911 from your cell phone or campus phone when you need Police, Fire, or Emergency Medical Services. Remain calm – your actions influence others.

- » Tell the dispatcher you are at Virginia Tech and give the exact address or building.
- » Give your full name and the telephone number from which you are calling, in case you are disconnected.
- » Describe the nature of the emergency (describe clearly and accurately).
- » Remain calm and do not hang up as additional information may be needed. If possible, have someone else meet emergency personnel outside of the building.



WHAT IF THERE IS A MEDICAL EMERGENCY?

Provide plenty of space for the victim and emergency personnel.

- » Call 911. Try to have someone escort emergency medical personnel to the scene.
- » Unless they are in immediate danger, do not move any victims until emergency personnel arrive.
- » If properly trained, give appropriate first aid and/or CPR until emergency personnel arrive.



HOW DO I SECURE-IN-PLACE?

When it is necessary to secure-in-place, you will be the safest by placing a locked door or other barricade between you and the associated violence or danger.

- » Remain calm.
- » If you are outside during a secure-in-place emergency you should seek cover in the nearest unlocked building.
- » If the buildings in the immediate area have exterior doors that have been locked, continue to move away from the danger, seek cover, move to another building, or leave campus if it is safe to do so.
- » Once inside, find an interior room and lock or barricade the doors.
- » To minimize vulnerability, turn off lights, silence phones, draw blinds, and move away from windows.
- » Await further instruction from VT Alerts and emergency personnel.
- » Do not leave until an "All Clear" is received.

WHAT IF SOMEONE WANTS TO ENTER A SECURE AREA?

If there is any doubt about the safety of the individuals inside the room or building, the area needs to remain secure. Allowing someone to enter a secure location may endanger you and others. Use good judgment. If there are individuals outside the secured door who wish to get in, several factors should be considered to determine if it is safe:

- » Can you see the area outside the door to determine that someone is not lying in wait? Is it a trap?
- » If a physical description of the subject was given in the secure-in-place alert, consider similarities such as age, race, clothing description, height, weight, sex, hair and eye color.

If the description is made to let a person in, consider the following:

- » Have the person leave anything he or she is carrying (a backpack, laptop case, package, etc.) on the ground, outside of the secure area.
- » Have the person lift his or her shirt, coat, and/or jacket until the waistline is visible and rotate 360 degrees to see if he or she is concealing a weapon.

Remember, always use common sense. There are exceptions to all guidance and prescribed directions.

HOW DO I SHELTER-IN-PLACE?

Shelter-in-place events are usually weather related emergencies. When it is necessary to shelter-in-place, you will be safest by moving inside to a building space that protects you from the danger. Do not lock doors behind you as others may also need to shelter-in-place.

- » Remain calm.
- » Immediately seek shelter inside the closest sturdy building. Do not wait until you physically see a tornado or severe weather event to react.
- » Resist the temptation to go outside and check the weather conditions yourself.
- » Once inside, stay away from windows, glass, and unsecured objects that may fall.
- » Seek shelter in interior rooms and corridors.
- » Avoid large freestanding expanses such as auditoriums and gymnasiums.
- » Do not use elevators.
- » Await further instruction from VT Alerts and emergency personnel.
- » Do not leave until an "All Clear" is received.

During a tornado, seek shelter on the lowest level possible. If warranted, consider crouching near the floor and seeking additional shelter under a sturdy desk or table, or cover your head with your hands.



WEATHER DEFINITIONS

- » **Watch:** Conditions are favorable for the development of severe weather. Closely monitor the situation in case conditions worsen.
- » **Warning:** Severe weather has been observed. Listen closely to instructions provided by weather radios, emergency officials, and other alert mechanisms. Seek shelter immediately.



HOW DO I EVACUATE CAMPUS BUILDINGS?

Evacuation routes are posted in building hallways, usually near stairwells or exits.

- » Remain calm and always use commonsense.
- » Know at least two evacuation routes. Look for illuminated EXIT signs.
- » Remember, when the fire alarm sounds – you must evacuate. Do not use elevators unless authorized to do so by emergency personnel.
- » Know where fire extinguishers and manual pull stations are located.
- » Encourage others to evacuate with you – do not wait for those who refuse to leave.
- » Provide Resident Hall Advisors and emergency personnel the location of people still in the building.
- » Move at least 50 feet away from the building to provide space for emergency personnel.
- » If you have questions about special assistance, contact Services for Students with Disabilities (540- 231-3788). You may be asked to be a 'buddy' by an individual with a disability. In an emergency, a buddy helps a person with a disability.



LOOK OUT FOR YOURSELF AND YOUR FRIENDS

- » Trust your instincts – if it feels wrong, it probably is.
- » Never drink and drive and don't let your friends do it either!
- » Use a buddy system. Make sure all friends that arrived are accounted for when you head home.
- » You are not alone at Virginia Tech. If you or a friend are feeling stressed or having difficulties coping, reach out and get assistance immediately:
 - » The Virginia Tech Women's Center (540- 231-7806)
 - » The Dean of Students (540-231-3787)
 - » Cook Counseling Center (540-231-6557)
 - » Virginia Tech Police (540-231-6411)



WHEN VENTURING INTO THE GREAT OUTDOORS

Outdoor activities are abundant in the New River Valley.

- » Make an itinerary and give a copy to someone who is staying behind.
- » Check the weather before venturing out.
- » Have an appropriate first aid kit.
- » Don't forget about food and water – bring more than you think you may need.
- » Carry a compass and map or even better – a GPS.
- » When in the forest, especially during hunting season, wear blaze orange to increase your visibility.
- » Never swim alone. Be extra careful when swimming in the river – currents can be deceiving.
- » When boating, canoeing, rafting, or tubing – use a personal flotation device.

STAY INFORMED

Use these outlets to stay up-to-date on what to do before, during, and after an emergency.

- » **Virginia Tech Emergency Management**
 - www.emergency.vt.edu | @BeHokieReady
- » **Virginia Tech Police Department**
 - www.police.vt.edu | @VaTechPolice
- » **VT Alerts**
 - www.alerts.vt.edu | @vtalerts
- » **Virginia Tech News**
 - www.vtnews.vt.edu | @vtnews
- » **National Weather Service**
 - www.weather.gov | @NWSBlacksburg



Emergency Evacuation Procedures

The Office of Fire Safety located within the Environmental Health & Safety department along with the Division of Student Affairs office of Residential Programs work together each year to provide fire and life safety education to students living on campus. Each occupied residence hall is required to conduct a quarterly fire drill in compliance with the Commonwealth of Virginia fire code. Thus, the emergency response and evacuation procedures are tested at least twice each year and, for some of the buildings, four times a year. Each year Area Coordinators, Resident Directors and Resident Assistants are required to attend fire and life safety training during their orientation in August. The purpose of the drills is to provide all residents and staff an opportunity to practice what to do in the event there is ever a real fire or other evacuation emergency. These drills prepare building occupants for an organized evacuation in case of a fire or other emergency. Evacuation drills are a way to educate and train occupants on fire safety issues specific to their building. During the drill, occupants familiarize themselves with procedures and the location of exits and the sound of the fire alarm. Alarms and other components of fire safety systems are checked to see that they are working properly. The fire drills are generally held within the first 10 days of the semester, during the hours of 8:00 a.m. and 11:00 p.m. Following the drill, residents receive a report and feedback on the evacuation process. Be sure you know what to do when the fire alarms sounds, and always evacuate!

Each university department or unit develops an Emergency Action Plan (EAP) that outlines the actions occupants in the building must take during emergencies. Evacuation planning is a part of each department's EAP. All drills must be coordinated with Environmental Health and Safety Services (EHSS) in advance by calling (540) 231-9068 or email firesafe@vt.edu.

Reporting a Crime or Getting Emergency Assistance

Individuals are responsible for being aware of and complying with university policies/procedures and applicable law. Employees and students are encouraged to accurately, voluntarily and promptly report crimes, emergencies, potential threats or risks to the NRV911 center who will notify the Virginia Tech Police Department, when the victim elects to, or is unable to, make such a report. Crimes and other emergencies should be reported to the NRV911 center @ 540-382-4343 or 911 for an emergency. The NRV 911 center will notify the Virginia Tech Police Department. Survivors or witnesses of crimes on campus may report those crime anonymously on a voluntary, confidential basis for inclusion in the annual crime disclosure online at www.police.vt.edu/anonymous.html.

Criminal or suspicious acts and emergencies should be reported to the police immediately in person, by telephone or by using one of the blue light phones located throughout campus. Currently there are 114 blue light phones on campus that can directly connect you with the NRV911. The phones are available 24-hours-a-day, 7-days-a-week and a simple push of a button is all it takes to connect. Calling 911 on a land line or cell phone is another option. The Hokie Ready app is available for download for Android and iPhone devices. Hokie Ready allows students, faculty, and staff to send tips and messages to the Virginia Tech Police Department, share their location with friends or family as they walk on campus, find buildings on campus, and access emergency preparedness information. A program has been added to the Virginia Tech Police Department's website that enables students, faculty and staff to report incidents via the internet. The report form contains all information needed to complete a police report. This form can only be used for vandalism, damage or destruction of property, larceny or theft offenses and annoying or harassing phone calls. If a person wants to

report an incident anonymously and or confidentially to the Virginia Tech Police Department or a Campus Security Authority, they may do so in person, or by accessing the *Stop Abuse website* <https://www.stopabuse.vt.edu> or by clicking on the link provided on the Virginia Tech Police Department's website. Campus Security Authorities include, Dean of Students @ 540-231- 3787, Title IX Director @ 540-231-1824, and Director of Housing & Residence Life @ 540- 231-9811.

Voluntary Confidential Reporting

If you are the victim of a crime and do not want to pursue action within the University system or the criminal justice system, you may still want to consider making a confidential report. With your permission, a VTPD officer can file a report on the details of the incident without revealing your identity (except to the Title IX Coordinator in the event of a reported sex offense or sexual harassment). The purpose of a confidential report is to comply with your wish to keep the matter confidential, while taking steps to enhance the future safety of yourself and others. With such information, the VTPD can keep an accurate record of the number of incidents involving students, employees and visitors; determine where there is a pattern of crime with regard to a particular location, method, or assailant; and alert the campus community to potential danger. Reports filed in this manner are counted and disclosed in the annual crime statistics for the institution.

Anonymous Reporting

The purpose of an anonymous report is to possibly take steps to promote safety. In addition, VTPD can keep an accurate record of the number of incidents involving students, determine where there is a pattern of crime with regard to a particular location, method, or assailant, and alert the campus community to potential danger. Reports filed in this manner are counted and disclosed in the annual crime statistics for the institution. These forms can be accessed at <https://police.vt.edu/anonymous.html>.

If you ever need to contact the police, officers and staff will attempt to assist you in any way possible. The Virginia Tech Police Department has two locations to serve our community. The Security Center located in the Public Safety Building at 330 Sterrett Drive, Blacksburg, Virginia 24061, is staffed 24 hours a day and department personnel are available to answer questions or to have an officer respond to assist with a complaint. The second location is the office of the Chief of Police in the Public Safety Building located on second floor and is open during normal business hours Monday- Friday.

The Virginia Tech Police Department encourages everyone who is a survivor of a crime to come forward and report it to the police. However, on occasion and depending on the nature of the crime the survivor declines to press charges. This is the survivor's option. Just because a crime has been reported with the police department does not mean that criminal charges have to be filed. Students also have the option of contacting other university resources, such as Title IX, Dean of Students Virginia Tech Women's Center, Office of Student Conduct, Cook Counseling Center, Shiffert Health Center, or academic advisors who will assist with notifications, if desired. This information will be included in the annual disclosure of crime if the caller provides the date, location and crime committed.

Dial 911 for all emergency calls for Police, Fire, and Rescue. For non-emergency calls, contact the NRV911 center @ 540-382-4343.

Clery Reportable Crimes

Response to Reported Incidents

In response to reports of criminal activity occurring on the VT campus, the NRV911 will take the required action, either dispatching a Virginia Tech Police officer to the incident location or asking the survivor to report to the Virginia Tech Police Department Security Center located at 330 Sterrett Drive, Blacksburg, Virginia 24061. The Security Center is open 24 hours daily and is staffed to answer questions or to have an officer respond to take a complaint. The Virginia Tech Police Department is also available at the Public Safety Building at 330 Sterrett Drive, Blacksburg, Virginia 24061. All Virginia Tech Police Department incident reports involving students or conduct referrals involving students are forwarded to the Office of Student Conduct for potential action, as appropriate. In some instances, these reports and or referrals are held during active investigations, and then provided at a later time. The Virginia Tech Police Department Investigative division will conduct criminal and administrative investigations when it is deemed appropriate.

Services and Prevention Information

Alcohol and Drug Abuse Prevention Services

The Campus Alcohol Abuse Prevention Center, located in 147 McComas Hall is the university resource for alcohol abuse prevention. They may be contacted at 540-231-2233 (Hokie Wellness) or by email to CAAPC@vt.edu. Drug education prevention is provided by A.D.A.P.T. (Alcohol and Drug Prevention Team). ADAPT Peer Educators are dedicated to addressing alcohol and other drug abuse issues in the Virginia Tech community.

ADAPT members promote awareness through educational programs and outreach, while serving as accessible resources for fellow students. ADAPT members strive to minimize the abused of alcohol and other drugs in an effort to encourage students to pursue positive behavioral changes, and to promote a healthier environment at Virginia Tech. They can be contacted through the Office of Student Conduct in Suite 141 New Hall West or at 540-231-3790.

Safety and Security Programs

The Virginia Tech Police Department has community outreach and residence life officers that provide educational programming and other crime prevention functions to the university community. Educational programs include Student Police Academy, Alcohol Awareness, Bicycle Safety, Drug Awareness, Personal and Property Safety (basic crime prevention and personal safety) Rape Aggression Defense, Women's Awareness and Safety and RAD for men teaches the practice of self- defense and how to escape aggressive behavior. Other programs presented include, One Love workshops on Intimate Violence, Emergency Preparedness, and building/lighting assessments begin with orientation sessions for incoming freshmen and their parents. Once school begins, the Community Services Unit continues with educational programs throughout the year in the residence halls as requested and actively recruits participants for its interactive programs. Global Ed presents pre-departure training, and faculty leader training in the spring and fall of each year as well as monthly safety reminders via VT news. All programs are available to faculty, staff and students upon request or if a need becomes apparent.

Virginia Tech Athletics Department implemented the One Love workshops illustrating the signs and effects of relationship abuse, followed by honest and empowering discussions, the S.M.A.R.T. training for sexual misconduct and relationship violence with alcohol, consent, bystander intervention, retaliation and campus resources. Police chiefs from Virginia Tech and

Blacksburg, discussed campus safety initiative “No Hoke Left Behind” and ways students can play a role in creating a safer campus.

Hokie Wellness presented information on the importance of consent and Party Positive workshops as well as risk management training for Natural Disaster and Inclement weather. A common theme of these programs is to encourage students and employees to be responsible for their own safety and the safety of others.

Operation Identification

The Virginia Tech Police Department has engravers to loan for the purpose of engraving personal property. It is thought to help make items theft resistant, because engraved items are more easily identified making them harder to sell. The nationally recognized identification procedure is to abbreviate your state and driver’s license number on items (e.g. VA211110000). A benefit to the program is, if an item is lost or stolen, then recovered, it is much easier for the owner to be located and the property returned. Other procedures include engraving your Hokie passport number, or other identifiable numbers or letters on the item with an engraving tool. Do not use your social security number due to the rise of identity theft.

Fingerprinting Services

The Virginia Tech Police Department also provides fingerprinting services for Virginia Tech students, faculty, staff, and their families at no cost, Monday- Friday from 9am – 2pm.

Safe Ride

The Virginia Tech Police Department sponsors a nighttime safety escort service called “Safe Ride.” This service is available to all students, faculty, staff, and visitors to the university. Safe Ride operates from dusk until dawn and provides transportation or a walking escort, upon request, to persons who must cross campus during the nighttime alone. Safe Ride may be contacted by using the TransLoc Rider app or calling **540-231-SAFE (7233)**. The ability to request a ride via the app streamlines the process for both the rider and the Safe Ride Driver. In addition to being more user friendly, the app alleviates hold time and busy phone lines, reduces wait time for riders by grouping ride requests on similar routes, and increases student safety with real- time tracking and text notifications that allow riders to wait in a safe place until their ride arrives.

Training Outreach, and Education- Sexual Harassment/ Sexual Violence Office for Equity and Access

The Office for Equity and Accessibility, OEA, offers the Compliance Workshop: Policy 1025; Title IX; and the Violence Against Women Act (VAWA) for persons employed by Virginia Tech. In November, 2014, the President established a standard that all current employees and subsequently new employees, complete within 90 days of employment at Virginia Tech a workshop which addresses prevention and awareness of dating violence, domestic violence, sexual assault, and stalking. Employees are required to take the workshop every two years.

In addition, the **Policy on Harassment, Discrimination, and Sexual Assault (University Policy 1025)** and the **Policy on Title IX Sexual Harassment and Responsible Employee Reporting (University Policy 1026)** clearly prohibits these forms of sexual misconduct, provides definitions of these forms of sexual misconduct and of consent, and also describes the responsibilities of Administrators, Supervisors, and Responsible Employees.

The categories of employees covered by this performance expectation include: staff, faculty, wage

employees, student wage employees, Graduate Teaching Assistants and Graduate Research Assistants.

The description of the Compliance Workshop is published on the OEA website.

Compliance Workshop: University Policy 1025, Title IX, and the Violence Against Women Act

This workshop is required for all new Virginia Tech employees. The workshop is to be completed within ninety (90) days of the beginning employment date. There are three options for completing this workshop: in-person: attending via WebEx; or by using an on-demand learning module.

University Policy 1025; Policy on Harassment, Discrimination, and Sexual Assault and University Policy 1026; Policy on Title IX Sexual Harassment and Responsible Employee Reporting outlines the university's position on discrimination and harassment based on race, color, national origin, disability, age, gender, sexual orientation, gender identity and gender expression, veteran status or political affiliation. In addition, as a recipient of federal financial assistance, the university has responsibilities associated with both Title IX of the Education Amendments (1972) and the Violence Against Women Act Reauthorization (2013). These latter federal regulations are specifically concerned with sexual harassment, sexual assault, stalking, and domestic or dating violence.

This workshop will assist individuals in understanding the university's policy, complaint and resolution processes and available resources to assist individuals in addressing these issues.

Learning objectives

- The definitions associated with **University Policy 1025: Policy on Harassment, Discrimination and Sexual Assault** and **University Policy 1026 on Title IX Sexual Harassment and Responsible Employee Reporting**;
- The resources available to assist members of the Virginia Tech community, including our students, in dealing with difficult, sometimes traumatic, situations;
- Individual responsibilities in receiving and reporting a disclosure of sexual harassment, sexual assault, stalking, and domestic or dating violence;
- What behavioral signs may indicate someone is being subjected to inappropriate behavior;
- What to do about "consensual relationships";
- Why doing what seems obvious can cost the university millions of dollars and possibly subject you to disciplinary action;
- The resources and processes for initiating a complaint; and
- What acts and behaviors can be determined to be retaliation

The workshop is offered in several different delivery formats. Persons can:

1. Attend an instructor-led workshop at North End Center on the Blacksburg, Virginia campus.
2. WebEx access is available periodically.

3. Complete the workshop online using the on-demand module of the workshop contracted with EverFi known as Haven for Faculty and Staff.
4. Workshops for intact groups of employees in departments and larger organizational areas are also available.

Summary of Education / Outreach Activity for 2019

The university tracks completion of this performance expectation. During the 2018 academic year, 6,828 employees completed the Compliance Workshop in the 2019-2020 academic year. During these sessions, attendees were provided with the listings of resources for persons impacted by behaviors, consistent with both Title IX and VAWA. In addition, as part of the New Employee Orientation program and NEW GTA Orientation programs, a member of the OEA provides a briefing to the role of the OEA, including a discussion on the performance expectation of completion of the Compliance Workshop within 90 days of employment.

Training, Outreach, and Education- Sexual Harassment/ Sexual Violence Office for Equity and Accessibility and the Women's Center

Educational programs and initiatives for Virginia Tech students are provided through the collaborative efforts of the Office for Equity and Accessibility and the Virginia Tech Women's Center. In 2019, these efforts included the following:

Mandatory online training module for all incoming students in spring and fall 2019.

Sexual Assault Prevention for Undergraduates and Graduates

Sexual Assault Prevention Understanding for Undergraduates and Graduates are interactive web- based training tools that educate students about sexual violence, strategies on how to be an active bystander to help prevent sexual violence, and information on campus resources for victims of violence and their friends and family members. Those courses are required of all incoming first year, transfer, and graduate students. During the 2019-2020 academic year, 11,384 students completed this course.

In addition to the mandatory training, the Office for Equity and Accessibility, the Virginia Tech Women's Center, and the Virginia Tech Police Department offered the following prevention and education initiatives in 2019:

- The Women's Center provided Bringing in the Bystander, bystander-intervention workshops across campus.
- The Office of Equity and Accessibility provided information on Title IX and sexual violence, including sexual harassment, sexual assault, dating violence, domestic violence, and stalking, via a one stop website: www.stopabuse.vt.edu. The website was re-designed in 2019 to include an online reporting form, more clearly and concisely helps students understand how to make a report, provides supporting resources, educates students on consent and the different forms of abuse, and encourages students to take an active role in preventing abuse within the Virginia Tech community.
- The Office for Equity and Accessibility and the Women's Center trained resident advisors as well as professional Housing and Residence Life staff on responding to and reporting sexual violence at the start of both Fall and Spring semesters.
- The Office for Equity and Accessibility facilitated workshops on Title IX and sexual violence for members of the Corps of Cadets, orientation leaders, student athletes, and peer mentors.

- The Women's Center facilitated several prevention and awareness campaigns, including the White Ribbon and Red Flag campaigns.
- Together, the Women's Center and the Office for Equity and Accessibility hosted a production of *The Hook-Up* by Catharsis Productions.
- Together, the Women's Center and the Office for Equity and Accessibility hosted nine listening sessions discussing sexual violence and campus culture. Approximately 125 students and employees participated in those discussions.
- In addition to their own offerings, the Women's Center and the Office for Equity and Accessibility provide information and support to other campus organizations who provided sexual violence and prevention programs to students.

Sexual Assault and Prevention

Virginia Tech is committed to University Policy 1025 and the Violence Against Women Act (VAWA), which among other things *prohibits* discrimination and discriminatory harassment, including *sexual harassment* and *sexual violence* in all of its forms, *domestic violence*, *dating violence*, and *stalking*, as defined by the Clery Act. While we provide for campus wide awareness and prevention and a holistic response to complaints, we are constantly assessing our policies and practices to ensure we are consistent with the law and best practices, and to ensure that we treat the members of our community if impacted, with respect, compassion, and care.

We have adopted the following definitions of sexual violence, gender based harassment, and consent into university policy.

Sexual Assault means misconduct that meets the definition of Rape, Fondling, Incest, or Statutory Rape, as defined below:

- **Rape** means penetration no matter how slight, of the vagina or anus of a person with any body part or object, or oral penetration by a sex organ of another person, without the consent of the victim.
- **Fondling** means the touching of the private body parts of another person for the purpose of sexual gratification, without the consent of the victim, including instances where the victim is incapable of giving consent because of age or temporary or mental incapacity.
- **Incest** means sexual intercourse between persons who are related to each other within the degrees wherein marriage is prohibited by law.
- **Statutory Rape** means sexual intercourse with a person who is under the statutory age of consent.

Harassment/Discrimination - means conduct that conditions any element of a person's employment, enrollment as a student, receipt of student financial aid, or participation in university activities on that person's age, color, disability, sex (including pregnancy), gender, gender identity, gender expression, genetic information, national origin, political affiliation, race, religion, sexual orientation, or veteran status, unless otherwise permitted or required by applicable law. Virginia Tech does not otherwise discriminate against employees or applicants who inquire about, discuss, or disclose their compensation or the compensation of other employees or applicants nor on any other basis protected by law.

Domestic Violence - means felony or misdemeanor crimes of violence committed by: a current or former spouse or intimate partner of the victim; (b) a person with whom the victim shares a child in common; (c) a person who is cohabitating with or has cohabitated with the victim as a spouse or intimate partner; (d) a person similarly situated to a spouse of the victim under the domestic or family violence laws of Virginia; or (e) any other person against an adult or youth victim who is protected from that person's acts under the domestic or family violence laws of Virginia.

Dating Violence - means violence committed by a person: (a) who is or has been in a social relationship of a romantic or intimate nature with the victim; and (b) Where the existence of such a relationship shall be determined based on a consideration of the following factors: (1) the length of the relationship; (2). the type of relationship; and (3) the frequency of interaction between the persons involved in the relationship.

Stalking

Repeatedly contacting another person when the contact is unwanted. Additionally, the contact may cause the other person reasonable apprehension of imminent physical harm or cause substantial impairment of the other person's ability to perform the activities of daily life. Contact includes communicating with (either in person, by phone, or by computer) or remaining in the physical presence of the other person. (VA State Definition - repeated conduct, which places a person, or his or her family, in reasonable fear of death, sexual assault, or bodily injury.)

Consent – knowing, voluntary, and clear permission by word or action, to engage in mutually agreed upon sexual activity. The existence of consent based on the totality of circumstances, including the context in which the alleged consent occurred. Silence does not necessarily constitute consent and coercion, force, or threat of either party invalidates consent. (No VA State definition) Consent, cannot be given, when a person is incapacitated due to drugs or alcohol, or when a person has a disability; or is not of legal age to consent as defined by law.

- Consent to any one form of sexual activity cannot automatically imply consent to any other forms of sexual activity. Consent, can be withdrawn at any time.
- Previous relationship or prior consent cannot imply consent to future sexual acts.
- **Incapacitation** - includes but is not limited to being asleep, drugged, intoxicated or unconscious.

Title IX Sexual Harassment: Title IX Sexual Harassment means any of the following conduct on the basis of sex, when that conduct occurs within the United States and at any on or off campus locations, events, or circumstances over which the university exercises substantial control over both the Respondent and the context in which the sexual harassment occurs and includes any building owned or controlled by a student organization officially recognized by the university,;

- a university employee conditioning an educational benefit or service upon a person's participation in unwelcome sexual conduct (i.e. *quid pro quo* harassment); unwelcome conduct that a reasonable person would determine to be so severe, pervasive, and objectively offensive that it would effectively deny a person equal access to a university program or activity; or
- Sexual Assault, Dating Violence, Domestic Violence, or Stalking.

Responsible Employee - Responsible employees include all university officials who have authority to institute corrective measures in response to a report of Title IX Sexual Harassment. A responsible employee who receives notice of behavior that might reasonably be construed as constituting Title IX

Sexual Harassment must promptly report the alleged behavior to the Title IX Coordinator. A responsible employee who receives notice of an alleged Title IX Sexual Harassment and fails to report it to the Title IX Coordinator may be subject to discipline up to and including termination.

Responsible employees under this section include university administrators, supervisors, employees with instructional responsibilities (for their respective teaching obligation), academic advisors, and other university employees who have significant responsibility for student and campus activities or implementing the university's policies related to employee and student discipline.

Virginia Tech has designated several offices on campus as confidential resources. When performing their responsibilities providing services, these offices are not subject to this policy. Confidential resources include the staff at the University Ombuds Office and Graduate School Office of the Ombudsperson, Schiffert Health Center, Cook Counseling Center, and the Virginia Tech Women's Center. Disclosures made to Athletic Doctors while acting within the scope of his or her license or certification are also confidential.

Community Information

Virginia Tech provides the following information to members of our community who experience, or who have friends and loved ones who experience sexual violence:

How do you help a friend?

If someone you know shows signs they are experiencing, or have been a victim of harassment, sexual assault, relationship violence, or stalking, there are ways you can help:

- Believe them! Do not immediately question or dismiss their experience.
- Listen to your friend. Keep questions to a minimum and ask how you can help.
- Assure them it is not their fault, this has happened.
- Tell them help is available! Share the resources on our Get Help page, and let them know that you are here to support them in whatever choices they make.

If you believe that someone you know may be experiencing sexual violence of some kind, use your voice to let him or her know you care about his or her well-being, and that you can help. Encourage this person to seek help. Getting help promptly can alleviate crisis and protect the health and well-being of your friend.

Below are a few examples of what your friend may be feeling. If someone is experiencing other feelings, they still may have experienced some form of sexual violence.

People who have experienced abuse may feel:

- Shock, disbelief, numbness, withdrawal
- Preoccupation with thoughts and feelings about the assault
- Unwanted memories, flashbacks, and/or nightmares
- Intense anger, fear, anxiety, depression
- Physical symptoms: sleep disturbance, headaches, stomach aches
- Inability to concentrate, lower grades
- Loss of focus on academics
- Loss of interest in sex
- Fears about safety
- Feelings of guilt and shame

What is an active bystander?

Bystanders, the largest group involved in violence, who greatly outnumber both perpetrators and victims have the power to stop abuse and to get help for people who have been victimized. Active bystanders are people who are aware of an abusive situation, and choose to speak up and say or do something without putting their own safety at risk.

The power to stop sexual violence is not limited to eyewitness heroics or endangering your own safety. Things you can do before or after an instance of violence will help STOP ABUSE at Virginia Tech:

- Call 911 if there is immediate danger to you or someone else.
- Speak up if someone says or does something indicating intent to commit sexual violence. Like stopping a friend from driving drunk, or stopping a friend or teammate from inappropriate actions, your intervening can help protect more than one person.
- Respect your fellow Hokies. Say something to protest offensive or derogatory remarks, including sexist or racist jokes. Always ask for partner consent in intimate situations. If you sense trouble, ask the affected person if he or she needs help.
- For more tips on intervening in a potential sexual harassment, sexual assault, relationship violence, or stalking situation:
- Go to [Men Can Stop Rape](#)
- Download our [Bystander Intervention Playbook](#)

How can I get involved?

- **Apply to be a SAVES peer educator**
Affiliated with the Women's Center at Virginia Tech, Sexual Assault and Violence Education by Students (SAVES) peer educators facilitate presentations, conduct programs, and provide outreach to the Virginia Tech community about sexual assault, relationship violence, and stalking prevention. From facilitating presentations to residence halls and student organizations to planning events like Downtown Initiatives and The Red Flag Campaign, SAVES strives to make a positive difference in the Virginia Tech community.
- To learn more about SAVES, contact Katie Mey, Gender Based Violence Coordinator, at 540-231-7806 or katie2@vt.edu.
- **Volunteer at Women's Resource Center (WRC) of the New River Valley**
Located in Radford, VA, the WRC is a non-profit, human service agency who provides programs and services to adult and child victims of domestic and sexual violence. Volunteers assist WRC staff in providing shelter services and maintaining their Crisis Hotline. Other areas of special interest may be working with children, acting as advance volunteers and providing emergency advocacy services, or providing assistance on one- time projects such as decorating a transitional apartment or organizing holiday parties.
- For more information contact the WRC at volunteers@wrcnrv.org, or call 540-639-1123.
- **Become involved in the Red Flag Campaign**
A statewide public awareness effort aimed at stopping relationship violence on college campuses in Virginia, the Red Flag Campaign (RFC) encourages us all to speak up when we see red flags (or warning signs) for potential abusive or unhealthy behaviors in our friends' relationships. The campaign created by the Virginia Sexual and Domestic Violence Action Alliance, is being used to prevent relationship violence in 49 states. For more information about how you can become involved, go

to the <http://www.womenscenter.vt.edu/Program/RFC>

- **Become a Virginia Tech's Mentors in Violence Prevention Program (MVP) Facilitator**

Mentors in Violence Prevention program is designed to educate, inspire, and empower men and women in self-understanding, integrity, and courageous leadership to prevent, interrupt, and respond to sexist abuse in order to create a civil and just community. The program coordinated by the Women's Center and is affiliated with MVP National, a project of the National Consortium of Academics and Sports and the Northeastern University Center for Sport in Society. Workshops are 90 minutes long and group size are limited to 20 participants in order to create a safe and meaningful learning environment for everyone.

Getting Help and Reporting

Sexual Assault is a crime that affects people of all genders and gender identities punishable by both civil and criminal legal action. The Virginia Tech Police Department has the authority to investigate sexual assaults, which occur on campus. Detectives are regularly on call and capable of responding at any time. Once reported to the police, officers or detectives respond, investigate, and make applicable criminal charges based on evidence collection and survivor/witness statements.

The Virginia Tech Police Department works closely with other area law enforcement personnel and other university departments, including the office of Title IX to ensure that appropriate support services are made available and utilized when necessary. The survivor of a sexual assault may also choose to file a report with Title IX, or the Department of Human Resources. The Office of Student Conduct adjudicates cases involving sex offenses in which the alleged perpetrator is a Virginia Tech student. Virginia Tech also encourages survivors to prosecute alleged perpetrators to the fullest extent of the law. There are several avenues for assistance if a person becomes the survivor of a sex offense.

Survivors of sexual assault tend to feel a variety of conflicting emotions: rage, fear, depression, relief to have survived, numbness, and exhaustion, to name just a few. Two key points to remember are, that the assault was not the survivor's fault and there is help available. The Virginia Tech Police Department is available and ready to assist if needed. The Virginia Tech Police Department is a valuable resource for information. The department has educational literature available on prevention methods and procedures to follow if you should become the survivor of a sex offense. The Virginia Tech Police Department and the Women's Center provide educational awareness programs regarding rape, acquaintance rape, other sex offenses, personal safety, and Rape Aggression Defense (RAD) classes upon request. Rape Aggression Defense classes are self-defense classes for women and men. They consist of awareness, safety tips, and progresses into hands on attack simulations at the end of the class.

The police department's Victim/Witness Assistance Program protects the rights of survivors and witnesses of crimes. Referral information is available at all times regarding area services available for general counseling, health, mental health, victim advocacy, emergency housing, visa and immigration assistance, and financial assistance. Virginia Tech complies with Virginia Law in recognizing orders of protection, restraining orders, and no contact orders. A complainant should provide a copy of a protective order to the Virginia Tech Police Department to develop a plan to reduce the risk of harm while on campus and going to and from campus. The plan may include, but is not limited to, escorts, special parking arrangements, changing classroom location

or allowing the student to complete assignments from home. The University does not issue orders of protection. However, responsiveness to the needs of crime survivors is a department priority.

The University may issue an institutional no contact order if deemed appropriate or at the request of the victim or accused. If the University receives a report that such an institutional no contact order has been violated, the University will initiate disciplinary proceedings appropriate to the status of the accused (student, employee, etc.) and will impose sanctions if the accused is determined to be responsible for violating the no contact order.

Procedures to follow:

If Stalking, Dating Violence, Domestic Violence or Sexual Assault Happens to You

- Contact the police for assistance, information, or to report the incident. Reports of all domestic violence, dating violence, sexual assault and stalking made to the police department, will be automatically referred to the Title IX Coordinator for investigation regardless if the complainant chooses to pursue criminal charges. The NRV Emergency Communications Regional Authority should be contacted for on-campus incidents at 911 or 540-382-4343 and they will dispatch a Virginia Tech Police officer. The local police should be contacted for off-campus incidents. (Blacksburg Police Department @ 540-443-1400 or in person at 200 Clay St., Blacksburg, VA) Additional information about the Blacksburg Police Department, can be found online at www.blacksburg.gov/departments/departments-l-z/police. The Virginia Tech Police Department, Title IX Coordinator, Women's Center, Office of Student Conduct or Human Resources, will assist the survivor in contacting the correct law enforcement agency, if requested. Furthermore, victims have the right to decline to notify law enforcement.
- After an incident of sexual assault, dating violence or domestic violence, the victim should consider seeking medical attention as soon as possible. Go to the New River Valley medical Center in Radford or Lewis-Gale Hospital Montgomery in Blacksburg. A qualified physician or nurse will examine you for injuries and collect physical evidence that could be used in judicial proceedings, if you decide to prosecute. The New River Valley Medical Center and or Lewis-Gale Hospital Montgomery offers the services of Sexual Assault Nurse Examiners.
- If possible, do not change your clothes, shower, eat or drink between the rape and the trip to the emergency room. Preserving evidence is critical and can assist in prosecution. Bring a change of clothes with you because the police will need the clothes you were wearing for evidence. It is important that a victim of sexual assault not bathe, douche, smoke, change clothing or clean the bed/linen/area where they were assaulted if the offense occurred within the past 96 hours so that evidence may be preserved that may assist in proving that the alleged criminal offense occurred/or is occurring or may be helpful in obtaining a protection order. In circumstances of sexual assault, if victims do not opt for forensic evidence collection, health care providers can still treat injuries and take steps to address concerns of pregnancy and/or sexually transmitted infections. Victims of sexual assault, domestic violence, stalking, and dating violence are encouraged to also preserve evidence by saving text messages, instant messages, social networking pages, other communications, and keeping pictures, logs or other copies of documents, if they have any that would be useful to University adjudicators/investigators or police.
- The hospital will notify the Women's Resource Center of Radford, who will supply you with a trained companion at the hospital. The companion will look after your needs and will help direct you to available services.
- Even if you do not wish to prosecute, it is important that you have a physical exam after the attack. Besides bruises or other physical injuries, the perpetrator might have passed on a sexually transmitted disease that requires treatment. An HIV/AIDS test may also ease your mind, although six months must elapse after an attack, to detect with accuracy the presence of HIV, the virus that causes AIDS.

- Seek counseling from the Thomas E. Cook Counseling Center, the Women's Center at Virginia Tech, the Women's Resource Center, or a private counselor. All these services are free of charge (except private counseling) and CONFIDENTIAL. If you are not comfortable talking with a counselor, consider talking with a trusted friend or family member. (See Counseling Options)
- Consider your judicial options if you have not done so already. Although there are statutes of limitation on criminal cases, they are often longer than you think. You also have the option of campus and civil charges (See Criminal, Civil, & Disciplinary Options).
- If the assault and its aftermath are interfering with your ability to complete your work or Academic performance, talk with the Thomas E. Cook Counseling Center, Women's Center at Virginia Tech, or the academic dean of your college about academic relief. The Dean of Students will also assist in changing academic and living situations after an alleged sexual assault incident, should the survivor request such assistance and such changes are reasonably available, regardless of whether a report is filed with the Virginia Tech Police Department.
- Remember that it is never too late to deal with a sexual assault and that you can heal from this significant trauma. People are ready and able to help you, but they cannot if you do not ask.

Medical Care

As mentioned above, survivors of very recent assaults should go to the emergency room of the New River Valley Medical Center or Lewis-Gale Hospital Montgomery for a physical exam and the collection of evidence. All survivors, past or present, should be seen by a qualified physician or nurse to check for sexually transmitted diseases, physical trauma, and possible pregnancy. The New River Valley Medical Center and Lewis-Gale Hospital Montgomery offer the services of Sexual Assault Nurse Examiners. A female survivor may prefer a female physician, and should request one if that will increase their comfort, though in the emergency room that may not always be possible.

Virginia Tech students can receive medical care through Schiffert Health Services; however, Schiffert cannot collect evidence and will refer survivors to Lewis-Gale Hospital Montgomery or the New River Valley Medical Center. The Women's Clinic of Schiffert Health Services offers gynecological care, pregnancy testing, and treatment for sexually transmitted diseases. Survivors may also wish to see their family doctor. Even if no symptoms are apparent, survivors are still strongly encouraged to seek medical attention.

Counseling options

Students coping with a sexual assault have at least three counseling options that are free of charge. Two of those options are on-campus: The Women's Center at Virginia Tech and the Thomas E. Cook Counseling Center. The Women's Center at Virginia Tech offers short-term crisis counseling and sexual assault support groups. The Thomas E. Cook Counseling Center offers both short-term and long-term individual and group counseling. The Women's Resource Center in Radford offers a 24-hour crisis line, individual and group counseling, and legal advocacy. These three agencies frequently collaborate to provide services to survivors of sexual assault and these services are CONFIDENTIAL. Many other options exist which have some cost associated with them, such as private therapists. Counseling is often crucial to the recovery process, and survivors should be encouraged to seek the assistance of qualified professionals, even if many years have elapsed since the assault. As always, the choice to seek counseling should be the survivors.

Criminal, Civil & Disciplinary Options

Sexual assault survivors have four options from which to choose: filing criminal charges, filing a report with the Title IX Office, which works closely with the Office of Student Conduct, and filing a civil suit for monetary damages. Survivors are not limited to just one of these options, but can choose any combination including filing all three types of charges. Below is a brief description of each type of process.

Criminal

A police report must be generated before an investigation can begin and charges can be filed. The location of where the assault occurred will determine the jurisdiction of the investigating authority.

The Virginia Tech Police Department investigates all crimes on campus. If the assault occurs anywhere other than on the Virginia Tech campus, the Virginia Tech Police Department will assist the student in notifying these authorities, if the student requests assistance.

Many survivors believe that if they do not file criminal charges immediately, they lose that option. This may not be the case. There are statutes of limitations for filing criminal charges, but they are typically several years in duration. Certainly, it is best to go to the police as soon as possible after an assault, in order to preserve as much evidence as possible. The police will arrange for the survivor to be seen at Lewis Gale Hospital Montgomery for medical care and evidence collection. However, even if some time has elapsed, the police still encourage survivors to come forward. Criminal charges are prosecuted by the State of Virginia, not the individual survivor. A Commonwealth Attorney will argue the case at no cost to the survivor. The survivor serves as the primary witness to the crime, and his or her testimony is crucial to the case. Criminal cases may take considerable time to proceed through the justice system. Typically, the press protects the identity of the survivor. The identity of the accused perpetrator is not protected.

Assistance for Victims: Rights and Options

Regardless of whether a victim elects to pursue a criminal complaint or whether the offense was alleged to have occurred on or off campus, the university will assist victims of sexual assault, domestic violence, dating violence, and stalking and will provide each victim with a written explanation of their rights and options. The written information contains a list of your rights and a list of resources for advocacy and support on and off campus.

Confidentiality

Victims may request that directory information on file with the University be withheld by request through Registrar's office. Regardless of whether a victim has opted-out of allowing the University to share "directory information," personally identifiable information about the victim and other necessary parties will be treated as confidential and only shared with persons who have a specific need-to-know, i.e., those who are investigating/adjudicating the report or those involved in providing support services to the victim, including accommodations and protective measures. By only sharing personally identifiable information with individuals on a need-to-know basis, the institution will maintain as confidential, any accommodations or protective measures provided to the victim to the extent that maintaining such confidentiality would not impair the ability of the institution to provide the accommodations or protective measures.

The University does not publish the name of crime victims or other identifiable Information regarding victims in the Daily Crime Log or in the annual crime statistics that are disclosed in compliance with the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act. Furthermore, if a Timely Warning Notice is issued on the basis of a report of domestic violence, dating violence, sexual assault or stalking, the name of the victim and other personally identifiable information about the victim will be withheld.

Reporting to the University (Campus)

The university's Title IX and Student Conduct disciplinary process includes a prompt, fair, and impartial investigation and resolution process. The process will be conducted in a manner that is consistent with the institution's policy and that is transparent to the complainant and respondent. There is no statute of limitations on reports, and investigations may proceed if the respondent is enrolled in school or when no longer than one year has passed since they were last enrolled.

Individuals who wish to report incidents of sex discrimination, sexual harassment, and / or sexual violence, including dating and domestic violence, and stalking, may make a report to Katie Polidoro, the university's Title IX Coordinator, at 540-231-1824, by email at polidoro@vt.edu or in person at 300 Turner Street NW, Blacksburg, VA. Upon receipt of a report, the Title IX Coordinator will offer supportive measures and information about the option to file a formal complaint. Supportive measures that are not an undue burden to respondents will be provided, without the need of filing a formal complaint or participating in an investigation process.

In cases of Title IX Sexual Harassment when a complainant chooses to file a formal complaint, the university will notify both parties and initiate an investigation to determine if disciplinary action is warranted. The goal of the investigation is to gather all relevant facts that will aid in determining if there is sufficient information to refer the report for disciplinary action using the university's Student Conduct procedures. The resolution process is guided by the principles of equity and respect for all parties. All parties are presumed not responsible for the conduct alleged. Resources are available for all students, whether as complainants or respondents, to provide support and guidance throughout the investigation and resolution of the complaint. Once evidence gathering is completed, each party is provided the opportunity to review and respond to the evidence collected that is directly related to the allegations before a final investigation report is completed. The investigator will prepare a final investigation report, summarizing all relevant information to the Title IX Coordinator.

In cases of sexual harassment and violence that fall outside the scope of the university's Title IX Grievance Process, the Virginia Tech Code of Conduct's policy on Gender Based Harassment and Violence continues to apply to conduct. In those cases, when a complaint wished to proceed with a complaint, the Title IX Coordinator will share the report with the Office for Student Conduct. The Director of that office may request that an investigation be conducted by the Office for Equity and Accessibility. When an investigation commences, each party will be notified in writing. All parties are presumed not responsible for the conduct alleged. Resources are available for all students, whether as complainants or respondents, to provide support and guidance throughout the investigation and resolution of the complaint. Once evidence gathering is completed, the investigator will prepare a final investigation report summarizing all relevant information, which will be forwarded to the Director of Student Conduct.

In any investigation, the investigator will gather information from the complainant, the respondent, and any other individuals who may have information relevant to the investigation. The investigation, is designed to be prompt and equitable. The investigation will be thorough and impartial, and all individuals, will be treated with appropriate sensitivity and respect for individual privacy concerns. Throughout the process, a complainant or respondent may have an advocate present at any meeting related to the investigation.

Referrals to Student Conduct for Adjudication in Title IX Cases

In cases of Title IX Sexual Harassment and Violence, upon review of an investigation report, if the

Title IX Coordinator determines that there is sufficient information gathered to suggest that a policy violation may have occurred, the Title IX Coordinator or designee will notify the complainant and the respondent and refer the report to Student Conduct for adjudication. Student Conduct will resolve the matter using preponderance of the evidence, as to whether the respondent is responsible for conduct in violation of university policy.

At the hearing, the complainant and respondent each have the opportunity to present their side of the story. Each party's advisor will have the opportunity to directly question the other party and other witnesses. If a party does not have an advisor, the university will provide one for the purpose of questioning. The hearing officers will base their decision on a preponderance of the evidence as to whether the respondent is responsible for conduct in violation of university policy.

Referrals to Student Conduct for Adjudication in Non-Title IX Cases

In cases of Gender Based Harassment and Violence that falls outside the scope of Title IX, the Investigator will share the report with the Director of Student Conduct, who will determine the proper resolution of the complaint. When the Director determines that there is sufficient information gathered to suggest that a policy violation may have occurred, the Director or a designee will notify the complainant and the respondent and request that a formal student conduct hearing occur. At the hearing, the complainant and respondent each have the opportunity to present their side of the story and ask questions. The hearing officers will base their decision on a preponderance of the evidence as to whether the respondent is responsible for conduct in violation of university policy.

Outcomes of Adjudication

Depending on the circumstances of the case, students who are found in violation of the Gender Based Violence Policy may receive significant educational and status sanctions. Both the complainant and the respondent will be notified of the outcome of the hearing. No matter the outcome, both students have the right to appeal the hearing officers' decision.

The Office of Student Conduct determines both status and educational sanctions. Status sanctions refer to the student's status within the university community. Educational sanctions are meant to help students reflect on and learn from their experiences, provide an opportunity for personal growth, and connect students with resources both on and off-campus. These outcomes not only cover all policies in the Student Code of Conduct, but more specifically, may be considered for allegations of gender based violence.

Virginia Tech will, upon request, disclose to the complainant of a crime of violence, or a non-forcible sex offense, the report on the results of any disciplinary proceeding conducted by such institution against a student who is the respondent of such a crime or offense. If the complainant is deceased as a result of such crime or offense, the next of kin of such complainant shall be treated as the complainant for purposes of this paragraph.

The Student Code of Conduct defines gender-based violence as the following prohibited acts: sexual violence--assault, sexual violence-battery, sexual violence-coercion, sexual violence-rape, gender based harassment, sexual exploitation, dating and domestic violence, and stalking.as a violation of the Abusive Conduct Policy. Depending on the circumstances of the case, students who are found responsible for particularly egregious incidents of gender-based violence may receive sanctions up to and including suspension for one or more semesters or dismissal from the university.

Both respondents and complainants have the right to appeal the outcome of a hearing, regardless of the outcome. The grounds for appeal are set out in the Student Code of Conduct. Notification of Student Conduct hearing outcomes is made on a "need to know" basis. This includes, among others the Cadets staff, in cases involving cadets, the Graduate School, in cases involving graduate students and international students; Cranwell Center, for cases involving undergraduate international students; the Athletic Department in cases involving varsity athletes, the Director of Housing and Residence, in cases involving residence hall students, and survivors of violent crime, including sexual assaults, involving student respondents. Other university agencies or organizations may be required to obtain written release before they can receive notification. Student Conduct maintains records for five years from the date of the incident.

More detailed information regarding the Title IX Reporting and Grievance Procedures and the Student Code of Conduct may be found here:

[Title IX Reporting and Grievance Procedures](#) [Virginia Tech Student Code of Conduct](#)

Civil Court

Sexual assault survivors, may also choose to pursue a civil action against an alleged perpetrator, and the student may choose to consult Student Legal Services or an attorney for advice.

Student Conduct

When a student accepts admission to Virginia Tech as an undergraduate, graduate, or professional student, they also accept membership in the university community and responsibility for upholding its shared values and expectations. The *Student Code of Conduct* outlines policies established by the university that set standards for students' behavior, along with procedures for adjudicating and sanctioning violations of these standards. The code applies to all students and student organizations at Virginia Tech. The *Student Code of Conduct* is overseen by the Office of Student Conduct. The university's conduct system supports the educational mission of the university by educating students about appropriate behavior and fostering a community in which students can flourish academically and personally.

The university conduct system assumes that students and student organizations have the capacity to assume responsibility for their own behavior and that the university has the authority to establish an internal structure for the enforcement of its policies and procedures, which students have agreed to accept by enrolling in the university. As part of its authority, Student Conduct may take disciplinary action towards students, including suspension and dismissal from the university. When conduct violates both criminal law and the Student Code of Conduct, disciplinary action may be taken by the university, irrespective and separate from criminal action. At the university's discretion, the Office of Student Conduct may proceed with disciplinary action prior to a criminal trial or postpone action until after trial.

Any student, faculty member, staff member, administrator, community member, or concerned party may submit a complaint, known as a "conduct referral," to the Office of Student Conduct. Students may also be assigned educational assignments to complete as part of their case resolution. In cases involving alleged crimes of violence, the complainant has an option to participate in a hearing and to be informed of the hearing outcome. To help them prepare their response, students or organizational representatives may choose an advisor, who may be present at a hearing but may not participate in the proceedings. The advisor's role is specifically limited to conferring with their advisee.

Student Conduct sanctions are designed to promote safety, individual accountability, and reflection. Whenever possible, Student Conduct makes efforts to educate students and to foster personal and academic success. When assigning sanctions, hearing officers consider the type and nature of any policy violation(s), including mitigating or aggravating factors, as well as the student's prior conduct record. Sanctions are generally cumulative in nature. One or more of the following sanctions may be imposed when a student or student organization is found responsible for violating policies in the *Student Code of Conduct*: Status Sanctions

Status Sanctions

Formal Warning

A formal written notice that the student or student organization has violated a policy in the Student Code of Conduct and that further violations may result in more serious conduct action. Students or student organizations who receive a formal warning are still considered in good conduct standing with the university.

Probation

A specified period of time during which the student or student organization is considered not in good conduct standing with the university. Further violations during that time period may result in more serious conduct action, including a potential separation from the university.

Deferred Suspension

A specified period of time during which the student or student organization is considered not in good conduct standing with the university. Violations for which deferred suspension is assigned are those that are serious enough to warrant suspension from the university, but due to mitigating factors, the student or student organization is given the opportunity to remain enrolled at the university, provided they do not violate further policies. The suspension may take effect if they violate additional policies during the period of deferred suspension.

Denial of Privileges or Associations

A specified period of time during which the student is denied certain privileges or associations, including but not limited to termination of the housing contract, removal from athletic events, loss of recreational sports privileges, network access, or access to certain university facilities. Student organizations may also have their social function privileges revoked.

Suspension from the University

A specified period of time during which the student or student organization is separated from the university. During the suspension period, the student does not have the rights and access to privileges associated with being a student, which includes eligibility to be academically enrolled at Virginia Tech or transfer credits earned at other institutions during the period of disciplinary suspension. For student organizations, the university will withdraw recognition for the duration of the suspension. A student or student organization must complete all assigned sanctions and receive permission from Student Conduct to be eligible to re-enroll. For a student who has completed their academic work but whose degree has not yet been conferred, their degree may be withheld for the duration of the suspension period.

Deferred Dismissal

A specified period of time during which the student or student organization is considered not in good conduct standing with the university. Violations for which deferred dismissal is assigned are those that may warrant permanent dismissal, or expulsion, from the university, but due to mitigating factors, the student is given the opportunity to maintain student status with the university, provided they do not violate further policies. The dismissal may take effect if the student violates additional policies during the period of deferred dismissal. A deferred dismissal is often accompanied by a suspension or other conduct sanctions.

Dismissal

A formal notice that the student or student organization is permanently dismissed, or expelled, from the university, with no opportunity to re-enroll. For student organizations, the university permanently withdraws recognition.

Restitution

Requirement for the student to make restitution for damage to university property, which, at the discretion of Student Conduct and the associated university department, may be in the form of monetary payment or community service.

Educational, Community, and Wellness Activities

Assignments or activities designed to provide opportunities for reflection, learning, and growth as well as to connect the student with resources to support their well-being and personal and academic success.

Reports of Sexual Harassment and Violence Involving Employees

Employee's conduct related to sexual harassment and violence are also governed by Policy 1025 on Discrimination, Harassment, and Sexual Assault and by Policy 1026 on Title IX Sexual Harassment and Violence.

Individuals who wish to report incidents of sex discrimination, sexual harassment, and / or sexual violence, including dating and domestic violence, and stalking involving employees, may make a report to Harrison Blythe, the university's Deputy Title IX Coordinator, at 540-231-0448, by email at hblythe@vt.edu or in person at 300 Turner Street NW, Blacksburg, VA. Upon receipt of a report, the Deputy Title IX Coordinator will offer supportive measures and information about the option to file a formal complaint.

Supportive measures that are not an undue burden to respondents will be provided, without the need of filing a formal complaint or participating in an investigation process.

In cases of Title IX Sexual Harassment, Complainants who are participating in, or attempting to participate in, Virginia Tech's programs and activities may file formal complaints alleging conduct prohibited under this policy by undergraduate students, graduate students, professional students, administrators, faculty, staff, volunteers, vendors and contractors. The procedures for investigating and resolving formal complaints depend on the Respondent's relationship to the university, and specifically whether the Respondent is a student or an employee. Both sets of procedures follow the same general guiding principles. At a minimum, the procedures:

- Provide for a prompt and equitable response to reports of Title IX Sexual Harassment;
- Start with a presumption of non-responsibility for the Respondent;
- Allow for and require objective evaluation of all evidence;
- Include an option for an emergency interim suspension of a student Respondent that includes the opportunity for appeal of that decision;
- Prohibit anyone who has a conflict of interest or a bias for or against a particular Complainant or Respondent, or Complainants and Respondents generally, from participating as an investigator, Title IX Coordinator, hearing officer, or appellate officer;
- Describe the range of possible disciplinary sanctions and remedies that the university may implement following a determination of responsibility;
- Describe the circumstances in which the university will convene a live hearing to resolve a Formal Complaint, as well as the circumstance in which the Title IX Coordinator will dismiss a Formal Complaint prior to the live hearing phase;
- Set forth the process for the live hearing, including by describing the roles of advisors and hearing officers, and describe the procedural rules that apply during the live hearing phase, including the opportunity for cross examination;
- Describe the process for appealing formal decisions; and
- Do not require, allow, rely upon, or otherwise use any questions or evidence that constitute or seek disclosure of information protected by a legally recognized privilege.

More Detailed information regarding this process can be found at: www.oea.vt.edu.

In cases of sexual harassment and violence that fall outside the scope of Title IX, the university will use the following process:

1. Upon notification, the Office for Equity and Accessibility will assess the immediate safety needs of the complainant and provide the complainant with access to care and resources, as appropriate, including the Women's Center and medical assistance, if needed.
2. The Office for Equity and Accessibility will contact the Virginia Tech Police Department and the appropriate local police department as necessary, and will advise the Virginia Tech Threat Assessment Team, if needed.
3. The Office of Equity for Accessibility will assist the complainant with contacting the Virginia Tech Police Department and/or the appropriate local police department, as needed and at the request of the complainant and will provide the complainant with the contact information to the appropriate police department, as necessary.
4. The Office for Equity and Accessibility will take all reasonable steps necessary to address safety and to assess the need to implement interim or long-term protective measures, including administrative leaves, position reassignments, no contact requirements, and other measures as deemed appropriate.
5. The Office for Equity and Accessibility will provide to all complainants and respondents a copy of the Virginia Polytechnic Institute and State University Policy on Harassment, Discrimination, and Sexual Assault (University Policy 1025), a copy of the rights of any party involved with an investigation, and a list of available resources. It will also inform all parties of timeframes for inquiry, investigation, and resolution.
6. The Office for Equity and Accessibility will inform the complainant and the respondent simultaneously of the outcome of the investigation, whether or not a violation of policy was found to have occurred, and any measures to be taken to stop the unwanted behavior. A preponderance of the evidence standard will be used. In addition, the Office for Equity and Accessibility will advise both the complainant and the respondent of any changes to any of the above mentioned determinations.
7. Any disciplinary action taken as a result of an Office for Equity and Accessibility investigation will be imposed by the employee's department, in conjunction with and at the recommendation of Human Resources. The department may impose a wide range of sanctions, depending on the severity of the conduct, which can range from counseling and/or training through suspension and termination.
8. Employees will be advised of their right to grieve any disciplinary action taken as a result of an Office for Equity and Accessibility investigation by contacting the Virginia Tech Department of Human Resources and in deference to university and state policy.

A more detailed outline of this process can be found at the link
below: [OEA Anti-Discrimination Complaint Procedures](#)

Policy Updates

On August 13, 2020, the university updated its policies and procedures related to Sexual Harassment and Violence in response to the Department of Education's newly issued Title IX regulations.

Updates are made, as necessary, to student and employee resources, pursuant to the requirements of Title IX and VAWA. Resources, policy, process, and related updates can be found at:

Office of Equity and Access www.hr.vt.edu/oea

University Anti-Discrimination or Harassment Policy

www.policies.vt.edu/index.php Title IX www.hr.vt.edu/oea/title

[ix/](#) Student Code of Conduct

www.hokiehandbook.vt.edu/codeofconduct/ StopAbuse VT

www.stopabuse.vt.edu

The Women's Center

www.womenscenter.vt.edu Division

of Student Affairs www.dsa.vt.edu

Title IX Coordinator Contact Information

Katie Reardon Polidoro
Director of Title IX
Compliance/Title IX Coordinator
Office for Equity and Accessibility
North End Center, Suite 2300
300 Turner Street, NW
Blacksburg, VA 24061 540-
231-1824
polidoro@vt.edu

Harrison Blythe
Director of Compliance & Conflict Resolution
Deputy Title IX Coordinator for Employees
Office for Equity and Accessibility
North End Center, Suite 2300
300 Turner Street, NW Blacksburg, VA 24061
540-231-0448
hblythe@vt.edu

Sex Offender Registry and Access to Related Information

The federal "Campus Sex Crimes Prevention Act" law was signed on October 28, 2000, and became effective October 28, 2002. The law requires institutions of higher education to issue a statement advising the campus community where law enforcement agency information provided by a state under section 121 of the Adam Walsh Child Protection Act of 2006. (42 U.S.C. 16921) concerning registered sex offender' may be obtained, such as the law enforcement office of the institution, a local law enforcement agency with jurisdiction for the campus, or a computer network address. It also requires sex offenders already required to register in a state to provide notice, as required under state law, of each institution of higher education in that state at which the person is employed, carries on a vocation, volunteers their services, or is a student. Information about the Sex Offender registry can be found at <https://sex-offender.vsp.virginia.gov/sor/> or can be accessed through the Virginia Tech Police Department web site at <http://www.police.vt.edu>. In the Commonwealth of Virginia, convicted sex offenders must register with the *Sex Offender and Crimes Against Minors Registry*. The registry was established pursuant to §19.2-390.1 of the Commonwealth's Criminal Code. Every person convicted on or after July 1, 1997, including juveniles tried and convicted in the circuit courts pursuant to § 16.1-269.1, whether sentenced as adults or juveniles, of an offense for which registration is required shall be required as a part of the sentence imposed upon conviction to register and re-register with the Commonwealth's Department of State Police, as provided in this section.

In addition, all persons convicted of offenses under the laws of the United States, or any other state substantially similar to an offense for which registration is required, shall provide to the local agency all necessary information for inclusion in the State Police Registry within ten days of establishing a residence within the Commonwealth. Any person required to register shall also be required to reregister within ten days following any change of residence, whether within or outside of the Commonwealth.

Nonresident offenders entering the Commonwealth for employment, to carry on a vocation, volunteer services or as a student attending school who are required to register in their state of residence or who would be required to register under this section if a resident of the Commonwealth shall, within ten days of accepting employment or enrolling in school in the Commonwealth, be required to register and reregister pursuant to this section. For purposes of this section "student" means a person who is enrolled on a full-time or part-time basis, in any public or private educational institution, including any secondary school, trade or professional institution, or institution of higher education.

Information concerning offenders registered with the *Sex Offender and Crimes Against Minors Registry* may be disclosed to any person requesting information on a specific individual in accordance with the law. Information regarding a specific person requested pursuant to the law shall be disseminated upon receipt of an official request form that may be submitted directly to the Commonwealth's Department of State Police or to the State Police through a local law-enforcement agency. The Department of State Police shall make registry information available, upon request, to criminal justice agencies including local law enforcement agencies through the Virginia Criminal Information Network (VCIN). Registry information provided under this section shall be used for the purposes of the administration of criminal justice, for the screening of current or prospective employees or volunteers or otherwise for the protection of the public in general and children in particular. *Uses of the information for purposes not authorized by this section are prohibited and a willful violation of this section with the intent to harass or intimidate another shall be punished as a Class 1 misdemeanor.*

Virginia State Police maintain a system for making certain registry information on violent sex offenders publicly available by means of the internet. The information made available includes the

offender's name; all aliases which he has used or under which he may have been known; the date and locality of the conviction and a brief description of the offense; the offender's date of birth, current address and photograph; and such other information as the State Police may from time to time determine is necessary to preserve public safety. The system is secure and is not capable of being altered except by or through the State Police. The system is updated each business day with newly received registrations and re-registrations.

This section has attempted to offer an overview of sexual assault issues, and the available options on the Virginia Tech campus. No one publication can be entirely comprehensive. Sexual assault is a complex issue; no two cases will have exactly the same results or the same course of action. The university therefore offers a variety of services so that survivors can get the assistance they most need. A good starting point for a survivor, or family and friends of a survivor, is with the Sexual Assault Education Coordinator, who resides in the Women's Center at Virginia Tech.

Important Phone Numbers

For further explanation or elaboration of the information in this report, and for assistance or services, contact the agencies whose numbers are listed here.

<div> <div></div> <div></div> </div>	
NRV Emergency Communications Authority	911 (emergency, on campus)
	540-382-4343 (non-emergency)
Virginia Tech Police Department	540-231-6411 (non-emergency)
Lewis Gale Montgomery Hospital	540-953-1111 (main number)
New River Valley Medical Center	540-731-2000
Women's Center at Virginia Tech	540-231-7806
Women's Resource Center hours)	540-639-1123 (hotline, 24 540-639-9592 (office)
Thomas E. Cook Counseling Center	540-231-6557 (8:00am – 5:00pm) Mon- Thurs
	540-231-6444 (9:00am – 5:00pm) Friday
Schiffert Health Services	540-231-6444
Cranwell International Center	540-231-6527
Blacksburg Police Department	911 (emergency, off campus) 540-443-1400 (non-emergency)
Montgomery County Sheriff's Office	540-382-6915 (non-emergency)
Christiansburg Police Department	540-382-3131 (non-emergency)
Dean of Students	540-231-3787
Office of Student Conduct	540-231-3790
Office of Student Programs	540-231-6204
Student Legal Services	540-231-4720
Safe Ride (Dusk until Dawn)	540-231-SAFE (7233)
Title IX Coordinator	540-231-1824 (students)
Office of Equity & Access	540-231-2010 (employees)
Office of Emergency Management	540-231-4873
University Relations	540-231-5396

Safety Tips / Risk Reduction

Security doesn't begin and end with the university police. It takes the entire university, faculty, staff, and students to make our campus a safe and secure place to live, work, and play. What can you do to help? The number one thing you can do is to take a few precautions and follow a few safety tips that will help us, help you.

- A. Trust your instincts. If a place or situation doesn't feel right, it probably isn't.
- B. Avoid working or studying alone in a building at night.
- C. Avoid shortcuts and isolated areas when walking after dark.
- D. Stay alert when crossing roads and be mindful of your surroundings.
- E. Don't walk alone after dark. Travel in groups. Use the Safe Ride Service.
- F. Know how to defend yourself--enroll in a self-defense class.
- G. Become familiar with the locations of the blue-light emergency phones on campus.
- H. Don't leave personal property (iPods Laptops, iPhones, book bags) lying around unattended.
- I. Carry a whistle or other noisemaker.
- J. Keep your bike locked in a rack or storage facility when not in use
- K. Never prop open exterior doors, even for a short time.
- L. Keep your room door locked when leaving even for "Just a minute" and when sleeping.
- M. Lock windows and close shades after dark.
- N. Never attach your name and address to keys, if lost or stolen they could lead to theft.
- O. When traveling in your vehicle keep windows up and doors locked.
- P. Engrave your valuables.
- Q. Report any suspicious or criminal activity to the police and report all crimes immediately.
- R. Don't put personal information on social networking sites.
- S. Do not accept drinks from strangers or leave your drink unattended because it could be drugged.
- T. If you suspect someone of having alcohol poisoning, call 911 immediately. Do not wait until it is too late.

Programs to Prevent Domestic Violence, Dating Violence, Sexual Assault and Stalking

Virginia Tech prohibits the crimes of domestic violence, dating violence, sexual assault and stalking as defined by the Clery Act. The University engages in comprehensive, intentional, and integrated programming, initiatives, strategies, and campaign intended to end dating violence, domestic violence, sexual assault, and stalking that:

1. Are culturally relevant, inclusive of diverse communities and identities, sustainable, responsive to community needs, and informed by research, or assessed for value, effectiveness, or outcome, and
2. Consider environmental risk or protective factors as they occur on the individual, relationship, institutional, community and societal levels.

Educational programming consists of primary prevention and awareness programs for all incoming students and new employees and ongoing awareness and prevention campaigns for students.

EDUCATIONAL PROGRAMS ADDRESSING-- SEXUAL ASSAULT, STALKING, DATING VIOLENCE AND DOMESTIC VIOLENCE

PREVENTION / AWARENESS PROGRAMS

NAME OF PROGRAM	VAWA Crime	NATURE OF CONTENT	DATE (S) OFFERED	TARGETED AUDIENCE
HRL- Pro Staff BCD's	SA/DV	Services/Response	8/3/2018	Student Staff- Res. Life
Hunting Ground Screening- Squad Leaders	SA	Services/Response	8/7/2018	Student Staff- Res. Life/Corps
SafeZone- Healthy Relationships	DV/ST	Inclusion/Prevention/Response	8/8/2018	Faculty/Students
Amazing Race- Campus Resources Presentations	SA/DV/ST	Services/Response	8/9/2018	Student Staff- Res. Life
HRL- Student Staff T9	SA/DV/ST	Services/Response	8/10/2018	Student Staff- Res. Life
HRL- Student Staff BCD's	SA/DV	Services/Response	8/10/2018	Student Staff- Res. Life
Briefing for Jr. Cadets	SA/DV/ST	Services/Response	8/17/2018	Student Cadet Leaders
Fall WC Intern Training	DV	Prevention/Response	8/25/2018	Student Staff/Volunteers
SAVES Training #1	SA/DV/ST	Prevention/Response	9/1/2018	Student Volunteers
SAVES Training #2	SA/DV/ST	Prevention/Response	9/8/2018	Student Volunteers
SAVES Training #3	SA/DV/ST	Prevention/Response	9/16/2018	Student Volunteers
Virginia Community Criminal Justice Association- Conference pannel	SV	Services/Response	11/7/2018	Parole & Probation Officers
Intro. to History- Shadel	SA	Awareness/Response	8/23/2018	New Students
SAVES @ Alpha Chi Omega	DV	Prevention/Response	9/17/2018	Sorority Women
Univ. 1824 11am Nick Sano-Franchini	DV	Prevention/Response	9/20/2018	New Students
Univ. 1824 3:30 Nick Sano-Franchini	DV	Prevention/Response	9/20/2018	New Students
SAVES @ Kappa Alpha Theta- RFC	DV	Prevention/Response	9/26/2018	Sorority Women
Soc. Of Women & Crime- Kaite Boyle	SA	Prevention/Response	10/3/2018	Students
Internsessions Talk- SA on Campus (Backup Taylor)	SA	Prevention/Response	10/3/2018	Leadership Students
Human Sexuality- Chris Kaestle	SA	Prevention/Response	10/11/2018	Students
Human Sexuality- Victoria Lael	SA	Prevention/Response	11/15/2018	Students
Human Sexuality- Lea El Helou #1	SA	Prevention/Response	11/26/2018	Students
Human Sexuality- Lea El Helou #2	SA	Prevention/Response	11/28/2018	Students
SAVES @ Gamma Phi Beta- RFC	DV	Prevention/Response	10/4/2018	Students
SAVES @ Delta Chi- RFC	DV	Prevention/Response	10/14/2018	Fraternity Men
SAVES @ United Feminist Movement- RFC	DV	Prevention/Response	10/17/2018	Students
SAVES @ Alpha Kappa Deltat Phi- RFC	DV	Prevention/Response	10/28/2018	Sorority Women
SAVES @ Hillel- RFC	DV	Prevention/Response	11/5/2018	Jewish Students
SAVES @ Alpha Phi Omega- RFC	DV	Prevention/Response	11/5/2018	Sorority Women
SAVES @ Harper 3rd Floor- RFC	DV	Prevention/Response	11/6/2018	Residential Students
SAVES @ Student Afffrican American Sisterhood	SA/DV	Prevention/Response	11/7/2018	Black Women Students

SAVES @ Pritchard 2nd Floor- RFC	DV	Prevention/Response	11/8/2018	Residential Students
SAVES @ Lee Hall	SA	Prevention/Response	11/11/2018	Residential Students
Cadre Hunting Ground Screening	SA	Services/Response	1/11/2018	Student Staff- Res. Life/Corps
Spring BCD's- Civilian & Cadet	SA/DV	Services/Response	1/12/2018	Student Staff- Res. Life/Corps
Women's Center Intern Training	SA	Prevention/Response	1/19/2018	Student staff/Volunteers
Echo Co.- Sexism, Discrimination	SA	Prevention/Response	2/1/2018	Student Cadet Leaders
SAVES Spring Meeting	SA/DV/ST	Prevention/Response	1/23/2018	Student Volunteers
Understadning Barriers: Inclusive Preventino Practices	SA/DV	Inclusion/Prevention/Response	2/26/2018	Faculty
It's On Us Training- Echo Co.	SA	Prevention/Response	3/27/2018	Student Cadets
Orientation Leader Training	SA/DV	Services/Response	4/18/2018	Student Staff
Wellfest-SAVES & Women's Center	SA/DV/ST	Services/Response	1/16/2018	Students
Destination Wellness-Outreach Tables 2/21	SA	Prevention/Response	2/21/2018	Students
Destination Wellness- Outreach Tables 2/22	SA	Prevention/Response	2/22/2018	Students
Destination Wellness- Outreach Tables 2/27	SA	Prevention/Response	2/27/2018	Students
Destination Wellness Sorority Workshops	SA	Prevention/Response	2/26/2018	Sorority Women
Training Day; Understanding Barriers to Prevention	SA/DV	Inclusion/Prevention/Response	2/26/2018	Faculty
Human Sexuality- Kaestle	SA	Prevention/Response	3/17/2018	Students
SAVES @ Hillel- Heathoy Relationships	DV	Prevention/Response	3/17/2018	Jewish Students
Human Sexuality-Meservy	SA	Prevention/Response	3/19/2018	Students
Human Sexuality- Meservy	SA	Prevention/Response	3/21/2018	Students
Recy Taylor Screening- Co-Sponsored F/S Lunch	SA	Inclusion/Prevention/Response	3/22/2018	Faculty
Recy Taylor Screening- Co-Sponsored Student	SA	Inclusion/Prevention/Response	3/22/2018	Students
Hunting Ground Screening & Discussion	SA	Prevention/Response	4/3/2018	Students
SafeZone: Dating & Healthy Relationships	DV	Inclusion/Prevention/Response	4/4/2018	Students/ Faculty
SAVES @ Arnold Air Society	SA	Prevention/Response	4/9/2018	Student Cadets
I Am Evidence Movie Screening & Discussion	SA	Services/Response	4/16/2018	Students
Human Sexuality- Helou	SA	Prevention/Response	4/25/2018	Students
Human Sexuality- Helou	SA	Prevention/Response	4/27/2018	Students
BYSTANDER INTERVENTION				
NAME OF PROGRAM		NATURE OF CONTENT	DATE (S) OFFERED	TARGETED AUDIENCE
MVP for RA's and Cadre	SA/DV/ST	Bystander Intervention	8/6/2018	Student Staff- Res. Life/Corps
MVP w/ CEED Peer Mentors	SA/DV/ST	Bystander Intervention	8/17/2018	Student Staff- Res. Life
BIB Facilitator Training- Returning MVP folks	SA/DV/ST	Bystander Intervention	10/19/2018	Student & Faculty Volunteers
BIB Facilitator Training- New Facilitators #1	SA/DV/ST	Bystander Intervention	11/9/2018	Student & Faculty Volunteers
SVPC- Sept BIB Pt. 1	SA/DV/ST	Bystander Intervention	9/6/2018	Student & Faculty Volunteers
SVPC- Oct. BIB Pt. 2	SA/DV/ST	Bystander Intervention	10/4/2018	Student & Faculty Volunteers
SVPC- Nov. BIB Pt. 3	SA/DV/ST	Bystander Intervention	11/1/2018	Student & Faculty Volunteers

MVP w/ 1st Year Cadets			2/5/2018	Student Cadets
MVP w/1st Year Cadets			2/12/2018	Student Cadets
MVP Assistant Facilitator Training			3/17/2018	Student & Faculty Volunteers
MVP w/Chi Delta Alpha			4/8/2018	Fraternity Men
MVP w/Selep's Coalition #1			4/11/2018	Sorority/Fraternity Students
MVP w/Selep's Coalition #2			4/15/2018	Sorority/Fraternity Students
MVP for CCED Mentors			4/24/2018	Student Staff- Res. Life
OTHER SAETY / SECURITY PROGRAMS				
NAME OF PROGRAM	VAWA Crime	NATURE OF CONTENT	DATE (S) OFFERED	TARGETED AUDIENCE
Red Flag Campaign	DV	Prevention/Response Campaign-Awareness	October	Campus Community
It's On Us Campaign	SA	Bystander Intervention- Awareness	March/April	Campus Community
Sexual Assault Awareness Month (SAAM)	SA	Sexual Violence Prevention/Response-Awareness	March/April	Campus Community
One Love Workshops	SA/DV/ST	Relationship Violence	Spring / Fall	Students

Rights and Options to Review

1. Contact the police for assistance and information or to report the incident. You also have the right to decline notifying law enforcement.

2. Consider seeking medical attention ASAP for examination of injuries & to collect physical evidence. In circumstances of sexual assault, if survivors do not opt for forensic evidence collection, health care providers can still treat injuries and take steps to address other medical concerns. Collection of evidence does not require you to file a police report, but a forensic exam can preserve evidence should you decide to file a report at a later date.

Evidence preservation for domestic violence, dating violence or stalking cases will likely be different.

3. If possible, do not change your clothes, shower or drink before going to the emergency room. Bring a change of clothes. The police will keep the clothes you are wearing for evidence. Do not clean the area where the incident occurred. Preserving evidence is critical and can assist in prosecution should you choose to pursue a protective order or legal action.

4. Preserve evidence by saving text messages or taking screenshots of social media, pictures or other communications, etc. Take pictures of injuries (if not taken by medical providers) as well as any property damage.

5. The hospital will notify the Women's Resource Center who will provide a trained companion at the hospital. The companion will look after your needs and help with resources.

6. Even if you do not wish to prosecute, it is important that you have a physical exam after the attack. The perpetrator might have passed on a sexually transmitted disease that requires treatment.

7. Seek counseling from one of the listed resources in your packet. There are several free and *confidential* resources on campus such as Cook Counseling and the Women's Center.

8. Consider your judicial options. Statutes of limitations are longer than you think. You also have options with campus & civil charges.

9. If the assault & its aftermath are interfering with your academic performance or ability to work, talk with Cook Counseling, the Women's Center, or the Dean of Students about academic relief.

Remember it is never too late to deal with a sexual assault.

You can heal from this trauma.

People are ready and able to help you, but they cannot if you do not ask.

Additional Resources

Virginia Tech Police Department

Major Tony Haga, Deputy Chief and Assistant Director of Security
(540) 231-8122 tchaga@vt.edu police.vt.edu

Virginia Tech Women's Center

(540) 231-7806 womenscenter.vt.edu

Montgomery County Victim-Witness

(540) 382-5705

Women's Resource Center

(540) 639-1123 wrcnrv.org

Cook Counseling Center

(540) 231-6557 ucc.vt.edu

Schiffert Health Center

(540) 231-6444 healthcenter.vt.edu

Carilion New River Valley Medical Center

PERK exams are available at this location and can be submitted anonymously.

(540) 731-2866 carilionclinic.org

Virginia Tech Title IX

Katie Polidoro, Director for Title IX Compliance/Title IX Coordinator

Student & Non-student complaints

(540) 231-1824 polidoro@vt.edu stopabuse.vt.edu

Dean of Students

(540) 231-3787 dean.students@vt.edu dos.vt.edu

Student Conduct

(540) 231-3790 studentconduct@vt.edu studentconduct.vt.edu

Virginia Tech Ombuds

Reese Ramos, University Ombuds

(540) 231-3125 reeseramos@vt.edu

Bryan Hanson, Graduate Ombudsperson

(540) 231-9573 gradstudentombud@vt.edu graduate.ombudsman.vt.edu

Virginia Tech's Title IX investigation process can take several weeks and may lead to further adjudication through other processes, such as Student Conduct. Participation in any step of this process is optional.

Crime Definitions specified by the Clery Act:

Murder & Non-negligent Manslaughter - The willful killing of one human being by another.

Manslaughter by Negligence – the killing of another person through gross negligence.

Rape – Penetration, no matter how slight, of the vagina or anus with anybody part or object, or oral penetration by a sex organ of another person, without the consent of the victim, including instances where the victim is incapable of giving consent because of his / her age or temporary or permanent mental or physical incapacity. This definition includes the rape of both males and females.

Fondling – The touching of the private body parts of another person for the purpose of sexual gratification without the consent of the victim, including instances where the victim is incapable of giving consent because of his / her age or temporary or permanent mental or physical incapacity.

Incest –sexual intercourse between persons who are related to each other within the degrees wherein marriage is prohibited by law.

Statutory Rape – Non-forcible sexual intercourse with a person who is under the statutory age of consent.

Robbery – The taking or attempting to take anything of value from the care, custody, or control of a person or persons by force or threat of force or violence and/or by putting the victim in fear.

Aggravated Assault – An unlawful attack by one person upon another for the purpose of inflicting severe or aggravated bodily injury. This type of assault usually is accompanied by the use of a weapon or by means likely to produce death or great bodily harm.

Burglary – The unlawful entry of a structure to commit a felony or a theft.

Motor Vehicle Theft – The theft or attempted theft of a motor vehicle.

Arson – Any willful or malicious burning or attempt to burn, with or without intent to defraud, a dwelling house, public building, motor vehicle or aircraft or personal property of another.

Liquor Law Violations – The violation of state laws or local laws/ordinances prohibiting the manufacture, sale, purchase, transportation, possession and use of alcoholic beverages, not including driving under the influence and drunkenness.

Drug Law Violations – Violations of laws prohibiting the production, distribution, and/or use of certain controlled substances and the equipment or devices utilized in their preparation and/or use. The unlawful cultivation, manufacture, distribution, use, possession, transportation or importation of any controlled drug or narcotic substance. Arrests for violations of state and local laws specifically those relating to the unlawful possession, sale, using, growing, manufacturing and making of narcotic drugs.

Weapons Law Violations – The violation of laws or ordinances prohibiting the manufacture, sale, purchase, transportation, possession, concealment, or use of firearms, cutting instruments, explosives, incendiary devices or other deadly weapons. This classification encompasses weapons offenses that are regulatory in nature.

Referrals – The referral of any person to any campus official who initiates a disciplinary action of which a record is kept and which may result in the imposition of a sanction.

Domestic Violence – includes felony or misdemeanor crimes of violence committed by a current or former spouse of the victim, by a person with whom the victim shares a child in common, by a person who is cohabitating with or has cohabitated with the victim as a spouse, by a person similarly situated to a spouse of the victim under the domestic or family violence laws of the jurisdiction receiving grant monies, or by any other person against an adult or youth victim who is protected from that person's acts under the domestic or family violence laws of the jurisdiction in which the crime of violence occurred.

Dating Violence – violence committed by a person who is or has been in a social relationship of a romantic or intimate nature with the victim; and where the existence of such a relationship shall be determined based on the reporting party's statement and with consideration of the length of the relationship, the type of relationship, and the frequency of interaction between the persons involved in the relationship. Includes but is not limited to, sexual or physical abuse or the threat of such abuse. Dating violence does not include acts covered under the definition of domestic violence.

Stalking – engaging in a course of conduct directed at a specific person that would cause a reasonable person to fear for his or her safety or the safety of others; or suffer substantial emotional distress.

Definitions of Geography

On-Campus – Any building or property owned or controlled by the institution within the same reasonably contiguous geographic area and used by the institution in direct support of or in a manner related to the institution's educational purposes, including residence halls; and any building or property that is owned by the institution but controlled by another person, is frequently used by students and supports institutional purpose. (Statistics for university housing facilities are recorded and included in both the on-campus category and residential category)

Non-Campus – Any building or property not part of the core campus and does not fit the definition of separate campus and is owned or controlled by the institution, is used in direct support of or in relation to the institution's educational purposes, and is frequently used by students. Other Non-Campus property that is Clery reportable is property "owned or controlled by a student organization that is officially recognized by the institution such as fraternity and sorority houses."

Public Property – all public property, including thoroughfares, streets, sidewalks, that is within the campus, or immediately adjacent to and accessible from the campus.

Definition of the term "Unfounded" On occasion, an agency will receive a complaint which is determined through investigation to be false or baseless. If the investigation shows that no offense occurred nor was attempted, the reported offense can be "unfounded" by a law enforcement officer.

Virginia Tech Blacksburg Campus Crimes Statistics 2019

	On Campus			Non Campus			Public Property			Year Total			Residential		
OFFENSE TYPE	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Murder & Non negligent Manslaughter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Manslaughter By Negligence	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rape	20	12	8	0	0	2	0	0	0	20	13	10	5	11	8
Fondling	6	3	2	0	0	0	0	0	0	6	3	2	4	3	2
Incest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Statutory Rape	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Robbery	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
Aggravated Assault	4	4	8	0	0	0	0	0	0	4	4	8	2	1	6
Burglary	30	20	14	0	0	0	0	0	0	30	20	14	25	16	5
Motor Vehicle Theft	2	4	2	0	0	0	0	0	0	2	4	2	0	0	0
Liquor Law Violations Referred	560	530	532	0	0	0	0	4	5	560	534	537	537	487	486
Liquor Law Arrests	41	19	40	0	0	0	10	2	11	51	21	51	12	8	8
Drug Law Violations Referred	76	74	139	0	0	0	1	0	1	77	74	140	33	39	76
Drug Law Arrests	89	104	74	0	0	0	3	1	1	92	105	75	58	71	45
Illegal Weapons Possession Referred	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0
Illegal Weapons Possession Arrests	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0
Arson	2	0	0	0	0	0	0	0	0	2	0	0	2	0	0
Domestic Violence**	4	1	3	0	0	0	0	1	0	4	2	0	0	0	0
Dating Violence**	4	2	10	0	0	0	0	0	1	4	2	11	3	2	7
Stalking**	5	1	4	0	0	0	0	0	0	5	1	4	1	0	0

*No hate crimes were reported in 2018 and 2019. (2017—1 on-campus simple assault characterized as race bias.)

*No unfounded crimes reported in 2017. In 2018—2 and in 2019--1

*Hate crimes are criminal offenses committed against a person or property which is motivated in whole or in part by the offender's bias. Bias is a preformed negative opinion or attitude toward a group of persons based on their race, religion, gender, sexual orientation, ethnicity, disability, gender identity and national origin.

* Note: Included in the Virginia Tech Blacksburg Crime Statistics Chart are the crimes required by the Clery Act that occurred on or within an institution's Clery Geography that have been reported to a Campus Security Authority. *Not all agencies contacted could provide statistics as requested."

Virginia Tech Higher Education Opportunity Act Blacksburg Campus Fire Safety Annual Compliance Report for 2019

Overview

The Higher Education Opportunity Act (Public Law 110-315) became law in August, 2008, requiring all United States academic institutions to produce an annual fire safety report outlining fire safety practices, standards, and all fire-related on-campus statistics related to student housing. The following public disclosure report details all information required by this law as it relates to Virginia Tech as outlined in the initial regulation; subsequent yearly reports will comply with the Act as amended and published October 29, 2009.

On-Campus Housing Fire Safety Equipment

At Virginia Tech, all forty-eight (48) of our residence halls are protected by [smoke detection and alarm systems](#) which are monitored 24 hours/day, seven days/week by Simplex. This report shows fifty (50) residence halls, however Thomas and Monteith Halls were demolished in June of 2017, and will be removed from this report in 2021. In August of 2019, two resident halls were added to accommodate growth within the student population. These residence halls are The Inn at Virginia Tech and Holiday Inn Express (HIE). When a fire alarm is activated, Simplex receives notification of the alarm, Simplex notifies the New River Valley Emergency Communications Regional Authority (NRVECRA) which then dispatches the Blacksburg Fire Department (BFD) and the Virginia Tech Police Department. The Holiday Inn Express is being leased by Virginia Tech and the fire alarm system is not monitored by Simplex. The system is monitored by Templeton Vest. When Templeton Vest receives an alarm from Holiday Inn Express, they contact NRVECRA and BFD is dispatched to respond to HIE. The buildings are also equipped with either emergency generators or lighting fixtures that incorporate backup batteries; upon loss of power, these systems automatically activate to assure adequate egress lighting in hallways and emergency exit stairwells. Twenty-nine of our residence halls are fully sprinklered, including all high-rise residence halls. Carbon monoxide detectors have been installed in all residence hall mechanical rooms where products of combustion could occur. All fire safety systems and equipment are strictly maintained and tested in accordance with applicable national standards. A summary of the fire protection systems present in each residence hall is provided in Table I. Blacksburg Fire Department is the first responder to all fire emergencies at the Virginia Tech main campus.

Fire Safety Education, Training and Fire Drills

All on-campus residents (including those with special needs) receive intensive and comprehensive fire safety training at the beginning of each semester. Training on fire and life safety is also provided to all Residential Advisors, Area Coordinators, Building Managers, Fraternity & Sorority

House Managers, Event Planning Office Staff & Crowd Managers, Housekeeping staff and Hot-work Coordinators. In addition, a quality control program that covers emergency and evacuation procedures is reviewed regularly with the occupants and staff of each respective residence hall. Each resident is required to review and comply with the requirements outlined in the [Hokie Handbook](#), [Housing Policies](#), [University Policies for Student Life](#), and [Housing and Residence Life Policies](#), which include information on fire safety and what appropriate action to take during a fire alarm or fire emergency. Student Affairs also maintains extensive information on fire safety on its [website](#). There is an emergency evacuation map posted on each floor to direct occupants to primary and secondary exits. There is also an evacuation map on the interior side of every resident hall room door.

Fire drills are conducted four times per year in all of the occupied residence halls in coordination with Virginia Tech's offices of Environmental, Health and Safety and Student Affairs. The fire drills are conducted within the first 10 days of each semester (Fall, Spring, Summer I & Summer II). Fraternity and sorority houses that are located on university property must follow the same procedures that apply to residence halls and are included in the fire drills.

Items Prohibited in Residence Halls – Items include, but are not limited to:

- Extension cords
- Multi-plug adapters
- Single-plug adapters
- Candles/incense/open flames
- Lamps with halogen bulbs
- Fireworks
- Toasters/toaster ovens
- Explosives/flammables/propane/gas/grills
- Firearms/weapons/incendiary devices
- Curtains (unless purchased with tag stating they are fire retardant)
- Motorized vehicles
- Hazardous materials
- All smoking devices (cigarettes, cigars, pipes, e-cigarettes, hookahs, etc.)

Specific Fire Prevention Related Policies and Programs

- Policy 1005, [Health and Safety](#), affirms that faculty, staff and students must comply with university health and safety policies and programs, attend required training, report any identified safety or health hazard, and know their roles in an emergency.

- Policy 1010, [Policy on Smoking](#), prohibits smoking in all university properties owned and operated by Virginia Tech, including residence halls.
- Policy 5000, [University Facilities Usage and Event Approval](#), requires that an application must be submitted for certain types of events on campus, and affirms that these events are subject to a review and approval process. The use of open flames and pyrotechnics, layout of assembly areas/events, and use of decorations are all evaluated during this review.
- Policy 5406, [Requirements for Temporary Facilities/Tents/Stages](#), assures that tents, stages and other temporary facilities comply the Virginia Statewide Fire Prevention Code, including the prohibition on the use of open flames near or under any tent.
- Policy 5605, [Residence Hall Fire and Fire Alarm Procedures](#), affirms that students must evacuate the building upon fire alarm activation and outlines the role of staff members in overseeing evacuation procedures and reentry into the building when authorized.
- Policy 5615, [University Safety and Security](#), requires that Resident Advisors be trained to perform safety audits of residence rooms, coordinate emergency evacuations and warning procedures, and facilitate the performance of fire and other drills.
- The [Hokie Handbook](#), [Housing Policies](#), [University Policies for Student Life](#), and [Housing and Residence Life Policies](#), which are part of the housing contract, limit the types of electrical appliances allowed in residence halls, establish expectations for compliance with drills and training, provide for periodic health and safety inspections of residence rooms, affirm limitations on materials that may be stored in resident rooms, prohibit open flames without a permit, limit the use of combustible decorations/furnishings, and define the consequences if students violate university policies and programs. Specifically:
 - Electrical appliances such as electric stoves, George Foreman-type grills, toaster ovens, toasters, crock pots, sandwich makers, air conditioners, space heaters, hot plates, and other open coiled appliances are not permitted in residence hall rooms. No extension cords of any type are permitted, and halogen bulb lamps and high intensity lamps are prohibited.
 - Room furnishings/decorations and the decorating of public spaces is strictly controlled. Additional limitations on the use of flammable and combustible materials for decorations in both residence rooms and common areas are affirmed in the [Policy for Residence Hall Decorations](#).
 - Items that require an open flame, operate on fuel, or produce heat (such as Bunsen burners, lit candles, incense, and alcohol burners) are prohibited.
 - All residence halls, including student rooms, are smoke-free
 - Student rooms, common areas, storage, and mechanical areas are subject to regular inspection by the Virginia State Fire Marshal's office, Environmental Health and Safety personnel, and Student Affairs staff. In addition, resident room inspections are conducted once per semester by hall staff in order to identify any health or safety concerns. Violations of fire and life safety policies are subject to university judicial action and appropriate sanctions.
 - Anyone found causing a false fire alarm, tampering with fire-safety equipment, or not properly evacuating during a fire alarm will face arrest and/or judicial referral.
- Virginia Tech's [Fire and Life Safety Program](#) establishes requirements for the performance of periodic fire safety inspections of all university buildings, including residence halls; provides for periodic training for employees and students on basic fire safety; affirms conditions that must be maintained in all university properties to comply with the Virginia Statewide Fire Prevention Code; and, establishes requirements for the permitting, approval and inspection of hot work, use of open flames/burning, pyrotechnics and special effects, and temporary facilities, tents and stages.

Table I - Fire Protection Systems in Blacksburg Campus Residential Facilities

<i>Building Name</i>	<i>Offsite Fire Alarm Monitoring (SIMPLEX)</i>	<i>Partial Sprinkler System²</i>	<i>Full Sprinkler System³</i>	<i>Smoke Detection</i>	<i>Fire Extinguishing Devices</i>	<i>Evacuation Plans & Signs</i>	<i>Number of Fire Drills each calendar year⁴</i>
Ambler Johnston Hall (East) 700 Washington St. SW	X		X	X	X	X	2
Ambler Johnston Hall (West) 720 Washington St. SW	X		X	X	X	X	2
Barringer Hall 240 Kent St.	X			X	X	X	2
Campbell Hall (East) 320 Drillfield Drive	X			X	X	X	2
Campbell Hall (Main) 300 Drillfield Drive	X			X	X	X	2
Cochrane Hall 770 Washington St. SW	X	X		X	X	X	2
Eggleston Hall (East) 500 Drillfield Drive	X			X	X	X	4 ⁸
Eggleston Hall (Main) 440 Drillfield Drive	X			X	X	X	2
Eggleston Hall (West) 410 Drillfield Drive	X			X	X	X	2
Graduate Life Center at Donaldson Brown 155 Otey St. NW	X		X	X	X	X	2
Harper Hall 240 West Campus Drive	X		X	X	X	X	2

Building Name	Offsite Fire Alarm Monitoring (SIMPLEX)	Partial Sprinkler System²	Full Sprinkler System³	Smoke Detection	Fire Extinguishing Devices	Evacuation Plans & Signs	Number of Fire Drills each calendar year⁴
Hillcrest Hall 385 West Campus Drive	X			X	X	X	2
Holiday Inn Express (HIE) ⁹ 1020 Plantation Rd	X ⁹		X	X	X	X	1 ⁹
Johnson Hall 500 Washington St SW	X			X	X	X	2
Lee Hall 570 Washington St. SW	X		X	X	X	X	2
Miles Hall 410 Washington St. SW	X			X	X	X	2
Monteith Hall ⁷ 170 Turner St. NW	X ¹			X	X	X	1 ⁷
New Cadet Hall 310 Alumni Mall	X		X	X	X	X	2
New Hall West 190 West Campus Drive	X		X	X	X	X	2
New Residence Hall East 590 Washington St. SW	X		X	X	X	X	4 ⁸
Newman Hall 200 Kent St.	X			X	X	X	2
O'shaughnessy Hall 530 Washington St. SW	X		X	X	X	X	2
Payne Hall	X		X	X	X	X	3 ⁶

Building Name	Offsite Fire Alarm Monitoring (SIMPLEX)	Partial Sprinkler System²	Full Sprinkler System³	Smoke Detection	Fire Extinguishing Devices	Evacuation Plans & Signs	Number of Fire Drills each calendar year⁴
600 Washington St							
Pearson Hall 260 Alumni Mall	X		X	X	X	X	2
Peddrew-Yates Residence Hall 610 Washington St. SW	X		X	X	X	X	2
Pritchard Hall 630 Washington St. SW	X		X	X	X	X	2
Slusher Tower 201 Ag Quad Drive	X		X	X	X	X	2
Slusher Wing 201 Ag Quad Drive	X		X	X	X	X	2
The Inn at Virginia Tech ⁹ 901 Prices Fork Rd	X ⁹		X	X	X	X	1 ⁹
Thomas Hall ⁷ 190 Turner St. NW	X ¹			X	X	X	1 ⁷
Transfer House – Bldg. SPEH, 2475 Oak Lane	X		X	X	X	X	2
Vawter Hall 180 Kent St.	X			X	X	X	4 ⁸
Special Purpose Housing - Bldg. A 2750 Oak Lane	X	X ⁵		X	X	X	2
Special Purpose Housing - Bldg. B 2740 Oak Lane	X	X ⁵		X	X	X	2
Special Purpose Housing - Bldg. C 2720 Oak Lane	X	X ⁵		X	X	X	2

Building Name	Offsite Fire Alarm Monitoring (SIMPLEX)	Partial Sprinkler System²	Full Sprinkler System³	Smoke Detection	Fire Extinguishing Devices	Evacuation Plans & Signs	Number of Fire Drills each calendar year⁴
Special Purpose Housing - Bldg. D 2805 Oak Lane	X		X	X	X	X	2
Special Purpose Housing - Bldg. E 2705 Oak Lane	X		X	X	X	X	2
Special Purpose Housing - Bldg. F 2615 Oak Lane	X		X	X	X	X	2
Special Purpose Housing - Bldg. G 2575 Oak Lane	X		X	X	X	X	2
Special Purpose Housing - Bldg. H 3205 Oak Lane	X		X	X	X	X	2
Special Purpose Housing - Bldg. I 3160 Oak Lane	X		X	X	X	X	2
Special Purpose Housing – Bldg. J 3170 Oak Lane	X		X	X	X	X	2
Special Purpose Housing - Bldg. K 3115 Oak Lane	X		X	X	X	X	2
Special Purpose Housing - Bldg. L 3115 Oak Lane	X		X	X	X	X	2
Special Purpose Housing - Bldg. M 3025 Oak Lane	X		X	X	X	X	2
Special Purpose Housing - Bldg. N 3025 Oak Lane	X		X	X	X	X	2
Special Purpose Housing - Bldg. O 2965 Oak Lane	X		X	X	X	X	2
Special Purpose Housing - Bldg. P 2965 Oak Lane	X		X	X	X	X	2

Building Name	Offsite Fire Alarm Monitoring (SIMPLEX)	Partial Sprinkler System²	Full Sprinkler System³	Smoke Detection	Fire Extinguishing Devices	Evacuation Plans & Signs	Number of Fire Drills each calendar year⁴
Special Purpose Housing - Bldg. Q 2875 Oak Lane	X		X	X	X	X	2
Special Purpose Housing - Bldg. R 2875 Oak Lane	X		X	X	X	X	2

¹ denotes single stations in residence rooms with smoke and/or heat detection in common areas

² denotes having sprinklers in the common areas only

³ denotes having sprinklers in both common areas and individual rooms

⁴ denotes having drills conducted four times per year when the building is occupied year-round; drills are otherwise conducted within 10 days of the beginning of each semester when occupied

⁵ denotes having sprinklers in mechanical rooms only

⁶occupied Summer II, not Summer I

⁷ demolished June 2017

⁸used summer I and II

⁹added fall 2019

Fire Statistics

The number and cause of each fire in each residence hall is summarized in Table 2. There were no reported fire-related injuries or fatalities in residence halls during calendar years 2017 through 2019. There were five (5) reported fires during this period. Total damages for fire-related losses were \$00.00.

Fire Reporting

In July of 2016 the Virginia Tech Police Department converted over to a centralized dispatch. The fire alarm and sprinkler monitoring systems were also switched to an off-site monitoring system. Simplex monitors the status of all fire detection and fire suppression systems in residence halls. When Simplex receives notification of a fire alarm or a sprinkler alarm, they call the New River Valley Emergency Communications Regional Authority which intern dispatches the Blacksburg Fire Department and the Virginia Tech Police Department. If a fire has occurred, it should be reported to the New River Valley Emergency Communications Regional Authority by one of the following methods, calling 911 (emergency), calling the NRVECRA Communications Center 540-382-4343 (emergency) or the Virginia Tech Police Department 540-231-6411 (non-emergency).

Responding to a Fire/Evacuation Procedures

If a fire emergency occurs, notify occupants by activating the fire alarm system. This requires pulling the pull station to initiate the alarm. If the fire alarm is activated while you are in your room or you activate the alarm, immediately exit the building at the closest exit away from the fire emergency. Move at least 50 feet away from the building and out of the way of responding emergency personnel. Do not reenter the building until the fire department says it is safe to do so and an 'all clear' signal has been given by the alarm system. If you are unable to leave your area, place wet towels or other material under the door to assist with blocking smoke from entering. If you can, call 911 and give your exact location and as much information as possible to the dispatcher. If you are unable to call for assistance, shout out of the window for help. Only assist others if you can do so safely. Never use elevators during a fire emergency. Remain Calm.

Plans for Future Improvement

Virginia Tech maintains a prioritized list of projects to upgrade older fire systems, enhance the capabilities of existing systems, or install new fire safety systems in existing buildings.

Table 2 - Fire Statistics for the Blacksburg Campus Residential Facilities for Calendar Years 2017, 2018 and 2019.

<i>Building Name</i>	<i>Total Fires in Each Building</i>	<i>Fire Number</i>	<i>Date/Time</i>	<i>Location</i>	<i>Cause of Fire</i>	<i>Number of Injuries that Required Treatment at a Medical Facility</i>	<i>Number of Deaths Related to a Fire</i>	<i>Value of Property Damage Caused by Fire (Dollars)</i>
Ambler Johnston Hall (East) 700 Washington St. SW	0	0			N/A	N/A	N/A	N/A

Building Name	Total Fires in Each Building	Fire Number	Date/Time	Location	Cause of Fire	Number of Injuries that Required Treatment at a Medical Facility	Number of Deaths Related to a Fire	Value of Property Damage Caused by Fire (Dollars)
Ambler Johnston Hall (West) 720 Washington St. SW	0	0			N/A	N/A	N/A	N/A
Barringer Hall 240 Kent St.	0	0			N/A	N/A	N/A	N/A
Campbell Hall (East) 320 Drillfield Drive	0	0			N/A	N/A	N/A	N/A
Campbell Hall (Main) 300 Drillfield Drive	0	0			N/A	N/A	N/A	N/A
Cochrane Hall 790 Washington St. SW	0	0			N/A	N/A	N/A	N/A
Eggleston Hall (East) 500 Drillfield Drive	0	0			N/A	N/A	N/A	N/A
Eggleston Hall (Main) 440 Drillfield Drive	1	1	10/09/2019 2301 hours	Room 232	Unintentional – wireless speaker	0	0	0.00
Eggleston Hall (West) 410 Drillfield Drive	0	0			N/A	N/A	N/A	N/A
Graduate Life Center at Donaldson Brown 155 Otey St. NW	0	0			N/A	N/A	N/A	N/A
Harper Hall 240 West Campus Drive	0	0			N/A	N/A	N/A	N/A
Hillcrest Hall 385 West Campus Drive	0	0			N/A	N/A	N/A	N/A
Holiday Inn Express (HIE) ¹ 1020 Plantation Road	0	0			N/A	N/A	N/A	N/A
Johnson Hall 500 Washington St SW	0	0			N/A	N/A	N/A	N/A
Lee Hall 570 Washington St. SW	0	0			N/A	N/A	N/A	N/A
Miles Hall 410 Washington St. SW	0	0			N/A	N/A	N/A	N/A
Monteith Hall 170 Turner St. NW	0	0			N/A	N/A	N/A	N/A
New Cadet Hall 310 Alumni Mall	1	1	10/25/2017 0000 hours		Intentional – burning of small objects	0	0	0.00
New Hall West 190 West Campus Drive	0	0			N/A	N/A	N/A	N/A

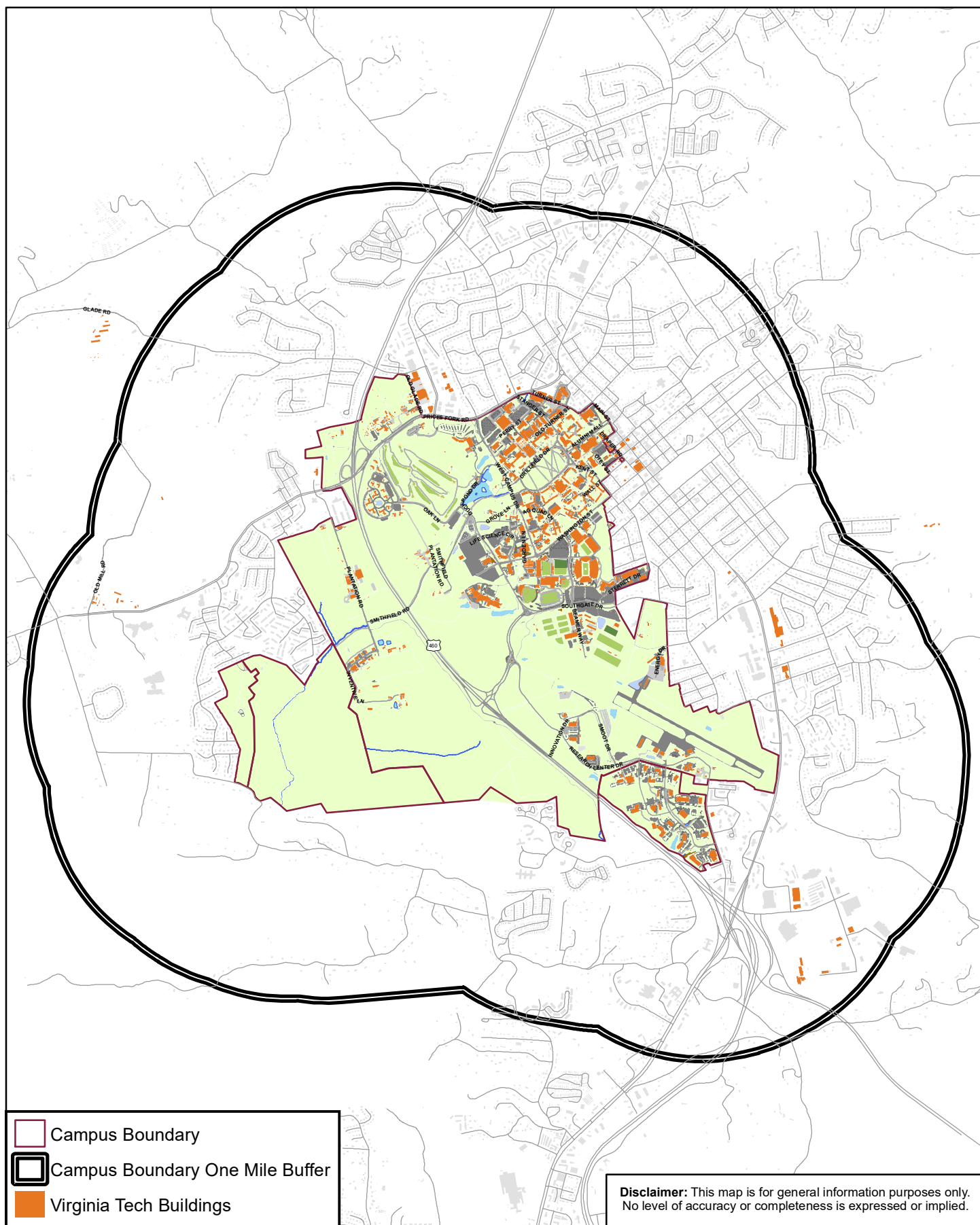
Building Name	Total Fires in Each Building	Fire Number	Date/Time	Location	Cause of Fire	Number of Injuries that Required Treatment at a Medical Facility	Number of Deaths Related to a Fire	Value of Property Damage Caused by Fire (Dollars)
New Residence Hall East 590 Washington St. SW	0	0			N/A	N/A	N/A	N/A
Newman Hall 200 Kent St.	1	1	4/26/2017 0339 hours	Room 326	Intentional – towel lit on fire	0	0	0.00
O'shaughnessy Hall 530 Washington St. SW	0	0			N/A	N/A	N/A	N/A
Payne Hall 600 Washington St	0	0			N/A	N/A	N/A	N/A
Pearson Hall 260 Alumni Mall	0	0			N/A	N/A	N/A	N/A
Peddrew-Yates Residence Hall 610 Washington St. SW	0	0			N/A	N/A	N/A	N/A
Pritchard Hall 630 Washington St. SW	1	1	11/12/2017 1552	Room 2076	Unintentional – electrical cellphone charger and power-strip	0	0	0.00
Slusher Tower 201 Ag Quad Drive	1	1	11/06/2019	Lounge	Unintentional – microwave malfunctioned	0	0	0.00
Slusher Wing 201 Ag Quad Drive	0	0			N/A	N/A	N/A	N/A
The Inn at Virginia Tech ¹ 901 Prices Fork Rd	0	0			N/A	N/A	N/A	N/A
Thomas Hall 190 Turner St. NW	0	0			N/A	N/A	N/A	N/A
Transfer House –Bldg. SPEH, 2745 Oak Lane	0	0			N/A	N/A	N/A	N/A
Vawter Hall 180 Kent St.	0	0			N/A	N/A	N/A	N/A
Special Purpose Housing - Bldg. A, 2750 Oak Lane	0	0			N/A	N/A	N/A	N/A
Special Purpose Housing - Bldg. B, 2740 Oak Lane	0	0			N/A	N/A	N/A	N/A
Special Purpose Housing - Bldg. C, 2720 Oak Lane	0	0			N/A	N/A	N/A	N/A
Special Purpose Housing - Bldg. D, 2805 Oak Lane	0	0			N/A	N/A	N/A	N/A
Special Purpose Housing - Bldg. E, 2705 Oak Lane	0	0			N/A	N/A	N/A	N/A
Special Purpose Housing - Bldg. F, 2615 Oak Lane	0	0			N/A	N/A	N/A	N/A

Building Name	Total Fires in Each Building	Fire Number	Date/Time	Location	Cause of Fire	Number of Injuries that Required Treatment at a Medical Facility	Number of Deaths Related to a Fire	Value of Property Damage Caused by Fire (Dollars)
Special Purpose Housing - Bldg. G, 2575 Oak Lane	0	0			N/A	N/A	N/A	N/A
Special Purpose Housing - Bldg. H, 3205 Oak Lane	0	0			N/A	N/A	N/A	N/A
Special Purpose Housing - Bldg. I, 3160 Oak Lane	0	0			N/A	N/A	N/A	N/A
Special Purpose Housing - Bldg. J, 3170 Oak Lane	0	0			N/A	N/A	N/A	N/A
Special Purpose Housing - Bldg. K, 3115 Oak Lane	0	0			N/A	N/A	N/A	N/A
Special Purpose Housing - Bldg. L, 3115 Oak Lane	0	0			N/A	N/A	N/A	N/A
Special Purpose Housing - Bldg. M, 3025 Oak Lane	0	0			N/A	N/A	N/A	N/A
Special Purpose Housing - Bldg. N, 3025 Oak Lane	0	0			N/A	N/A	N/A	N/A
Special Purpose Housing - Bldg. O, 2965 Oak Lane	0	0			N/A	N/A	N/A	N/A
Special Purpose Housing - Bldg. P, 2965 Oak Lane	0	0			N/A	N/A	N/A	N/A
Special Purpose Housing - Bldg. Q, 2875 Oak Lane	0	0			N/A	N/A	N/A	N/A
Special Purpose Housing - Bldg. R, 2875 Oak Lane	0	0			N/A	N/A	N/A	N/A

¹residence hall added August 2019

Virginia Tech Main Campus

Blacksburg, VA

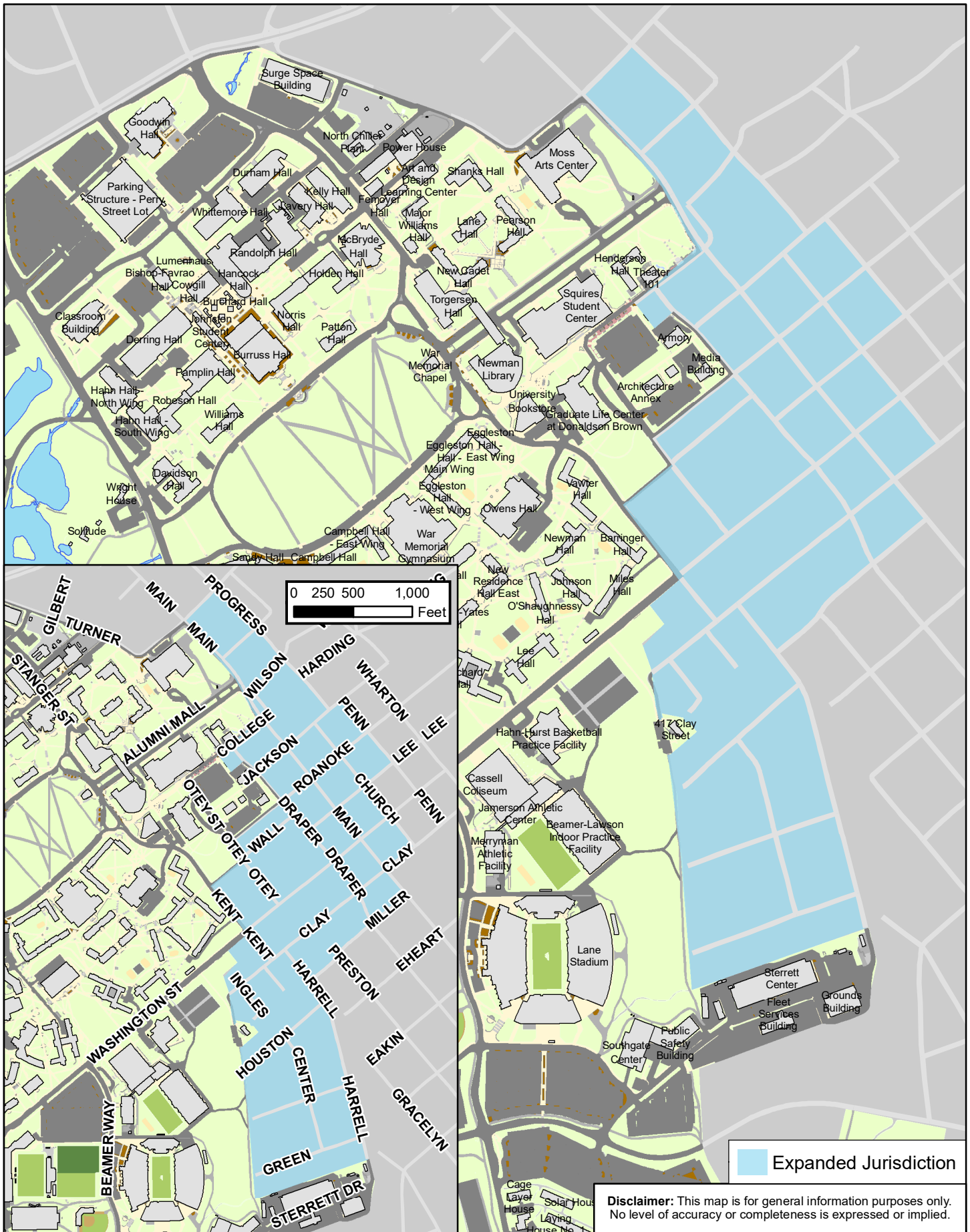


0 0.25 0.5 0.75 1 1.25 1.5 1.75 2 Miles
Date Created: Feb. 20, 2020



Extended Downtown Jurisdiction Map

Attachment G



0 500 1,000 1,500 2,000 Feet

Date Created: Feb. 15, 2019



Virginia Tech Research Center – Arlington

Virginia Tech is committed to providing the members of the campus community and visitors with the safest and most secure environment possible, however, even the most extensive initiatives cannot succeed without the awareness and cooperation of the community members who work, study and live on campus.

Crime information for the Virginia Tech Research Center – Arlington is obtained from the Director and the Arlington County Police Department. Individuals, who want to report crimes for inclusion in the Annual Security Report, or for the purpose of making timely warning reports, should report them to the Arlington County Police Department or the Director of the Virginia Tech Research Center – Arlington.

Overview

The Virginia Tech Research Center — Arlington, at 900 N. Glebe Road, is a highly visible state-of-the-art facility designed to further the university's mission to expand its research portfolio in the National Capital Region. The building is located in the vibrant [Ballston](#) district of [Arlington](#), a short distance from many of the leading science and research agencies of the federal government and many high-technology companies.

The seven-floor, 144,000-square-foot research center is U.S. Green Council [LEED-certified](#). The interior, designed by [Gensler](#), includes computational laboratories, offices, and [an Executive Briefing Center \(EBC\)](#) to accommodate meetings, forums, symposia, and other events. The EBC is available to the science and technology communities throughout the region for meetings and events not specifically related to the university, and two of the seven floors in the building not occupied by Virginia Tech are for commercial lease.

The building is among the best-connected research facilities in the world, incorporating next-generation Internet with direct fiber access to Internet 2 and multiple federal networks. High-performance connectivity links this research center to Virginia Tech's main campus in Blacksburg, as well as to other major universities. The network provides access to international peering points in New York, Chicago, Seattle, Los Angeles, and Florida, and the building includes a secure data center for high performance computing (HPC)-based research.

A number of established Virginia Tech [research centers and institutes](#) are located in this facility.

Access to Campus Buildings

When this facility was in the planning phase, security measures such as lighting, landscape and entrance security were included by the University Architects Office. The first layer of deterrence is the landscape design, as to include the lighting after hours. All exterior doors remain secured, with exception to the main entrance to the reception area. The next layer of detection is all exterior doors have security cameras. Access to the Arlington Center is controlled by layered security.

All visitors are welcomed at a reception desk, and then escorted within the facility by a staff member. The reception area has both a camera and a push-button alarm to alert the security personnel. Security personnel are onsite the same days/hours that the parking garage operates at. Reports of

malfunctioning lights and other unsafe physical conditions that need to be addressed are forwarded to the onsite Facilities Maintenance Technician. Facilities and landscapes are maintained in a manner that minimizes hazardous conditions.

Law Enforcement Services

The Virginia Tech Police Department does not normally provide law enforcement services to the Virginia Tech Research Center – Arlington. Day-to-day law enforcement services to the center are provided by the Arlington County Police Department. The Virginia Tech Police Department does not have an MOU with the Arlington County Police Department since they investigate all crimes within their jurisdiction.

Timely Warnings/Crime Alerts

Timely Warnings/Crime Alerts will be provided to the community in the event of a reported crime, either on campus or off, that, in the judgment of the Chief of the Virginia Tech Police Department or a designee, constitutes an ongoing or continuing serious threat to the university community. *Timely Warnings/Crime Alerts* can only be issued if the Virginia Tech Police Department receives information either from the Arlington County Police Department, the Virginia State Police or the Director of the Virginia Tech Research Center – Arlington.

Pastoral and Professional Counselors

The Virginia Tech Research Center – Arlington does not have any pastoral or professional counselors. However, students and faculty are encouraged to report crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics by contacting the Virginia Tech Police Department by phone 540-231-6411 (non-emergency) or by accessing the online report form on the Virginia Tech Police Department website.

Emergency Notifications

Regional VT Alerts are available for the National Capital Region, including the Arlington Research Center. Immediate/emergency notifications using VT Alerts to members of a satellite campus community will be provided when information is received, either from the designated individual at the satellite campus or from the law enforcement agency responsible for services where the campus is located. VT Alerts will normally be issued by the Virginia Tech Police Department. Emergency notifications may be issued locally, using other means by the Director of the National Capital Region – Arlington Research Center. These methods may include, but not limited to, direct communication to the campus using email or website notices. Members of the satellite campus are also encouraged to sign up for their localities emergency notification system, which are not affiliated with Virginia Tech, check with the police department in your area.

The Arlington County Sheriff's Office, Virginia State Police and the Arlington County Fire and EMS Departments are primarily responsible for confirming that there is a significant emergency or dangerous situation at the Arlington Research Center that could cause an immediate threat to the health and safety of the members of the campus community. The Director or designee can also be in a position to confirm an emergency in or surrounding the facility. The Office of University Relations, the Virginia Tech Police Department and/or Virginia Tech Emergency Management have access to the VT Alerts system

which can send an alert to subscribers; notifying the campus community of threats that have occurred that may necessitate evacuation, shelter in place or other action on the part of students, employees, and campus visitors. The university will typically provide follow-up information to the campus community using the same systems that were used to send out the original alert or to direct the campus community to other informational channels.

Virginia Tech will immediately notify the campus community upon the confirmation, from the Arlington County Sheriff's Office or authorized staff member at the Northern Capital Region – Arlington Research Center, of a significant emergency or an immediate threat to the health or safety of students or staff occurring at the Northern Capital Region – Arlington Research Center. One of the listed departments above will, without delay, and taking into account the safety of the community, determine the content of the notification and initiate the notification system based on information received, unless issuing a notification will, in the professional judgment of the public safety official, compromise efforts to assist a survivor or to contain, respond to, or otherwise mitigate the emergency. First responders to an incident that causes an immediate threat to the health and safety of the Virginia Tech community at the National Capital Region – Arlington Research Center will typically include the Arlington County Sheriff's Office, Virginia State Police, and the Arlington Fire and EMS Department.

In accordance with the Higher Education Act of 1965 as amended and Section 23-9.2:11 of the Code of Virginia, the university has implemented a comprehensive communications system, VT Alerts, to provide prompt warning notifications and alerts of immediate threats to the health and safety of members of the campus community using a variety of methods. The VT Alerts system includes: email notices; phone, cellular phone, text messages, and university website notices. Parents and members of the larger community are not eligible to sign up for immediate notification through VT Alerts. However, all Hokie family members, along with members of the community, are able to subscribe to receive real-time VT Phone Alerts to stay informed and are encouraged to do so. To subscribe, text **HokieFam** to **226787**. Also, they can check the University Website at www.vt.edu for updates during an emergency at the National Capital Region – Arlington Research Center and can sign up for desk top alerts by following the direction at: <https://www.alerts.vt.edu/index/desktop-alerts.html>.

Students and employees have the option of signing up on VT Alerts to receive emergency messages related to the National Capital Region – Arlington Research Center at: <http://www.alerts.vt.edu>. Annually, the Offices of University Relations and Human Resources provides communications to the university community regarding university procedures for authorized closings and receiving emergency alerts. Additional information about the “Alert” process can be found in the University Safety and Security Policy at: <http://www.policies.vt.edu/5615.pdf>.

Emergency Preparedness

Emergency preparedness and information on what to do in an emergency can be found on the “Be Hokie Ready” link from the Virginia Tech Emergency Management webpage <http://www.emergency.vt.edu>. Hokie family and community members are also encouraged to download the free Hokie Ready mobile safety app. App users can access important just-in-time emergency information. To download the app, search "Hokie Ready" in your app store

University departments are responsible for developing Emergency Action Plans (EAP) and Continuity of Operations Plans (COOP) for their staff and areas of responsibility. The University conducts numerous exercises each year, including tabletop exercises, functional exercises, drills and tests of the emergency notification systems. These tests are designed to assess and evaluate the emergency plans and capabilities of the institution.

Virginia Tech will notify the university community of its emergency notification protocols, emergency response and evacuation procedures via email, in conjunction with at least one drill or exercise each calendar year. Information related to emergency notifications and emergency guidelines can be found at <http://www.emergency.vt.edu>. Information related to evacuation procedures can be found at https://www.ehss.vt.edu/programs/FLS_fire_emergencies.php.

Reporting a Crime or Getting Emergency Assistance

Individuals are responsible for being aware of and complying with university policies/procedures, and applicable law. Employees and students are encouraged to accurately, voluntarily and promptly report crimes, emergencies, potential threats, or risks to the appropriate law enforcement agency or university office(s). Crimes and other emergencies should be reported to the Arlington County Police Department at 703-558-2222 or 911 for an emergency.

Survivors or witnesses can report crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics through the Virginia Tech Police Department website by accessing the Online Report Form, Anonymous Tips Form.

The Virginia Tech Police Department encourages every one that is a survivor of crime to come forward and report to the police. Students also have the option of contacting other university resources on the main campus, such as the Virginia Tech Women's Center, Office of Student Conduct, and Cook Counseling Center, Schiffert Health Center, or academic advisors who will assist with notifications, if desired. Cook Counseling Center will facilitate referrals. Crimes can also be reported to the Virginia Tech Police Department for the purpose of making a Timely Warning report and the annual statistical disclosure.

Services and Prevention Information

All Virginia Tech students have access to services offered on the main campus regardless of the location of the extended campus where they are taking classes. Crime prevention, safety and security, sexual assault and other programs are available upon request.

Virginia Tech is committed to University Policy 1025 and the Violence Against Women Act (VAWA), which among other things prohibits discrimination and discriminatory harassment, including sexual harassment and sexual violence in all of its forms, domestic violence, dating violence, and stalking.

Sexual Assault is a crime that affects men and women punishable by both civil and criminal legal action. The Arlington County Police Department investigates all sexual assaults reported to the Police Department. Once reported to the Police officers respond, investigate and make applicable criminal charges based on evidence collection and survivor / witness statements. The survivor of a sexual assault

may also choose to file a report with the Title IX Coordinator, or the Department of Human Resources. The Office of Student Conduct adjudicates cases involving sex offenses in which the alleged perpetrator is a Virginia Tech Student. Virginia Tech also encourages survivors to prosecute alleged perpetrators to the fullest extent of the law. There are several avenues for assistance if a person becomes the survivor of a sex offense.

Survivors of sexual assault tend to feel a variety of conflicting emotions: rage, fear, depression, relief to have survived, numbness, and exhaustion, to name just a few. Two key points to remember are that the assault was not your fault and there is help available.

The Virginia Tech Police Department is available and ready to assist if needed. The Virginia Tech Police Department is a valuable resource for information. The department has educational literature available on prevention methods and procedures to follow if you should become the survivor of a sex offense. The department provides educational programs on women's awareness, personal safety and instructs Rape Aggression Defense (RAD) classes upon request. RAD for women classes are self-defense classes and consist of awareness, safety tips and progresses into hands on attack simulations at the end of the class. Resisting Aggression Defense for men, teaches the practice of self-defense and how to escape aggressive behavior. The Arlington County Police Department's Survivor/Witness Assistance Program protects the rights of survivors and witness of crimes. Referral information is available regarding area services for general counseling, medical attention, emergency housing or financial assistance. Responsiveness to the needs of crime survivors is a department priority. For crimes that occur at the center, the Virginia Tech Police Department will assist and refer the survivor to the Arlington County Police Department. Responsiveness to the needs of crime survivors is a department priority.

If Sexual Assault Happens to You

- Contact the police for assistance and information or to report the incident. The Arlington County Police Department should be contacted for incidents occurring at the center.
- Go to the Virginia Hospital Center Arlington. A qualified physician or nurse will examine you for injuries and collect physical evidence that could be used in judicial proceedings if you decide to prosecute.
- If possible, do not change your clothes, shower, eat or drink between the rape and the trip to the emergency room. Preserving evidence is critical and can assist in prosecution. Bring a change of clothes with you because the police will need the clothes you were wearing for evidence.
- Even if you do not wish to prosecute, it is important that you have a physical exam after the attack. Besides bruises or other physical injuries, the perpetrator might have passed on a sexually transmitted disease that requires treatment. An HIV/AIDS test may also ease your mind, although six months must elapse after an attack to accurately detect the presence of HIV, the virus that causes AIDS.
- Seek counseling from the Department of Human Services Behavioral Healthcare Division located at North George Mason Drive, Arlington, Virginia 22205, (703-228-4256) or a private counselor. If you are not comfortable talking with a counselor, consider talking with a trusted friend or family member.
- Consider your judicial options if you have not done so already. Although there are statutes of

limitation on criminal cases, they are often longer than you think. You also have the option of campus and civil charges.

- If the assault and its aftermath are interfering with your ability to complete your work or academic performance, talk with the Thomas E. Cook Counseling Center, Women's Center at Virginia Tech, or the academic dean of your college about academic relief. The Dean of Students will also assist in changing academic and living situations after an alleged sexual assault incident, should the survivor request such assistance and such changes are reasonably available.
- Remember that it is never too late to deal with a sexual assault, and that you can heal from this significant trauma. People are ready and able to help you, but they can't if you don't ask.

Medical Care

As mentioned above, survivors of very recent assaults should go to the emergency room of the Virginia Hospital Center Arlington for a physical exam and the collection of evidence. All survivors, past or present, should be seen by a qualified physician or nurse to check for sexually transmitted diseases, physical trauma, and possible pregnancy. The Virginia Hospital Center Arlington offers the services of Sexual Assault Nurse Examiners. Female survivors may prefer to see a female physician, and should request one if that will increase their comfort though in the emergency room that may not always be possible. Survivors may also wish to see their family doctor. Even if no symptoms are apparent, survivors are still strongly encouraged to seek medical attention.

Criminal

A police report must be generated before an investigation can begin and charges can be placed. If the assault happened at the center, it falls under the jurisdiction of the Arlington County Police Department. Many survivors believe that if they do not file criminal charges immediately, they lose that option. This may not be the case. There are statutes of limitation for filing criminal charges, but they are typically several years in duration. Certainly, it is best to go to the police as soon as possible after an assault, in order to preserve as much evidence as possible. The police will arrange for the survivor to be seen at the Virginia Hospital Center Arlington for medical care and evidence collection. However, even if some time has elapsed, the police still encourage survivors to come forward. Criminal charges are prosecuted by the state of Virginia, not the individual survivor. A Commonwealth's Attorney will argue the case at no cost to the survivor. The survivor serves as the primary witness to the crime, and his or her testimony is crucial to the case. Criminal cases may take considerable time to proceed through the justice system. Typically, the press protects the identity of the survivor, although the identity of the accused perpetrator is not protected.

Important Contacts / Phone Numbers

This section has attempted to offer an overview of sexual assault issues, and the available options on the Virginia Tech campus. No one publication can be entirely comprehensive. Sexual assault is a complex issue; no two cases will have exactly the same results or the same course of action. The university therefore, offers a variety of services so that survivors can get the assistance they most need. A good starting point for a survivor, or family and friends of a survivor, is with the Sexual Assault Education Coordinator who is based in The Women's Center at Virginia Tech. For further explanation or elaboration of the information in this section, contact the agencies whose numbers are listed here.

Arlington County Police Department	703-558-2222
	911 (emergency)
The Women's Center at Virginia Tech	540-231-7806
Women's Center Northern Virginia	703-281-2657
Thomas E. Cook Counseling Center	540-231-6557(8am-5pm)
	540-231-6444(5pm-8am)
Schiffert Health Services	540-231-6444
Cranwell International Center	540-231-6527
Virginia Tech Police Department	540-231-6411
VT HR Employee Assistance Program	866-725-0602
(employees who are covered by the university's health insurance)	
Dean of Students	540-231-3787
Office of Student Conduct	540-231-3790
Office of Student Programs	540-231-6204
Student Legal Services	540-231-4720
Virginia Hospital Center Arlington	703-558-5000
Arlington C. Community Service Board	703-228-4871
Title IX Coordinator	540-231-1824(students)
Office of Equity & Access	540-231-8771(employees)
Office of Emergency Management	540-231-2438

The Arlington County Community Services Board (ACCSB) consists of members of the community appointed to oversee services provided through divisions within the Department of Human Services to persons challenged by mental health, intellectual disabilities, and substance abuse issues. The ACCSB provides the principal forum for residents and consumers of services to review, comment on, and influence the direction of those services.

The ACCSB acts as an advocate, educator, community organizer, and community planner for services. Visit the rest of the ACCSB site for more information.

Virginia Tech Arlington Research Center Crime Statistics 2019

	On Campus			Non Campus			Public Property			Year Total			Residential		
OFFENSE TYPE	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Murder & Non negligent Manslaughter	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A
Manslaughter By Negligence	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A
Rape	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A
Fondling	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A
Incest	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A
Statutory Rape	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A
Robbery	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A
Aggravated Assault	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A
Burglary	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A
Motor Vehicle Theft	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A
Liquor Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A
Liquor Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A
Drug Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A
Drug Law Arrests	0	0	0	0	0	0	0	1	0	0	1	0	N/A	N/A	N/A
Illegal Weapons Possession Referred	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A
Illegal Weapons Possession Arrests	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A
Arson	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A
Domestic Violence**	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A
Dating Violence**	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A
Stalking**	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A

*No hate crimes were reported in 2017, 2018, or 2019.

*No unfounded crimes reported in 2017, 2018, or 2019.

*Hate crimes are criminal offenses committed against a person or property which is motivated in whole or in part by the offender's bias. Bias is a preformed negative opinion or attitude toward a group of persons based on their race, religion, gender, sexual orientation, ethnicity, disability, gender identity and national origin.

Note: Included in the Virginia Tech Arlington Crime Statistics Chart are the crimes required by the Clery Act that occurred on or within an institution's Clery Geography that have been reported to a Campus Security Authority.



Arlington Research Center

Attachment G



900 N Glebe Rd
Arlington, VA

0 100 200 400 Feet

Virginia Tech Carilion

Virginia Tech is committed to providing the members of the campus community and visitors with the safest and most secure environment possible, however, even the most extensive initiatives cannot succeed without the awareness and cooperation of the community members who work, study and live on campus. Crime information for VTC is requested from the Carilion Clinic Police and Security Department. Individuals who want to report crimes for inclusion in the Annual Security Report should report them to the Carilion Clinic Police and Security Department or the Director of the Virginia Tech Carilion Research Institute.

Information for this annual report is obtained from reports provided by Carilion Police and Security Department officials, Campus Security Authorities including, but not limited to, the Department of Human Resources, the Office of Student Conduct, the Dean of Students Office, the Virginia Tech Women's Center, and the Office of Residence Life. Statistics are also requested from law enforcement agencies in jurisdictions that Virginia Tech owns, leases or controls property or those with jurisdiction on adjacent property.

Overview

In 2018, the Virginia Tech Carilion Research Institute and the Virginia Tech School of Medicine became one under the name of Virginia Tech Carilion. The VTCRI opened in August 2010 and is located at 2 Riverside Circle in Roanoke, Virginia 24016. Collectively called Virginia Tech Carilion (VTC), the Virginia Tech Carilion Research Institute leverages Virginia Tech's world-class strength in basic sciences, bioinformatics, and engineering with Carilion Clinic's highly experienced medical staff and rich history in medical education.

Research conducted at the Virginia Tech Carilion Research Institute (VTCRI) creates a bridge between basic science research and clinical expertise at Carilion Clinic which increases translational research opportunities for both. Research conducted by scientists at the institute is aimed at understanding the molecular basis for health and disease, and development of diagnostic tools, treatments, and therapies that will contribute to the prevention and solution of existing and emerging problems in contemporary medicine. Research areas of emphasis which presently align with areas of strength and active research at Virginia Tech include inflammation, infectious disease, neuroscience, and cardiovascular science and cardiology.

Virginia Tech Carilion is located near downtown Roanoke, Virginia, adjacent to Carilion Roanoke Memorial Hospital, in a burgeoning biomedical health sciences campus. The Virginia Tech Carilion building is contemporary in style and is partially constructed with Hokie Stone, the traditional stone utilized on the Virginia Tech campus in Blacksburg.

Access to Campus Buildings

Access to the Research Institute is controlled by layered security. The doors have card access and all visitors are welcomed at a reception desk, and then escorted within the facility by a staff member. Visitor passes are issued when guests are signed in, and visitors are signed out upon departure from the facility. All exterior doors, except the main entrance, are locked at all times. Police are stationed within the facility 24 hours a day, 7 days a week, and 365 days a year.

Reports of malfunctioning lights and other unsafe physical conditions that need to be addressed are forwarded to the onsite Facilities Maintenance Technician. Facilities and landscapes are maintained in a manner that minimizes hazardous conditions. For information about the access protocol for a specific building, see the building manager, a department head, or contact the Carilion Clinic Police and Security Department at 540-981-7516.

Law Enforcement Services

The Virginia Tech Police Department does not normally provide law enforcement services to the Virginia Tech Carilion Research Institute. Day-to-day law enforcement services to the VTCRI are provided by the Carilion Clinic Police and Security Department. The Virginia Tech Police Department has a Memorandum of Understanding (MOU) with the Carilion Clinic Police and Security Department since the Carilion Clinic Police and Security Department investigates all crimes within their jurisdiction. The Carilion Police have full police powers and are certified through DCJS as police officers within the Commonwealth of Virginia.

The Carilion Clinic Police and Security Department maintains a close working relationship with the Roanoke City Police Department as well as other law enforcement agencies throughout the state. As a participant in the National Crime Information Center (NCIC) and the Virginia Crime Information Network (VCIN), Carilion Clinic Police and Security personnel are able to transmit and receive crime information with other police agencies throughout the United States. Through its membership in related professional organizations, the department is able to keep abreast of new or developing ideas and has a medium for the exchange of information on law enforcement issues. The Carilion Clinic Police and Security Department has a news release called “Daily Crime and Fire Log” that is published each day with the exception of weekends and holidays. The “Daily Crime and Fire Log” lists all incidents of crime over the past 24 hours, or over the weekend. It is available for review by the public at the Police Department. The Carilion Clinic Police and Security Department notifies the university, via a Referral of Student Conduct, when students or university recognized student groups are involved in criminal activities on campus.

Timely Warning Notices

Timely Warnings/ Crime Alerts will be provided to the community in the event of a reported crime, either on campus or off, that, in the judgment of the Carilion Clinic Police and Security Department or a designee, constitutes an ongoing or continuing serious threat to the university community. *Timely Warnings/ Crime Alerts* can only be issued if the Virginia Tech Police Department receives information either from the Carilion Clinic Police and Security Department, the Virginia State Police, the Roanoke City Police or the Dean or Vice Dean of the School of Medicine and Research Institute. The Clery crimes for which *Timely Warnings/ Crime Alerts* may be issued, but are not limited to, are murder & non negligent manslaughter, manslaughter by negligence, arson, burglary, robbery, sex offenses, aggravated assault and motor vehicle theft.

Controlled Substances

The university strictly prohibits the illegal use or possession of any controlled substance. The illegal use of controlled substances is incompatible with the goals of an academic community. Students found guilty of possessing, using, distributing, or selling controlled substances will face serious disciplinary action, which may include suspension and/or dismissal from the university.

upon the first offense. Violations of state law should be reported to the Carilion Clinic Police and Security Department who will take appropriate legal actions. For more comprehensive details, please refer to the University's Policy for a Drug Free University at: <http://www.policies.vt.edu/1020.pdf>.

Pastoral and Professional Counselors

The Research Institute offer's professional counseling to students. These services are outlined in the student handbook under Student Wellness. This option may not be practical for students at the Roanoke Higher Education Center. Many other options exist in Roanoke that may have some cost associated with them, such as private therapists.

Emergency Response and Evacuation Procedures

Emergency Notifications

Regional VT Alerts are available for the Carilion Research Institute. Immediate/emergency notifications using VT Alerts to members of a satellite campus community will be provided when information is received, either from the designated individual at the satellite campus or from the law enforcement agency responsible for services where the campus is located. VT Alerts will normally be issued by the Virginia Tech Police Department. Emergency notifications may be issued locally, using other means by the Director of the Carilion Research Institute. These methods may include, but not limited to, direct communication to the campus using email or website notices. Members of the satellite campus community are also encouraged to sign up for their localities emergency notification system, which are not affiliated with Virginia Tech, check with the police department in your area.

The Carilion Clinic Police and Security Department, the Virginia state Police and the Roanoke City Fire and EMS Departments are primarily responsible for confirming that there is a significant emergency or dangerous situation at the Carilion Research Institute that could cause an immediate threat to the health and safety of the members of the campus community. The Director or designee can also be in a position to confirm an emergency in or surrounding the campus. The Office of University Relations, the Virginia Tech Police Department and/or Virginia Tech Emergency Management have access to the VT Alerts system which can send an alert to subscribers; notifying the campus community of threats that have occurred that may necessitate evacuation, shelter-in-place or other action on the part of students, employees, and campus visitors. The university will typically provide follow-up information to the campus community using the same systems that were used to send out the original alert or to direct the campus community to other informational channels.

Virginia Tech will immediately notify the campus community upon the confirmation, from the Carilion Clinic Police and Security Department, the Virginia state Police or the Roanoke City Fire and EMS Departments or authorized staff member at the Carilion Research Institute, of a significant emergency or an immediate threat to the health or safety of students or staff occurring at the Carilion Research Institute. One of the listed departments above will, without delay and taking into account the safety of the community, determine the content of the notification and initiate the notification system based on information received, unless issuing a notification will, in the professional judgment of the public safety official, compromise efforts to assist, contain, respond to, or otherwise mitigate the emergency. First responders to an incident that causes an immediate

threat to the health and safety of the Virginia Tech community at the Carilion Research Institute will typically include the Carilion Clinic Police and Security Department, the Virginia state Police and the Roanoke City Fire and EMS Departments.

In accordance with the Higher Education Act of 1965 as amended and Section 23-9.2:11 of the Code of Virginia, the university has implemented a comprehensive communications system, VT Alerts, to provide prompt warning notifications and alerts of immediate threats to the health and safety of members of the campus community using a variety of methods. The VT Alert system includes: email notices; phone, cellular phone, and text messages; and university website notices. Parents and members of the larger community are not eligible to sign up for immediate notification through VT Alerts. However, all Hokie family members, along with members of the community, are able to subscribe to receive real-time VT Phone Alerts to stay informed and are encouraged to do so. To subscribe, text **HokieFam** to **226787**. They can also check the University Website at www.vt.edu for updates during an emergency at the Carilion Research Institute and can sign up for desk top alerts by following the direction at: <http://www.alerts.vt.edu/index/desktop-alerts.html>.

Students and employees have the option of signing up on VT Alerts to receive emergency messages related to the Carilion Research Institute at: <http://www.alerts.vt.edu>. Annually, the Offices of University Relations and Human Resources provides communications to the university community regarding university procedures for authorized closings and receiving emergency alerts. Additional information about the "Alert" process can be found in the University Safety and Security Policy at: <http://www.policies.vt.edu/5615.pdf>

Emergency Preparedness

Emergency preparedness and information on what to do in an emergency can be found on the "Be Hokie Ready" link from the Virginia Tech Emergency Management webpage <http://www.emergency.vt.edu> Hokie family and community members are also encouraged to download the free Hokie Ready mobile safety app. App users can access important just-in-time emergency information. To download the app, search "Hokie Ready" in your app store.

University departments are responsible for developing Emergency Action Plans (EAP) and Continuity of Operations Plans (COOP) for their staff and areas of responsibility. The University conducts numerous exercises each year, including tabletop exercises, functional exercises, drills and tests of the emergency notification systems. These tests are designed to assess and evaluate the emergency plans and capabilities of the institution.

Virginia Tech will notify the university community of its emergency notification protocols, emergency response and evacuation procedures via email, in conjunction with at least one drill or exercise each calendar year. Information related to emergency notifications and emergency guidelines can be found at <http://www.emergency.vt.edu>. Information related to evacuation procedures can be found at https://www.ehss.vt.edu/programs/FLS_fire_emergencies.php

Reporting a Crime or Getting Emergency Assistance

Individuals are responsible for being aware of and complying with university policies/procedures, and applicable law. Employees and students are encouraged to accurately, voluntarily and promptly report crimes, emergencies, potential threats, or risks to the appropriate law enforcement agency or university office(s). Crimes and other emergencies should be reported to the Carilion

Clinic Police and Security Department (540-981-7911 or 911) for an emergency.

The Virginia Tech Carilion Research Institute does not have any policies or procedures that allow survivors or witnesses to report crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics.

The Virginia Tech Police Department encourages everyone that is a survivor of crime to come forward and report to the police. However, on occasion and depending on the nature of the crime, the survivor refuses to press charges. This is the survivor's option. Students also have the option of contacting other university resources on the main campus, such as the Virginia Tech Women's Center, Office of Student Conduct, Cook Counseling Center, Schiffert Health Center, or academic advisors who will assist with notifications, if desired. Crimes can also be reported to the Virginia Tech Police Department for the purpose of making a Timely Warning report and the annual statistical disclosure.

Services and Prevention Information

All Virginia Tech students have access to services offered on the main campus regardless of the location of the extended campus where they are taking classes. Crime prevention, safety and security, sexual assault and other programs are available upon request.

Safety and Security Programs

The Virginia Tech Police Department has community outreach and residence life resource officers that provide educational programming and other crime prevention functions to the university community. Educational programs located on the Blacksburg campus include Student Police Academy, Alcohol Awareness, Bicycle Safety, Drug Awareness, Operation ID, Personal and Property Safety (basic crime prevention and personal safety), Rape Aggression Defense and Women's Awareness and Safety. RAD for men is also available and teaches self-defense and how to escape aggressive behavior. All programs are available to faculty, staff and students upon request or if a need becomes apparent. Crime prevention programs for satellite campuses are supplemented by local law enforcement agencies. The Carilion Clinic Police and Security Department should be contacted to determine what types of classes are available.

Virginia Tech is committed to University Policy 1025 and the Violence Against Women Act (VAWA), which among other things prohibits discrimination and discriminatory harassment, including sexual harassment and sexual violence in all of its forms, domestic violence, dating violence, and stalking.

Sexual Assault is a crime that affects men and women punishable by both civil and criminal legal action. The Carilion Clinic Police and Security Department investigates all sexual assaults reported to the Police Department. Once reported to the Police officers respond, investigate and make applicable criminal charges based on evidence collection and survivor / witness statements. The survivor of a sexual assault may also choose to file a report with Title IX Coordinator, or the Department of Human Resources. The Office of Student Conduct adjudicates cases involving sex offenses in which the alleged perpetrator is a Virginia Tech student. Virginia Tech also encourages survivors to prosecute alleged perpetrators to the fullest extent of the law. There are several avenues for assistance if a person becomes the survivor of a sex offense.

Survivors of sexual assault tend to feel a variety of conflicting emotions: rage, fear, depression, relief to have survived, numbness, and exhaustion, to name just a few. Two key points to remember are that the assault was not your fault and there is help available.

In conjunction with the Carilion Clinic Police and Security Department, The Virginia Tech Police Department is always available and ready to assist if needed. The Virginia Tech Police Department is a valuable resource for information. The department has educational literature available on prevention methods and procedures to follow if you should become the survivor of a sex offense. The department provides educational programs on women's awareness, personal safety and instructs Rape Aggression Defense (RAD) classes upon request. RAD classes are self-defense classes for women only and consist of awareness, safety tips and progresses into hands on attack simulations at the end of the class.

The Police Department's Survivor/Witness Assistance Program protects the rights of survivors and witness of crimes. Referral information is accessible at all times regarding area services available for general counseling, medical attention, emergency housing or financial assistance. Responsiveness to the needs of crime survivors is a department priority.

If Sexual Assault Happens to You

- Contact the police for assistance and information or to report the incident. The Carilion Clinic Police and Security Department should be contacted for incidents occurring at the Virginia Tech Carilion Research Institute. The Virginia Tech Police Department will assist the survivor in contacting the correct law enforcement agency, if requested.
- Go to the Roanoke Memorial Hospital in Roanoke. A qualified physician or nurse will examine you for injuries and collect physical evidence that could be used in judicial proceedings if you decide to prosecute.
- If possible, do not change your clothes, shower, eat or drink between the rape and the trip to the emergency room. Preserving evidence is critical and can assist in prosecution. Bring a change of clothes with you because the police will need the clothes you were wearing for evidence.
- Even if you do not wish to prosecute, it is important that you have a physical exam after the attack. Besides bruises or other physical injuries, the perpetrator might have passed on a sexually transmitted disease that requires treatment. An HIV/AIDS test may also ease your mind, although six months must elapse after an attack to accurately detect the presence of HIV, the virus that causes AIDS.
- Seek counseling options from the Roanoke City Department of Social Services located at 1510 Williamson Road, Roanoke Virginia 24012 (540-853-2591) or a private counselor. If you are not comfortable talking with a counselor, consider talking with a trusted friend or family member.
- Consider your judicial options if you have not done so already. Although there are statutes of limitation on criminal cases, they are often longer than you think. You also have the option of campus and civil charges.
- If the assault and its aftermath are interfering with your ability to complete your work or academic performance, talk with the Thomas E. Cook Counseling Center,

Women's Center at Virginia Tech, or the academic dean of your college about academic relief. The Dean of Students will also assist in changing academic and living situations after an alleged sexual assault incident, should the survivor request such assistance and such changes are reasonably available.

- Remember it is never too late to deal with a sexual assault, and that you can heal from this significant trauma. People are ready and able to help you, but they can't if you don't ask.
- Seek counseling options from the Roanoke City Department of Social Services located At 1510 Williamson Road, Roanoke Virginia 24012 (540-853-2591) or a private counselor. If you are not comfortable talking with a counselor, consider talking with a trusted friend or family member.
- Consider your judicial options if you have not done so already. Although there are statutes of limitation on criminal cases, they are often longer than you think. You also have the option of campus and civil charges
- If the assault and its aftermath are interfering with your ability to complete your work or academic performance, talk with the Thomas E. Cook Counseling Center, Women's Center at Virginia Tech, or the academic dean of your college about academic relief. The Dean of Students will also assist in changing academic and living situations after an alleged sexual assault incident, should the survivor request such assistance and such changes are reasonably available.
- Remember that it is never too late to deal with a sexual assault, and that you can heal from this significant trauma. People are ready and able to help you, but they can't if you don't ask.

Medical Care

As mentioned above, survivors of very recent assaults should go to the emergency room of the Roanoke Memorial Hospital for a physical exam and the collection of evidence. All survivors, past or present, should be seen by a qualified physician or nurse to check for sexually transmitted diseases, physical trauma, and possible pregnancy. The Roanoke Memorial Hospital offers the services of Sexual Assault Nurse Examiners. Female survivors may prefer to see a female physician, and should request one if that will increase their comfort, though in the emergency room that may not always be possible. Survivors may also wish to see their family doctor. Even if no symptoms are apparent, survivors are still strongly encouraged to seek medical attention.

Counseling Options

Students coping with a sexual assault have counseling options available. Two of those options are on-campus: The Women's Center at Virginia Tech and the Thomas E. Cook Counseling Center. The Women's Center at Virginia Tech offers short-term crisis counseling and sexual assault support groups. The Thomas E. Cook Counseling Center offers both short- term and long- term individual and group counseling. These two options may not be practical for students at Carilion Research Institute. Many other options exist in the Roanoke area that may have some cost associated with them, such as private therapists. Counseling is often crucial to the recovery process, and survivors should be encouraged to seek the assistance of qualified professionals, even if many years have elapsed since the assault. As always, the choice to seek counseling should be the survivor's.

Criminal

A police report must be generated before an investigation can begin and charges can be placed. If the assault happened on campus, it falls under the jurisdiction of the Carilion Police and Security Department. Many survivors believe that if they do not file criminal charges immediately, they lose that option. This may not be the case. There are statutes of limitation for filing criminal charges, but they are typically several years in duration. Certainly, it is best to go to the police as soon as possible after an assault, in order to preserve as much evidence as possible. The police will arrange for the survivor to be seen at the Roanoke Memorial Hospital for medical care and evidence collection. However, even if some time has elapsed, the police still encourage survivors to come forward. Criminal charges are prosecuted by the state of Virginia, not the individual survivor. A Commonwealth's Attorney will argue the case at no cost to the survivor. The survivor serves as the primary witness to the crime, and his or her testimony is crucial to the case. Criminal cases may take considerable time to proceed through the justice system. Typically, the press protects the identity of the survivor, although the identity of the accused perpetrator is not protected.

Important Contacts / Phone Numbers

This section has attempted to offer an overview of sexual assault issues, and the available options on the Virginia Tech campus. No one publication can be entirely comprehensive. Sexual assault is a complex issue; no two cases will have exactly the same results or the same course of action. The university therefore offers a variety of services so that survivors can get the assistance they most need. A good starting point for a survivor, or family and friends of a survivor, is with the Sexual Assault Education Coordinator who is based in The Women's Center at Virginia Tech. For further explanation or elaboration of the information in this section, contact the agencies whose numbers are listed here.

The Women's Center at Virginia Tech	540-231-7806
Women's Center	703-281-2657
Thomas E. Cook Counseling Center	540-231-6557 (8am – 5pm)
	540-231-6444 (8pm – 5am)
VT Cook Counseling Services/Roanoke	540-526-2626
Sexual Assault Response & Awareness/Roanoke	540-981-9352 (Hotline)
Schiffert Health Services	540-231-6444
Virginia Tech Police Department	540-231-6411
	(located in Blacksburg)
VT HR Employee Assistance Program	866-725-0602
(Employees covered by the university's health insurance)	
Dean of Students	540-231-3787
Office of Student Conduct	540-231-3790
Office of Student Programs	540-231-6204
VTC Title IX Liason	540-526-2505
Title IX	540-231-1824 (students)
Equity & Access	540-231-8771 (employees)
Student Legal Services	540-231-4720
Carilion Clinic Police and Security	540-981-7911
	911 (emergency)
Carilion Roanoke Memorial Hospital	434-266-6000
Roanoke City Police	540-853-2212
Office of Emergency Management	540-231-2438

One of the largest hospitals in the state, Carilion Roanoke Memorial Hospital (CRMH) is a 703-bed hospital with an additional 60-bed Neonatal Intensive Care Unit. The CRMH facility includes the Carilion Clinic Children's Hospital complete with a Pediatric Emergency Room. Now in its second century of providing premiere healthcare services, CRMH also features a Level I trauma center.

Virginia Tech Carilion Crime Statistics 2019

	On Campus			Non Campus			Public Property			Year Total		
OFFENSE TYPE	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Murder & Non negligent Manslaughter	0	0	0	0	0	0	0	0	0	0	0	0
Manslaughter By Negligence	0	0	0	0	0	0	0	0	0	0	0	0
Rape	0	0	0	0	0	0	0	0	0	0	0	0
Fondling	0	0	0	0	1	0	0	0	0	0	1	0
Incest	0	0	0	0	0	0	0	0	0	0	0	0
Statutory Rape	0	0	0	0	0	0	0	0	0	0	0	0
Robbery	0	0	0	0	0	0	0	0	0	0	0	0
Aggravated Assault	0	0	0	0	0	0	0	0	0	0	0	0
Burglary	0	0	0	0	0	0	0	0	0	0	0	0
Motor Vehicle Theft	0	0	0	0	0	0	0	0	0	0	0	0
Liquor Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0
Liquor Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Drug Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0
Drug Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Illegal Weapons Possession Referred	0	0	0	0	0	0	0	0	0	0	0	0
Illegal Weapons Possession Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Arson	0	0	0	0	0	0	0	0	0	0	0	0
Domestic Violence**	0	0	0	0	0	0	0	0	0	0	0	0
Dating Violence**	0	0	0	0	0	0	0	0	0	0	0	0
Stalking**	0	0	1	0	0	0	0	0	0	0	0	1

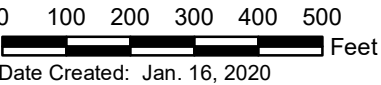
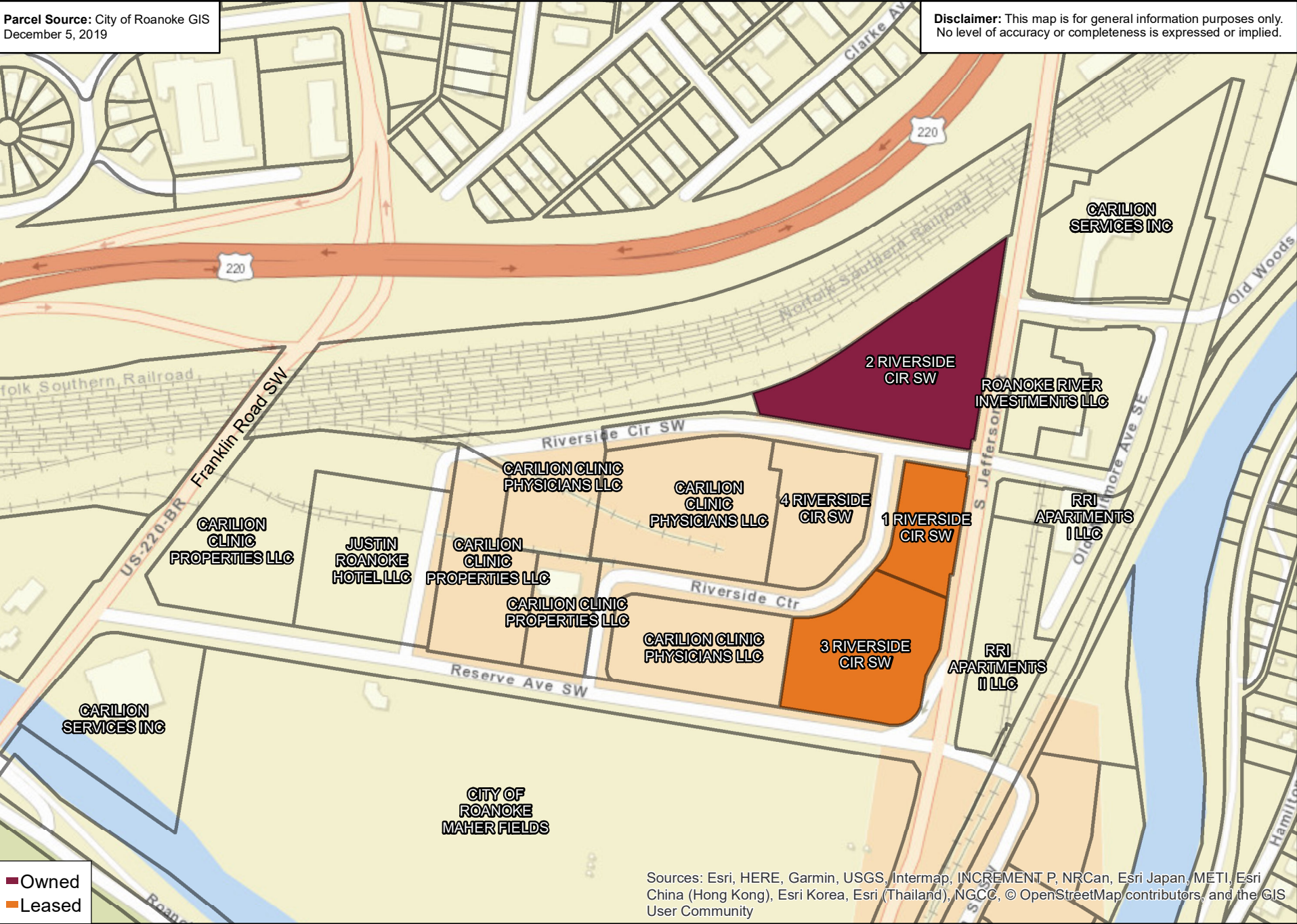
*No hate crimes were reported in 2017, 2018, or 2019. No on-campus housing.

*No unfounded crimes reported in 2017, 2018, or 2019.

*Hate crimes are criminal offenses committed against a person or property which is motivated in whole or in part by the offender's bias. Bias is a preformed negative opinion or attitude toward a group of persons based on their race, religion, gender, sexual orientation, ethnicity, disability, gender identity and national origin.

Note: Included in the Virginia Tech Carilion Crime Statistics Chart are the crimes required by the Clery Act that occurred on or within an institution's Clery Geography that have been reported to a Campus Security Authority.

Virginia Tech Carilion



Hampton Roads Education Center

Virginia Tech is committed to providing the members of the campus community and visitors with the safest and most secure environment possible, however, even the most extensive initiatives cannot succeed without the awareness and cooperation of the community members who work, study and live on campus. Crime information for the Hampton Roads Education Center is obtained from the Director of the Facility and the Virginia Beach Police Department. Individuals who want to report crimes for inclusion in the Annual Security Report, or for the purpose of making timely warning reports, should report them to the Virginia Beach Police Department or the Director of the Hampton Roads facility.

Information for this annual report is compiled from reports provided by Campus Security Authorities including, but not limited to, the Department of Human Resources, the Office of Student Conduct, the Dean of students Office, the Virginia Tech Women's Center, and the Office of Residence Life. Statistics are also compiled from law enforcement agencies in jurisdictions that Virginia Tech owns, leases or controls property or those with jurisdiction on adjacent property.

Campus Overview

The Virginia Tech Hampton Roads Centers creates opportunities for long-term economic and individual success via continuing education and professional development. We offer an array of educational services to meet the needs of working professionals in the Hampton Roads region of the Commonwealth. Conveniently located in Newport News (with a second location in Virginia Beach), we offer: professional development and continuing education opportunities, graduate level courses and customized opportunities for corporations and organizations.

Access to Campus Buildings

Security and access control design standards have been developed for new and renovated buildings owned by the university. The Hampton Roads Education Center is open to the public from 8:00am to 9:30pm and are secured after operating hours and during extended breaks. Administrators review security access and address issues related to lighting and other unsafe conditions on a routine basis. On site staff fix any problems noted.

Law Enforcement Services

The Virginia Tech Police Department does not normally provide law enforcement services to the Hampton Roads Education Center. Day-to-day law enforcement services to the Hampton Roads Education Center are provided by the Virginia Beach Police Department. The Virginia Tech Police Department does not have a Memorandum of Understanding (MOU) with the Virginia Beach Police since Virginia Beach Police investigate all crimes within their jurisdiction.

Timely Warning / Crime Alert Notices

Timely Warnings / Crime Alerts will be provided to the community in the event of a reported crime, either on campus or off, that, in the judgment of the Chief of the Virginia Tech Police Department or a designee, constitutes an ongoing or continuing serious threat to the university community. *Timely Warnings / Crime Alerts* can only be issued if the Virginia Tech Police Department receives information either from the Virginia Beach Police

Department, the Virginia State Police or the Director of the Hampton Roads Education Center. The Clery crimes for which *Timely Warnings / Crime Alerts* may be issued may include, but are not limited to murder, non-negligent manslaughter, manslaughter by negligence, arson, burglary, robbery, sex offenses, aggravated assault and motor vehicle theft.

The *Timely Warnings / Crime Alerts* are generally written by the Chief of Police or a designee and they are typically distributed to the community via email to anyone who has a vt.edu email address by University Relations. If someone from University Relations is unavailable, there are several administrators in the Virginia Tech Police Department who can initiate the email system. The *Timely Warning / Crime Alert* notices are also posted on the Virginia Tech Police Department website. Updates to the Virginia Tech community about any particular case resulting in a *Timely Warning / Crime Alert* will normally be distributed via email.

Controlled Substances

The university strictly prohibits the illegal use or possession of any controlled substance. The illegal use of controlled substances is incompatible with the goals of an academic community. Students found guilty of possessing, using, distributing, or selling controlled substances will face serious disciplinary action, which may include suspension and/or dismissal from the university. Violations of state law should be reported to the Virginia Beach Police who will take appropriate legal actions. For more comprehensive details, please refer to the University's Policy for a Drug Free University at: <http://www.policies.vt.edu/1020.pdf>.

Pastoral and Professional Counselors

The Hampton Roads Education Center does not have any pastoral or professional counselors, therefore, there are no policies encouraging counselors to inform persons about reporting crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics.

Emergency Response and Preparedness / Emergency Notifications

Regional VT Alerts are available for the Hampton Roads Center. Immediate/emergency notifications using VT Alerts to members of a satellite campus community will be provided when information is received, either from the designated individual at the satellite campus or from the law enforcement agency responsible for services where the campus is located. VT Alerts will normally be issued by the Virginia Tech Police Department. Emergency notifications may be issued locally, using other means by the Director of the Hampton Roads Center. These methods may include, but not limited to, direct communication to the campus using email or website notices. Members of the satellite campus community are also encouraged to sign up for their localities emergency notification system, which are not affiliated with Virginia Tech, check with the police department in your area.

The Virginia Beach Police Department, the Virginia state Police and the Virginia Beach Fire and EMS Departments are primarily responsible for confirming that there is a significant emergency or dangerous situation at the Hampton Roads Center, that could cause an immediate threat to the health and safety of the members of the campus community. The Director or designee can also

be in a position to confirm an emergency in or surrounding the campus. The Office of University Relations, the Virginia Tech Police Department and/or Virginia Tech Emergency Management have access to the VT Alerts system which can send an alert to subscribers; notifying the campus community of threats that have occurred that may necessitate evacuation, shelter-in-place or other action on the part of students, employees, and campus visitors. The university will typically provide follow-up information to the campus community using the same systems that were used to send out the original alert or to direct the campus community to other informational channels.

Virginia Tech will immediately notify the campus community upon the confirmation, from the Virginia Beach Police Department, the Virginia state Police or the Virginia Beach Fire and EMS Departments or an authorized staff member at the Hampton Roads Center, of a significant emergency or an immediate threat to the health or safety of students or staff occurring at the Hampton Roads Center. One of the listed departments above will, without delay, and taking into account the safety of the community, determine the content of the notification and initiate the notification system based on information received, unless issuing a notification will, in the professional judgment of the public safety official, compromise efforts to assist, contain, respond to, or otherwise mitigate the emergency. First responders to an incident that causes an immediate threat to the health and safety of the Virginia Tech community at the Hampton Roads Center will typically include the Virginia Beach Police Department, the Virginia state Police and the Virginia Beach Fire and EMS Departments.

In accordance with the Higher Education Act of 1965 as amended and Section 23-9.2:11 of the Code of Virginia, the university has implemented a comprehensive communications system, VT Alerts, to provide prompt warning notifications and alerts of immediate threats to the health and safety of members of the campus community using a variety of methods. The VT Alerts system includes: email notices; phone, cellular phone, text messages, and university website notices. Parents and members of the larger community are not eligible to sign up for immediate notification through VT Alerts, however, all Hokie family members, along with members of the community, are able to subscribe to receive real-time VT Phone Alerts to stay informed and are encouraged to do so. To subscribe, text **HokieFam** to **226787**. Parents and community members can check the University Website at www.vt.edu for updates during an emergency at the Hampton Roads Center and can sign up for desk top alerts by following the direction at: <http://www.alerts.vt.edu/desktop/alerts-desktop.html>.

Students and employees have the option of signing up on VT Alerts to receive emergency messages related to the Hampton Roads Center at: <http://www.alerts.vt.edu>. Annually, the Offices of University Relations and Human Resources provides communications to the university community regarding university procedures for authorized closings and receiving emergency alerts. Additional information about the “Alert” process can be found in the University Safety and Security Policy at: <http://www.policies.vt.edu/5615.pdf>.

Emergency Preparedness

Emergency preparedness and information on what to do in an emergency can be found on the “**Be Hokie Ready**” link from the Virginia Tech Emergency Management webpage <http://www.emergency.vt.edu>. Hokie family and community members are also encouraged to download the free **Hokie Ready mobile safety app**. To download the app, search “**Hokie**

Ready” in your app store.

University departments are responsible for developing Emergency Action Plans (EAP) and Continuity of Operations Plans (COOP) for their staff and areas of responsibility. The University conducts numerous exercises each year, including tabletop exercises, functional exercises, drills and tests of the emergency notification systems. These tests are designed to assess and evaluate the emergency plans and capabilities of the institution.

Virginia Tech will notify the university community of its emergency notification protocols, emergency response and evacuation procedures via email, in conjunction with at least one drill or exercise each calendar year. Information related to emergency notifications and emergency guidelines can be found at <http://www.emergency.vt.edu>. Information related to evacuation procedures can be found at https://www.ehss.vt.edu/programs/FLS_fire_emergencies.php.

Reporting a Crime or Getting Emergency Assistance

Individuals are responsible for being aware of and complying with university policies/procedures, and applicable law. Employees and students are encouraged to accurately, voluntarily and promptly report crimes, emergencies, potential threats, or risks to the appropriate law enforcement agency or university office(s). Crimes and other emergencies should be reported to the Virginia Beach Police Department at 757-385-2703 or 911 for an emergency. The Hampton Roads Education Center does not have any policies or procedures that allow survivors or witnesses to report crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics.

The Virginia Tech Police Department encourages everyone that is a survivor of crime to come forward and report to the police. However, on occasion and depending on the nature of the crime the survivor refuses to press charges. This is the survivor's option. Just because a report is filed with the police department does not mean that criminal charges have to be filed. Students also have the option of contacting other university resources on the main campus, such as the Virginia Tech Women's Center, Office of Student Conduct, Cook Counseling Center, Shiffert Health Center, or academic advisors who will assist with notifications, if desired. Crimes can also be reported to the Virginia Tech Police Department for the purpose of making a *Timely Warning* report and the annual statistical disclosure.

Services and Prevention Information

All Virginia Tech students have access to services offered on the main campus regardless of the location of the extended campus where they are taking classes. Crime prevention, sexual assault and other programs are available upon request.

Safety and Security Programs

The Virginia Tech Police Department has community outreach and residence life officers that provide educational programming and other crime prevention functions to the university community. The Virginia Tech Police Department has community outreach and residence life officers that provide educational programming and other crime prevention functions to the

university community. Educational programs located on the Blacksburg campus include Student Police Academy, Alcohol Awareness, Bicycle Safety, Drug Awareness, Operation ID, Personal and Property Safety (basic crime prevention and personal safety), Rape Aggression Defense, Women's Awareness and Safety, and Resisting Aggression Defense (RAD) for men. All programs are available to faculty, staff and students upon request or if a need becomes apparent.

Crime prevention programs for satellite campuses are supplemented by local law enforcement agencies. The Virginia Beach Police Department should be contacted to determine what types of classes are available. Any requests for programs that are not conducted by the Virginia Tech Police Department should be directed to the Virginia Beach Police Department.

Virginia Tech is committed to University Policy 1025 and the Violence Against Women Act (VAWA), which among other things prohibits discrimination and discriminatory harassment, including sexual harassment and sexual violence in all of its forms, domestic violence, dating violence, and stalking.

Sexual Assault is a crime that affects men and women punishable by both civil and criminal legal action. The Virginia Beach Police Department investigates all sexual assaults reported to the Police Department. Once reported to the Police, officers respond, investigate and make applicable criminal charges based on evidence collection and survivor / witness statements. The survivor of a sexual assault may also choose to file a report with Title IX Coordinator, or the Department of Human Resources. The Office of Student Conduct adjudicates cases involving sex offenses in which the alleged perpetrator is a Virginia Tech Student. Virginia Tech also encourages survivors to prosecute alleged perpetrators to the fullest extent of the law. There are several avenues for assistance if a person becomes the survivor of a sex offense.

Survivors of sexual assault tend to feel a variety of conflicting emotions: rage, fear, depression, relief to have survived, numbness, and exhaustion, to name just a few. Two key points to remember are that the assault was not your fault and there is help available.

The Virginia Tech Police Department is available and ready to assist if needed. The Virginia Tech Police Department is a valuable resource for information. The department has educational literature available on prevention methods and procedures to follow if you should become the survivor of a sex offense. The department provides educational programs on women's awareness, personal safety and instructs Rape Aggression Defense (RAD) for women upon request. RAD classes are self-defense classes for women and consist of awareness, safety tips and progresses into hands on attack simulations at the end of the class. Resisting Aggression with Defense for Men (RAD) program teaches the practice of self-defense and how to escape aggressive behavior.

The Police Department's Survivor/Witness Assistance Program protects the rights of survivors and witness of crimes. Referral information is available regarding area services for general counseling, medical attention, visa and immigration, emergency housing or financial assistance. For crimes that occur in Virginia Beach, the Virginia Tech Police Department will assist and refer the survivor to the Virginia Beach Police Department or other law

enforcement agency depending on the jurisdiction in which it occurred. Responsiveness to the needs of crime survivors is a department priority.

If Sexual Assault Happens to You

- Contact the police for assistance and information or to report the incident. The Virginia Beach Police Department should be contacted for incidents occurring at the center. The Virginia Tech Police Department will assist the survivor in contacting the correct law enforcement agency, if requested.
- Go to the Sentara Bayside Hospital in Virginia Beach. A qualified physician or nurse will examine you for injuries and collect physical evidence that could be used in judicial proceedings if you decide to prosecute.
- If possible, do not change your clothes, shower, eat or drink between the rape and the trip to the emergency room. Preserving evidence is critical and can assist in prosecution. Bring a change of clothes with you because the police will need the clothes you were wearing for evidence.
- Even if you do not wish to prosecute, it is important that you have a physical exam after the attack. Besides bruises or other physical injuries, the perpetrator might have passed on a sexually transmitted disease that requires treatment. An HIV/AIDS test may also ease your mind, although six months must elapse after an attack to accurately detect the presence of HIV, the virus that causes AIDS.
- Seek counseling from a local women's center or a private counselor. All these services are free of charge (except private counseling) and CONFIDENTIAL. If you are not comfortable talking with a counselor, consider talking with a trusted friend or family member. (See Counseling)
- Consider your legal options if you have not done so already. Although there are statutes of limitation on criminal cases, they are often longer than you think. You also have the option of campus and civil charges (See Criminal, Civil, & Disciplinary Options).
- If the assault and its aftermath are interfering with your ability to complete your work or academic performance, talk with the Thomas E. Cook Counseling Center, Women's Center at Virginia Tech, or the academic dean of your college about academic relief. The Dean of Students will also assist in changing academic and living situations after an alleged sexual assault incident, should the survivor request such assistance and such changes are reasonably available.
- Remember that it is never too late to deal with a sexual assault, and that you can heal from this significant trauma. People are ready and able to help you, but they can't if you don't ask.

Medical Care

As mentioned above, survivors of very recent assaults should go to the emergency room of the Sentara Bayside Hospital for a physical exam and the collection of evidence. All survivors, past or present, should be seen by a qualified physician or nurse to check for sexually transmitted diseases, physical trauma, and possible pregnancy. Female survivors may prefer to see a female physician, and should request one if that will increase their comfort, though in the emergency room that may not always be possible. Survivors may also wish to see their family doctor. Even if no symptoms are apparent, survivors are still strongly encouraged to seek medical attention.

Counseling Options

Students coping with a sexual assault have counseling options available. Two of those options are on-campus: The Women's Center at Virginia Tech and the Thomas E. Cook Counseling Center. The Women's Center at Virginia Tech offers short-term crisis counseling and sexual assault support groups. The Thomas E. Cook Counseling Center offers both short-term and long-term individual and group counseling. These two options may not be practical for students at the Hampton Roads Education Center. Many other options exist in Virginia Beach and Hampton that may have some cost associated with them, such as private therapists. Counseling is often crucial to the recovery process, and survivors should be encouraged to seek the assistance of qualified professionals, even if many years have elapsed since the assault. As always, the choice to seek counseling should be the survivor's.

Criminal

A police report must be generated before an investigation can begin and charges can be placed. If the assault happened on campus, it falls under the jurisdiction of the Virginia Beach Police Department. Many survivors believe that if they do not file criminal charges immediately, they lose that option. This may not be the case. There are statutes of limitation for filing criminal charges, but they are typically several years in duration. Certainly, it is best to go to the police as soon as possible after an assault, in order to preserve as much evidence as possible. The police will arrange for the survivor to be seen at the Sentara Bayside Hospital for medical care and evidence collection. However, even if some time has elapsed, the police still encourage survivors to come forward. Criminal charges are prosecuted by the state of Virginia, not the individual survivor. A Commonwealth's Attorney will argue the case at no cost to the survivor. The survivor serves as the primary witness to the crime, and his or her testimony is crucial to the case. Criminal cases may take considerable time to proceed through the justice system. Typically, the press protects the identity of the survivor, although the identity of the accused perpetrator is not protected.

Important Contacts / Phone Numbers

This section has attempted to offer an overview of sexual assault issues, and the available options on the Virginia Tech campus. No one publication can be entirely comprehensive. Sexual assault is a complex issue; no two cases will have exactly the same results or the same course of action. The university therefore offers a variety of services so that survivors can get the assistance they most need. A good starting point for a survivor, or family and friends of a survivor, is with the Sexual Assault Education Coordinator who is based in The Women's Center at Virginia Tech.

For further explanation or elaboration of the information in this section, contact the agencies whose numbers are listed here.

Director of Hampton Roads (Peter Schultz)	804-662-7288, ext. 215
The Women's Center at Virginia Tech	540-231-7806
Thomas E. Cook Counseling Center	540-231-6557 (8am –5pm)
	540-231-6444 (5pm –
8am)) Schiffert Health Services	540-231-6444
Virginia Tech Police Department	911 (emergency, on campus)
	540-231-6411 (non-emergency)
Dean of Students	540-231-3787
Office of Student Conduct	540-231-3790
Cranwell International Center	540-231-6527
Virginia Beach Police Department	911 (emergency)
(3rd Precinct)	757-385-2703 (non-emergency)
Sentara Bayside Hospital	757-363-6137
VA Family Violence & Sexual Assault	757-622-4300 (hotline)
Coordinator for the Hampton Roads Center	757-552-1880 (ext. 14)
Title IX Coordinator	540-231-1824 (students)
Equity & Access	540-231-8771 (employees)
Office of Emergency Management	540-231-2438

Virginia Tech Hampton Roads Education Center Crimes Statistics 2019

OFFENSE TYPE	On Campus			Non Campus			Public Property			Year Total		
	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Murder & Non negligent Manslaughter	0	0	0	0	0	0	0	0	0	0	0	0
Manslaughter By Negligence	0	0	0	0	0	0	0	0	0	0	0	0
Rape	0	0	0	0	0	0	0	0	0	0	0	0
Fondling	0	0	0	0	0	0	0	0	0	0	0	0
Incest	0	0	0	0	0	0	0	0	0	0	0	0
Statutory Rape	0	0	0	0	0	0	0	0	0	0	0	0
Robbery	0	0	0	0	0	0	0	0	0	0	0	0
Aggravated Assault	0	0	0	0	0	0	0	0	0	0	0	0
Burglary	0	0	0	0	0	0	0	0	0	0	0	0
Motor Vehicle Theft	0	0	0	0	0	0	0	0	0	0	0	0
Liquor Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0
Liquor Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Drug Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0
Drug Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Illegal Weapons Possession Referred	0	0	0	0	0	0	0	0	0	0	0	0
Illegal Weapons Possession Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Arson	0	0	0	0	0	0	0	0	0	0	0	0
Domestic Violence**	0	0	0	0	0	0	0	0	0	0	0	0
Dating Violence**	0	0	0	0	0	0	0	0	0	0	0	0
Stalking**	0	0	0	0	0	0	0	0	0	0	0	0

*No hate crimes were reported in 2017, 2018, or 2019. No on campus housing.

*No unfounded crimes reported in 2017, 2018, or 2019.

*Hate crimes are criminal offenses committed against a person or property which is motivated in whole or in part by the offender's bias. Bias is a preformed negative opinion or attitude toward a group of persons based on their race, religion, gender, sexual orientation, ethnicity, disability, gender identity and national origin.

*Note: Included in the Virginia Tech Hampton Roads Center Crime Statistics Chart are the crimes required by the Clery Act that occurred on or within an institution's Clery Geography that have been reported to a Campus Security Authority.

Hampton Roads AREC

Attachment ②



Marion duPont Scott Equine Medical Center

Virginia Tech is committed to providing the members of the campus community and visitors with the safest and most secure environment possible, however, even the most extensive initiatives cannot succeed without the awareness and cooperation of the community members who work, study and live on campus.

Crime information for the Marion duPont Scott Equine Medical Center is obtained from the Director of the Facility and the Loudoun County Sheriff's Office. Individuals who want to report crimes for inclusion in the Annual Security Report should report them to the Loudoun County Sheriff's Office or the Director of the Marion duPont Scott Equine Medical Center.

Campus Overview

The Marion duPont Scott Equine Medical Center is a premier, full-service equine hospital located at Morven Park in Leesburg, Virginia, and one of two hospitals of the Virginia-Maryland College of Veterinary Medicine. Opened in 1984, the center offers **advanced specialty care, 24-hour emergency treatment, and diagnostic services** for all ages and breeds of horses. The center's team of equine specialists in internal medicine, reproduction, sports medicine and rehabilitation, and surgery is committed to providing **exceptional treatment** for patients; **superior service** to clients; **education** for referring veterinarians, future veterinarians, and clients; and **cutting-edge research** to the equine industry.

Access to Campus Buildings

Security and access control design standards have been developed for new and renovated buildings owned by the university. Academic and administrative buildings are open to the public during operating hours and are generally secured after operating hours and during extended breaks. Visitors to the Marion duPont Equine Medical Center enter either at the front desk to the administrative offices or the emergency room area. The receptionist at the front desk signs in visitors. The main facility is locked after normal business hours; however, due to the nature of the services offered, the emergency entrance is open to receive patients 24 hours a day. Administrators review security access and address issues related to lighting and other unsafe conditions on a routine basis. On site staff fix any problems noted.

Law Enforcement Services

Day to day law enforcement services to the Marion duPont Scott Equine Medical Center are provided by the Loudoun County Sheriff's Office. The Virginia Tech Police Department does not have a Memorandum of Understanding (MOU) with the Loudoun County Sheriff's Office since the Loudoun County Sheriff's Office investigates all crimes within their jurisdiction.

Timely Warning/Crime Alerts

Timely Warnings / Crime Alerts will be provided to the community in the event of a reported crime, either on campus or off, that, in the judgment of the Chief of the Virginia Tech Police Department or a designee, constitutes an ongoing or continuing serious threat to the university community. *Timely Warnings / Crime Alerts* can only be issued if the Virginia Tech Police Department receives information either from the Loudoun County Sheriff's Office, the Virginia

State Police or the Director of the Marion duPont Scott Equine Medical Center. The Clery crimes for which *Timely Warnings / Crime Alerts* may be issued but are not limited to, are murder, non-negligent manslaughter, negligent manslaughter, arson, homicide, burglary, robbery, sex offenses, aggravated assault and motor vehicle theft.

The *Timely Warnings / Crime Alerts* are generally written by the Chief of Police or a designee and they are typically distributed to the community via email to anyone who has a vt.edu email address by University Relations. If someone from University Relations is unavailable, there are several administrators in the Virginia Tech Police Department who can initiate the email system. The *Timely Warning / Crime Alert* notices are also posted on the Virginia Tech Police Department website. Updates to the Virginia Tech community about any particular case resulting in a *Timely Warning / Crime Alert* will normally be distributed via email.

Controlled Substances

The university strictly prohibits the illegal use or possession of any controlled substance. The illegal use of controlled substances is incompatible with the goals of an academic community. Students found guilty of possessing, using, distributing, or selling controlled substances will face serious disciplinary action, which may include suspension and/or dismissal from the University upon the first offense. Violations of state law should be reported to the Loudon County Sheriff's Office who will take appropriate legal actions. For more comprehensive details, please refer to the University's Policy for a Drug Free University at: <http://www.policies.vt.edu/1020.pdf>.

Pastoral and Professional Counselors

The Marion duPont Scott Equine Medical Center does not have any pastoral or professional counselors, therefore, there are no policies encouraging counselors to inform persons about reporting crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics.

Emergency Response and Preparedness

Emergency Notifications

Regional VT Alerts are available for the Marion DuPont Scott Equine Medical Center.

Immediate/emergency notifications using VT Alerts to members of a satellite campus community will be provided when information is received, either from the designated individual at the satellite campus or from the law enforcement agency responsible for services where the campus is located. VT Alerts will normally be issued by the Virginia Tech Police Department. Emergency notifications may be issued locally, using other means by the Director of the Marion DuPont Scott Equine Medical Center. These methods may include, but not limited to, direct communication to the campus community using email or website notices. Members of the satellite campus community are also encouraged to sign up for their localities emergency notification system, which are not affiliated with Virginia Tech, check with the police department in your area.

The Loudon County Sheriff's Office is primarily responsible for confirming that there is a significant emergency or dangerous situation on campus that could cause an immediate threat to the health and safety of the members of the campus community. The Director or designee can also be in a position to confirm

an emergency in or surrounding the Marion DuPont Scott Equine Medical Center. The Office of University Relations, the Virginia Tech Police Department and/or Virginia Tech Emergency Management have access to the VT Alerts system which can send an alert to subscribers; notifying the campus community of threats that have occurred that may necessitate evacuation, shelter in place or other action on the part of students, employees, and campus visitors. The university will typically provide follow-up information to the campus community using the same systems that were used to send out the original alert or to direct the campus community to other informational channels.

Virginia Tech will immediately notify the campus community upon the confirmation, from the Loudon County Sheriff's Office or authorized staff member at the Marion DuPont Scott Equine Medical Center, of a significant emergency or an immediate threat to the health or safety of students or staff occurring at the Marion DuPont Scott Equine Medical Center. One of the listed departments above will, without delay, and take into account the safety of the community, determine the content of the notification and initiate the notification system based on information received, unless issuing a notification will, in the professional judgment of public safety official, compromise efforts to assist, respond to, or otherwise mitigate the emergency. First responders to an incident that causes an immediate threat to the health and safety of the Virginia Tech community at the Marion DuPont Scott Equine Medical Center will typically include the Loudon County Sheriff's Office, Virginia State Police, and the Loudon County Fire and EMS Department.

In accordance with the Higher Education Act of 1965 as amended and Section 23-9.2:11 of the Code of Virginia, the university has implemented a comprehensive communications system, VT Alerts, to provide prompt warning notifications and alerts of immediate threats to the health and safety of members of the campus community using a variety of methods. The VT Alerts system includes: email notices; phone, cellular phone, text messages, and university website notices. Parents and members of the larger community are not eligible to sign up for immediate notification through VT Alerts. However, all Hokie family members, along with members of the community, are able to subscribe to receive real-time VT Phone Alerts to stay informed and are encouraged to do so. To subscribe, text **HokieFam** to **226787**. Parents and members of the larger community can also check the University Website at www.vt.edu for updates during an emergency at the Marion DuPont Scott Equine Medical Center and can sign up for desk top alerts by following the direction at: <http://www.alerts.vt.edu/desktop/alerts-desktop.html>.

Students and employees have the option of signing up on VT Alerts to receive emergency messages related to the Marion DuPont Scott Equine Medical Center at: <http://www.alerts.vt.edu>. Annually, the Offices of University Relations and Human Resources provides communications to the university community regarding university procedures for authorized closings and receiving emergency alerts. Additional information about the "Alert" process can be found in the University Safety and Security Policy at: <http://www.policies.vt.edu/5615.pdf>.

Emergency Preparedness

Emergency preparedness and information on what to do in an emergency can be found on the "Be Hokie Ready" link from the Virginia Tech Emergency Management webpage <http://www.emergency.vt.edu>. Hokie family and community members are also encouraged to download the free Hokie Ready mobile safety app. App users can access important just-in-time emergency information. To download the app, search "Hokie Ready" in your app store.

University departments are responsible for developing Emergency Action Plans (EAP) and Continuity of Operations Plans (COOP) for their staff and areas of responsibility. The University conducts numerous exercises each year, including tabletop exercises, functional exercises, drills and tests of the emergency notification systems. These tests are designed to assess and evaluate the emergency plans and capabilities of the institution.

Virginia Tech will notify the university community of its emergency notification protocols, emergency response and evacuation procedures via email, in conjunction with at least one drill or exercise each calendar year. Information related to emergency notifications and emergency guidelines can be found at <http://www.emergency.vt.edu>. Information related to evacuation procedures can be found at https://www.ehss.vt.edu/programs/FLS_fire_emergencies.php.

Reporting a Crime or Getting Emergency Assistance

Individuals are responsible for being aware of and complying with university policies/procedures, and applicable law. Employees and students are encouraged to accurately, voluntarily and promptly report crimes, emergencies, potential threats, or risks to the appropriate law enforcement agency or university office(s). Crimes and other emergencies should be reported to the Loudoun County Sheriff's Office at 703-777-0407 or 911 for an emergency. The Marion duPont Scott Equine Medical Center does not have any policies or procedures that allow survivors or witnesses to report crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics.

The Virginia Tech Police Department encourages everyone that is a survivor of crime to come forward and report to the police. However, on occasion and depending on the nature of the crime the survivor refuses to press charges. This is the survivor's option. Students also have the option of contacting other university resources on the main campus, such as the Virginia Tech Women's Center, Office of Student Conduct, Cook Counseling Center, Schiffert Health Center, or academic advisors who will assist with notifications, if desired. Crimes can also be reported to the Virginia Tech Police Department for the purpose of making a timely warning reports and the annual statistical disclosure.

Services and Prevention Information

All Virginia Tech students have access to services offered on the main campus regardless of the location of the extended campus where they are taking classes. Crime prevention, safety and security, sexual assault and other programs are available upon request.

Virginia Tech is committed to University Policy 1025 and the Violence Against Women Act (VAWA), which among other things prohibits discrimination and discriminatory harassment, including sexual harassment and sexual violence in all of its forms, domestic violence, dating violence, and stalking

Crime prevention programs for satellite campuses are supplemented by local law enforcement agencies. The Loudoun County Sheriff's Office should be contacted to determine what types of classes are available. Any requests for programs that are not conducted by the Virginia Tech Police Department should be directed to the Loudoun County Sheriff's Office. There have not been any crime prevention programs conducted during the previous three years.

Sexual Assault is a crime that affects men and women punishable by both civil and criminal legal action. The Loudoun County Sheriff's Office investigates all sexual assaults reported to the Police Department. Once reported to the Police officers respond, investigate and make applicable criminal charges based on evidence collection and survivor / witness statements. The survivor of a sexual assault may also choose to file a report with Title IX Coordinator, or the Department of Human Resources. The University Judicial System administered through the Office of Student Conduct adjudicates cases involving sex offenses in which the alleged perpetrator is a Virginia Tech Student. Virginia Tech also encourages survivors to prosecute alleged perpetrators to the fullest extent of the law. There are several avenues for assistance if a person becomes the survivor of a sex offense.

Survivors of sexual assault tend to feel a variety of conflicting emotions: rage, fear, depression, relief to have survived, numbness, and exhaustion, to name just a few. Two key points to remember are that the assault was not your fault and there is help available.

Virginia Tech is committed to University Policy 1025 and the Violence Against Women Act (VAWA), which among other things prohibits discrimination and discriminatory harassment, including sexual harassment and sexual violence in all of its forms, domestic violence, dating violence, and stalking.

The Virginia Tech Police Department is available and ready to assist if needed. The Virginia Tech Police Department is a valuable resource for information. The department has educational literature available on prevention methods and procedures to follow if you should become the survivor of a sex offense. The department provides educational programs on women's awareness, personal safety and instructs Rape Aggression Defense (RAD) classes upon request. RAD classes are self-defense classes for women only and consist of awareness, safety tips and progresses into hands on attack simulations at the end of the class. Resisting Aggression with Defense for Men (RAD) program teaches the practice of self-defense and how to escape aggressive behavior.

The Police Department's Survivor/Witness Assistance Program protects the rights of survivors and witness of crimes. Referral information is available at all times regarding area services available for general counseling, medical attention, emergency housing or financial assistance. For crimes that occur in Leesburg, the Virginia Tech Police Department will assist and refer the survivor to the Loudoun County Sheriff's Office or other law enforcement agency depending on the jurisdiction in which it occurred. Responsiveness to the needs of crime survivors is a department priority.

If Sexual Assault Happens to You

- Contact the police for assistance and information or to report the incident. The Loudoun County Sheriff's Office should be contacted for incidents occurring at the center. The Virginia Tech Police Department will assist the survivor in contacting the correct law enforcement agency, if requested.
- Go to the INOVA Loudoun Hospital in Ashburn. A qualified physician or nurse will examine you for injuries and collect physical evidence that could be used in judicial proceedings, if you decide to prosecute.
- If possible, do not change your clothes, shower, eat or drink between the rape and the trip to the emergency room. Preserving evidence is critical and can assist in prosecution. Bring a change of

clothes with you because the police will need the clothes you were wearing for evidence.

- Even if you do not wish to prosecute, it is important that you have a physical exam after the attack. Besides bruises or other physical injuries, the perpetrator might have passed on a sexually transmitted disease that requires treatment. An HIV/AIDS test may also ease your mind, although six months must elapse after an attack to accurately detect the presence of HIV, the virus that causes AIDS.
- Seek counseling from Loudoun Abused Women's Shelter (LAWS) Sexual Assault Services, the Virginia Family Violence & Sexual Assault Center or a private counselor. All these services are free of charge (except private counseling) and CONFIDENTIAL. If you are not comfortable talking with a counselor, consider talking with a trusted friend or family member. (See Counseling)
- Consider your judicial options if you have not done so already. Although there are statutes of limitation on criminal cases, they are often longer than you think. You also have the option of campus and civil charges.
- If the assault and its aftermath are interfering with your ability to complete your work or academic performance, talk with the Thomas E. Cook Counseling Center, Women's Center at Virginia Tech, or the academic dean of your college about academic relief. The Dean of Students will also assist in changing academic and living situations after an alleged sexual assault incident, should the survivor request such assistance and such changes are reasonably available.
- Remember that it is never too late to deal with a sexual assault, and that you can heal from this significant trauma. People are ready and able to help you, but they can't if you don't ask.

Medical Care

As mentioned above, survivors of very recent assaults should go to the emergency room of the INOVA Loudoun Hospital for a physical exam and the collection of evidence. All survivors, past or present, should be seen by a qualified physician or nurse to check for sexually transmitted diseases, physical trauma, and possible pregnancy. INOVA Loudoun Hospital offers the services of Sexual Assault Nurse Examiners. Female survivors may prefer to see a female physician, and should request one if that will increase their comfort, though in the emergency room that may not always be possible. Survivors may also wish to see their family doctor. Even if no symptoms are apparent, survivors are still strongly encouraged to seek medical attention.

Counseling Options

Students coping with a sexual assault have counseling options available. Two of those options are on-campus: The Women's Center at Virginia Tech and the Thomas E. Cook Counseling Center. The Women's Center at Virginia Tech offers short-term crisis counseling and sexual assault support groups. The Thomas E. Cook Counseling Center offers both short-term and long-term individual and group counseling. These two options may not be practical for students at the Marion duPont Scott Equine Center. Many other options exist in Leesburg and Loudoun County that may have some cost associated with them, such as private therapists. Counseling is often crucial to the recovery process, and survivors should be encouraged to seek the assistance of qualified professionals, even if many years have elapsed since the assault. As always, the choice to seek counseling should be the survivor's. For services in Leesburg or

Loudoun County, contact LAWS Sexual Assault Services or the Virginia Family Violence & Sexual Assault Center.

Criminal

A police report must be generated before an investigation can begin and charges can be placed. If the assault happened on campus, it falls under the jurisdiction of the Loudoun County Sheriff's Office. Many survivors believe that if they do not file criminal charges immediately, they lose that option. This may not be the case. There are statutes of limitation for filing criminal charges, but they are typically several years in duration. Certainly, it is best to go to the police as soon as possible after an assault, in order to preserve as much evidence as possible. The police will arrange for the survivor to be seen at INOVA Loudoun Hospital for medical care and evidence collection. However, even if some time has elapsed, the police still encourage survivors to come forward. Criminal charges are prosecuted by the state of Virginia, not the individual survivor. A Commonwealth's Attorney will argue the case at no cost to the survivor.

The survivor serves as the primary witness to the crime, and his or her testimony is crucial to the case. Criminal cases may take considerable time to proceed through the justice system. Typically, the press protects the identity of the survivor, although the identity of the accused perpetrator is not protected.

Important Contacts / Phone Numbers

This section has attempted to offer an overview of sexual assault issues, and the available options on the Virginia Tech campus. No one publication can be entirely comprehensive. Sexual assault is a complex issue; no two cases will have exactly the same results or the same course of action. The university therefore offers a variety of services so that survivors can get the assistance they most need. A good starting point for a survivor, or family and friends of a survivor, is with the Sexual Assault Education Coordinator who is based in The Women's Center at Virginia Tech. For further explanation or elaboration of the information in this section, contact the agencies whose numbers are listed here.

Loudoun County Sheriff's Office	911 (emergency) 703-777-0407 (non-emergency)
INOVA Loudoun Hospital	703-858-6000 or 888-542-8477
(LAWS) Sexual Assault Services	703-777-6552 (24hour hotline)
Loudoun County Survivor/Witness Services	703-777-0417
Virginia Family Violence & Sexual Assault	800-838-8238
Loudoun County Mental Health	703-771-5100
The Women's Center at Virginia Tech	540-231-7806
Thomas E. Cook Counseling Center	540-231-6557 (8am--5pm)
Thomas E. Cook Counseling Center	540-231-6444 (8pm—5am)
Schiffert Health Services	540-231-6444
NRV Emergency Communications Regional Authority	911(emergency) 540-382-4343 (non-emergency)
Virginia Tech Police Department	540-231-6411 (non-emergency)
Dean of Students	540-231-3787
Office of Student Conduct	540-231-3790
Office of Student Programs	540-231-6204
Student Legal Services	540-231-4720
Title IX Coordinator	540-231-1824 (students)
Equity & Access	540-231-8771 (employees)
Office of Emergency Management	540-231-2438

Virginia Tech Marion DuPont Scott Equine Medical Center Crimes Statistics 2019

	On Campus			Non Campus			Public Property			Year Total		
OFFENSE TYPE	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Murder & Non negligent Manslaughter	0	0	0	0	0	0	0	0	0	0	0	0
Manslaughter By Negligence	0	0	0	0	0	0	0	0	0	0	0	0
Rape	0	0	0	0	0	0	0	0	0	0	0	0
Fondling	0	0	0	0	0	0	0	0	0	0	0	0
Incest	0	0	0	0	0	0	0	0	0	0	0	0
Statutory Rape	0	0	0	0	0	0	0	0	0	0	0	0
Robbery	0	0	0	0	0	0	0	0	0	0	0	0
Aggravated Assault	0	0	0	0	0	0	0	0	0	0	0	0
Burglary	0	0	0	0	0	0	0	0	0	0	0	0
Motor Vehicle Theft	0	0	0	0	0	0	0	0	0	0	0	0
Liquor Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0
Liquor Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Drug Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0
Drug Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Illegal Weapons Possession Referred	0	0	0	0	0	0	0	0	0	0	0	0
Illegal Weapons Possession Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Arson	0	0	0	0	0	0	0	0	0	0	0	0
Domestic Violence**	0	0	0	0	0	0	0	0	0	0	0	0
Dating Violence**	0	0	0	0	0	0	0	0	0	0	0	0
Stalking**	0	0	0	0	0	0	0	0	0	0	0	0

*No hate crimes were reported in 2017, 2018, or 2019. No on-campus housing.

*No unfounded crimes reported in 2017, 2018, or 2019.

*Hate crimes are criminal offenses committed against a person or property which is motivated in whole or in part by the offender's bias. Bias is a preformed negative opinion or attitude toward a group of persons based on their race, religion, gender, sexual orientation, ethnicity, disability, gender identity and national origin.

Note: Included in the Virginia Tech Marion DuPont Center Crime Statistics Chart are the crimes required by the Clery Act that occurred on or within an institution's Clery Geography that have been reported to a Campus Security Authority.

Leesburg AREC

Attachment C



Middleburg Agricultural Research and Extension Center

Virginia Tech is committed to providing the members of the campus community and visitors with the safest and most secure environment possible, however, even the most extensive initiatives cannot succeed without the awareness and cooperation of the community members who work, study and live on campus. Individuals who want to report crimes for inclusion in the Annual Security Report, or for the purpose of making timely warning reports, should report them to the Fauquier County Sheriff's Office or the Facilities Manager at the Middleburg Agricultural Research and Extension Center.

Information for this annual report is compiled from reports provided by Campus Security Authorities including, but not limited to, the Department of Human Resources, the Office of Student Conduct, the Dean of Students Office, the Virginia Tech women's Center and the Office of Residence Life. Statistics are also compiled from law enforcement agencies in jurisdictions that Virginia Tech owns, leases or controls property or those with jurisdiction on adjacent property. Information about crimes occurring on the Middleburg Agricultural Research and Extension Center was obtained from the Facilities Manager at the Middleburg Agricultural Research and Extension Center and the Fauquier County Sheriff's Office.

Campus Overview

Situated at the heart of Virginia's horse country, the Middleburg Agricultural Research and Extension (MARE) Center is one of Virginia Tech's 11 ARECs. Philanthropist Paul Mellon donated the 420-acre farm to Virginia Tech in 1949 to foster research that improved pasture and animal productivity while enhancing the land. The center was used primarily for beef cattle research for 40 years, but was rededicated to equine research and teaching in 1992.

Today, the MARE Center continues to play a critical role in the discovery, outreach, and education missions of Virginia Tech's College of Agriculture and Life Sciences. Through collaboration with academic and industry partners around the world, the center advances the health and well-being of the horse through its innovative research efforts and exceptional educational programming in equine science.

Access to Campus Buildings

Security and access control design standards have been developed for new and renovated buildings owned by the university. All buildings on the Middleburg Agricultural Research and Extension Center campus are locked at all times. Academic and administrative buildings remain secure. Students who reside in the residences are provided keys that they use to access the residences. Administrators review security access and address issues related to lighting and other unsafe conditions on a routine basis. On site staff fix any problems noted.

Law Enforcement Services

Day to day law enforcement services to the Middleburg Agricultural Research and Extension Center are provided by the Fauquier County Sheriff's Office. The Virginia Tech Police Department does not have a Memorandum of Understanding (MOU) with the Fauquier County Sheriff's Office since the Fauquier County Sheriff's Office investigates all crimes within their

jurisdiction. The Fauquier County Sheriff's Office does not notify Virginia Tech when students are involved in law violations nor do they submit student conduct referrals.

Timely Warning Notices / Crime Alerts

Timely Warnings / Crime Alerts will be provided to the community in the event of a reported crime, either on campus or off, that, in the judgment of the Chief of the Virginia Tech Police or a designee, constitutes an ongoing serious threat to the university community. *Timely Warnings / Crime Alerts* can only be issued if the Virginia Tech Police Department receives information either from the Fauquier County Sheriff's Office, the Virginia State Police or the Facility Manager of the MARE Center. The Clery crimes for which *Timely Warnings / Crime Alerts* may be issued may include, but are not limited to murder, non-negligent manslaughter, negligent manslaughter, arson, burglary, robbery, sex offenses, aggravated assault and motor vehicle theft.

The *Timely Warnings / Crime Alerts* are generally written by the Chief of Police or a designee and they are typically distributed to the community via email to anyone who has a vt.edu email address by University Relations. If someone from University Relations is unavailable, there are several administrators in the Virginia Tech Police Department who can initiate the email system. The *Timely Warnings / Crime Alerts* are also posted on the Virginia Tech Police Department website and may be posted on social media outlets. Updates to the Virginia Tech community about any particular case resulting in a *Timely Warning / Crime Alert* will normally be distributed via email.

Missing Persons

If a member of the University community has reason to believe that a student who resides in on-campus housing is missing, he or she should *immediately* notify the Virginia Tech Police Department through the NRV Emergency Communications Authority at 540-382-4343 and the Fauquier County Sheriff's Office. The Fauquier County Sheriff's Office or the Virginia Tech Police Department will generate a missing person report and initiate an investigation.

After investigating the missing person report, should the Fauquier County Sheriff's Office or the Virginia Tech Police Department determine that the student is missing and has been missing for more than 24 hours, the Virginia Tech Police Department will notify the student's emergency contact, or confidentially identified individual, no later than 24 hours after the student is determined to be missing. If the missing student is under the age of 18 and is not an emancipated individual, the Virginia Tech Police Department will notify the student's parent or legal guardian or any other designated contact person after the Virginia Tech Police Department has determined that the student has been missing for more than 24 hours. As per requirement of the law, the Virginia Tech Police Department will inform the Fauquier County Sheriff's Office of any missing student in order to inform them that the Virginia Tech Police Department has conducted an initial investigation and has determined that a student is missing. This notification will be made no later than 24 hours after the student is determined to be missing.

In addition to registering an emergency contact, students residing in on-campus housing have the option to identify, confidentially, an individual to be contacted by Virginia Tech in the event the student is determined to be missing for more than 24 hours. Students who wish to identify a confidential contact can do so through the Hokie Spa web site. This confidential contact

information will be accessible only to an authorized campus officials and law enforcement and it will not be disclosed outside of a missing person investigation.

Controlled Substances

The university strictly prohibits the illegal use or possession of any controlled substance. The illegal use of controlled substances is incompatible with the goals of an academic community. Students found guilty of possessing, using, distributing, or selling controlled substances will face serious disciplinary action, which may include suspension and/or dismissal from the university upon the first offense. Violations of state law should be reported to the Fauquier County Sheriff's Office who will take appropriate legal actions. For more comprehensive details, please refer to the University's Policy for a Drug Free University at: <http://www.policies.vt.edu/1020.pdf>.

Pastoral and Professional Counselors

The Middleburg Agricultural Research and Extension Center does not have any pastoral or professional counselors, therefore, there are no policies encouraging counselors to inform persons about reporting crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics.

Emergency Response and Preparedness

Emergency Notifications

Regional VT Alerts are available for the National Capital Region, including the Middleburg Agricultural Research and Extension Center. Immediate/emergency notifications using VT Alerts to members of a satellite campus community will be provided when information is received, either from the designated individual at the satellite campus or from the law enforcement agency responsible for services where the campus is located. VT Alerts will normally be issued by the Virginia Tech Police Department. Emergency notifications may be issued locally, using other means by the Director of the Middleburg Agricultural Research and Extension Center or the designee. These methods may include, but not limited to, direct communication to the campus using email or website notices. Members of the satellite campus community are also encouraged to sign up for their localities emergency notification system, which are not affiliated with Virginia Tech. Check with the police department in your area.

The Fauquier County Sheriff's Office is primarily responsible for confirming that there is a significant emergency or dangerous situation, at the Middleburg Agricultural Research and Extension Center campus that could cause an immediate threat to the health and safety of the members of the campus community. The Director or designee can also be in a position to confirm an emergency in or surrounding the campus. The Office of University Relations, the Virginia Tech Police Department and/or Virginia Tech Emergency Management have access to the VT Alerts system which can send an alert to subscribers; notifying the campus community of threats that have occurred that may necessitate evacuation, shelter in place or other action on the part of students, employees, and campus visitors. The university will typically provide follow-up information to the campus community using the same systems that were used to send out the original alert or to direct the campus community to other informational channels.

Virginia Tech will immediately notify the campus community upon the confirmation, from the Fauquier County Sheriff's Office or authorized staff member at the Middleburg Agricultural Research and Extension Center, of a significant emergency or an immediate threat to the health or safety of students or staff occurring at the Middleburg Agricultural Research and Extension Center. One of the listed departments above will, without delay, and taking into account the safety of the community, determine the content of the notification and initiate the notification system based on information received, unless issuing a notification will, in the professional judgment of the public safety official, compromise efforts, contain, respond to, or otherwise mitigate the emergency. First responders to an incident that causes an immediate threat to the health and safety of the Virginia Tech community at the Middleburg Agricultural Research and Extension Center will typically include the Fauquier County Sheriff's Office, Virginia State Police, and the Middleburg Fire and EMS Department.

In accordance with the Higher Education Act of 1965 as amended and Section 23-9.2:11 of the Code of Virginia, the university has implemented a comprehensive communications system, VT Alerts, to provide prompt warning notifications and alerts of immediate threats to the health and safety of members of the campus community using a variety of methods. The VT Alerts system includes: email notices; phone, cellular phone, text messages, and university website notices. Parents and members of the larger community are not eligible to sign up for all of the immediate notifications through Virginia Tech Alerts. However, all Hokie family members, along with members of the community, are able to subscribe to receive real-time VT Phone Alerts to stay informed and are encouraged to do so. To subscribe, text **HokieFam** to **226787**. They can also check the University Website at www.vt.edu for updates during an emergency at the Middleburg Agricultural Research and Extension Center and can sign up for desk top alerts by following the direction at: <http://www.alerts.vt.edu/desktop/alerts-desktop.html>.

Students and employees have the option of signing up on VT Alerts to receive emergency messages related to the Middleburg Agricultural Research and Extension Center at: <http://www.alerts.vt.edu>. Annually, the Offices of University Relations and Human Resources provides communications to the university community regarding university procedures for authorized closings and receiving emergency alerts. Additional information about the "Alert" process can be found in the University Safety and Security Policy at: <http://www.policies.vt.edu/5615.pdf>.

Emergency Preparedness

Emergency preparedness and information on what to do in an emergency can be found on the "Be Hokie Ready" link from the Virginia Tech Emergency Management webpage <http://www.emergency.vt.edu>. Hokie family and community members are also encouraged to download the free **Hokie Ready mobile safety app**. To download the app, search "**Hokie Ready**" in your app store.

University departments are responsible for developing Emergency Action Plans (EAP) and Continuity of Operations Plans (COOP) for their staff and areas of responsibility. The University conducts numerous exercises each year, including tabletop exercises, functional exercises, drills

and tests of the emergency notification systems. These tests are designed to assess and evaluate the emergency plans and capabilities of the institution.

Virginia Tech will notify the university community of its emergency notification protocols, emergency response and evacuation procedures via email, in conjunction with at least one drill or exercise each calendar year. Information related to emergency notifications and emergency guidelines can be found at <http://www.emergency.vt.edu>. Information related to evacuation procedures can be found at https://www.ehss.vt.edu/programs/FLS_fire_emergencies.php.

Reporting a Crime or Getting Emergency Assistance

Individuals are responsible for being aware of and complying with university policies/procedures, and applicable law. Employees and students are encouraged to accurately, voluntarily and promptly report crimes, emergencies, potential threats, or risks to the appropriate law enforcement agency or university office(s). Crimes and other emergencies should be reported to the Fauquier County Sheriff's Office at 540-422-8600 or 911 for an emergency.

The Middleburg Agricultural Research and Extension Center does not have any policies or procedures that allow survivors or witnesses to report crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics.

The Virginia Tech Police Department encourages everyone that is a survivor of crime to come forward and report to the police. However, on occasion and depending on the nature of the crime the survivor refuses to press charges. This is the survivor's option. Just because a report is filed with the police department does not mean that criminal charges have to be filed. Students also have the option of contacting other university resources on the main campus, such as the Virginia Tech Women's Center, Office of Student Conduct, Cook Counseling Center, Schiffert Health Center, or academic advisors who will assist with notifications, if desired. Crimes can also be reported to the Virginia Tech Police for the purpose of making a timely warning reports and the annual statistical disclosure.

Services and Prevention Information

All Virginia Tech students have access to services offered on the main campus regardless of the location of the extended campus where they are taking classes. Crime prevention, safety and security, sexual assault and other programs are available upon request.

Virginia Tech is committed to University Policy 1025 and the Violence Against Women Act (VAWA), which among other things prohibits discrimination and discriminatory harassment, including sexual harassment and sexual violence in all of its forms, domestic violence, dating violence, and stalking.

Sexual Assault is a crime that affects men and women punishable by both civil and criminal legal action. The survivor of a sexual assault may also choose to file a report with Title IX Coordinator, or the Department of Human Resources. The Office of Student Conduct adjudicates cases involving sex offenses in which the alleged perpetrator is a Virginia Tech Student.

Virginia Tech also encourages survivors to prosecute alleged perpetrators to the fullest extent of

the law. There are several avenues for assistance if a person becomes the survivor of a sex offense.

Survivors of sexual assault tend to feel a variety of conflicting emotions: rage, fear, depression, relief to have survived, numbness, and exhaustion, to name just a few. Two key points to remember are that the assault was not your fault and there is help available.

The Virginia Tech Police Department is available and ready to assist if needed. The Virginia Tech Police Department is a valuable resource for information. The department has educational literature available on prevention methods and procedures to follow if you should become the survivor of a sex offense. The department provides educational programs on women's awareness, personal safety and instructs Rape Aggression Defense (RAD) classes upon request. RAD classes are self-defense classes for women only and consist of awareness, safety tips and progresses into hands on attack simulations at the end of the class. RAD for men is also available and teaches self-defense and how to escape aggressive behavior.

The Police Department's Survivor/Witness Assistance Program protects the rights of survivors and witness of crimes. Referral information is available regarding area services for general counseling, medical attention, emergency housing or financial assistance. Responsiveness to the needs of crime survivors is a department priority.

If Sexual Assault Happens to You

- Contact the police for assistance and information or to report the incident. The Fauquier County Sheriff's Office should be contacted for incidents occurring at the center. The Virginia Tech Police Department will assist the survivor in contacting the correct law enforcement agency, if requested.
- Go to the INOVA Loudoun Hospital in Alexandria. A qualified physician or nurse will examine you for injuries and collect physical evidence that could be used in judicial proceedings if you decide to prosecute.
- If possible, do not change your clothes, shower, eat or drink between the rape and the trip to the emergency room. Preserving evidence is critical and can assist in prosecution. Bring a change of clothes with you because the police will need the clothes you were wearing for evidence.
- Even if you do not wish to prosecute, it is important that you have a physical exam after the attack. Besides bruises or other physical injuries, the perpetrator might have passed on a sexually transmitted disease that requires treatment. An HIV/AIDS test may also ease your mind, although six months must elapse after an attack to accurately detect the presence of HIV, the virus that causes AIDS.
- Seek counseling from the Rape Survivors Hotline, the Battered Women's Shelter or a private counselor. All these services are free of charge (except private counseling) and with a trusted friend or family member.
- Consider your judicial options if you have not done so already. Although there are statutes of limitation on criminal cases, they are often longer than you think. You also have the option of campus and civil charges.
- If the assault and its aftermath are interfering with your ability to complete your work or academic performance, talk with the Thomas E. Cook Counseling Center,

Women's Center at Virginia Tech, or the academic dean of your college about academic relief. The Dean of Students will also assist in changing academic and living situations after an alleged sexual assault incident, should the survivor request such assistance and such changes are reasonably available.

- Remember that it is never too late to deal with a sexual assault, and that you can heal from this significant trauma. People are ready and able to help you, but they can't if you don't ask.

Medical Care

As mentioned above, survivors of very recent assaults should go to the emergency room of the INOVA Loudoun Hospital for a physical exam and the collection of evidence. All survivors, past or present, should be seen by a qualified physician or nurse to check for sexually transmitted diseases, physical trauma, and possible pregnancy. INOVA Loudoun Hospital offers the services of Sexual Assault Nurse Examiners. Female survivors may prefer to see a female physician, and should request one if that will increase their comfort, though in the emergency room that may not always be possible.

Counseling Options

Students coping with a sexual assault have at least three counseling options that are free of charge. Two of those options are on-campus: The Women's Center at Virginia Tech and the Thomas E. Cook Counseling Center. The Women's Center at Virginia Tech offers short-term crisis counseling and sexual assault support groups. The Thomas E. Cook Counseling Center offers both short-term and long-term individual and group counseling. These agencies frequently collaborate to provide services to survivors of sexual assault and these services are CONFIDENTIAL. The Rape Survivors Hotline is available 24 hours a day by calling 703-683-7273. Many other options exist which have some cost associated with them, such as private therapists. Counseling is often crucial to the recovery process, and survivors should be encouraged to seek the assistance of qualified professionals, even if many years have elapsed since the assault. As always, the choice to seek counseling should be the survivor's.

Criminal

A police report must be generated before an investigation can begin and charges can be placed. If the assault happened on campus, it falls under the jurisdiction of the Fauquier County Sheriff's Office. Many survivors believe that if they do not file criminal charges immediately, they lose that option. This may not be the case. There are statutes of limitation for filing criminal charges, but they are typically several years in duration. Certainly, it is best to go to the police as soon as possible after an assault, in order to preserve as much evidence as possible. The police will arrange for the survivor to be seen at the INOVA Loudoun Hospital for medical care and evidence collection. However, even if some time has elapsed, the police still encourage survivors to come forward. Criminal charges are prosecuted by the state of Virginia, not the individual survivor. A Commonwealth's Attorney will argue the case at no cost to the survivor. The survivor serves as the primary witness to the crime, and his or her testimony is crucial to the case. Criminal cases may take considerable time to proceed through the justice system. Typically, the press protects the identity of the survivor, although the identity of the accused perpetrator is not protected.

Important Contacts / Phone Numbers

This section has attempted to offer an overview of sexual assault issues, and the available options on the Virginia Tech campus. No one publication can be entirely comprehensive. Sexual assault is a complex issue; no two cases will have exactly the same results or the same course of action. The university therefore offers a variety of services so that survivors can get the assistance they most need. A good starting point for a survivor, or family and friends of a survivor, is with the Sexual Assault Education Coordinator who is based in The Women's Center at Virginia Tech. For further explanation or elaboration of the information in this section, or for other information, contact the agencies whose numbers are listed here.

Fauquier County Sheriff's Office	911(emergency) 540-422-8600 (non-emergency)
INOVA Alexandria Hospital	703-858-6000
Rape Survivors Hotline	703-683-7273 (24 hour hotline)
Department of Human Services	703-838-5030
The Women's Center at Virginia Tech	540-231-7806
Thomas E. Cook Counseling Center	540-231-6557 (8:00am – 5:00pm) 540-231-6444 (5:00pm – 8:00am)
Schiffert Health Services	540-231-6444
Virginia Tech Police Department	540-231-6411 (non-emergency)
Dean of Students	540-231-3787
Office of Student Conduct	540-231-3790
Office of Student Programs	540-231-6204
Student Legal Services	540-231-4720
Title IX Coordinator	540-231-1824 (students)
Equity & Access	540-231-8771 (employees)
Facility Manager-Ryan Brooks	540-687-3521 ext. 24
Office of Emergency Management	540-231-2438

Middleburg Agricultural Research and Extension Center Crimes Statistics 2019

	On Campus			Non Campus			Public Property			Year Total			Residential		
OFFENSE TYPE	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Murder & Non negligent Manslaughter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Manslaughter By Negligence	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rape	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fondling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Incest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Statutory Rape	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Robbery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aggravated Assault	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Burglary	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motor Vehicle Theft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Liquor Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Liquor Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drug Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drug Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Illegal Weapons Possession Referred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Illegal Weapons Possession Arrests	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic Violence**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dating Violence**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stalking**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*No hate crimes were reported in 2017, 2018, or 2019.

*No unfounded crimes reported in 2017, 2018, or 2019.

*Hate crimes are criminal offenses committed against a person or property which is motivated in whole or in part by the offender's bias. Bias is a preformed negative opinion or attitude toward a group of persons based on their race, religion, gender, sexual orientation, ethnicity, disability, gender identity and national origin.

Note: Included in the Virginia Tech Middleburg Crime Statistics Chart are the crimes required by the Clery Act that occurred on or within an institution's Clery Geography that have been reported to a Campus Security Authority.

Virginia Tech

Higher Education Opportunity Act

Middleburg Campus

Fire Safety Annual Compliance Report for 2019

Overview

The Middleburg residential facility is located at the Middleburg Agricultural Research and Extension (MARE) Center in Middleburg, Virginia. The facility, which belongs to the Virginia Tech Foundation, is located on a 420-acre farm and consists of 8 residents, (7 stand-alone ranch style houses and one two story house with two separated living spaces and addresses 800/800A). Each house includes a basement equipped with washer and dryer, a full bathroom and kitchen along with a dedicated front and backyard.

Middleburg Facility Fire Safety Equipment

The fire protection systems at the Middleburg Facility includes Portable Fire Extinguishers and Dual Duty Smoke Detectors:

- Individual houses are equipped with portable fire extinguishers.
- All houses are equipped with dual duty smoke detectors that also detect Carbon Monoxide.

All fire protection equipment is strictly maintained and tested in accordance with the Virginia Statewide Fire Prevention Code. The periodic maintenance and testing activities are conducted by contractors. In addition, a Fire and Life Safety inspection is conducted by the local Fire Official on a periodic basis. This inspection includes an audit of the fire protection equipment testing and maintenance activities and a fire code review of all apartment units and common areas. For more information on the fire safety systems that are present in each facility, see Table I.

Fire Safety Education, Training and Fire Drills

All current Middleburg Facility Residents have been provided information on the fire protection systems present in the subject buildings and evacuations procedures to be followed, and all future residents will be provided this information when their lease is initiated. Since the facility is classified as R-3 under the Virginia Uniform Statewide Building Code, there are no requirements for conducting fire drills and no drills have been performed.

Specific Fire Prevention Related Policies and Programs

Based on the facility classification under the Virginia Uniform Statewide Building Code, no special policies other than the policies listed below have been implemented:

- Policy 1005, [Health and Safety](#), affirms that faculty, staff and students must comply with university health and safety policies and programs, attend required training, report any identified safety or health hazard, and know their roles in an emergency.
- Policy 1010, [Policy on Smoking](#), prohibits smoking in all university properties owned and operated by Virginia Tech, including residence halls.

- Virginia Tech's [Fire and Life Safety Program](#) establishes requirements for the performance of periodic fire safety inspections of all university buildings, including residence halls; provides for periodic training for employees and students on basic fire safety; affirms conditions that must be maintained in all university properties to comply with the Virginia State Wide Fire Prevention Code; and, establishes requirements for the permitting, approval and inspection of hot work, use of open flames/burning, pyrotechnics and special effects, and temporary facilities, tents and stages.

Fire Statistics

The number and cause of each fire in the residential facility for each dwelling is summarized in Table 2. There were no fires or associated losses reported in the Middleburg Residential Facilities during the Calendar Years 2017, 2018 and 2019.

Fire Reporting

If a fire has occurred, it should be reported to the local Police Department by calling 911 (emergency). It should also be reported to Tait Golightly, Virginia Tech MARE Center Superintendent at (540) 450-6388.

Responding to a Fire

If a fire emergency occurs, while you are in the building, notify occupants by knocking on their doors and shouting "fire" as you exit the building. Do not jeopardize your own safety to do this. If you are in your room with the door closed and an alarm activates, feel your door. If cool, open and leave immediately. If the door is hot, do not open, place towels at the base of the door, and open the window from the top. Exit through the window, if safe to do so. Do not reenter the building until the fire department says it is safe to do so. If you are unable to leave your room, place towels under the door to prevent smoke from entering. Call 911 and give them your exact location and as much information as possible. Remain calm.

Plans for Future improvement:

Virginia Tech will continue to work with the local Authorities to enhance and improve the existing building fire protection system capabilities as required by applicable codes, standards and best business practices.

Table 1- Fire Protection Systems at the Middleburg Campus Residential Facilities

<i>Building Name</i>	<i>Onsite Fire Alarm Monitoring</i>	<i>Partial Sprinkler System</i>	<i>Full Sprinkler System</i>	<i>Smoke Detection</i>	<i>Fire Extinguishing Devices</i>	<i>Evacuation Plans & Signs</i>	<i>Number of Fire Drills each calendar year</i>
House 815 – 5566 Sullivans Mill Rd., Middleburg, VA 20117				X	X	Not Required	Not Required
House 814 – 5558 Sullivans Mill Rd., Middleburg, VA 20117				X	X	Not Required	Not Required
House 804 – 5511 Sullivans Mill Rd., Middleburg, VA 20117				X	X	Not Required	Not Required
House 820 – 5497 Sullivans Mill Rd., Middleburg, VA 20117				X	X	Not Required	Not Required

Building Name	Onsite Fire Alarm Monitoring	Partial Sprinkler System	Full Sprinkler System	Smoke Detection	Fire Extinguishing Devices	Evacuation Plans & Signs	Number of Fire Drills each calendar year
House 818- 5364 Sullivans Mill Rd., Middleburg, VA 20117				X	X	Not Required	Not Required
House 800-5414 Sullivans Mill Rd., Middleburg, VA 20117				X	X	Not Required	Not Required
House 800A-5414 Sullivans Mill Rd., Middleburg, VA 20117				X	X	Not Required	Not Required
House 816-5615 Sullivans Mill Rd., Middleburg, VA 20117				X	X	Not Required	Not Required

Table 2 - Fire Statistics for the Middleburg Campus Residential Facilities for Calendar Year 2017, 2018, and 2019

Building Name	Total Fires in Each Building	Fire Number	Date/Time	Location	Cause of Fire	Number of Injuries that Required Treatment at a Medical Facility	Number of Deaths Related to a Fire	Value of Property Damage Caused by Fire (Dollars)
House 815 – 5566 Sullivans Mill Rd., Middleburg, VA 20117	0	0			N/A	N/A	N/A	N/A
House 814 – 5558 Sullivans Mill Rd., Middleburg, VA 20117	0	0			N/A	N/A	N/A	N/A
House 804 – 5511 Sullivans Mill Rd., Middleburg, VA 20117	0	0			N/A	N/A	N/A	N/A
House 820 – 5497 Sullivans Mill Rd., Middleburg, VA 20117	0	0			N/A	N/A	N/A	N/A
House 818- 5364 Sullivans Mill Rd., Middleburg, VA 20117	0	0			N/A	N/A	N/A	N/A
House 800 – 5414 Sullivans Mill Rd., Middleburg, VA 20117	0	0			N/A	N/A	N/A	N/A
House 800A – 5414 Sullivans Mill Rd., Middleburg, VA 20117	0	0			N/A	N/A	N/A	N/A

<i>Building Name</i>	<i>Total Fires in Each Building</i>	<i>Fire Number</i>	<i>Date/Time</i>	<i>Location</i>	<i>Cause of Fire</i>	<i>Number of Injuries that Required Treatment at a Medical Facility</i>	<i>Number of Deaths Related to a Fire</i>	<i>Value of Property Damage Caused by Fire (Dollars)</i>
House 816 – 5615 Sullivans Mill Rd., Middleburg, VA 20117	0	0			N/A	N/A	N/A	N/A

Attachment 16

Aerial Imagery (c) 2006-2007 Commonwealth of Virginia

Northern Virginia Center

Virginia Tech Northern Virginia Center (NVC) is committed to providing the members of the campus community and visitors with the safest and most secure environment possible, however, even the most extensive initiatives cannot succeed without the awareness and cooperation of the community members who work, study and live on campus. Crime information for the NVC is obtained from the NVC Center Director, the Facilities Manager and the Fairfax County Police Department. Individuals, who want to report crimes for inclusion in the Annual Security Report, or for the purpose of making timely warning reports, should report them to the Fairfax County Police Department.

Campus Overview

The (NVC) at 7054 Haycock Road in Falls Church, VA, opened in 1997. The building houses administrative offices for the associate dean of the Graduate School and the Graduate Student Services Office (GSSO) for Virginia Tech in the National Capital Region (NCR).

The NVC is also a teaching facility for a number of academic programs offered by Virginia Tech in the region. Additionally, faculty and students at the NVC are actively engaged in innovative and collaborative projects to further the university's research mission in the NCR. The NVC is located adjacent to the West Falls Church Metro station on the Orange line, and exit 66, just off I-66.

Access to Campus Buildings

Access to the NVC is controlled by the property management company. All exterior doors, except the main entrance, are locked at all times. A security guard is stationed at the front desk to address visitors. Exterior key access is maintained by the management company and not by Virginia Tech. Virginia Tech does not have any responsibility for maintenance of the facility therefore has no policy related to security considerations.

Law Enforcement Services

The Virginia Tech Police Department does not normally provide law enforcement services to the NVC. Day-to-day law enforcement services to the NVC are provided by the Fairfax County Police Department. The Virginia Tech Police Department does not have a Memorandum of Understanding (MOU) with the Fairfax County Police since Fairfax County Police investigate all crimes within their jurisdiction.

Timely Warnings / Crime Alerts

Timely Warnings / Crime Alerts will be provided to the community in the event of a reported crime, either on campus or off, that, in the judgment of the Chief of the Virginia Tech Police Department or a designee, constitutes an ongoing or continuing serious threat to the university community. *Timely Warnings / Crime Alerts* can only be issued if the Virginia Tech Police Department receives information either from the Falls Church Police Department, the Fairfax County Police Department, the Virginia State Police or the Director of the NVC. The Clery crimes for which *Timely Warnings / Crime Alerts* may be issued, but are not limited to, are murder, non-negligent manslaughter, negligent manslaughter, arson, homicide, burglary, robbery, sex offenses, aggravated assault and motor vehicle theft.

The *Timely Warnings / Crime Alerts* are generally written by the Chief of Police or a designee and they are typically distributed to the community via email to anyone who has a vt.edu email address by University Relations. If someone from University Relations is unavailable, there are several administrators in the Virginia Tech Police Department who can initiate the email system. The *Timely Warning / Crime Alert* notices are also posted on the Virginia Tech Police Department website. Updates to the Virginia Tech community about any particular case resulting in a *Timely Warning / Crime Alert* will normally be distributed via email.

Controlled Substances

The university strictly prohibits the illegal use or possession of any controlled substance. The illegal use of controlled substances is incompatible with the goals of an academic community. Students found guilty of possessing, using, distributing, or selling controlled substances will face serious disciplinary action, which may include suspension and/or dismissal from the university upon the first offense. Violations of state law should be reported to the Fairfax County Police Department or the Virginia State Police who will take appropriate legal actions. For more comprehensive details, please refer to the University's Policy for a Drug Free University at: <http://www.policies.vt.edu/1020.pdf>.

Pastoral and Professional Counselors

The NVC does not have any pastoral or professional counselors, therefore, there are no policies encouraging counselors to inform persons about reporting crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics.

Emergency Response and Preparedness

Emergency Notifications

Regional VT Alerts are available for the NVC. Immediate/emergency notifications using VT Alerts to members of a satellite campus community will be provided when information is received, either from the designated individual at the satellite campus or from the law enforcement agency responsible for services where the campus is located. VT Alerts will normally be issued by the Virginia Tech Police Department. Emergency notifications may be issued locally, using other means by the Director of the Northern Virginia Center or the designee. These methods may include, but are not limited to, direct communication to the campus using email or website notices. Members of the satellite campus community are also encouraged to sign up for their localities emergency notification system, which are not affiliated with Virginia Tech, check with the police department in your area.

The Fairfax County Police Department, the Virginia State Police and the Fairfax County Fire and EMS Departments are primarily responsible for confirming that there is a significant emergency or dangerous situation at the NVC that could cause an immediate threat to the health and safety of the members of the campus community. The Director or designee can also be in a position to confirm an emergency in or surrounding the campus. The Office of University Relations, the Virginia Tech Police Department and/or Virginia Tech Emergency Management have access to the VT Alerts system which can send an alert to subscribers; notifying the campus community of threats that have occurred that may necessitate evacuation, shelter in place or other action on the part of students, employees, and campus visitors. The university will typically provide follow-up information to the

campus community using the same systems that were used to send out the original alert or to direct the campus community to other informational channels.

Virginia Tech will immediately notify the campus community upon the confirmation, from the Fairfax County Police Department or authorized staff member at the NVC of a significant emergency or dangerous situation involving an immediate threat to the health or safety of students or staff occurring at the NVC. One of the listed departments above will, without delay, and taking into account the safety of the community, determine the content of the notification and initiate the notification system based on information received, unless issuing a notification will, in the professional judgment of the public safety official, compromise efforts to assist, respond to, or otherwise mitigate the emergency. First responders to an incident that causes an immediate threat to the health and safety of the Virginia Tech community at the NVC will typically include the Fairfax County Police Department, Virginia State Police, and the Arlington County and / or Fairfax County Fire and EMS Departments. The Falls Church Police Department may also respond since the Center borders on their city jurisdiction.

In accordance with the Higher Education Act of 1965 as amended and Section 23-9.2:11 of the Code of Virginia, the university has implemented a comprehensive communications system, VT Alerts, to provide prompt warning notifications and alerts of immediate threats to the health and safety of members of the campus community using a variety of methods. The VT Alerts system includes: email notices; phone, cellular phone, text messages, and VT NVC university website notices. Parents and members of the larger community are not eligible to sign up for immediate notification through VT Alerts. However, all hokie family members, along with members of the community, are able to subscribe to receive real-time VT Phone Alerts to stay informed and are encouraged to do so. To subscribe, text **HokieFam** to **226787**. Parents and larger community members can check the University Website at www.vt.edu for updates during an emergency at the Northern Virginia Center and can sign up for desk top alerts by following the direction at: <http://www.alerts.vt.edu/desktop/alerts-desktop.html>.

Students and employees have the option of signing up on VT Alerts to receive emergency messages related to the NVC, at: <http://www.alerts.vt.edu>. Annually, the Offices of University Relations and Human Resources provides communications to the university community regarding university procedures for authorized closings and receiving emergency alerts. Additional information about the “Alert” process can be found in the University Safety and Security Policy at: <http://www.policies.vt.edu/5615.pdf>.

Emergency Preparedness

Emergency preparedness and information on what to do in an emergency can be found on the “Be Hokie Ready” link from the Virginia Tech Emergency Management webpage <http://www.emergency.vt.edu>. Hokie family and community members are also encouraged to download the free **Hokie Ready mobile safety app**. To download the app, search “**Hokie Ready**” in your app store.

University departments are responsible for developing Emergency Action Plans (EAP) and Continuity of Operations Plans (COOP) for their staff and areas of responsibility. The University conducts numerous exercises each year, including tabletop exercises, functional exercises, drills and

tests of the emergency notification systems. These tests are designed to assess and evaluate the emergency plans and capabilities of the institution.

Virginia Tech will notify the university community of its emergency notification protocols, emergency response and evacuation procedures via email, in conjunction with at least one drill or exercise each calendar year. Information related to emergencies, drills, evacuations, etc. can be found at <https://www.nvc.vt.edu/intranet/resources/DeskReference-NVC-2015.pdf>. VT Personnel are encouraged to sign up for Fairfax County Emergency Information alerts for area alerts related to emergency, weather, transportation, and other area-related incidents in their campus area at <https://fairfaxcountyemergency.wordpress.com/>.

Reporting a Crime or Getting Emergency Assistance

Individuals are responsible for being aware of and complying with university policies/procedures, and applicable law. Employees and students are encouraged to accurately, voluntarily and promptly report crimes, emergencies, potential threats, or risks to the appropriate law enforcement agency or university office(s). Crimes and other emergencies should be reported to the Fairfax County Police Department at (non-emergency assistance number) 703-691-2131, or 911 for an emergency.

The NVC does not have any policies or procedures that allow survivors or witnesses to report crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics.

The Virginia Tech Police Department encourages everyone that is a survivor of crime to come forward and report to the police. However, on occasion and depending on the nature of the crime the survivor refuses to press charges. This is the survivor's option. Students also have the option of contacting other university resources on the main campus, such as the Virginia Tech Women's Center, Office of Student Conduct, Cook Counseling Center, Schiffert Health Center, or academic advisors who will assist with notifications, if desired. Crimes can also be reported to the Virginia Tech Police Department for the purpose of making a timely warning reports and the annual statistical disclosure.

Services and Prevention Information

All Virginia Tech students have access to services offered on the main campus regardless of the location of the extended campus where they are taking classes. Crime prevention, safety and security, sexual assault and other programs are available upon request.

Virginia Tech is committed to University Policy 1025 and the Violence Against Women Act (VAWA), which among other things prohibits discrimination and discriminatory harassment, including sexual harassment and sexual violence in all of its forms, domestic violence, dating violence, and stalking.

Sexual Assault is a crime that affects men and women punishable by both civil and criminal legal action. The Fairfax County Police Department investigates all sexual assaults reported to the Police Department. Once reported to the Police officers respond, investigate and make applicable criminal charges based on evidence collection and survivor / witness statements. The University Judicial

System administered through the Office of Student Conduct adjudicates, at the request of the survivor, all cases involving sex offenses in which the alleged perpetrator is a Virginia Tech Student. The survivor of a sexual assault may also choose to file a report with Title IX Coordinator, or the Department of Human Resources. Virginia Tech also encourages survivors to prosecute alleged perpetrators to the fullest extent of the law. There are several avenues for assistance if a person becomes the survivor of a sex offense.

Survivors of sexual assault tend to feel a variety of conflicting emotions: rage, fear, depression, relief to have survived, numbness, and exhaustion, to name just a few. Two key points to remember are that the assault was not your fault and there is help available.

The Virginia Tech Police Department is available and ready to assist if needed. The Virginia Tech Police Department is a valuable resource for information. The department has educational literature available on prevention methods and procedures to follow if you should become the survivor of a sex offense. The department provides educational programs on women's awareness, personal safety and instructs Rape Aggression Defense (RAD) classes upon request. RAD classes are self-defense classes for women only and consist of awareness, safety tips and progresses into hands on attack simulations at the end of the class. Resisting Aggression Defense (RAD) for men teaches the practice of self-defense and how to escape aggressive behavior.

The Police Department's Survivor/Witness Assistance Program protects the rights of survivors and witness of crimes. Referral information is accessible at all times regarding area services available for general counseling, medical attention, emergency housing or financial assistance. Responsiveness to the needs of crime survivors is a department priority.

For crimes that occur in Falls Church, the Virginia Tech Police Department will assist and refer the survivor to the Falls Church Police Department or the Fairfax County Police Department depending on the jurisdiction in which it occurred. Responsiveness to the needs of crime survivors is a department priority.

If Sexual Assault Happens to You

- Contact the police for assistance and information or to report the incident. The Fairfax County Police Department should be contacted for incidents occurring at the NVC. The Virginia Tech Police Department will assist the survivor in contacting the correct law enforcement agency, if requested.
- Go to the INOVA Fairfax Hospital in Fairfax or the Arlington Hospital. A qualified physician or nurse will examine you for injuries and collect physical evidence that could be used in judicial proceedings if you decide to prosecute.
- If possible, do not change your clothes, shower, eat or drink between the rape and the trip to the emergency room. Preserving evidence is critical and can assist in prosecution. Bring a change of clothes with you because the police will need the clothes you were wearing for evidence.
- Even if you do not wish to prosecute, it is important that you have a physical exam after the attack. Besides bruises or other physical injuries, the perpetrator might have passed on a sexually transmitted disease that requires treatment. An HIV/AIDS test may also ease your mind, although six months must elapse after an attack to accurately detect the presence of

HIV, the virus that causes AIDS.

- Seek counseling from the Center for Family Services located onsite at the NVC or a private counselor. All these services are free of charge (except private counseling) and CONFIDENTIAL. If you are not comfortable talking with a counselor, consider talking with a trusted friend or family member.
- Consider your judicial options if you have not done so already. Although here are statutes of limitations on criminal cases, they are often longer than you think. You have the option of campus and civil charges.
- If the assault and its aftermath are interfering with your ability to complete your work or academic performance, talk with the Thomas E. Cook Counseling Center, Women's Center at Virginia Tech, at Virginia Tech, or the academic dean of your college about academic relief. The Dean of Students will also assist in changing academic and living situations after an alleged sexual assault incident, should the survivor request such assistance and such changes are reasonably available.
- Remember that it is never too late to deal with a sexual assault, and that you can heal from this significant trauma. People are ready and able to help you, but they can't if you don't ask.

Medical Care

As mentioned above, survivors of very recent assaults should go to the emergency room of the INOVA Fairfax Hospital for a physical exam and the collection of evidence. All survivors, past or present, should be seen by a qualified physician or nurse to check for sexually transmitted diseases, physical trauma, and possible pregnancy. INOVA Fairfax Hospital offers the services of Sexual Assault Nurse Examiners. Female survivors may prefer to see a female physician, and should request one if that will increase their comfort, though in the emergency room that may not always be possible. Survivors may also wish to see their family doctor. Even if no symptoms are apparent, survivors are still strongly encouraged to seek medical attention.

Counseling Options

Students coping with a sexual assault have counseling options available. Two of those options are on-campus: The Women's Center at Virginia Tech and the Thomas E. Cook Counseling Center. The Women's Center at Virginia Tech offers short-term crisis counseling and sexual assault support groups. The Thomas E. Cook Counseling Center offers both short-term and long-term individual and group counseling. These two options may not be practical for students at the NVC. Many other options exist in Falls Church and Fairfax that may have some cost associated with them, such as private therapists. Counseling is often crucial to the recovery process, and survivors should be encouraged to seek the assistance of qualified professionals, even if many years have elapsed since the assault. As always, the choice to seek counseling should be the survivor's.

Criminal

A police report must be generated before an investigation can begin and charges can be placed. If the assault happened on campus, it falls under the jurisdiction of the Fairfax County Police. Many survivors believe that if they do not file criminal charges immediately, they lose that option. This may not be the case. There are statutes of limitation for filing criminal charges, but they are typically several years in duration. Certainly, it is best to go to the police as soon as possible after an assault, in order to preserve as much evidence as possible. The police will arrange for the survivor to be seen at the INOVA Fairfax

Hospital for medical care and evidence collection. However, even if some time has elapsed, the police still encourage survivors to come forward. Criminal charges are prosecuted by the state of Virginia, not the individual survivor. A Commonwealth's Attorney will argue the case at no cost to the survivor. The survivor serves as the primary witness to the crime, and his or her testimony is crucial to the case. Criminal cases may take considerable time to proceed through the justice system. Typically, the press protects the identity of the survivor, although the identity of the accused perpetrator is not protected.

Important Contacts / Phone Numbers

This section has attempted to offer an overview of sexual assault issues, and the available options on the Virginia Tech campus. No one publication can be entirely comprehensive. Sexual assault is a complex issue; no two cases will have exactly the same results or the same course of action. The university therefore offers a variety of services so that survivors can get the assistance they most need. A good starting point for a survivor, or family and friends of a survivor, is with the Sexual Assault Education Coordinator who is based in The Women's Center at Virginia Tech. For further explanation or elaboration of the information in this section, contact the agencies whose numbers are listed here.

The Women's Center at Virginia Tech	540-231-7806
Women's Center	703-281-2657
Thomas E. Cook Counseling Center	540-231-6557 (8:00am – 5:00pm)
	540-231-6444 (5:00pm – 8:00am)
Schiffert Health Services	540-231-6444
Virginia Tech Police Department	540-231-6411 (located in Blacksburg)
VT HR Employee Assistance Program	866-725-0602
<u>(Employees who are covered by the university's health insurance)</u>	
Dean of Students	540-231-3787
Office of Student Conduct	540-231-3790
Office of Student Programs	540-231-6204
Student Legal Services	540-231-4720
Fairfax County Police Department	703-691-2131
	https://www.fairfaxcounty.gov/police/
	911(emergency)
INOVA Fairfax Hospital ER Dept.	703-776-3111
NOVA Community Hospital, Arlington, VA	703-671-1200
Virginia Hospital Center, Arlington, VA	703-558-5000
Crisis Link Hotline	703-527-4077
Or text "Connect" to 85511	web links to http://ipscenter.org/crisis-hotlines/
Center for Family Services, VT/NVC	703-538-8470
Office for Women & Domestic & Sexual	
Violence Services Hotline	703-360-7273 TTY: 711
https://www.fairfaxcounty.gov/familyservices/domestic-sexual-violence	
Fairfax County Alcohol & Drug	703-359-7040 TTY: 703-538-5292 / 711
Fairfax-Falls Church Mental Health Services	703-573-5679 TTY: 703-207-7737 / 711
Title IX Coordinator	540-231-1824 (students)
Equity & Access	540-231-8771 (employees)
VT (Blacksburg) Office of Emergency	
Management	540-231-4873; Fax: 540-231-4029
Fairfax County Office of Emergency	
Management	573-350-1000

Report all crimes to the Fairfax County Police.

Virginia Tech Northern Virginia Center Crime Statistics 2019

	On Campus			Non Campus			Public Property			Year Total		
OFFENSE TYPE	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Murder & Non negligent Manslaughter	0	0	0	0	0	0	0	0	0	0	0	0
Manslaughter By Negligence	0	0	0	0	0	0	0	0	0	0	0	0
Rape	0	0	0	0	0	0	0	0	0	0	0	0
Fondling	0	0	0	0	0	0	0	0	0	0	0	0
Incest	0	0	0	0	0	0	0	0	0	0	0	0
Statutory Rape	0	0	0	0	0	0	0	0	0	0	0	0
Robbery	0	0	0	0	0	0	0	0	0	0	0	0
Aggravated Assault	0	0	0	0	0	0	0	0	0	0	0	0
Burglary	0	0	0	0	0	0	0	0	0	0	0	0
Motor Vehicle Theft	0	0	0	0	0	0	0	0	0	0	0	0
Liquor Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0
Liquor Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Drug Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0
Drug Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Illegal Weapons Possession Referred	0	0	0	0	0	0	0	0	0	0	0	0
Illegal Weapons Possession Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Arson	0	0	0	0	0	0	0	0	0	0	0	0
Domestic Violence**	0	0	0	0	0	0	0	0	0	0	0	0
Dating Violence**	0	0	0	0	0	0	0	0	0	0	0	0
Stalking**	0	0	0	0	0	0	0	0	0	0	0	0

*No hate crimes were reported in 2017, 2018, or 2019. No on-campus housing.

*No unfounded crimes reported in 2017, 2018, or 2019.

*Hate crimes are criminal offenses committed against a person or property which is motivated in whole or in part by the offender's bias. Bias is a preformed negative opinion or attitude toward a group of persons based on their race, religion, gender, sexual orientation, ethnicity, disability, gender identity and national origin.

Note: Included in the Virginia Tech Northern Virginia Crime Statistics Chart are the crimes required by the Clery Act that occurred on or within an institution's Clery Geography that have been reported to a Campus Security Authority.

Northern Virginia Center

Attachment C



7054 Haycock Rd
Falls Church, VA

0 100 200 400 Feet

Richmond Center

Virginia Tech is committed to providing the members of the campus community and visitors with the safest and most secure environment possible, however, even the most extensive initiatives cannot succeed without the awareness and cooperation of the community members who work, study and live on campus. Crime information for the Richmond Center is obtained from the Richmond Center Director and the Henrico County Police Department. Individuals, who want to report crimes for inclusion in the Annual Security Report, or for the purpose of making timely warning reports, should report them to the Director of the Richmond Center or the Henrico County Police Department.

Information about services and crimes for this report is obtained from Campus Security Authorities including, but not limited to, the Department of Human Resources, the Director of Virginia Tech Richmond Center and Office of Student Conduct. Statistics are also obtained from the Henrico County Police Department, which serves as the law enforcement authority where the Richmond Center is located.

Campus Overview

The Virginia Tech Richmond Center offers an array of educational services to meet the needs of working professionals in the capital region of the Commonwealth. Conveniently located in the West End of Richmond, we offer:

- Professional Development in the form of a variety of workshops and customized certificate programs to serve the needs of the organizations in the private sector as well as those of our state and local governments.
- Graduate Programs in Public Administration and Policy, Business Administration, Education, Engineering, Information Technology, Instructional Technology and Career and Technical Education and Licensure
- Conference Planning and Management Services
- Exam Proctoring

Access to Campus Buildings

Access to the multi-tenant building at 2810 N. Parham Road is controlled by Sonitrol of Greater Richmond. Exterior doors are unlocked at 7:00am on business days and are secured by 10:00pm. Exterior key access is maintained by the management company and not by Virginia Tech. Security is provided by the management company from 5:30pm to end of classes, Monday through Friday, on site. Virginia Tech does not have any responsibility for maintenance of the facility therefore has no policy related to security considerations.

Law Enforcement Services

The Virginia Tech Richmond Center receives its police services from the Henrico County Police Department. Henrico County Police respond to calls for service and assistance. The Virginia Tech Police Department does not have a Memorandum of Understanding (MOU) with the Henrico County Police, since Henrico County Police investigate all crimes within their jurisdiction.

Timely Warning Notices

Timely Warnings / Crime Alerts will be provided to the community in the event of a reported crime, either on campus or off, that, in the judgment of the Chief of the Virginia Tech Police Department or a designee, constitutes an ongoing or continuing serious threat to the university community. *Timely Warnings / Crime Alerts* can only be issued if the Virginia Tech Police Department receives information either from the Henrico County Police Department, the Virginia State Police or the Director of the Richmond Center. The Clery crimes for which *Timely Warnings / Crime Alerts* may be issued may include, but are not limited to, arson, homicide, burglary, robbery, sex offenses, aggravated assault and motor vehicle theft.

The *Timely Warnings / Crime Alerts* are generally written by the Chief of Police or a designee and they are typically distributed to the community via email to anyone who has a vt.edu email address by University Relations. If someone from University Relations is unavailable, there are several administrators in the Virginia Tech Police Department who can initiate the email system. The *Timely Warning / Crime Alert* notices are also posted on the Virginia Tech Police Department website. Updates to the Virginia Tech community about any particular case resulting in a *Timely Warning / Crime Alert* will normally be distributed via email.

Controlled Substances

The university strictly prohibits the illegal use or possession of any controlled substance. The illegal use of controlled substances is incompatible with the goals of an academic community. Students found guilty of possessing, using, distributing, or selling controlled substances will face serious disciplinary action, which may include suspension and/or dismissal from the university for the first offense. Violations of state law should be reported to the Henrico County Police who will take appropriate legal actions. For more comprehensive details, please refer to the University's Policy for a Drug Free University at: <http://www.policies.vt.edu/1020.pdf>.

Pastoral and Professional Counselors

The Virginia Tech Richmond Center does not have any pastoral or professional counselors. There are no policies encouraging counselors to inform persons about reporting crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics.

Emergency Response and Preparedness

Emergency Notifications

Regional VT Alerts are available for the Richmond Center. Immediate/emergency notifications using VT Alerts to members of a satellite campus community will be provided when information is received, either from the designated individual at the satellite campus or from the law enforcement agency responsible for services where the campus is located. VT Alerts will normally be issued by the Virginia Tech Police Department. Emergency notifications may be issued locally, using other means by the Director of the Richmond Center. These methods may include, but not limited to, direct communication to the campus using email or website notices. Members of the satellite campus community are also encouraged to sign up for their localities emergency notification system, which are not affiliated with Virginia Tech, check with the police department in your area.

The Henrico County Police Department, the Virginia state Police and the Henrico County Fire and EMS Departments are primarily responsible for confirming that there is a significant emergency or dangerous situation at the Richmond Center that could cause an immediate threat to the health and safety of the members of the campus community. The Director or designee can also be in a position to confirm an emergency in or surrounding the campus. The Office of University Relations, the Virginia Tech Police Department and/or Virginia Tech Emergency Management have access to the VT Alerts system which can send an alert to subscribers; notifying the campus community of threats that have occurred that may necessitate evacuation, shelter-in-place or other action on the part of students, employees, and campus visitors. The university will typically provide follow-up information to the campus community using the same systems that were used to send out the original alert or to direct the campus community to other informational channels.

Virginia Tech will immediately notify the campus community upon the confirmation, from the Henrico County Police Department, the Virginia state Police or the Henrico County Fire and EMS Departments or authorized staff member at the Richmond Center, of a significant emergency or an immediate threat to the health or safety of students or staff occurring at the Richmond Center. One of the listed departments above will, without delay, and taking into account the safety of the community, determine the content of the notification and initiate the notification system based on information received, unless issuing a notification will, in the professional judgment of the public safety official, compromise efforts to assist, respond to, or otherwise mitigate the emergency. First responders to an incident that causes an immediate threat to the health and safety of the Virginia Tech community at the Richmond Center will typically include the Henrico County Police Department, the Virginia state Police and the Henrico County Fire and EMS Departments.

In accordance with the Higher Education Act of 1965 as amended and Section 23-9.2:11 of the Code of Virginia, the university has implemented a comprehensive communications system, VT Alerts, to provide prompt warning notifications and alerts of immediate threats to the health and safety of members of the campus community using a variety of methods. The VT Alerts system includes: email notices; phone, cellular phone, text messages, and university website notices. Parents and members of the larger community are not eligible to sign up for immediate notification through VT Alerts, however, all Hokie family members, along with members of the community, are able to subscribe to receive real-time VT Phone Alerts to stay informed and are encouraged to do so. To subscribe, text **HokieFam** to **226787**Alerts. Also, they can check the University Website at www.vt.edu for updates during an emergency at the Richmond Higher Education Center and can sign up for desk top alerts by following the direction at: <http://www.alerts.vt.edu/desktop/alerts-desktop.html>.

Students and employees have the option of signing up on VT Alerts to receive emergency messages related to the Richmond Center at: <http://www.alerts.vt.edu>. Annually, the Offices of University Relations and Human Resources provides communications to the university community regarding university procedures for authorized closings and receiving emergency alerts. Additional information about the "Alert" process can be found in the University Safety and Security Policy at: <http://www.policies.vt.edu/5615.pdf>.

Emergency Preparedness

Emergency preparedness and information on what to do in an emergency can be found on the “Be Hokie Ready” link from the Virginia Tech Emergency Management webpage

<http://www.emergency.vt.edu>. Hokie family and community members are also encouraged to download the free **Hokie Ready mobile safety app**. To download the app, search “Hokie Ready” in your app store.

University departments are responsible for developing Emergency Action Plans (EAP) and Continuity of Operations Plans (COOP) for their staff and areas of responsibility. The University conducts numerous exercises each year, including tabletop exercises, functional exercises, drills and tests of the emergency notification systems. These tests are designed to assess and evaluate the emergency plans and capabilities of the institution.

Virginia Tech will notify the university community of its emergency notification protocols, emergency response and evacuation procedures via email, in conjunction with at least one drill or exercise each calendar year. Information related to emergency notifications and emergency guidelines can be found at <http://www.emergency.vt.edu>. Information related to evacuation procedures can be found at https://www.ehss.vt.edu/programs/FLS_fire_emergencies.php.

Reporting a Crime or Getting Emergency Assistance

Individuals are responsible for being aware of and complying with university policies/procedures, and applicable law. Employees and students are encouraged to accurately, voluntarily and promptly report crimes, emergencies, potential threats, or risks to the appropriate law enforcement agency or university office(s). Crimes and other emergencies should be reported to the Henrico County Police Department at 804-501-5000 or 911 for an emergency.

The Richmond Center does not have any policies or procedures that allow survivors or witnesses to report crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics.

The Virginia Tech Police Department encourages everyone that is a survivor of crime to come forward and report to the police. However, on occasion and depending on the nature of the crime the survivor refuses to press charges. This is the survivor's option. Students also have the option of contacting other university resources, such as the Virginia Tech Women’s Center, Office of Student Conduct, Cook Counseling Center, Schiffert Health Center, or academic advisors who will assist with notifications, if desired. Crimes can also be reported to the Virginia Tech Police Department for the purpose of making a timely warning reports and the annual statistical disclosure.

Services and Prevention Information

All Virginia Tech students have access to services offered on the main campus regardless of the location of the extended campus where they are taking classes. Crime prevention, safety and security, sexual assault and other programs are available upon request.

Virginia Tech is committed to University Policy 1025 and the Violence Against Women Act (VAWA), which among other things prohibits discrimination and discriminatory harassment, including sexual harassment and sexual violence in all of its forms, domestic violence, dating violence, and stalking. Sexual Assault is a crime that affects men and women punishable by both civil and criminal legal action. The survivor of a sexual assault may also choose to file a report with Title IX Coordinator, or the Department of Human Resources. The Office of Student Conduct adjudicates cases involving sex offenses in which the alleged perpetrator is a Virginia Tech student. Virginia Tech also encourages survivors to prosecute alleged perpetrators to the fullest extent of the law. There are several avenues for assistance if a person becomes the survivor of a sex offense.

Survivors of sexual assault tend to feel a variety of conflicting emotions: rage, fear, depression, relief to have survived, numbness, and exhaustion, to name just a few. Two key points to remember are that the assault was not your fault and there is help available.

The Virginia Tech Police Department is available and ready to assist if needed. The Virginia Tech Police Department is a valuable resource for information. The department has educational literature available on prevention methods and procedures to follow if you should become the survivor of a sex offense. The department provides educational programs on women's awareness, personal safety and instructs Rape Aggression Defense (RAD) classes upon request. RAD classes are self-defense classes for women only and consist of awareness, safety tips and progresses into hands on attack simulations at the end of the class. Resisting Aggression with Defense for Men (RAD) program teaches the practice of self-defense and how to escape aggressive behavior

The Police Department's Survivor/Witness Assistance Program protects the rights of survivors and witness of crimes. Referral information is accessible at all times regarding area services available for general counseling, medical attention, emergency housing or financial assistance. For crimes that occur in Richmond, the Virginia Tech Police Department will assist and refer the survivor to the Richmond Police Department or the Henrico County Police Department depending on the jurisdiction in which it occurred. Responsiveness to the needs of crime survivors is a department priority.

If Sexual Assault Happens to You

- Contact the police for assistance and information or to report the incident. The Henrico County Police Department should be contacted for incidents occurring at the center. The Virginia Tech Police Department will assist the survivor in contacting the correct law enforcement agency, if requested.
- Go to the Henrico Doctor's Hospital. A qualified physician or nurse will examine you for injuries and collect physical evidence that could be used in judicial proceedings if you decide to prosecute.
- If possible, do not change your clothes, shower, eat or drink between the rape and the trip to the emergency room. Preserving evidence is critical and can assist in prosecution. Bring a change of clothes with you because the police will need the clothes you were wearing for evidence.
- Even if you do not wish to prosecute, it is important that you have a physical exam after the attack. Besides bruises or other physical injuries, the perpetrator might have passed on a sexually transmitted disease that requires treatment. An HIV/AIDS test may also ease your mind, although six months must elapse after an attack to accurately detect the presence of HIV, the virus that causes AIDS.

- Seek counseling from a counselor in your area. If you are not comfortable talking with a counselor, consider talking with a trusted friend or family member.
- Consider your judicial options if you have not done so already. Although there are statutes of limitation on criminal cases, they are often longer than you think. You also have the option of campus and civil charges.
- If the assault and its aftermath are interfering with your ability to complete your work or academic performance, talk with the academic dean of your college about academic relief. The Dean of Students will also assist in changing academic and living situations after an alleged sexual assault incident, should the survivor request such assistance and such changes are reasonably available.
- Remember that it is never too late to deal with a sexual assault, and that you can heal from this significant trauma. People are ready and able to help you, but they can't if you don't ask.

Medical Care

As mentioned above, survivors of very recent assaults should go to the emergency room of the Henrico Doctor's Hospital for a physical exam and the collection of evidence. All survivors, past or present, should be seen by a qualified physician or nurse to check for sexually transmitted diseases, physical trauma, and possible pregnancy. Henrico Doctor's Hospital offers the services of Sexual Assault Nurse Examiners. Female survivors may prefer to see a female physician, and should request one if that will increase their comfort, though in the emergency room that may not always be possible. Survivors may also wish to see their family doctor. Even if no symptoms are apparent, survivors are still strongly encouraged to seek medical attention.

Counseling Options

Students coping with a sexual assault have counseling options available. Two of those options are on-campus: The Women's Center at Virginia Tech and the Thomas E. Cook Counseling Center. The Women's Center at Virginia Tech offers short-term crisis counseling and sexual assault support groups. The Thomas E. Cook Counseling Center offers both short-term and long-term individual and group counseling. These two options may not be practical for students at the Richmond Center. Many other options exist in Richmond that may have some cost associated with them, such as private therapists. Counseling is often crucial to the recovery process, and survivors should be encouraged to seek the assistance of qualified professionals, even if many years have elapsed since the assault. As always, the choice to seek counseling should be the survivor's.

Criminal

A police report must be generated before an investigation can begin and charges can be placed. If the assault happened on campus, it falls under the jurisdiction of the Henrico County Police. If the assault occurs anywhere other than the main campus in Blacksburg, the Virginia Tech Police Department will assist the survivor in notifying the proper authorities, if the student requests the assistance of these personnel. Many survivors believe that if they do not file criminal charges immediately, they lose that option. This may not be the case. There are statutes of limitation for filing criminal charges, but they are typically several years in duration. Certainly, it is best to go to the police as soon as possible after an assault, in order to preserve as much evidence as possible. The police will arrange for the survivor to be seen at the Henrico Doctor's Hospital for medical care and evidence collection. However, even if

some time has elapsed, the police still encourage survivors to come forward. Criminal charges are prosecuted by the state of Virginia, not the individual survivor. A Commonwealth's Attorney will argue the case at no cost to the survivor. The survivor serves as the primary witness to the crime, and his or her testimony is crucial to the case. Criminal cases may take considerable time to proceed through the justice system. Typically, the press protects the identity of the survivor, although the identity of the accused perpetrator is not protected.

Important Contacts / Phone Numbers

This section has attempted to offer an overview of sexual assault issues, and the available options on the Virginia Tech campus. No one publication can be entirely comprehensive. Sexual assault is a complex issue; no two cases will have exactly the same results or the same course of action. The university therefore offers a variety of services so that survivors can get the assistance they most need. A good starting point for a survivor, or family and friends of a survivor, is with the Sexual Assault Education Coordinator who is based in The Women's Center at Virginia Tech. For further explanation or elaboration of the information in this section, contact the agencies whose numbers are listed here.

Susan Johnstad, Director	804-662-7288
Elaine Densley, Center Assistant	804-662-7288
Henrico County Police	911 (emergency)
	804-501-5000 (non-emergency)
Henrico Doctor's Hospital	804-289-400
The Women's Center at Virginia Tech	540-231-7806
Virginia Tech Women's Center	540-231-7806
Thomas E. Cook Counseling Center	540-231-6557 (8:00am – 5:00pm)
	540-231-6444 (5:00pm – 8:00am)
Schiffert Health Services	540-231-6444
Virginia Tech Police Department	540-231-6411
	(non- emergency)
Dean of Students	540-231-3787
Office of Student Conduct	540-231-3790
Office of Student Programs	540-231-6204
Student Legal Services	540-231-4720
Victor Holleman, Onsite Building	
Maintenance Supervisor	804-431-6004
Cassandra Drinnon, Building Manager	888-597-8700 x44
Title IX Coordinator	540-231-1824 (students)
Equity & Access	540-231-8771 (employees)
Office of Emergency Management	540-231-2438

Virginia Tech Richmond Center Crimes Statistics 2019

OFFENSE TYPE	On Campus			Non Campus			Public Property			Year Total		
	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Murder & Non negligent Manslaughter	0	0	0	0	0	0	0	0	0	0	0	0
Manslaughter By Negligence	0	0	0	0	0	0	0	0	0	0	0	0
Rape	0	0	0	0	0	0	0	0	0	0	0	0
Fondling	0	0	0	0	0	0	0	0	0	0	0	0
Incest	0	0	0	0	0	0	0	0	0	0	0	0
Statutory Rape	0	0	0	0	0	0	0	0	0	0	0	0
Robbery	0	0	0	0	0	0	0	0	0	0	0	0
Aggravated Assault	0	0	0	0	0	0	0	0	0	0	0	0
Burglary	0	1	0	0	0	0	0	0	0	0	1	0
Motor Vehicle Theft	0	0	0	0	0	0	0	0	0	0	0	0
Liquor Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0
Liquor Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Drug Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0
Drug Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Illegal Weapons Possession Referred	0	0	0	0	0	0	0	0	0	0	0	0
Illegal Weapons Possession Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Arson	0	0	0	0	0	0	0	0	0	0	0	0
Domestic Violence**	0	0	0	0	0	0	0	0	0	0	0	0
Dating Violence**	0	0	0	0	0	0	0	0	0	0	0	0
Stalking**	0	0	0	0	0	0	0	0	0	0	0	0

*No hate crimes were reported in 2017, 2018, or 2019. No on campus housing.

*No unfounded crimes reported in 2017, 2018, or 2019.

*Hate crimes are criminal offenses committed against a person or property which is motivated in whole or in part by the offender's bias. Bias is a preformed negative opinion or attitude toward a group of persons based on their race, religion, gender, sexual orientation, ethnicity, disability, gender identity and national origin.

Note: Included in the Virginia Tech Richmond Center Crime Statistics Chart are the crimes required by the Clery Act that occurred on or within an institution's Clery Geography that have been reported to a Campus Security Authority.

VT Richmond Higher Education Center

Attachment C

2810 N Parham Rd
Richmond, VA

0 200 400 800 Feet

Roanoke Higher Education Center

Virginia Tech is committed to providing the members of the campus community and visitors with the safest and most secure environment possible, however, even the most extensive initiatives cannot succeed without the awareness and cooperation of the community members who work, study and live on campus. Crime information for the Roanoke Higher Education Center is obtained from the Director of the Facility and the Roanoke City Police Department. Individuals, who want to report crimes for inclusion in the Annual Security Report, or for the purpose of making timely warning reports, should report them to the Director of the Roanoke Center or the Roanoke City Police Department.

Information for this annual report is compiled from reports provided by Campus Security Authorities including, but not limited to, the Department of Human Resources, the Office of Student Conduct, the Dean of Students Office, the Virginia Tech Women's Center, and the Office of Residence Life. Statistics are also compiled from law enforcement agencies in jurisdictions that Virginia Tech owns, leases or controls property or those with jurisdiction on adjacent property.

Campus Overview

The Virginia Tech Roanoke Center (VTRC) connects the resources of Virginia Tech to the Roanoke region and beyond.

Located on the seventh floor of the Roanoke Higher Education Center in beautiful downtown Roanoke, our team works to create opportunities for long-term economic and individual success. We cultivate community relationships and bring you absurdly awesome learning experiences.

We embody the Ut Prosim (That I May Serve) motto of Virginia Tech and fulfill that duty in the Roanoke region. We create and participate in engagement opportunities that promote positivity.

Access to Campus Buildings

Security and access control design standards have been developed for new and renovated buildings owned by the university. Academic and administrative buildings are open to the public during operating hours and are generally secured after operating hours and during extended breaks. The Roanoke Higher Education Center is open from 7:30am to 10:30pm Monday through Friday and from 7:00am to 6:00pm on Saturday's. The Center uses Sun States security to provide security on-site from 6:00am to 12:00am, Monday through Friday and from 6:00am to 8:00pm on Saturday. The security company monitors security features, access, lighting and report problems to the administration.

Law Enforcement Services

Day to day law enforcement services to the Roanoke Higher Education Center are provided by the Roanoke City Police Department. The Virginia Tech Police Department does not have a Memorandum of Understanding (MOU) with the Roanoke City Police Department since the Roanoke City Police Department investigates all crimes within their jurisdiction.

Timely Warnings / Crime Alerts

Timely Warnings / Crime Alerts will be provided to the community in the event of a reported crime, either on campus or off, that, in the judgment of the Chief of the Virginia Tech Police Department or a designee, constitutes an ongoing or continuing serious threat to the university community. *Timely Warnings / Crime Alerts* can only be issued if the Virginia Tech Police Department receives information either from the Roanoke City Police Department, the Virginia State Police or the Director of the Roanoke Higher Education Center. The Clery crimes for which *Timely Warnings / Crime Alerts* may be issued may include, but are not limited to, arson, homicide, burglary, robbery, sex offenses, aggravated assault and motor vehicle theft.

The *Timely Warnings / Crime Alerts* are generally written by the Chief of Police or a designee and they are typically distributed to the community via email to anyone who has a vt.edu email address by University Relations. If someone from University Relations is unavailable, there are several administrators in the Virginia Tech Police Department who can initiate the email system. The *Timely Warning / Crime Alert* notices are also posted on the Virginia Tech Police Department website. Updates to the Virginia Tech community about any particular case resulting in a *Timely Warning / Crime Alert* will normally be distributed via email.

Controlled Substances

The university strictly prohibits the illegal use or possession of any controlled substance. The illegal use of controlled substances is incompatible with the goals of an academic community. Students found guilty of possessing, using, distributing, or selling controlled substances will face serious disciplinary action, which may include suspension and/or dismissal from the university upon the first offense. Violations of state law should be reported to the Roanoke City Police Department who will take appropriate legal actions. For more comprehensive details, please refer to the University's Policy for a Drug Free University at: <http://www.policies.vt.edu/1020.pdf>.

Pastoral and Professional Counselors

The Roanoke Higher Education Center does not have any pastoral or professional counselors, therefore, there are no policies encouraging counselors to inform persons about reporting crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics.

Emergency Response and Preparedness

Emergency Notifications

Regional VT Alerts are available for the Roanoke High Education Center. Immediate/emergency notifications using VT Alerts to members of a satellite campus community will be provided when information is received, either from the designated individual at the satellite campus or from the law enforcement agency responsible for services where the campus is located. VT Alerts will normally be issued by the Virginia Tech Police Department. Emergency notifications may be issued locally, using other means by the Director of the Roanoke High Education Center. These methods may include, but not limited to, direct communication to the campus using email or website notices. Members of the satellite campus community are also encouraged to sign up for their localities emergency notification system, which are not affiliated with Virginia Tech, check with the police department in your area.

The Roanoke City Police Department, the Virginia State Police and the Roanoke City Fire and EMS Departments are primarily responsible for confirming that there is a significant emergency or dangerous situation at the Roanoke Higher Education Center, which could cause an immediate threat to the health and safety of the members of the campus community. The Director or designee can also be in a position to confirm an emergency in or surrounding their campus. The Office of University Relations, the Virginia Tech Police Department and/or Virginia Tech Emergency Management have access to the VT Alerts system which can send an alert to subscribers; notifying the campus community of threats that have occurred that may necessitate evacuation, shelter in place or other action on the part of students, employees, and campus visitors. The university will typically provide follow-up information to the campus community using the same systems that were used to send out the original alert or to direct the campus community to other informational channels.

Virginia Tech will immediately notify the campus community upon the confirmation, from the Roanoke City Police Department, the Virginia State Police or the Roanoke City Fire and EMS Departments or authorized staff member at the Roanoke Higher Education Center, of a significant emergency or an immediate threat to the health or safety of students or staff occurring at the Roanoke Higher Education Center. One of the listed departments above will, without delay, and taking into account the safety of the community, determine the content of the notification and initiate the notification system based on information received, unless issuing a notification will, in the professional judgment of the public safety official, compromise efforts to assist, respond to, or otherwise mitigate the emergency. First responders to an incident that causes an immediate threat to the health and safety of the Virginia Tech community at the Roanoke Higher Education Center will typically include the Roanoke City Police, the Virginia state Police and the Roanoke City Fire and EMS Departments.

In accordance with the Higher Education Act of 1965 as amended and Section 23-9.2:11 of the Code of Virginia, the university has implemented a comprehensive communications system, VT Alerts, to provide prompt warning notifications and alerts of immediate threats to the health and safety of members of the campus community using a variety of methods. The VT Alerts system includes: email notices; phone, cellular phone, text messages, and university website notices. Parents and members of the larger community are not eligible to sign up for immediate notification through VT Alerts, however, all Hokie family members, along with members of the community, are able to subscribe to receive real-time VT Phone Alerts to stay informed and are encouraged to do so. To subscribe, text **HokieFam** to **226787**. Parents and community members can check the University Website at www.vt.edu for updates during an emergency at the Hampton Roads Center and can sign up for desk top alerts by following the direction at: <http://www.alerts.vt.edu/desktop/alerts-desktop.html>.

Students and employees have the option of signing up on VT Alerts to receive emergency messages related to the Roanoke Higher Education Center at: <http://www.alerts.vt.edu>. Annually, the Offices of University Relations and Human Resources provides communications to the university community regarding university procedures for authorized closings and receiving emergency alerts. Additional information about the “Alert” process can be found in the University Safety and Security Policy at: <http://www.policies.vt.edu/5615.pdf>.

Emergency Preparedness

Emergency preparedness and information on what to do in an emergency can be found on the “Be Hokie Ready” link from the Virginia Tech Emergency Management webpage <http://www.emergency.vt.edu>. Hokie family and community members are also encouraged to download the free **Hokie Ready mobile safety app**. To download the app, search “Hokie Ready” in your app store.

University departments are responsible for developing Emergency Action Plans (EAP) and Continuity of Operations Plans (COOP) for their staff and areas of responsibility. The University conducts numerous exercises each year, including tabletop exercises, functional exercises, drills and tests of the emergency notification systems. These tests are designed to assess and evaluate the emergency plans and capabilities of the institution.

Virginia Tech will notify the university community of its emergency notification protocols, emergency response and evacuation procedures via email, in conjunction with at least one drill or exercise each calendar year. Information related to emergency notifications and emergency guidelines can be found at <http://www.emergency.vt.edu>. Information related to evacuation procedures can be found at https://www.ehss.vt.edu/programs/FLS_fire_emergencies.php.

Reporting a Crime or Getting Emergency Assistance

Individuals are responsible for being aware of and complying with university policies/procedures, and applicable law. Employees and students are encouraged to accurately, voluntarily and promptly report crimes, emergencies, potential threats, or risks to the appropriate law enforcement agency or university office(s). Crimes and other emergencies should be reported to the Roanoke City Police Department at 540-853-2212 or 911 for an emergency. The Roanoke Higher Education Center does not have any policies or procedures that allow survivors or witnesses to report crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics.

The Virginia Tech Police Department encourages everyone that is a survivor of crime to come forward and report to the police. However, on occasion and depending on the nature of the crime the survivor refuses to press charges. This is the survivor's option. Students also have the option of contacting other university resources, such as the Virginia Tech Women’s Center, Office of Student Conduct, Cook Counseling Center, Schiffert Health Center, or academic advisors who will assist with notifications, if desired. Crimes can also be reported to the Virginia Tech Police Department for the purpose of making a timely warning reports and the annual statistical disclosure.

Services and Prevention Information

All Virginia Tech students have access to services offered on the main campus regardless of the location of the extended campus where they are taking classes. Crime prevention, safety and security, sexual assault and other programs are available upon request.

Crime prevention programs for satellite campuses are supplemented by local law enforcement agencies. The Roanoke City Police Department should be contacted to determine what types of

classes are available. Any requests for programs that are not conducted by the Virginia Tech Police Department should be directed to the Roanoke City Police Department. There has not been any crime prevention programs conducted during the previous three years.

Virginia Tech is committed to University Policy 1025 and the Violence Against Women Act (VAWA), which among other things prohibits discrimination and discriminatory harassment, including sexual harassment and sexual violence in all of its forms, domestic violence, dating violence, and stalking.

Sexual Assault is a crime that affects men and women punishable by both civil and criminal legal action. The survivor of a sexual assault may also choose to file a report with Title IX Coordinator, or the Department of Human Resources. The Office of Student Conduct adjudicates cases involving sex offenses in which the alleged perpetrator is a Virginia Tech student. Virginia Tech also encourages survivors to prosecute alleged perpetrators to the fullest extent of the law. There are several avenues for assistance if a person becomes the survivor of a sex offense.

Survivors of sexual assault tend to feel a variety of conflicting emotions: rage, fear, depression, relief to have survived, numbness, and exhaustion, to name just a few. Two key points to remember are that the assault was not your fault and there is help available.

The Virginia Tech Police Department is available and ready to assist if needed. The Virginia Tech Police Department is a valuable resource for information. The department has educational literature available on prevention methods and procedures to follow if you should become the survivor of a sex offense. The department provides educational programs on women's awareness, personal safety and instructs Rape Aggression Defense (RAD) classes upon request. RAD classes are self-defense classes for women only and consist of awareness, safety tips and progresses into hands on attack simulations at the end of the class. Resisting Aggression with Defense for Men (RAD) program teaches the practice of self-defense and how to escape aggressive behavior.

The Police Department's Survivor/Witness Assistance Program protects the rights of survivors and witness of crimes. Referral information is accessible at all times regarding area services available for general counseling, medical attention, visa and immigration assistance, emergency housing or financial assistance. For crimes that occur in Roanoke, the Virginia Tech Police Department will assist and refer the survivor to the Roanoke City Police Department or other law enforcement agency depending on the jurisdiction in which it occurred. Responsiveness to the needs of crime survivors is a department priority.

If Sexual Assault Happens to You

- Contact the police for assistance and information or to report the incident. The Roanoke City Police Department should be contacted for incidents occurring at the center. The Virginia Tech Police Department will assist the survivor in contacting the correct law enforcement agency, if requested.
- Go to the Carilion Roanoke Community Hospital in Roanoke. A qualified physician or nurse will examine you for injuries and collect physical evidence that could be used in judicial proceedings if you decide to prosecute.

- If possible, do not change your clothes, shower, eat or drink between the rape and the trip to the emergency room. Preserving evidence is critical and can assist in prosecution. Bring a change of clothes with you because the police will need the clothes you were wearing for evidence.
- Even if you do not wish to prosecute, it is important that you have a physical exam after the attack. Besides bruises or other physical injuries, the perpetrator might have passed on a sexually transmitted disease that requires treatment. An HIV/AIDS test may also ease your mind, although six months must elapse after an attack to accurately detect the presence of HIV, the virus that causes AIDS.
- Seek counseling from Sexual Assault Response & Awareness (SARA), a local area women's center that offers a 24 hour hotline as well as counseling, or a private counselor. All these services are free of charge (except private counseling) and CONFIDENTIAL. If you are not comfortable talking with a counselor, consider talking with a trusted friend or family member. (See Counseling)
- Consider your judicial options if you have not done so already. Although there are statutes of limitation on criminal cases, they are often longer than you think. You also have the option of campus and civil charges.
- If the assault and its aftermath are interfering with your ability to complete your work or academic performance, talk with the Thomas E. Cook Counseling Center, Women's Center at Virginia Tech, or the academic dean of your college about academic relief. The Dean of Students will also assist in changing academic and living situations after an alleged sexual assault incident, should the survivor request such assistance and such changes are reasonably available.
- Remember that it is never too late to deal with a sexual assault, and that you can heal from this significant trauma. People are ready and able to help you, but they can't if you don't ask.

Medical Care

As mentioned above, survivors of very recent assaults should go to the emergency room of the Carilion Roanoke Community Hospital for a physical exam and the collection of evidence. All survivors, past or present, should be seen by a qualified physician or nurse to check for sexually transmitted diseases, physical trauma, and possible pregnancy. Carilion Roanoke Community Hospital offers the services of Sexual Assault Nurse Examiners. Female survivors may prefer to see a female physician, and should request one if that will increase their comfort, though in the emergency room that may not always be possible. Survivors may also wish to see their family doctor. Even if no symptoms are apparent, survivors are still strongly encouraged to seek medical attention.

Counseling Options

Students coping with a sexual assault have counseling options available. Two of those options are on-campus: The Women's Center at Virginia Tech and the Thomas E. Cook Counseling Center. The Women's Center at Virginia Tech offers short-term crisis counseling and sexual assault support groups. The Thomas E. Cook Counseling Center offers both short-term and long-term individual and group counseling. These two options may not be practical for students at the Roanoke Higher Education Center. Many other options exist in Roanoke that may have some cost associated with them, such as private therapists.

Counseling is often crucial to the recovery process, and survivors should be encouraged to seek the assistance of qualified professionals, even if many years have elapsed since the assault. As always, the choice to seek counseling should be the survivor's. The Women's Resource Center in Radford offers a 24-hour crisis line, individual and group counseling, and legal advocacy. These three agencies frequently collaborate to provide services to survivors of sexual assault and these services are CONFIDENTIAL. Many other options exist which have some cost associated with them, such as private therapists. Counseling is often crucial to the recovery process, and survivors should be encouraged to seek the assistance of qualified professionals, even if many years have elapsed since the assault. As always, the choice to seek counseling should be the survivor's.

Criminal

A police report must be generated before an investigation can begin and charges can be placed. If the assault happened on campus, it falls under the jurisdiction of the Roanoke City Police. Many survivors believe that if they do not file criminal charges immediately, they lose that option. This may not be the case. There are statutes of limitation for filing criminal charges, but they are typically several years in duration. Certainly, it is best to go to the police as soon as possible after an assault, in order to preserve as much evidence as possible. The police will arrange for the survivor to be seen at the Carilion Roanoke Community Hospital for medical care and evidence collection. However, even if some time has elapsed, the police still encourage survivors to come forward. Criminal charges are prosecuted by the state of Virginia, not the individual survivor. A Commonwealth's Attorney will argue the case at no cost to the survivor. The survivor serves as the primary witness to the crime, and his or her testimony is crucial to the case. Criminal cases may take considerable time to proceed through the justice system. Typically, the press protects the identity of the survivor, although the identity of the accused perpetrator is not protected.

This section has attempted to offer an overview of sexual assault issues, and the available options on the Virginia Tech campus. No one publication can be entirely comprehensive. Sexual assault is a complex issue; no two cases will have exactly the same results or the same course of action. The university therefore offers a variety of services so that survivors can get the assistance they most need. A good starting point for a survivor, or family and friends of a survivor, is with the Sexual Assault Education Coordinator who is based in The Women's Center at Virginia Tech. For further explanation or elaboration of the information in this section, contact the agencies whose numbers are listed here.

Important Contacts / Phone Numbers

Roanoke City Police Department	911 (emergency) 540-853-2212 (non-emergency)
Carilion Roanoke Community Hospital	540-985-8000
Sexual Assault Response/Awareness	540-345-7273
Chris Meachum-Director of Facility Services	540-767-6005
Lesa Hanlin- Virginia Tech Director	540-767-6100
The Women's Center at Virginia Tech	540-231-7806
Thomas E. Cook Counseling Center	540-231-6557 (8:00am – 5:00pm) 540-231-6444 (5:00pm – 8:00am)
Schiffert Health Services	540-231-6444
Cranwell International Center	540-231-6527
NRV Emergency Communications	
Regional Authority	911 (emergency on campus)
Virginia Tech Police Department	540-231-6411 (non-emergency)
Dean of Students	540-231-3787
Office of Student Conduct	540-231-3790
Office of Student Programs	540-231-6204
Student Legal Services	540-231-4720
Title IX Coordinator	540-231-1824 (students)
Equity & Access	540-231-8771 (employees)
Office of Emergency Management	540-231-2438

Virginia Tech Roanoke Higher Education Center Crimes Statistics 2019

	On Campus			Non Campus			Public Property			Year Total		
OFFENSE TYPE	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Murder & Non negligent Manslaughter	0	0	0	0	0	0	0	0	0	0	0	0
Manslaughter By Negligence	0	0	0	0	0	0	0	0	0	0	0	0
Rape	0	0	0	0	0	0	0	0	0	0	0	0
Fondling	0	0	1	0	0	0	0	0	0	0	0	1
Incest	0	0	0	0	0	0	0	0	0	0	0	0
Statutory Rape	0	0	0	0	0	0	0	0	0	0	0	0
Robbery	0	0	0	0	0	0	0	0	0	0	0	0
Aggravated Assault	0	0	0	0	0	0	0	0	0	0	0	0
Burglary	0	0	0	1	0	0	0	0	0	1	0	0
Motor Vehicle Theft	0	0	0	0	0	0	0	0	1	0	0	1
Liquor Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0
Liquor Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Drug Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0
Drug Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Illegal Weapons Possession Referred	0	0	0	0	0	0	0	0	0	0	0	0
Illegal Weapons Possession Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Arson	0	0	0	0	0	0	0	0	0	0	0	0
Domestic Violence**	0	0	0	0	0	0	0	0	0	0	0	0
Dating Violence**	0	0	0	0	0	0	0	0	0	0	0	0
Stalking**	0	0	0	0	0	0	0	0	0	0	0	0

*No hate crimes were reported in 2017, 2018, or 2019. No on campus housing.

*No unfounded crimes reported in 2017, 2018, or 2019.

*Hate crimes are criminal offenses committed against a person or property which is motivated in whole or in part by the offender's bias. Bias is a preformed negative opinion or attitude toward a group of persons based on their race, religion, gender, sexual orientation, ethnicity, disability, gender identity and national origin.

Note: Included in the Virginia Tech Roanoke Center Crime Statistics Chart are the crimes required by The Clery Act that occurred on or within an institution's Clery Geography that have been reported to a Campus Security Authority.

VT Roanoke Higher Education Center

Attachment G

108 N Jefferson St #701
Roanoke, VA

0 100 200 400 Feet

Southwest Virginia Higher Education Center

Virginia Tech is committed to providing the members of the campus community and visitors with the safest and most secure environment possible, however, even the most extensive initiatives cannot succeed without the awareness and cooperation of the community members who work, study and live on campus. Crime information for the Southwest Virginia Higher Education Center is obtained from the Director of the Facility and the Abingdon Police Department. Individuals who want to report crimes for inclusion in the Annual Security Report should report them to the Abingdon Police Department or the Director of the Southwest Virginia Higher Education Center.

Information for this annual report is compiled from reports provided by Campus Security Authorities including, but not limited to, the Department of Human Resources, the Office of Student Conduct, the Dean of Students Office, the Virginia Tech Women's Center, and the Office of Residence Life. Statistics are also compiled from law enforcement agencies in jurisdictions that Virginia Tech owns, leases or controls property or those with jurisdiction on adjacent property.

Campus Overview

The Virginia Tech Southwest Center offers an array of educational services to meet the needs of working professionals in the southwest region of the Commonwealth. Our graduate programming portfolio includes:

- Educational Leadership (MS, EDS, EdD)
- Mathematics Specialist K-8 (MAED, EdS)
- Engineering (MS)
- Information Technology (MIT)
- Instructional Technology (MA, EdS)
- Career and Technical Education (MS)
- Licensure

To complement these graduate offerings, the Virginia Tech Southwest Center hosts a variety of workshops and customized certificate programs to serve the needs of organizations in the private sector, as well as those of our state and local governments. The Virginia Tech Southwest Center is conveniently located in the Southwest Virginia Higher Education Center.

Access to Campus Buildings

Security and access control design standards have been developed for new and renovated buildings owned by the university. Academic and administrative buildings are open to the public during operating hours and are generally secured after operating hours and during extended breaks. The facility is open Monday through Friday from 7:30a.m. - 10:00p.m., Saturdays from 8:00a.m - 5:00p.m. Visitors check in at the front desk and security cameras monitor public areas.

Law Enforcement Services

Day to day law enforcement services to the SVHEC are provided by the Abingdon Police Department. The Virginia Tech Police Department does not have a Memorandum of Understanding (MOU) with the Abingdon Police Department since the Abingdon Police Department investigates all crimes within their jurisdiction.

Virginia Tech has designed policies and regulations in order to create a safer and more harmonious environment for the members of its community. All campus community members and visitors of the university are required to obey these regulations. These policies not only reflect the university's high standards of conduct, but also local, state and federal laws. Observed and enforced, they create a high degree of safety for the university community. Facilities and landscapes are maintained in a manner that minimizes hazardous conditions. The Director of the Southwest Virginia Higher Education Center campus is responsible for security considerations used in building maintenance.

Controlled Substances

The university strictly prohibits the illegal use or possession of any controlled substance. The illegal use of controlled substances is incompatible with the goals of an academic community. Students found guilty of possessing, using, distributing, or selling controlled substances will face serious disciplinary action, which may include suspension and/or dismissal from the university upon a first offense. Violations of state law should be reported to the Abingdon Police who will take appropriate legal actions. For more comprehensive details, please refer to the University's Policy for a Drug Free University at: <http://www.policies.vt.edu/1020.pdf>.

Pastoral and Professional Counselors

The Southwest Virginia Higher Education Center does not have any pastoral or professional counselors, therefore, there are no policies encouraging counselors to inform persons about reporting crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics.

Emergency Response and Preparedness

Emergency Notifications

Regional VT Alerts are available for the Southwest Virginia Higher Education Center.

Immediate/emergency notifications using VT Alerts to members of a satellite campus community will be provided when information is received, either from the designated individual at the satellite campus or from the law enforcement agency responsible for services where the campus is located. VT Alerts will normally be issued by the Virginia Tech Police Department. Emergency notifications may be issued locally, using other means by the Director of the Southwest Virginia Higher Education Center. These methods may include, but not limited to, direct communication to the campus using email or website notices. Members of the satellite campus community are also encouraged to sign up for their localities emergency notification system, which are not affiliated with Virginia Tech, check with the police department in your area.

The Abingdon Police Department, the Virginia State Police and the Abingdon City Fire and EMS Departments are primarily responsible for confirming that there is a significant emergency or dangerous situation at the Southwest Virginia Higher Education Center that could cause an immediate threat to the health and safety of the members of the campus community. The Director or designee can also be in a position to confirm an emergency in or surrounding the campus. The Office of University Relations, the Virginia Tech Police Department and/or Virginia Tech Emergency Management have access to the VT Alerts system which can send an alert to subscribers; notifying the campus community of threats that have occurred that may necessitate evacuation, shelter in place or other action on the part of students, employees, and campus visitors. The university will typically provide follow-up information to the campus community using the same systems that were used to send out the original alert or to direct the campus community to other informational channels.

Virginia Tech will immediately notify the campus community upon the confirmation, from the Abingdon Police Department, the Virginia State Police or the Abingdon City Fire and EMS Departments or authorized staff member at the Southwest Virginia Higher Education Center, of a significant emergency or an immediate threat to the health or safety of students or staff occurring at the Southwest Virginia Higher Education Center. One of the listed departments above will, without delay, and taking into account the safety of the community, determine the content of the notification and initiate the notification system based on information received, unless issuing a notification will, in the professional judgment of the public safety official, compromise efforts to assist, contain, respond to, or otherwise mitigate the emergency. First responders to an incident that causes an immediate threat to the health and safety of the Virginia Tech community at the Southwest Virginia Higher Education Center will typically include the Abingdon Police, the Virginia state Police and the Abingdon City Fire and EMS Departments.

In accordance with the Higher Education Act of 1965 as amended and Section 23-9.2:11 of the Code of Virginia, the university has implemented a comprehensive communications system, VT Alerts, to provide prompt warning notifications and alerts of immediate threats to the health and safety of members of the campus community using a variety of methods. The VT Alerts system includes: email notices; phone, cellular phone, text messages, and university website notices. Parents and members of the larger community are not eligible to sign up for immediate notification through VT Alerts, but they can subscribe to receive real-time VT Phone Alerts by texting **HokieFam** to **226787** or check the University Website at www.vt.edu for updates during an emergency at the Southwest Virginia Higher Education Center and can sign up for desk top alerts by following the direction at: <http://www.alerts.vt.edu/desktop/alerts-desktop.html>.

Students and employees have the option of signing up on VT Alerts to receive emergency messages related to the Southwest Virginia Higher Education Center at: <http://www.alerts.vt.edu> you can also register for the Southwest Higher Education Center specific Alerts at www.swcenter.edu/hec-alerts. Annually, the Offices of University Relations and Human Resources provides communications to the university community regarding university procedures for authorized closings and receiving emergency alerts. Additional information about the “Alert” process can be found in the University Safety and Security Policy at: <http://www.policies.vt.edu/5615.pdf>.

Emergency Preparedness

Emergency preparedness and information on what to do in an emergency can be found on the “Be Hokie Ready” link from the Virginia Tech Emergency Management webpage <http://www.emergency.vt.edu>. Hokie family and community members are also encouraged to download the free **Hokie Ready mobile safety app**. To download the app, search “**Hokie Ready**” in your app store.

University departments are responsible for developing Emergency Action Plans (EAP) and Continuity of Operations Plans (COOP) for their staff and areas of responsibility. The University conducts numerous exercises each year, including tabletop exercises, functional exercises, drills and tests of the emergency notification systems. These tests are designed to assess and evaluate the emergency plans and capabilities of the institution.

Virginia Tech will notify the university community of its emergency notification protocols, and evacuation procedures via email, in conjunction with at least one drill or exercise each calendar year.

Information related to emergency notifications and emergency guidelines can be found at <http://www.emergency.vt.edu>. Information related to evacuation procedures can be found at https://www.ehss.vt.edu/programs/FLS_fire_emergencies.php

Reporting a Crime or Getting Emergency Assistance

Individuals are responsible for being aware of and complying with university policies/procedures, and applicable law. Employees and students are encouraged to accurately, voluntarily and promptly report crimes, emergencies, potential threats, or risks to the appropriate law enforcement agency or university office(s). Crimes and other emergencies should be reported to the Abingdon Police Department at 276-628-3111 or 911 for an emergency.

The Southwest Virginia Higher Education Center does not have any policies or procedures that allow survivors or witnesses to report crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics.

The Virginia Tech Police Department encourages everyone that is a survivor of crime to come forward and report to the police. However, on occasion and depending on the nature of the crime the survivor refuses to press charges. This is the survivor's option. Students also have the option of contacting other university resources on the main campus, such as the Virginia Tech Women's Center, Office of Student Conduct, Cook Counseling Center, Schiffert Health Center, or academic advisors who will assist with notifications, if desired. Crimes can also be reported to the Virginia Tech Police Department for the purpose of making a timely warning reports and the annual statistical disclosure.

Services and Prevention Information

All Virginia Tech students have access to services offered on the main campus regardless of the location of the extended campus where they are taking classes. Crime prevention, safety and security, sexual assault and other programs are available upon request.

Crime prevention programs for satellite campuses are supplemented by local law enforcement agencies. The Abingdon Police Department should be contacted to determine what types of classes are available. Any requests for programs that are not conducted by the Virginia Tech Police Department should be directed to the Abingdon Police Department. There has not been any crime prevention programs conducted during the previous three years.

Virginia Tech is committed to University Policy 1025 and the Violence Against Women Act (VAWA), which among other things prohibits discrimination and discriminatory harassment, including sexual harassment and sexual violence in all of its forms, domestic violence, dating violence, and stalking. Sexual Assault is a crime that affects men and women punishable by both civil and criminal legal action. The Abingdon Police Department investigates all sexual assaults reported to the Police Department. Once reported to the Police officers respond, investigate and make applicable criminal charges based on evidence collection and survivor / witness statements. The survivor of a sexual assault may also choose to file a report with Title IX Coordinator, or the Department of Human Resources. The Office of Student Conduct adjudicates cases involving sex offenses in which the alleged perpetrator is a Virginia Tech student. Virginia Tech also encourages survivors to prosecute alleged perpetrators to the fullest extent of the law. There are several avenues for assistance if a person becomes the survivor of a sex

offense. Survivors of sexual assault tend to feel a variety of conflicting emotions: rage, fear, depression, relief to have survived, numbness, and exhaustion, to name just a few. Two key points to remember are that the assault was not your fault and there is help available.

The Virginia Tech Police Department is available and ready to assist if needed. The Virginia Tech Police Department is a valuable resource for information. The department has educational literature available on prevention methods and procedures to follow if you should become the survivor of a sex offense. The department provides educational programs on women's awareness, personal safety and instructs Rape Aggression Defense (RAD) classes upon request. RAD classes are self-defense classes for women only and consist of awareness, safety tips and progresses into hands on attack simulations at the end of the class. Resisting Aggression with Defense for Men (RAD) program teaches the practice of self-defense and how to escape aggressive behavior.

The Police Department's Survivor/Witness Assistance Program protects the rights of survivors and witness of crimes. Referral information is accessible at all times regarding area services available for general counseling, visa and immigration assistance, medical attention, emergency housing or financial assistance. Responsiveness to the needs of crime survivors is a department priority.

If Sexual Assault Happens to You

- ☐ Contact the police for assistance and information or to report the incident. The NRV Emergency Communications Authority who will dispatch the Virginia Tech Police Department should be contacted for on-campus incidents and the local police should be contacted for off-campus incidents. The Virginia Tech Police Department will assist the survivor in contacting the correct law enforcement agency, if requested.
- ☐ Go to the Johnston Memorial Hospital in Abingdon. A qualified physician or nurse will examine you for injuries and collect physical evidence that could be used in judicial proceedings if you decide to prosecute.
- ☐ If possible, do not change your clothes, shower, eat or drink between the rape and the trip to the emergency room. Preserving evidence is critical and can assist in prosecution. Bring a change of clothes with you because the police will need the clothes you were wearing for evidence.
- ☐ Even if you do not wish to prosecute, it is important that you have a physical exam after the attack. Besides bruises or other physical injuries, the perpetrator might have passed on a sexually transmitted disease that requires treatment. An HIV/AIDS test may also ease your mind, although six months must elapse after an attack to accurately detect the presence of HIV, the virus that causes AIDS.
- ☐ Seek counseling from a local women's center or a private counselor. All these services are free of charge (except private counseling) and CONFIDENTIAL. If you are not comfortable talking with a counselor, consider talking with a trusted friend or family member.
- ☐ Consider your judicial options if you have not done so already. Although there are statutes of limitation on criminal cases, they are often longer than you think. You also have the option of campus and civil charges.
- ☐ If the assault and its aftermath are interfering with your ability to complete your work or academic performance, talk with the Thomas E. Cook Counseling Center, Women's Center

at Virginia Tech, or the academic dean of your college about academic relief. The Dean of Students will also assist in changing academic and living situations after an alleged sexual assault incident, should the survivor request such assistance and such changes are reasonably available.

- Remember that it is never too late to deal with a sexual assault, and that you can heal from this significant trauma. People are ready and able to help you, but they can't if you don't ask.

Medical Care

As mentioned above, survivors of very recent assaults should go to the emergency room of the Johnston Memorial Hospital for a physical exam and the collection of evidence. All survivors, past or present, should be seen by a qualified physician or nurse to check for sexually transmitted diseases, physical trauma, and possible pregnancy. Female survivors may prefer to see a female physician, and should request one if that will increase their comfort, though in the emergency room that may not always be possible.

Criminal

A police report must be generated before an investigation can begin and charges can be placed. If the assault happened on campus, it falls under the jurisdiction of the Abingdon Police. Many survivors believe that if they do not file criminal charges immediately, they lose that option. This may not be the case. There are statutes of limitation for filing criminal charges, but they are typically several years in duration. Certainly, it is best to go to the police as soon as possible after an assault, in order to preserve as much evidence as possible. The police will arrange for the survivor to be seen at the Johnston Memorial Hospital for medical care and evidence collection. However, even if some time has elapsed, the police still encourage survivors to come forward. Criminal charges are prosecuted by the state of Virginia, not the individual survivor. A Commonwealth's Attorney will argue the case at no cost to the survivor. The survivor serves as the primary witness to the crime, and his or her testimony is crucial to the case. Criminal cases may take considerable time to proceed through the justice system. Typically, the press protects the identity of the survivor, although the identity of the accused perpetrator is not protected.

Important Contacts / Phone Numbers

This section has attempted to offer an overview of sexual assault issues, and the available options on the Virginia Tech campus. No one publication can be entirely comprehensive. Sexual assault is a complex issue; no two cases will have exactly the same results or the same course of action. The university therefore offers a variety of services so that survivors can get the assistance they most need. A good starting point for a survivor, or family and friends of a survivor, is with the Sexual Assault Education Coordinator who is based in The Women's Center at Virginia Tech. For further explanation or elaboration of the information in this section, contact the agencies whose numbers are listed here.

Sources of Information and Assistance

Abingdon Police department	911 (emergency) 276-628-3111 (non-emergency)
Johnston Memorial Hospital	276-739-8010
Highland Community Center	276-628-9504
Abuse Alternatives	800-987-6499
SWVHEC Directors Office	276-619-4311
The Women's Center at Virginia Tech	540-231-7806
Thomas E. Cook Counseling Center	540-231-6557 (8:00am – 5:00pm) 540-231-6444 (5:00pm – 8:00am)
Schiffert Health Services	540-231-6444
Virginia Tech Police Department	911 (emergency, on campus) 540-231-6411 (non-emergency)
Dean of Students	540-231-3787
Office of Student Conduct	540-231-3790
Office of Student Programs	540-231-6204
Student Legal Services	540-231-4720
Title IX Coordinator	540-231-1824 (students)
Equity & Access	540-231-8771 (employees)
Office of Emergency Management	540-231-2438
Cranwell International Center	540-231-6527

Virginia Tech Southwest Virginia Higher Education Center Crimes Statistics 2019

OFFENSE TYPE	On Campus			Non Campus			Public Property			Year Total		
	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Murder & Non negligent Manslaughter	0	0	0	0	0	0	0	0	0	0	0	0
Manslaughter By Negligence	0	0	0	0	0	0	0	0	0	0	0	0
Rape	0	0	0	0	0	0	0	0	0	0	0	0
Fondling	0	0	0	0	0	0	0	0	0	0	0	0
Incest	0	0	0	0	0	0	0	0	0	0	0	0
Statutory Rape	0	0	0	0	0	0	0	0	0	0	0	0
Robbery	0	0	0	0	0	0	0	0	0	0	0	0
Aggravated Assault	0	0	0	0	0	0	0	0	0	0	0	0
Burglary	0	0	0	0	0	0	0	0	0	0	0	0
Motor Vehicle Theft	0	0	0	0	0	0	0	0	0	0	0	0
Liquor Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0
Liquor Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Drug Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0
Drug Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Illegal Weapons Possession Referred	0	0	0	0	0	0	0	0	0	0	0	0
Illegal Weapons Possession Arrests	0	0	0	0	0	0	0	0	0	0	0	0
Arson	0	0	0	0	0	0	0	0	0	0	0	0
Domestic Violence**	0	0	0	0	0	0	0	0	0	0	0	0
Dating Violence**	0	0	0	0	0	0	0	0	0	0	0	0
Stalking**	0	0	0	0	0	0	0	0	0	0	0	0

*No hate crimes were reported in 2017, 2018, or 2019. No on-campus housing.

*No unfounded crimes reported in 2017, 2018, or 2019.

*Hate crimes are criminal offenses committed against a person or property which is motivated in whole or in part by the offender's bias. Bias is a preformed negative opinion or attitude toward a group of persons based on their race, religion, gender, sexual orientation, ethnicity, disability, gender identity and national origin.

*Note: Included in the Virginia South West Virginia Center Crime Statistics Chart are the crimes required by the Clery Act that occurred on or within an institution's Clery Geography that have been reported to a Campus Security Authority.

Southwest Virginia AREC

Attachment C

Family Dwelling
0740

Office Building
0743

Implement and Machinery Shed
0742

Granery
0744

Sheep Barn
0745

Tobacco Barn
0746

Cattle Barn #5
0741

Tobacco Barn
0747

Tobacco Barn
0748

Steger Center for International Scholarship

Virginia Tech is committed to providing the members of the campus community and visitors with the safest and most secure environment possible, however, even the most extensive initiatives cannot succeed without the awareness and cooperation of the community members who work, study and live on campus. Crime information for the Steger Center is obtained from the Managing Director of the Facility and the Polizia Cantonale of the Repubblica E Cantone Ticino. Individuals who want to report crimes for inclusion in the Annual Security Report, or for the purpose of making timely warning reports, should report them to the Managing Director of the Facility.

Campus Overview

The Steger Center for International Scholarship is university's European campus academic center. The Steger is housed in a renovated 18th century villa, Villa Maderni, which offers dining, lodging, and classroom accommodations.

Historic remnants in the building include original floor tiles, hand-painted ceilings, and a massive stone fireplace. Modern additions include a computer lab, group study areas, and a cafeteria. The Steger Center also boasts collaborative learning spaces, including a "creativity room" with white board walls, a library, and a garden where students can study in nice weather.

The residential learning communities based at the Steger Center go far beyond the traditional classroom experience and take advantage of its strategic location in Ticino, the Italian-speaking canton in southern Switzerland.

Students participate on field trips and excursions to local and regional sites, cities, and organizations, which provide real-world learning experiences. Students will learn about course topics and experience the many cultures, economic systems, and social milieus of Europe.

The Steger Center currently houses semester-length residential programs, as well as a Varied set of shorter offerings in the summer. To assist in students' adjustment to living in Riva San Vitale, Italian language courses are provided to semester-long programs. All other courses are taught in English by Virginia Tech faculty members.

With spectacular natural beauty, varied educational opportunities, and rich cultural and historical heritage in the area, the Steger Center offers a unique international experience.

Access to Campus Buildings

Security and access control design standards have been developed for new and renovated buildings owned by the university. Access to Academic and administrative buildings is gained through a monitored doorway and by a digital key that is issued to faculty, staff, and students.

Law Enforcement Services

Day to day law enforcement services to the Steger Center are provided by the Polizia Cantonale. The Virginia Tech Police Department does not have a Memorandum of Understanding (MOU) with the Policia Cantonale of Ticino, since the Polizia Cantonale of Ticino investigates all crimes within their jurisdiction. VTPD has met with The Polizia Cantonale of Ticino and provided relevant contact information for support purposes. The

Polizia Cantonale of Ticino has the option to notify Virginia Tech when students are Involved in law violations and may submit student conduct referrals, if they deem it necessary. They don't currently, but it is an option for them.

Timely Warning / Crime Alerts

Timely Warnings / Crime Alerts can only be issued if the Virginia Tech Police Department receives information either from the Polizia Cantonale or the Managing Director of the Steger Center. The Clery crimes for which *Timely Warnings / Crime Alerts* may be issued may include, but are not limited to, murder, non-negligent manslaughter, negligent manslaughter, arson, homicide, burglary, robbery, sex offenses, aggravated assault and motor vehicle theft.

The *Timely Warnings / Crime Alerts* are generally written by the Chief of Police or a designee and they are typically distributed to the community via email to anyone who has a vt.edu email address by University Relations. A *Timely Warning / Crime Alert* for the Steger Center will be distributed in the same manner as noted below in "Emergency Notifications". That is, via the email list serve set up by the Managing Director, door to door notification, posting of flyers and a phone tree for the Steger Center facility and the area apartments. The *Timely Warning / Crime Alert* notices are also posted on the Virginia Tech Police Department website. Updates to the Steger Center about any particular case resulting in a *Timely Warning / Crime Alert* will normally be distributed in the same fashion as noted below, that is email list serve set up by the Managing Director, door to door notification, posting of flyers and a phone tree for the Steger Center facility and the area apartments.

The internal process for providing warnings at the Riva Campus is by e-mail, phone or by immediately notifying by voice to the entire community. The community is reachable within a few minutes from the occurrence of the event. All faculty are required to possess a cell phone (operative worldwide) and can be reached immediately when traveling with students. The Steger Center maintains a listserv with all e-mail addresses of students and faculty in residency as well as some administrators at Virginia Tech. Students traveling on weekends or breaks can usually be contacted by e-mail or by phone (text or call). All students traveling overnight during the semester must fill out a travel form in order for the Steger Center to be able to contact them in case of any emergencies.

Missing Person Policy

If a member of the Steger Center community has reason to believe that a student who resides at the Villa is missing, he or she should *immediately* notify the Managing Director of the Steger Center. The Managing Director is responsible for notifying the Virginia Tech Police Department at 540-231-6411 and the Polizia Cantonale subsequently the United States Embassy. The Polizia Cantonale will generate a missing person report and initiate an investigation.

After investigating the missing person report, should the Polizia Cantonale determine that the student is missing and has been missing for more than 24 hours, the Managing Director of the Steger Center, or designee, will immediately notify the Virginia Tech Police Department so that they may notify the student's emergency contact, or confidentially identified individual, no later than 24 hours after the student is determined to be missing. If the missing student is under the age of 18 and is not an emancipated individual, the Virginia Tech Police Department will notify the student's parent or legal guardian or any other designated contact person

immediately after the Polizia Cantonale has determined that the student has been missing for more than 24 hours. As per requirement of the law, the Managing Director will inform the local law enforcement agency within 24 hours of the determination that the student is missing, unless the local law enforcement agency was the entity that made the determination that the student is missing. This notification will be made no later than 24 hours after the student is determined to be missing.

Pastoral and Professional Counselors

The Steger Center does not have any pastoral or professional counselors, therefore, there are no policies encouraging counselors to inform persons about reporting crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics.

Emergency Notifications

If an emergency notification is required to the Steger Center community, there are several methods available. These methods include an email list serve, door to door notification, posting of flyers and a phone tree for the Steger Center facility and the area apartments. These methods may be used singularly or in concert, as the situation warrants. If there is an emergency in the village a siren will sound telling residents to enter the streets and seek additional information from local police and first responders. Emergency notifications may be issued by the Managing Director of the Steger Center, or the Polizia Cantonale, or the Protezione Civile Officers. By means of select email distributions to select groups, University Relations and the Virginia Tech Police Department can send email notifications as needed.

The Polizia Cantonale is primarily responsible for confirming that there is a significant emergency or dangerous situation on campus that could cause an immediate threat to the health and safety of the members of the campus community. The Managing Director or designee could be in a position to confirm certain types of emergencies, such as a pandemic flu outbreak, etc.

Virginia Tech will immediately notify the campus community upon the confirmation, from the Polizia Cantonale or authorized staff member at the Steger Center, of a significant emergency or dangerous situation involving an immediate threat to the health or safety of students or staff occurring at the Villa. The typical first responders to an incident that causes an immediate threat to the health and safety of the Virginia Tech community at the Steger Center include the Polizia Cantonale and the Fire Department of Mendrisio.

Emergency Evacuation Procedures

All the Steger Center residents and non-residents (e.g. students and faculty who live in town and commute for classes and meals) receive comprehensive fire safety training at the beginning of each semester or, in the case of short-stay groups, during the summer semester at arrival. A mandatory fire drill is conducted during the training session at the beginning of each semester. All students are required to evacuate the building upon being notified that there is a fire. Steger Center staff receive comprehensive safety training, which includes specific instructions on operating different fire safety equipment present in their area of work.

Thus, the emergency response and evacuation procedures are tested at least twice each year. The purpose of the drills is to provide all staff practice in the event there is ever a real fire or other evacuation emergency. The drills prepare building occupants for an organized evacuation in case of a fire or other emergency. Evacuation drills are used as a way to educate and train occupants on fire safety issues specific to their building. During the drill, occupants familiarize

themselves with procedures and the location of exits and the sound of the fire alarm. Alarms and other components of the fire safety system are also checked to see that they are working properly.

Each university department or unit develops an Emergency Action Plan (EAP) that outlines the actions occupants in the building must take during emergencies. Evacuation planning is a part of each department's EAP. Once you have reviewed your evacuation and fire prevention plans with your students and employees, practice drills are recommended to ensure that the students and employees are prepared for emergencies.

Reporting a Crime or Getting Emergency Assistance

Individuals are responsible for being aware of and complying with university policies and procedures, and applicable law. Employees and students are encouraged to accurately, voluntarily and promptly report crimes, emergencies, potential threats, or risks to the appropriate law enforcement agency or university office(s). Crimes and other emergencies should be reported to the Canton Ticino Police at: 117.

Students may also seek assistance through the US embassy/consulate. To view all options visit: http://travel.state.gov/travel/cis_pa_tw/cis/cis_1034.html#victim and scroll down to “Information for Victims of Crime” chapter.

The Steger Center Campus does not have any policies or procedures that allow victims or witnesses to report crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics.

The Virginia Tech Police Department encourages everyone that is a victim of crime to come forward and report to the police. However, on occasion and depending on the nature of the crime the victim refuses to press charges. This is the victim's option. Students also have the option of contacting other university resources on the main campus, such as the Virginia Tech Women’s Center, Office of Student Conduct, Cook Counseling Center, Schiffert Health Center, or academic advisors who will assist with notifications, if desired. Crimes can also be reported to the Virginia Tech Police Department for the purpose of making a timely warning reports and the annual statistical disclosure.

Services and Prevention Information

All Virginia Tech students have access to services offered on the main campus regardless of the location of the extended campus where they are taking classes. Crime prevention, safety and security, sexual assault and other programs are available upon request.

Safety and Security Programs

The Virginia Tech Police Department has community outreach and residence life resource officers that provide educational programming and other crime prevention functions to the university community. Educational programs located on the Blacksburg campus include Student Police Academy, Alcohol Awareness, Bicycle Safety, Drug Awareness, Operation ID, Personal and Property Safety (basic crime prevention and personal safety), Rape Aggression Defense and Women's Awareness and Safety. All programs are available to faculty, staff and students upon request or if a need becomes apparent. The Virginia Tech Police Department will present programming to the Steger Center faculty, staff, and students upon request. Crime prevention programs for satellite campuses are supplemented

by local law enforcement agencies. The administration of the Steger Center should be contacted to determine what types of classes are available. Any requests for programs will be forwarded by the administration at the Steger Center to the resource best suited to meet the request. There have not been any crime prevention programs conducted during the previous three years.

Virginia Tech is committed to University Policy 1025 and the Violence Against Women Act (VAWA), which among other things prohibits discrimination and discriminatory harassment, including sexual harassment and sexual violence in all of its forms, domestic violence, dating violence, and stalking as defined by VAWA.

Sexual Assault is a crime that affects men and women punishable by both civil and criminal legal action. The survivor of a sexual assault may also choose to file a report with Title IX Coordinator, or the Department of Human Resources. The Office of Student Conduct adjudicates cases involving sex offenses in which the alleged perpetrator is a Virginia Tech Student. Virginia Tech also encourages victims to prosecute alleged perpetrators to the fullest extent of the law. There are several avenues for assistance if a person becomes the victim of a sex offense.

Survivors of sexual assault tend to feel a variety of conflicting emotions: rage, fear, depression, relief to have survived, numbness, and exhaustion, to name just a few. Two key points to remember are that the assault was not your fault and there is help available.

The Virginia Tech Police Department is available and ready to assist if needed. The Virginia Tech Police Department is a valuable resource for information. The department has educational literature available on prevention methods and procedures to follow if you should become the victim of a sex offense. The department provides educational programs on women's awareness, personal safety and instructs Rape Aggression Defense (RAD) classes upon request. RAD classes are self-defense classes for women only and consist of awareness, safety tips and progresses into hands on attack simulations at the end of the class. Resisting Aggression Defense (RAD) is for men and teaches self-defense and how to escape aggressive behavior. RAD classes are not currently available at the Steger Center.

The Police Department's Victim/Witness Assistance Program protects the rights of victims and witness of crimes. Referral information is accessible at all times regarding area services available for general counseling, visa and immigration assistance, medical attention, emergency housing or financial assistance. Responsiveness to the needs of crime victims is a department priority.

If Sexual Assault Happens to You

- ☐ Contact the police for assistance and information or to report the incident. The Cantonal police should be contacted for all incidents occurring in Switzerland. The Virginia Tech Police will assist the victim in contacting the correct law enforcement agency, if requested.
- ☐ Go to the nearest hospital- if you are on the Virginia Tech campus in Riva San Vitale it will be the Ospedale Beata Vergine located in Mendrisio. A qualified physician or nurse will examine you for injuries and collect physical evidence that could be used in judicial proceedings if you decide to prosecute.

- ❑ If possible, do not change your clothes, shower, eat or drink between the rape and the trip to the emergency room. Preserving evidence is critical and can assist in prosecution. Bring a change of clothes with you because the police will need the clothes you were wearing for evidence.
- ❑ Even if you do not wish to prosecute, it is important that you have a physical exam after the attack. Besides bruises or other physical injuries, the perpetrator might have passed on a sexually transmitted disease that requires treatment. An HIV/AIDS test may also ease your mind, although six months must elapse after an attack to accurately detect the presence of HIV, the virus that causes AIDS.
- ❑ Seek counseling from a local counseling center (designated by State law to assist sexual assault victims) is organized through any of the hospitals or a private counselor (information and contact of a counseling center is normally done with the assistance of the hospital and or by the Police). If you are not comfortable talking with a counselor, consider talking with a trusted friend or family member.
- ❑ Consider your judicial options if you have not done so already. Although there are statutes of limitation on criminal cases, they are often longer than you think. You also have the option of campus and civil charges.
- ❑ If the assault and its aftermath are interfering with your ability to complete your work or academic performance, talk with the Thomas E. Cook Counseling Center, Women's Center at Virginia Tech, or the academic dean of your college about academic relief. The Dean of Students will also assist in changing academic and living situations after an alleged sexual assault incident, should the victim request such assistance and such changes are reasonably available.
- ❑ Remember that it is never too late to deal with a sexual assault, and that you can heal from this significant trauma. People are ready and able to help you, but they can't if you don't ask.

Medical Care

As mentioned above, victims of very recent assaults should go to the emergency room of the nearest Hospital (Ospedale Beata Vergine if you are at the Steger Center) for a physical exam and the collection of evidence. All victims, past or present, should be seen by a qualified physician or nurse to check for sexually transmitted diseases, physical trauma, and possible pregnancy. Female victims may prefer to see a female physician, and should request one if that will increase their comfort, though in the emergency room that may not always be possible.

Counseling Options

Students coping with a sexual assault have at least three counseling options that are free of charge. Two of those options are on-campus: The Women's Center at Virginia Tech and the Thomas E. Cook Counseling Center. The Women's Center at Virginia Tech offers short-term crisis counseling and sexual assault support groups. The Thomas E. Cook Counseling Center offers both short-term and long-term individual and group counseling. The Women's Resource Center in Radford offers a 24-hour crisis line, individual and group counseling, and legal advocacy. These three agencies frequently collaborate to provide services to victims of sexual assault and these services are CONFIDENTIAL. These two options may not be practical for students at the Steger Center. Many other options exist which have some cost associated with them, such as private therapists. Counseling is often crucial to the recovery process, and victims should be encouraged to seek the assistance of qualified

professionals, even if many years have elapsed since the assault. As always, the choice to seek counseling should be the victim's.

Criminal

A police report must be generated before an investigation can begin and charges can be placed. If the assault happened on campus, it falls under the jurisdiction of the Cantonal Police (Ticino for the Campus of Riva San Vitale). Many victims believe that if they do not file criminal charges immediately, they lose that option. This may not be the case. There are statutes of limitation for filing criminal charges, but they are typically several years in duration. Certainly, it is best to go to the police as soon as possible after an assault, in order to preserve as much evidence as possible. The police will arrange for the victim to be seen at the Ospedale Beata Vergine Hospital for medical care and evidence collection. However, even if some time has elapsed, the police still encourage victims to come forward. Criminal cases may take considerable time to proceed through the justice system. Typically, the press protects the identity of the victim, although the identity of the accused perpetrator is not protected.

Additional information about criminal procedures in Switzerland is available at: <http://www4.ti.ch/di/pol/prevenzione/reati-sessuali/>. The victim should immediately contact the police at either 112 or 117. In case of sexual assault the victim has the RIGHT to be interrogated by a person of the same sex. The victim also has the right to be assisted by doctors and psychologist, and receive a juridical advice by a counseling center recognized by the Swiss authorities. If the victim does not feel like seeing the police first she should immediately see a physician (Hospital Mendrisio) and contact the Center UIR (Unità di Intervento Regionale) in Mendrisio at 0041-91-815-94 01 (office hours). Victims may also see the police in Mendrisio (only during office hours) and have them arrange a consultation through the UIR or go to the nearest Hospital open 24 hours a day/7 days a week to seek assistance through UIR.

Sex Offender Registry

Switzerland does not have a sex offender registry.

Health and safety is a primary concern when traveling abroad.

There are protocols and guidelines in place to minimize risk to students, faculty, and staff: Register your travel with the Global Education Office. Follow the steps [here](#).

- The Global Education Office monitors U.S. government advisories Travelers are also encouraged to register with the [U.S. Department of State](#) and enroll in the Smart Traveler Enrollment Program (STEP)
- Students, participating in programs that are not faculty-led, attend mandatory pre-departure orientation sessions.
- The university requires that all Virginia Tech faculty, staff, and documented representatives traveling for business purposes enroll in the university-approved insurance, Cultural Intercultural Services International (CISI). Instructions for insurance enrollment can be found [here](#).
- In case of emergencies while abroad, travelers can call the Virginia Tech Police Dispatch number: 24-hours, 7 days a week: +1 (540) 231- 6411.

What is Hokie Sentinel?

Hokie Sentinel is the rallying term used by Hokies to prepare and protect Hokies traveling abroad. It encompasses every effort expended across the Virginia Tech family to help Hokies understand the value of a global experience, and the seriousness of preparing for that experience, being vigilant while abroad, and protecting the reputation of Hokies around the globe by behaving in a way that epitomizes Virginia Tech's motto "Ut Prosim". (More information is accessible through Virginia Tech's main website)

Hokie Sentinel Quick Reference Emergency Contacts

VT Police (24/7 coverage)

540-231-6411

VT Global Safety & Risk Management (24/7 coverage)

On-call personnel--540-750-5747

vt.globalsafety@vt.edu

AXA Assistance (Cultural Insurance Services

International's contracted support team)

312-935-1703 (collect)

medassist-usa@axa-assistance.us

Important Contacts / Phone Numbers

This section has attempted to offer an overview of sexual assault issues, and the available options on the Virginia Tech campus. No one publication can be entirely comprehensive. Sexual assault is a complex issue; no two cases will have exactly the same results or the same course of action. The university therefore offers a variety of services so that victims can get the assistance they most need. A good starting point for a victim, or family and friends of a victim, is with the Sexual Assault Education Coordinator who is based in The Women's Center at Virginia Tech. For further explanation or elaboration of the information in this section, contact the agencies whose numbers are listed here.

Canton Ticino Police (Polizia Cantonle)*	117 (emergency service available 24/7) 112 (service available 24/7) Police-Ambulance-Fire)* 011 41 91 848 25 55 55
US to Switzerland	144
Emergency Ambulance (Switzerland)	118 (emergency only)
Fire Department in Switzerland	0041 79 208 4636
Steger Center Managing Dir. Cell phone*	001 540-231-3787
VT Dean of Students	001 540-231-3790
VT Office of Student Conduct	001 540-231-6411
Virginia Tech Police Department	001 540-231-7806
VT Women's Center	001 540-231-6204
VT Office of Student Programs	001 540-231-6444
Schiffert Health Services	001 540-231-6527
Cranwell International Center	001 540-231-7806
VT Women's Center at Virginia Tech	001 540-231-6557 (8:00am - 5:00pm EST)
VT Thomas E. Cook Counseling Center	001 540-231-6444 (5:00pm - 8:00am EST)
Title IX Coordinator (students)	001 540-231-1824 (8:00am - 5:00pm EST)
Equity & Access (employees)	001 540-231-8771 (8:00am - 5:00pm EST)
Office of Emergency Management	001 540-231-2438 (8:00am – 5:00pm EST)

Virginia Tech Steger Center for International Scholarship Crimes Statistics 2019

	On Campus			Non Campus			Public Property			Year Total			Residential		
OFFENSE TYPE	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Murder & Non negligent Manslaughter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Manslaughter By Negligence	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rape	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fondling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Incest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Statutory Rape	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Robbery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aggravated Assault	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Burglary	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motor Vehicle Theft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Liquor Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Liquor Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drug Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drug Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Illegal Weapons Possession Referred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Illegal Weapons Possession Arrests	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic Violence**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dating Violence**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stalking**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*No hate crimes were reported in 2017, 2018, or 2019.

*No unfounded crimes reported in 2017, 2018, or 2019.

*Hate crimes are criminal offenses committed against a person or property which is motivated in whole or in part by the offender's bias. Bias is a preformed negative opinion or attitude toward a group of persons based on their race, religion, gender, sexual orientation, ethnicity, disability, gender identity and national origin.

* Note: Included in the Virginia Tech Steger Center Crime Statistics Chart are the crimes required by the Clery Act that occurred on or within an institution's Clery Geography that have been reported to a Campus Security Authority.

Virginia Tech

Higher Education Opportunity Act

Switzerland Campus – Steger Center

Fire Safety Annual Compliance Report for 2019

Overview

The properties located on the Switzerland Campus of Virginia Tech (the Steger Center for International Scholarship, Steger Center) consist of Villa Maderni (an approximately 260 year old building), annexed renovated stables (used as classroom), new building featuring classrooms, multipurpose room, storage, mechanical room surrounded by a large garden. All of the properties listed belong to the Virginia Tech Foundation. The main building was renovated in 1993- the construction-renovation work on the old stables area and the expansion were terminated in June 2014. In addition to the Villa Maderni, Steger Center also maintains rental contracts for apartments at via G. Motta 15 (apt. B), via Franscini 2, via Carlo Maderno 1, via Settala 7, and via G. Motta 15 (apt. A).

The 2014 new Steger Center buildings include classroom spaces, office spaces, a library, a housing facility with residential space for **32** students, dining facility (with a professional kitchen), storage, and a built-in independent apartment. The Fire Protection Equipment in the primary building was upgraded during the last renovation in 1993 in order to meet all applicable Swiss laws and regulations and in 2011 an additional upgrade included installation of a fire alarm system (with centralized smoke detectors) and fire rated doors.

Steger Center Housing Fire Safety Equipment

All the areas of the Steger Center are equipped with smoke detectors, fire extinguishers, fire hoses, and/or blankets in order to block the rapid spread of fire. All fire protection equipment is strictly maintained and tested in accordance with applicable Swiss laws. The electrical system is fully inspected and tested every 5 years and all devices operating with natural gas are inspected and maintained annually. There are no sprinkler systems but fire hoses, and a newly installed fire alarm system was added in 2011 and extended to the newly built and renovated spaces in June 2014. The fire alarms are sent directly to the local fire alarm station in Mendrisio/and Cantonal Police and the technical faults are detected immediately and reported to the Steger Center security designee. For a summary of fire protection systems present in each facility, see Table I. A lightning rod-discharge-grounding system was installed at the end of the renovation-expansion project in 2014 to fulfil the Swiss code requirement.

Fire Safety Education, Training and Fire Drills

All the Steger Center residents and non-residents (e.g. students and faculty who live in town and commute for classes and meals) receive comprehensive fire safety training at the beginning of each semester or, in the case of short-stay groups, during the summer semester at arrival. A mandatory fire drill is conducted during the training session at the beginning of each semester. All students are required to evacuate the building upon being notified that there is a fire. Steger

Center staff receive comprehensive safety training, which includes specific instructions on operating different fire safety equipment present in their area of work.

Specific Fire Prevention Related Policies and Programs

Based on the nature of the programs hosted at the Steger Center (small programs), the only policy that has been implemented is a No Smoking policy. Kitchen, Maintenance and Custodial Services Personnel monitor all of their designated areas for safety infractions. They report all identified hazards to the managing director, who is charged with taking appropriate corrective measures. Steger Center staff access student living quarters and all other areas of the building for general cleaning/maintenance on periodic basis and will report any identified hazards in those areas as well. Students and faculty are encouraged to discuss any special furnishing or decoration they may need for special projects with Steger Center administration. The yearly maintenance services to various Steger Center fire protection systems and equipment are also utilized in order to identify and correct additional deficiencies.

Statistical Report for Fire Response to the Steger Center

The fire response statistics for Steger Center are summarized in the following table.

Fire Statistics

The number and cause of each fire in the residential facility for each dwelling is summarized in Table 2. There were no fires or fire losses reported at any of the Steger Center Campus Facilities during Calendar Years 2017, 2018 and 2019.

Fire Reporting

If a fire has occurred at the Steger Center or in any of the apartments, it should be reported to Daniela Doninelli, Managing Director, Steger Center for International Scholarship at +41 79 208 46 36 or by email to daniela@vt.edu.

Responding to a Fire

If a fire alarm is received in the Steger Center, residents shall immediately exit all the buildings and gather at a predetermined location. The fire alarm central system will automatically notify the Cantonal police. The Cantonal police will then notify the fire department and the Steger Center Managing director or designee.

If a fire emergency occurs in the residence apartments leased by Virginia Tech, without a centralized fire alarm system, notify occupants by knocking on their doors and shouting “fire-fuoco (in Italian)” as you exit the building. Do not jeopardize your own safety to do this. Do not reenter the building until the fire department says it is safe to do so. If you are unable to leave your room, place towels under the door to prevent smoke from entering. Call 118 or call Steger Center Managing Director and give them your exact location and as much information as possible. Remain calm.

Plans for Future improvement

The Virginia Tech Foundation will continue to work with the local Authorities to enhance and improve the existing building fire protection system capabilities as required by applicable codes, standards and best business practices.

Table 1 - Fire Protection Systems at the Steger Center Campus Switzerland

<i>Building Name</i>	<i>Onsite Fire Alarm Monitoring</i>	<i>Partial Sprinkler System</i>	<i>Full Sprinkler System</i>	<i>Smoke Detection</i>	<i>Fire Extinguishing Devices</i>	<i>Evacuation Plans & Signs</i>	<i>Number of Fire Drills each calendar year</i>
Steger Center	X			X	X	Not Required	Not Required
APT. via Franscini 2				X	X ¹	Not Required	Not Required
APT. via Carlo Maderno 1				X	X ¹	Not Required	Not Required
APT. via Settala 7				X	X ¹	Not Required	Not Required
APT. via G. Motta 15 (apt. A)				X	X ¹	Not Required	Not Required
APT. Via G. Motta 15 (apt. B)				X	X ¹	Not Required	Not Required

¹denotes addition of fire blankets**Table 2 - Fire Statistics for the Steger Center Campus Switzerland for Calendar Years 2017, 2018, 2019**

<i>Building Name</i>	<i>Total Fires in Each Building</i>	<i>Fire Number</i>	<i>Date/Time</i>		<i>Location</i>	<i>Cause of Fire</i>	<i>Number of Injuries that Required Treatment at a Medical Facility</i>	<i>Number of Deaths Related to a Fire</i>	<i>Value of Property Damage Caused by Fire (Dollars)</i>
Steger Center	0	0				N/A	N/A	N/A	N/A
APT. via Franscini 2	0	0				N/A	N/A	N/A	N/A
APT. via Carlo Maderno 1	0	0				N/A	N/A	N/A	N/A
APT. via Settala 7	0	0				N/A	N/A	N/A	N/A
APT. via G. Motta 15 (apt. A)	0	0				N/A	N/A	N/A	N/A
APT. via G. Motta 15 (apt. B)	0	0				N/A	N/A	N/A	N/A

Steger Center-Switzerland

Attachment 6



Washington-Alexandria Campus

The Virginia Tech Police Department has been designated as the department responsible for compiling and publishing the university's annual security and fire safety report. This document is intended to serve as the annual security and fire safety report, as required by the Higher Education Opportunity Act and the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act. The purpose of the report is to provide information about security on campus to include: campus and community crime statistics, fire statistics and safety information, policy information, safety tips, resource phone numbers and a brief overview of the many services the university provides.

Information for this annual report is compiled from reports provided by Campus Security Authorities including, but not limited to, the Department of Human Resources, the Office of Student Conduct, the Dean of Students Office, the Virginia Tech Women's Center, and the Office of Residence Life. Statistics are also compiled from law enforcement agencies in jurisdictions that Virginia Tech owns, leases or controls property or those with jurisdiction on adjacent property. Information about crimes occurring on the Washington- Alexandria Campus was obtained from the Director of the Northern Capital Region and the Alexandria Police Department. Individuals who want to report crimes for inclusion in the Annual Security Report, or for the purpose of making timely warning reports, should report them to the Director of the Washington Alexandria Campus or the Alexandria Police Department.

Campus Overview

Since 1980, the Washington-Alexandria Architecture Center has served as an urban extension of the Virginia Tech School of Architecture + Design. The WAAC offers a unique professional learning environment with an interdisciplinary, international, individual focus. Our pedagogy emphasizes freedom and responsibility as partners in ethical design practice. Students have the freedom to choose their own studio and thesis projects, and take on the responsibility to realize those projects. We inspire students to chart their own career paths and become the architects or urban designers they want to become.

The WAAC accepts students in the fourth, fifth and graduate years of study. Select students from the VT B.Arch program may study at the WAAC for up to one school year as an off-campus option. Students in the M.Arch2, Urban Design and PhD programs may complete their entire courses of study at the WAAC. Students in the M.Arch 3 program may attend the WAAC at thesis level, after completing the first two years of the program in Blacksburg.

In addition to students and faculty from Virginia Tech, the WAAC also hosts a Consortium of study-away students from other universities. The WAAC is a member of the National Student Exchange, which opens up the Consortium experience to students from all fifty states, Puerto Rico, and a selection of schools in Canada. The WAAC hosts additional students through individual agreements with international schools. These visiting students contribute to a diverse student body, bring varied perspectives and broadening the educational program for all at the WAAC. Study-away students, like Their VT counterparts, are either graduates or upper-year undergraduates.

The WAAC allows students to address the complexities of urban areas using the Washington metropolitan area as a resource laboratory for design and research. All of our facilities are located within the Old Town district of Alexandria, VA, within a five-block historic urban campus.

Access to Campus Buildings

Security and access control design standards have been developed for new and renovated buildings owned by the university. Academic and administrative buildings are open to the public during operating hours and are generally secured after operating hours and during extended breaks. Both 1001 Prince Street and 1021 Prince Street are secured at all times and are accessible either by a key or key fob. Both the Gallery and the Gallery Apartments are accessible only to those authorized to use the facilities unless there is an exhibit in the Gallery. The Gallery is accessible by PIN number on a keypad. Administrators review security access and address issues related to lighting and other unsafe conditions on a routine basis. On site staff fix any problems noted.

Law Enforcement Services

Day to day law enforcement services to the Washington-Alexandria Campus are provided by the Alexandria Police Department. The Virginia Tech Police Department does not have a Memorandum of Understanding (MOU) with the Alexandria Police Department since the Alexandria Police Department investigates all crimes within their jurisdiction. The Alexandria Police Department does not notify Virginia Tech when students are involved in law violations nor do they submit student conduct referrals.

Missing Persons

If a member of the University community has reason to believe that a student who resides in on-campus housing is missing, he or she should immediately notify the Alexandria Police Department. Alexandria Police will generate a missing person report and initiate an investigation.

After investigating the missing person report, should the Alexandria Police determine that the student is missing and has been missing for more than 24 hours, Alexandria Police will notify the student's emergency contact, or confidentially identified individual, no later than 24 hours after the student is determined to be missing. If the missing student is under the age of 18 and is not an emancipated individual, Alexandria Police can contact the Virginia Tech Police Department to notify the student's parent or legal guardian immediately after the Virginia Tech Police Department has determined that the student has been missing for more than 24 hours. As per requirement of the law, the Virginia Tech Police Department will inform the Blacksburg Police Department of any missing student in order to inform them that the Virginia Tech Police Department has conducted an initial investigation and has determined that a student is missing. This notification will be made no later than 24 hours after the student is determined to be missing.

In addition to registering an emergency contact, students residing in on-campus housing have the option to identify, confidentially, an individual to be contacted by Virginia Tech in the event the student is determined to be missing for more than 24 hours. Students who wish to identify a confidential contact can do so through the Hokie Spa web site. This confidential contact information will be accessible only to authorized campus officials and law enforcement and it will not be disclosed outside of a missing person investigation.

Controlled Substances

The university strictly prohibits the illegal use or possession of any controlled substance. The illegal use of controlled substances is incompatible with the goals of an academic community. Students found guilty of possessing, using, distributing, or selling controlled substances will face serious disciplinary

action, which may include suspension and/or dismissal from the university upon the first offense. Violations of state law should be reported to the Alexandria Police Department who will take appropriate legal actions. For more comprehensive details, please refer to the University's Policy for a Drug Free University at: <http://www.policies.vt.edu/1020.pdf>.

Pastoral and Professional Counselors

The Washington-Alexandria Center does not have any pastoral or professional counselors, therefore, there are no policies encouraging counselors to inform persons about reporting crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics.

Emergency Response and Preparedness

Emergency Notifications

Regional VT Alerts are available for the National Capital Region, including the Washington Alexandria Architecture Campus. Immediate/emergency notifications using VT Alerts to members of a satellite campus community will be provided when information is received, either from the designated individual at the satellite campus or from the law enforcement agency responsible for services where the campus is located. VT Alerts will normally be issued by the Virginia Tech Police Department. Emergency notifications may be issued locally, using other means by the Director of the Washington Alexandria Architecture Campus or the designee. These methods may include, but not limited to, direct communication to the campus community using email or website notices. Members of the satellite campus community are also encouraged to sign up for their localities emergency notification system, which are not affiliated with Virginia Tech, check with the police department in your area.

The Alexandria Police Department is primarily responsible for confirming that there is a significant emergency or dangerous situation at the Washington Alexandria Architecture Campus that could cause an immediate threat to the health and safety of the members of the campus community. The Director or designee can also be in a position to confirm an emergency in or surrounding the campus. The Office of University Relations, the Virginia Tech Police Department and/or Virginia Tech Emergency Management have access to the VT Alerts system which can send an alert to subscribers; notifying the campus community of threats that have occurred that may necessitate evacuation, shelter in place or other action on the part of students, employees, and campus visitors. The university will typically provide follow-up information to the campus community using the same systems that were used to send out the original alert or to direct the campus community to other informational channels.

Virginia Tech will immediately notify the campus community upon the confirmation, from the Alexandria Police Department or authorized staff member at the Washington Alexandria Architecture Center of a significant emergency involving an immediate threat to the health or safety of students or staff occurring at the Washington Alexandria Architecture Center. One of the listed departments above will, without delay, and taking into account the safety of the campus community, determine the content of the notification and initiate the notification system based on information received, unless issuing a notification will, in the professional judgment of the public safety official, compromise efforts to assist, contain, respond to, or otherwise mitigate the emergency. First responders to an incident that causes an immediate threat to the health and safety of the Virginia Tech community at the Washington Alexandria Architecture Center will typically include the Alexandria Police Department, Virginia State Police, and the Alexandria Fire and EMS Department.

In accordance with the Higher Education Act of 1965 as amended and Section 23-9.2:11 of the Code of Virginia, the university has implemented a comprehensive communications system, VT Alerts, to provide prompt warning notifications and alerts of immediate threats to the health and safety of members of the campus community using a variety of methods. The VT Alerts system includes email notices; phone, cellular phone, text messages, and university website notices. Parents and members of the larger community are not eligible to sign up for immediate notification through VT Alerts, however, all Hokie family members, along with members of the community, are able to subscribe to receive real-time VT Phone Alerts to stay informed and are encouraged to do so. To subscribe, text **HokieFam** to **226787**. Parents and members of the larger community can check the University Website at www.vt.edu for updates during an emergency at the Washington Alexandria Architecture Center and can sign up for desk top alerts by following the direction at: <http://www.alerts.vt.edu/desktop/alerts-desktop.html>.

Students and employees have the option of signing up on VT Alerts to receive emergency messages related to the Washington Alexandria Architecture Center, at: <http://www.alerts.vt.edu>. Annually, the Offices of University Relations and Human Resources provides communications to the university community regarding university procedures for authorized closings and receiving emergency alerts. Additional information about the “Alert” process can be found in the University Safety and Security Policy at: <http://www.policies.vt.edu/5615.pdf>.

Emergency Preparedness

Emergency preparedness and information on what to do in an emergency can be found on the “Be Hokie Ready” link from the Virginia Tech Emergency Management webpage <http://www.emergency.vt.edu>. Hokie family and community members are also encouraged to download the free **Hokie Ready mobile safety app**. To download the app, search “**Hokie Ready**” in your app store.

University departments are responsible for developing Emergency Action Plans (EAP) and Continuity of Operations Plans (COOP) for their staff and areas of responsibility. The University conducts numerous exercises each year, including tabletop exercises, functional exercises, drills and tests of the emergency notification systems on campus. These tests are designed to assess and evaluate the emergency plans and capabilities of the institution.

Virginia Tech will notify the university community of its emergency notification protocols, emergency response and evacuation procedures via email, in conjunction with at least one drill or exercise each calendar year. Information related to emergency notifications and emergency guidelines can be found at <http://www.emergency.vt.edu>. Information related to evacuation procedures can be found at https://www.ehss.vt.edu/programs/FLS_fire_emergencies.php.

Reporting a Crime or Getting Emergency Assistance

Individuals are responsible for being aware of and complying with university policies/procedures, and applicable law. Employees and students are encouraged to accurately, voluntarily and promptly report crimes, emergencies, potential threats, or risks to the appropriate law enforcement agency or university office(s). Crimes and other emergencies should be reported to the Alexandria Police Department at 703-838-4444 or 911 for an emergency.

The Washington-Alexandria Campus does not have any policies or procedures that allow survivors or witnesses to report crimes on a voluntary, confidential basis for inclusion in the annual disclosure of crime statistics.

The Virginia Tech Police Department encourages everyone that is a survivor of crime to come forward and report to the police. However, on occasion and depending on the nature of the crime the survivor refuses to press charges. This is the survivor's option. Students also have the option of contacting other university resources on the main campus, such as the Virginia Tech Women's Center, Office of Student Conduct, Cook Counseling Center, Schiffert Health Center, or academic advisors who will assist with notifications, if desired. Crimes can also be reported to the Virginia Tech Police Department for the purpose of making a timely warning reports and the annual statistical disclosure.

Services and Prevention Information

All Virginia Tech students have access to services offered on the main campus regardless of the location of the extended campus where they are taking classes. Crime prevention, safety and security, sexual assault and other programs are available upon request.

Virginia Tech is committed to University Policy 1025 and the Violence Against Women Act (VAWA), which among other things prohibits discrimination and discriminatory harassment, including sexual harassment and sexual violence in all of its forms, domestic violence, dating violence, and stalking.

Sexual Assault is a crime that affects men and women punishable by both civil and criminal legal action. The Virginia Tech Police Department investigates all sexual assaults reported to the Police Department. Detectives are regularly on call and capable of responding immediately at any time. An on call list is updated and maintained for call out situations in the communications center. Once reported to the Police, detectives respond, investigate and make applicable criminal charges based on evidence collection and survivor / witness statements. The Virginia Tech Police Department works closely with other area law enforcement personnel and other university departments to ensure that appropriate support services are made available and utilized when necessary. The survivor of a sexual assault may also choose to file a report with Title IX Coordinator, or the Department of Human Resources. The Office of Student Conduct adjudicates cases involving sex offenses in which the alleged perpetrator is a Virginia Tech Student. Virginia Tech also encourages survivors to prosecute alleged perpetrators to the fullest extent of the law. There are several avenues for assistance if a person becomes the survivor of a sex offense.

Survivors of sexual assault tend to feel a variety of conflicting emotions: rage, fear, depression, relief to have survived, numbness, and exhaustion, to name just a few. Two key points to remember are that the assault was not your fault and there is help available.

The Virginia Tech Police Department is available and ready to assist if needed. The Virginia Tech Police Department is a valuable resource for information. The department has educational literature available on prevention methods and procedures to follow if you should become the survivor of a sex offense. The department provides educational programs on women's awareness, personal safety and instructs Rape Aggression Defense (RAD) classes upon request. RAD classes are self-defense classes for women only and consist of awareness, safety tips and progresses into hands on attack simulations at the end of the class. For men, Resisting Aggression with Defense (RAD) teaches self-defense and how to escape aggressive behavior.

The Police Department's Survivor/Witness Assistance Program protects the rights of survivors and witness of crimes. Referral information is accessible at all times regarding area services available for general counseling, visa and immigration assistance, medical attention, emergency housing or financial assistance. For crimes that occur in Washington Alexandria, the Virginia Tech Police Department will assist and refer the survivor to the Alexandria Police Department. Responsiveness to the needs of crime survivors is a department priority.

If Sexual Assault Happens to You

- Contact the police for assistance and information or to report the incident. The Alexandria Police Department should be contacted for incidents occurring at the center. The Virginia Tech Police Department will assist the survivor in contacting law enforcement agency, if requested.
- Go to the INOVA Alexandria Hospital in Alexandria or the Mount Vernon Hospital. A qualified physician or nurse will examine you for injuries and collect physical evidence that could be used in judicial proceedings if you decide to prosecute.
- If possible, do not change your clothes, shower, eat or drink between the rape and the trip to the emergency room. Preserving evidence is critical and can assist in prosecution. Bring a change of clothes with you because the police will need the clothes you were wearing for evidence.
- Even if you do not wish to prosecute, it is important that you have a physical exam after the attack. Besides bruises or other physical injuries, the perpetrator might have passed on a sexually transmitted disease that requires treatment. An HIV/AIDS test may also ease your mind, although six months must elapse after an attack to accurately detect the presence of HIV, the virus that causes AIDS.
- Seek counseling from the Rape Survivors Hotline, the Battered Women's Shelter or a private counselor. All these services are free of charge (except private counseling) and CONFIDENTIAL. If you are not comfortable talking with a counselor, consider talking with a trusted friend or family member.
- Consider your judicial options if you have not done so already. Although there are statutes of limitation on criminal cases, they are often longer than you think. You also have the option of campus and civil charges.
- If the assault and its aftermath are interfering with your ability to complete your work or academic performance, talk with the Thomas E. Cook Counseling Center, Women's Center at Virginia Tech, or the academic dean of your college about academic relief. The Dean of Students will also assist in changing academic and living situations after an alleged sexual assault incident, should the survivor request such assistance and such changes are reasonably available.
- Remember that it is never too late to deal with a sexual assault, and that you can heal from this significant trauma. People are ready and able to help you, but they can't if you don't ask.

Medical Care

As mentioned above, survivors of very recent assaults should go to the emergency room of the Mount Vernon Hospital or INOVA Alexandria Hospital for a physical exam and the collection of evidence. All survivors, past or present, should be seen by a qualified physician or nurse to check for sexually transmitted diseases, physical trauma, and possible pregnancy. INOVA Alexandria Hospital offers the services of Sexual Assault Nurse Examiners. Female survivors may prefer to see a female physician, and should request one if that will increase their comfort, though in the emergency room that may not always be possible.

Counseling Options

Students coping with a sexual assault have at least three counseling options that are free of charge. Two of those options are on-campus: The Women's Center at Virginia Tech and the Thomas E. Cook Counseling Center. The Women's Center at Virginia Tech offers short-term crisis counseling and sexual assault support groups. The Thomas E. Cook Counseling Center offers both short-term and long-term individual and group counseling. These agencies frequently collaborate to provide services to survivors of sexual assault and these services are CONFIDENTIAL. The Rape Survivors Hotline is available 24 hours a day by calling 703-683-7273. Many other options exist which have some cost associated with them, such as private therapists. Counseling is often crucial to the recovery process, and survivors should be encouraged to seek the assistance of qualified professionals, even if many years have elapsed since the assault. As always, the choice to seek counseling should be the survivor's.

Criminal

A police report must be generated before an investigation can begin and charges can be placed. If the assault happened on campus, it falls under the jurisdiction of the Alexandria Police Department. Many survivors believe that if they do not file criminal charges immediately, they lose that option. This may not be the case. There are statutes of limitation for filing criminal charges, but they are typically several years in duration. Certainly, it is best to go to the police as soon as possible after an assault, in order to preserve as much evidence as possible. The police will arrange for the survivor to be seen at the Mount Vernon Hospital or INOVA Fairfax Hospital for medical care and evidence collection. However, even if some time has elapsed, the police still encourage survivors to come forward. Criminal charges are prosecuted by the state of Virginia, not the individual survivor. A Commonwealth's Attorney will argue the case at no cost to the survivor. The survivor serves as the primary witness to the crime, and his or her testimony is crucial to the case. Criminal cases may take considerable time to proceed through the justice system. Typically, the press protects the identity of the survivor, although the identity of the accused perpetrator is not protected.

Important Contacts / Phone Numbers

This section has attempted to offer an overview of sexual assault issues, and the available options on the Virginia Tech campus. No one publication can be entirely comprehensive. Sexual assault is a complex issue; no two cases will have exactly the same results or the same course of action. The university therefore offers a variety of services so that survivors can get the assistance they most need. A good starting point for a survivor, or family and friends of a survivor, is with the Sexual Assault Education Coordinator who is based in The Women's Center at Virginia Tech.

For further explanation or elaboration of the information in this section, or for other information, contact the agencies whose numbers are listed here.

Director of the Washington-Alexander Center	703-706-3030
Alexandria Police Department	911 (emergency) 703-838-4444 (non-emergency) INOVA
Alexandria Hospital	703-504-3066
Mount Vernon Hospital	703-664-7111
Rape Survivors Hotline	703-683-7273 (24hour hotline)
Department of Human Services	703-838-5030
The Women's Center at Virginia Tech	540-231-7806
Thomas E. Cook Counseling Center	540-231-6557 (8:00am – 5:00pm) 540-231-6444 (5:00pm-8:00am)
Schiffert Health Services	540-231-6444
Virginia Tech Police Department	540-231-6411 (non-emergency)
Dean of Students	540-231-3787
Office of Student Conduct	540-231-3790
Office of Student Programs	540-231-6204
Student Legal Services	540-231-4720
Title IX Coordinator	540-231-1824 (students)
Equity & Access	540-231-8771 (employees)
Office of Emergency Management	540-231-2438
Cranwell International Center	540-231-6527

Virginia Tech Washington-Alexandria Campus Crimes Statistics 2019

	On Campus			Non Campus			Public Property			Year Total			Residential		
OFFENSE TYPE	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Murder & Non negligent Manslaughter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Manslaughter By Negligence	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rape	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fondling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Incest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Statutory Rape	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Robbery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aggravated Assault	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Burglary	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motor Vehicle Theft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Liquor Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Liquor Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drug Law Violations Referred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drug Law Arrests	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Illegal Weapons Possession Referred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Illegal Weapons Possession Arrests	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic Violence**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dating Violence**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stalking**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*No hate crimes were reported in 2017, 2018, or 2019.

*No unfounded crimes reported in 2017, 2018, or 2019.

*Hate crimes are criminal offenses committed against a person or property which is motivated in whole or in part by the offender's bias. Bias is a preformed negative opinion or attitude toward a group of persons based on their race, religion, gender, sexual orientation, ethnicity, disability, gender identity and national origin.

Note: Included in the Virginia Tech Washington Alexandria Center Crime Statistics Chart are the Crimes required by the Clery Act that occurred on or within an institution's Clery Geography that have been reported to a Campus Security Authority.

Virginia Tech Higher Education Opportunity Act Alexandria Campus Fire Safety Annual Compliance Report for 2019

Overview

The Gallery Apartments in Alexandria, Virginia has 3 levels and includes 23 units that are connected by atrium space. The individual units contain an individual kitchen and bathroom. The building also provides common areas for the residents as well as laundry facilities. The property belongs to the Virginia Tech Foundation, and it includes an addition to the original building.

Gallery Apartments Fire Safety Equipment

The fire protection systems at the Gallery Apartments include Portable Fire Extinguishers, Dual Duty Smoke Detectors (smoke and carbon monoxide) and a Partial Sprinkler and Alarm System as follows:

- All common areas of the Gallery Apartments are equipped with portable fire extinguishers.
- The addition, which includes the atrium and 9 apartments as well as the common area, is protected by sprinklers and a fire alarm system. No central monitoring of these systems is provided.
- All apartments are equipped with dual duty smoke detectors that detect Smoke and Carbon Monoxide, these were updated in 2015.

All fire protection equipment is strictly maintained and tested in accordance with the Virginia Statewide Fire Prevention Code. The periodic maintenance and testing activities are conducted by contractors. In addition, a Fire and Life Safety inspection is conducted by the local Fire Official on a periodic basis. This inspection includes an audit of the fire protection equipment testing and maintenance activities and a fire code review of all apartment units and common areas. For more information, see Table I.

Fire Safety Education, Training and Fire Drills

All current Gallery Apartment Residents have been provided information on the fire protection systems present in the subject building and evacuations procedures to be followed, and all future residents will be provided this information when their lease is initiated. Since the facility is classified as R-2 under the Virginia Uniform Statewide Building Code, but is not a university owned building, there are no requirements for conducting fire drills and no drills have been performed. Liz Akers, the Onsite Director, is the point-of-contact and a resident who lives on the property in one of the 23 units, she is available to assist residents with questions regarding emergency evacuations.

Specific Fire Prevention Related Policies and Programs

Based on the facility classification under the Virginia Uniform Statewide Building Code, no special policies other than a No Smoking policy have been implemented.

Fire Statistics

There were no fires or fire losses reported in the Gallery Apartments during Calendar Years 2017, 2018 or 2019. See Table 2.

Fire Reporting

If a fire has occurred, it should be reported to the local Police Department by calling 911 (emergency). It should also be reported to Bryan Felts, Property Manager, Capitol Property Management at (703) 707-6404.

Responding to a Fire

If a fire emergency occurs, while you are in the building, notify occupants by knocking on their doors and shouting “fire” as you exit the building. Do not jeopardize your own safety to do this. Do not reenter the building until the fire department says it is safe to do so. If you are unable to leave your room, place towels under the door to prevent smoke from entering. Call 911 and give them your exact location and as much information as possible. Remain calm.

Plans for Future improvement

The Virginia Tech Foundation will continue to work with the local Authorities to enhance and improve the existing building fire protection system capabilities as required by applicable codes, standards and best business practices.

Table 1 - Fire Protection Systems in the Alexandria Campus Residential Facility

<i>Building Name</i>	<i>Onsite Fire Alarm Monitoring</i>	<i>Partial Sprinkler System (*)</i>	<i>Full Sprinkler System</i>	<i>Smoke Detection (**)</i>	<i>Fire Extinguishing Devices</i>	<i>Evacuation Plans & Signs</i>	<i>Number of Fire Drills each calendar year</i>
Gallery Apartments 207 S. Patrick Street		X		X	X	Not Required	Not Required

* The addition, which includes the atrium and 9 apartments as well as the common area, is protected by sprinklers and fire alarm system. No central monitoring of these systems is provided.

** All apartments are equipped with dual duty smoke detectors that detect Smoke and Carbon Monoxide, these were updated in 2015.

Table 2 - Fire Statistics for the Alexandria Campus Residential Facility for Calendar Years 2017, 2018 and 2019

<i>Building Name</i>	<i>Total Fires in Each Building</i>	<i>Fire Number</i>	<i>Date/Time</i>	<i>Location</i>	<i>Cause of Fire</i>	<i>Number of Injuries that Required Treatment at a Medical Facility</i>	<i>Number of Deaths Related to a Fire</i>	<i>Value of Property Damage Caused by Fire (Dollars)</i>
Gallery Apartments 207 S. Patrick Street	0	0			N/A	N/A	N/A	N/A

Washington-Alexandria Architecture Center

Attachment C

1001 Prince St
Alexandria, VA

0 100 200 400 Feet

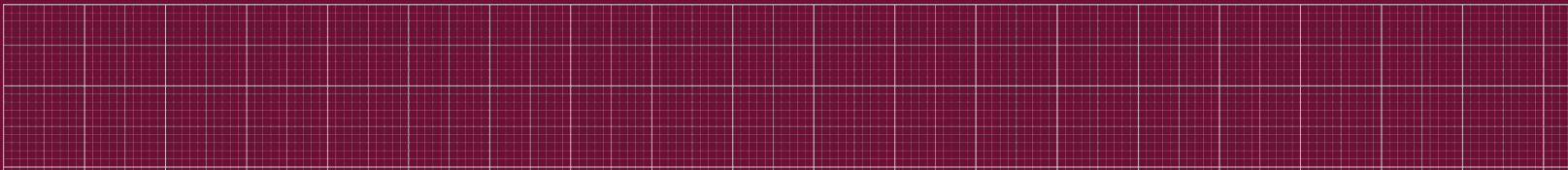


VIRGINIA TECH™



The Clery Act & Annual Report

CHIEF MAC BABB
VIRGINIA TECH POLICE
NOV. 15, 2020



OVERVIEW: VIRGINIA TECH POLICE DEPARTMENT Attachment C

1945 - 2020 | CELEBRATING 75 YEARS OF SERVICE



TEAM

- 51 sworn officers
- 7 security officers
- 6 security center representatives
- 2 civilian employees



ONGOING COLLABORATION

- Campus community
- Virginia Tech Rescue Squad
- Regional law enforcement community
- Commonwealth law enforcement efforts

STRONG ACCREDITATION CULTURE

- Commission on Accreditation for Law Enforcement Agencies (CALEA) – National Accreditation
- International Association of Law Enforcement Administrators (IACLEA) – International Accreditation



COMMITTED COMMUNITY ENGAGEMENT

- Extensive educational programming: Rape Aggression Defense Training (R.A.D.) for women and men, OneLove, Citizen and Student Police Academies
- Residence Life Resource Officer Program
- Participation in panels, regional task force, and more



JEANNE CLERY ACT: WHAT IS IT?

Attachment C

CONSUMER PROTECTION ACT

A **federal law** requiring all higher education institutions that participate in federal financial aid programs to:

- PUBLIC ANNUAL SAFETY REPORT
- DAILY CRIME & FIRE LOGS

- VT ALERTS:
CONFIRMED
IMMEDIATE THREAT
TO CAMPUS
- TIMELY WARNINGS:
POTENTIAL ONGOING
THREAT TO THE
COMMUNITY

RECORD AND
PUBLISH CRIME
STATS

CIRCULATE
CRIME &
SAFETY
POLICIES &
PRACTICES

DISSEMINATE
CRITICAL
SAFETY
INFORMATION

- RIGHTS &
RESPONSIBILITIES
- REPORTING CRIMES



THE CLERY ACT AT VIRGINIA TECH

FOUR GENERAL CATEGORIES OF OFFENSES:

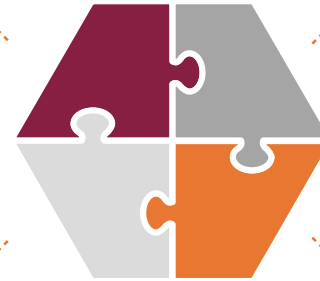
- Clery requires Virginia Tech to include four general categories of offenses in our Annual Safety/Security Report.
- In our annual crime statistics, we must include the the number of all reported offenses without regard to the findings of a court, coroner or jury, or the decision of a prosecutor.

1/ CRIMINAL
OFFENSES

3/ VIOLENCE
AGAINST WOMEN
ACT (VAWA)
OFFENSES

2/ HATE CRIMES

4/ ARRESTS AND
REFERRALS FOR
DISCIPLINARY
ACTION



WHAT ARE CLERY REPORTABLE CRIMES?

The Clery Act identifies certain crimes as “Clery reportable” crimes. They are:

<p>Criminal Homicide: Murder, Non-negligent Manslaughter and Manslaughter by Negligence</p> <p>Aggravated assault</p> <p>Arson</p> <p>Stalking</p>	<p>Sexual Assault (Sex Offenses): Rape, Fondling, Incest, Statutory Rape</p> <p>Burglary</p> <p>Domestic Violence</p> <p>Hate Crimes</p>	<p>Robbery</p> <p>Motor Vehicle Theft</p> <p>Dating Violence</p> <p>Arrests & disciplinary referrals for violations of liquor, drug, & weapons laws</p>
---	---	---

2019 CLERY ACT CRIME STATISTICS: BLACKSBURG CAMPUS

Attachment C

	On Campus			Non Campus			Public Property			Year Total			Residential		
OFFENSE TYPE	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Murder & Non-Negligent Manslaughter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Manslaughter by Negligence	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rape	20	12	8	0	0	2	0	0	0	20	12	10	5	11	8
Fondling	6	3	2	0	0	0	0	0	0	6	3	2	4	3	2
Incest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Statutory Rape	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Robbery	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
Aggravated Assault	4	4	8	0	0	0	0	0	0	4	4	8	2	1	6
Burglary	30	20	14	0	0	0	0	0	0	30	20	14	25	16	5
Motor Vehicle Theft	2	4	2	0	0	0	0	0	0	2	4	2	0	0	0

2019 CLERY ACT CRIME STATISTICS: BLACKSBURG CAMPUS

Attachment C

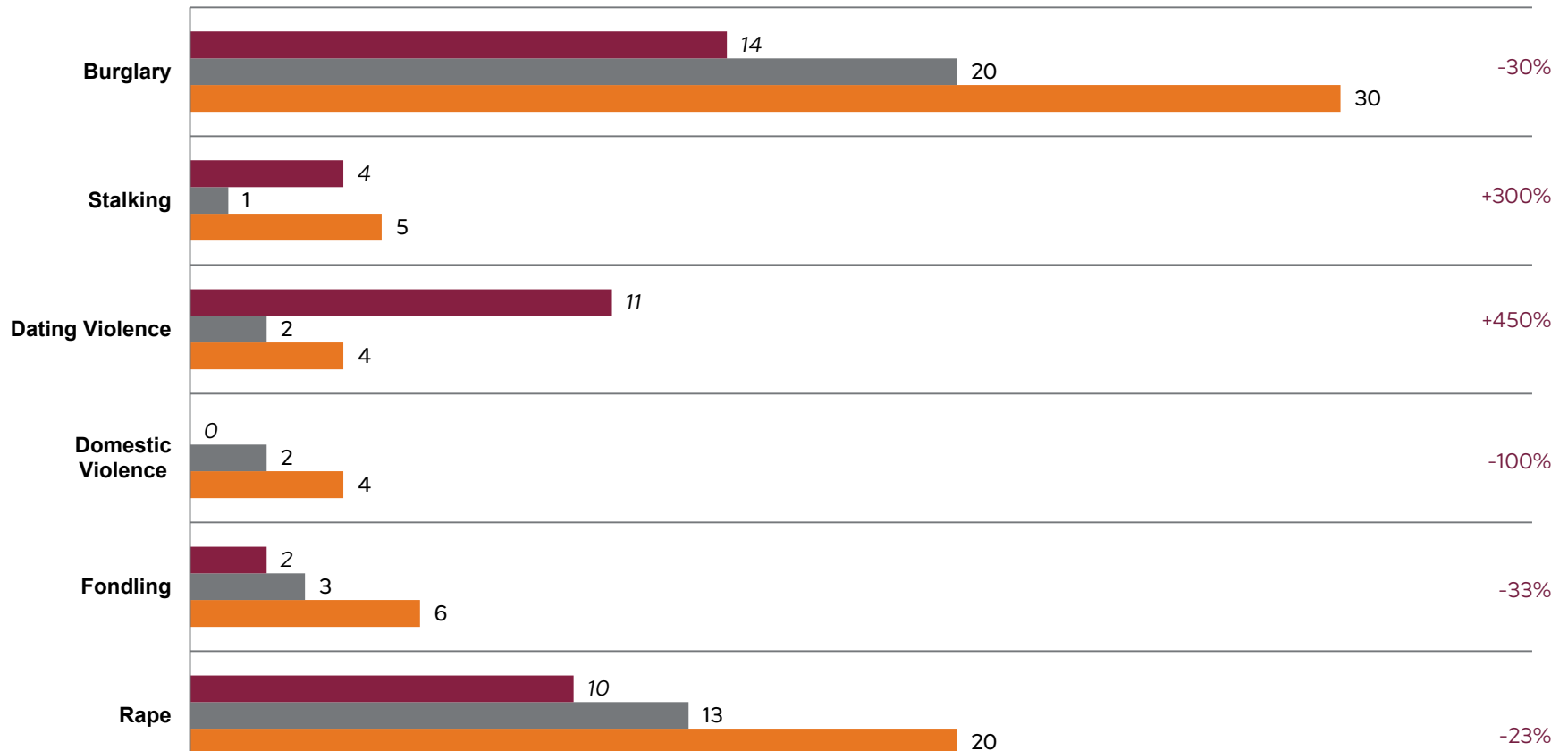
	On Campus			Non Campus			Public Property			Year Total			Residential		
OFFENSE TYPE	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Liquor Law Violations Referred	560	530	532	0	0	0	0	4	5	560	534	537	537	487	486
Liquor Law Arrests	41	19	40	0	0	0	10	2	11	51	21	51	12	8	8
Drug Law Violations Referred	76	74	139	0	0	0	1	0	1	77	74	140	33	39	76
Drug Law Arrests	89	104	74	0	0	0	3	1	1	92	105	75	58	71	45
Illegal Weapons Possession Referred	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0
Illegal Weapons Possession Arrests	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0
Arson	2	0	0	0	0	0	0	0	0	2	0	0	2	0	0
Domestic Violence**	4	1	3	0	0	0	0	1	0	4	2	0	0	0	0
Dating Violence**	4	2	10	0	0	0	0	0	1	4	2	11	3	2	7
Stalking**	5	1	4	0	0	0	0	0	0	5	1	4	1	0	0

VIRGINIA TECH CAMPUS CRIME STATISTICS 2019

Attachment C

Note: On campus full, part time undergrad, grad, professional students (per Office of Institutional Research and Effectiveness):
Fall 2019: 34,131 Fall 2018: 32,704

% Change
(2018 to 2019)
% Change: + 4.36%



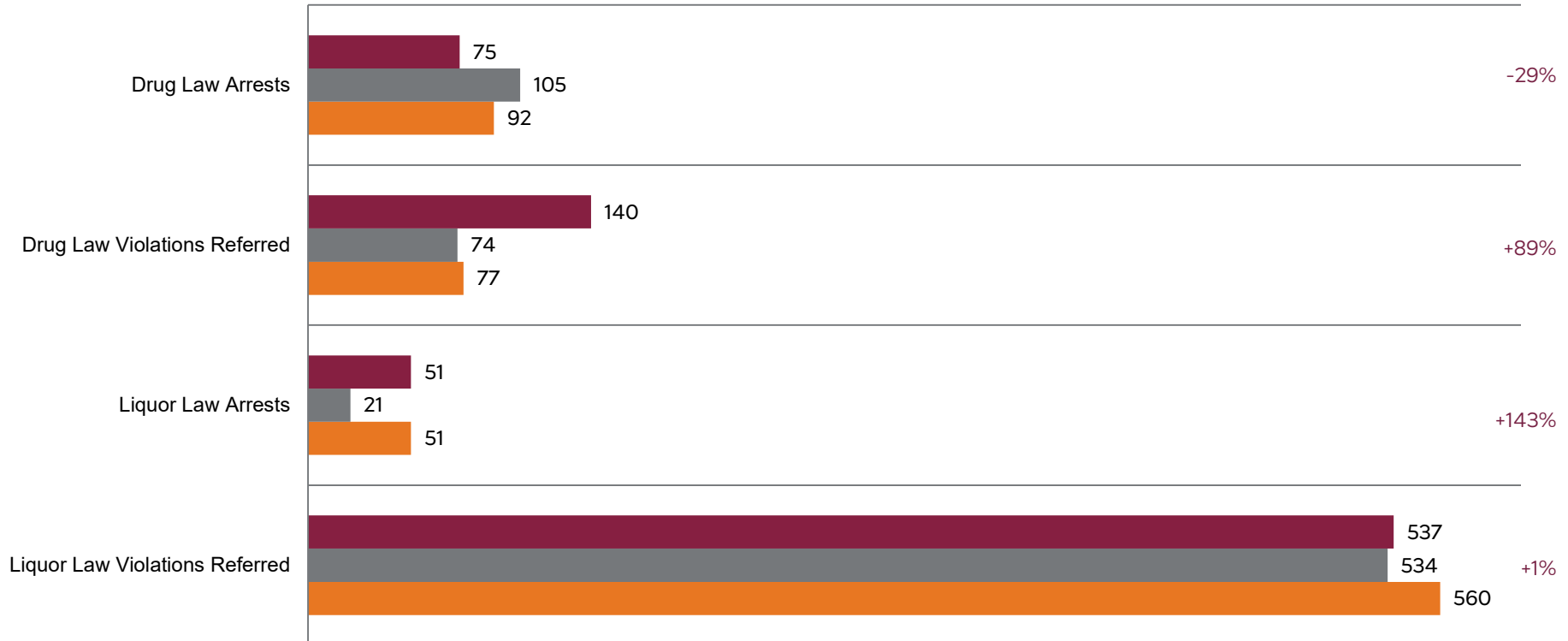
	Rape	Fondling	Domestic Violence	Dating Violence	Stalking	Burglary
■ 2019	10	2	0	11	4	14
■ 2018	13	3	2	2	1	20
■ 2017	20	6	4	4	5	30

VIRGINIA TECH CAMPUS CRIME STATISTICS 2019

Attachment C

Note: On campus full, part time undergrad, grad, professional students (per Office of Institutional Research and Effectiveness):
Fall 2019: 34,131 Fall 2018: 32,704 % Change: + 4.36%

% Change
(2018 to 2019)



	Liquor Law Violations Referred	Liquor Law Arrests	Drug Law Violations Referred	Drug Law Arrests
■ 2019	537	51	140	75
■ 2018	534	21	74	105
■ 2017	560	51	77	92

SUMMARY

- The 2019 Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act Report was filed and made available to the public for review in advance of the **October 1, 2020 deadline**.
- The Virginia Tech Police Department continues to monitor, analyze, and use crime statistics to help inform and enhance our community policing strategy.





QUESTIONS

VIRGINIA TECH POLICE CONTACTS

IN-PERSON

Public Safety Building
330 Sterrett Drive
Blacksburg, VA 24061

EMAIL & WEBSITE

police@vt.edu
police.vt.edu

VTPD NON-EMERGENCY

540-382-4343

CHIEF MAC BABB

wmb1@vt.edu
540-231-5123

Update on Agricultural Facilities Planning & Construction

BUILDINGS AND GROUND COMMITTEE

November 15, 2020

Capital Project Summary

Work continues on the construction of 13 new buildings for the College of Agriculture and Life Sciences (CALS) programs in Montgomery County and one new building to replace an Agricultural Research & Extension Center in Hampton, Virginia. The three new Improve Kentland Facilities, Phase II facilities are nearing completion and will be ready to be fully utilized before the start of next semester. Bids are being received on various bid packages for the Livestock and Poultry Research Facilities (LPRF), Phase I project, with construction window being projected through Spring of 2022 for these 10 new buildings. Construction kicked off on the new Virginia Seafood AREC building in September, with completion and occupancy scheduled for fall of 2021.

CALS is developing a long-term facility plan which will be informative for strategically identifying future capital and non-capital projects. In anticipation of the opportunity to submit capital budget requests for major project needs in the 2022-2024 biennium, CALS and other Agency 229 leaders are working with Campus Planning and Capital Financing as well as the Provost's office to develop the 6-year plan. Included in this plan will be a more developed version of the Priority 1 System-wide AREC Improvements, LPRF Phase II projects, and a Human and Agricultural Biosciences Building II which is a re-envisioning of the former Global Systems Sciences project.

Non-Capital Project Summary

Since the last report to the Buildings and Grounds Committee in August 2020, five more projects have been completed. The *Agricultural Facilities Planning & Construction Status Report* reflects a list of ten projects currently in design or construction with another 22 projects identified to begin in the near future. AREC Maintenance Reserve projects in the planning stages have been prioritized to maximize the impact of this biennium's \$1 million infusion of funds, supplementing the typical \$500,000 biennial budget.

Information Technology (IT) Summary

Progress is being made on several fronts related to technology at agriculture facilities. CALS IT is working with numerous local internet service providers across the state to provide higher bandwidth and speeds to the ARECs and other farm locations. As broadband capacity expands to more rural areas of the state, these facilities stand to benefit from enhanced connectivity opportunities. As work advances on the SmartFarm Innovation Network, CALS IT and faculty are evaluating alternatives for better Wi-Fi and field coverage for internet service in outdoor farming applications. It was determined that the Citizens Band Radio Service originally proposed for this application was unsuitable.

PROJECT NAME		PROJECT DESCRIPTION	ESTIMATED TOTAL PROJECT COST	FUND SOURCE	PROJECT TEAMS	CONTRACT COMPLETION DATE	PROJECT STATUS
CAPITAL PROJECTS							
Updates through October 31, 2020							
PROJECTS IN CONSTRUCTION							
	Improve Kentland Facilities, Phase II	Applied Reproduction Facility (APR): 4,510 SF barn at Vet-Med for palpation and breeding instruction. Bovine Extension, Teaching and Research (BETR) Facility: 3,500 SF classroom bulding and 5,100 SF demonstration arena at livestock center on Plantation Road. Metabolic Research Laboratory (MRL): 11,330 SF animal laboratory at the Dairy Center at Kentland Farm.	\$12,463,000	Capital Outlay	Spectrum	Fall 2020	APR is substantially complete. BETR classroom and arena facilities are substantially complete. MRL expected to be complete with owner-contracted work by end of year.
					Snyder, CPPI		
	New Virginia Seafood AREC Building	21,698 SF, 3-story bulding to replace existing aging and structurally unsound facility in Hampton, Virginia with state-of-the-art aquaculture research and extension facilities. Facility owned and developed by Virginia Tech Foundation.	\$9,260,000	Various	RRMM	Fall 2021	Notice to Proceed issued in September, 2020.
					E.T. Gresham		
PROJECTS IN DESIGN							
	Livestock and Poultry Research Facilities, Phase I	Pkg 1: New Swine Center at Kentland Farm. Pkg 2: New Beef Nutrition Facility & Hay Shed at Kentland Farm Pkg 3: New Broiler &Turkey Grow-out facilities at the Turkey Research Center (Glade Rd.) Pkg 4: New Equitation Barn & Equipment Storage Building at Livestock Center (Plantation Rd.) Pkg 5: 3 New Hay Sheds at Smithfield Horse Center, Fields west of US 460, and Heth Farm	\$25,274,000	Capital Outlay	Spectrum	TBD	Pkg 1: Negotiations with low bidder Pkg 2: Reviewing bids Pkg 3: Bids due November 12, 2020 Pkg 4: Bids due December 17, 2020 Pkg 5: Design nearing completion
					TBD		
PROJECT INITIATION / PLANNING STAGE							
	6-Year Capital Outlay Plan for the 2022-24 biennium	Capital budget requests for six projects: CNRE Center Woods, System-Wide AREC Improvements Phase I, Glade Road Relocation, Livestock and Poultry Research Facilities Phase II, Human and Agricultural Biosciences Building II, and System-Wide AREC Improvements Phase II.	TBD	TBD	TBD	TBD	Scope and budget development.
					TBD		
NON-CAPITAL PROJECTS							
Updates through October 31, 2020							
PROJECTS COMPLETED SINCE LAST REPORT							
	<u>Minor Projects (<\$25,000 each):</u> Shen. Valley AREC 0856 Feeding Barn Electrical Mods. Alson H. Smith, Jr. AREC LED Upgrade	Add power supply for (4) smart scales Pilot project to install LED lighting in graduate student office	\$3,000	CALS / VAES	-	Fall 2020	Projects are complete.
					Various		
	Southern Piedmont AREC Main Building Bathrooms	Renovation of main restrooms and kitchen in Administration Building to correct plumbing deficiencies and provide wheelchair accessibility.	\$322,000	Maintenance Reserve	Burns and McDonnell	Fall 2020	Project is complete
					Stoker Construction		
	Shenandoah Valley AREC Cattle Feed Shed Repair	Demolition and Replacement of Cattle Feeding and Equipment Storage Shed. Due to deterioration, cost of repair exceeds cost of replacement.	\$136,000	Maintenance Reserve	5 Design Architecture	Fall 2020	Project is complete
					Superior Buildings		
	Turkey Center Service Building 603 Restroom Repair	Demolition planned during the Livestock and Poultry Research Facilities (LPRF) Phase 1 capital project will remove the only functional restroom facility at the Turkey Farm. Existing but unused restroom facilities in the Service Building will be renovated to serve the farm, including accessibility improvements.	\$201,000	Maintenance Reserve	Spectrum Design	Fall 2020	Project is complete
					F&S		
	Middleburg AREC - Treadmill Barn Beam installation	Removal of existing post and installation of new beam to allow installation of high-speed camera for horse treadmill.	-	CALS / VAES	-	Fall 2020	High-speed camera installation completed without necessitating removal of beam.
					-		
PROJECTS IN CONSTRUCTION							
	<u>Minor Projects (<\$25,000 each):</u> Shenandoah Valley AREC House 0859 Repairs	Misc. minor repairs to tenant house 0859	\$3,000	CALS / VAES	-	Fall 2020	In Progress
					Multiple		
	Livestock Center Grain Bin Relocation	To clear the site for planned new equipment storage building as part of Livestock and Poultry Research Facilities (LPRF), Phase 1 capital project, 4 large grain bins must be relocated to a new site, requiring construction of new concrete pad, power connections, and access improvements.	\$180,000	LPRF	WRA	Fall 2020	In Progress
					Copeland, Shively		
PROJECTS IN DESIGN							
	AREC Exterior Signage Upgrades	Installation of 2 new exterior signs at each AREC with refreshed design to match current branding.	\$81,000	CALS / VAES	-	TBD	Detailed installation requirements being reviewed for final cost quote.
					Westview		
	Turkey Center Service Building 603 Roof and Misc. Repairs	After leaks were discovered in the roof above new restroom renovation project, building condition assessment determined more extensive work was necessary to preserve building including new roof, gutters, windows, doors, and other misc. repairs	TBD	Maintenance Reserve	HDH	TBD	Design is underway.
					TBD		

PROJECT NAME		PROJECT DESCRIPTION	ESTIMATED TOTAL PROJECT COST	FUND SOURCE	PROJECT TEAMS	CONTRACT COMPLETION DATE	PROJECT STATUS
PROJECT INITIATION / PLANNING STAGE	Hampton Roads AREC Repair Bulkhead & Pump House	Existing bulkhead, which protects the freshwater intake, pump system and pump house has deteriorated beyond repair. Project will replace wooden bulkhead with vinyl, and replace deteriorated door and roof on pump house.	\$40,000	Maintenance Reserve	Mattern and Craig	TBD	One bid received. Negotiating with bidder to reduce scope and cost within budget.
					TBD		
	Smithfield Equine Classrom Renovations	Buiding envelope repairs, accessibility improvements to classroom and restroom, HVAC upgrade to add cooling, classroom interior enhancements	\$150,000	Maintenance Reserve, various	5 Design	TBD	Design under review by Art and Architecture Review Board (AARB) in November.
					TBD		
	Hampton Roads AREC - Repair/Replace Roofs (5 buildings)	Roofs of several buildings are failing and leaking into finished spaces: The 2000 wing of the Main Office and Lab (1101) has a flat membrane roof that is leaking into Office Spaces. The Pesticide Storage Building (1106), Garage and Workshop Buildings (1107 and 1108) and Head house (1105) have shallow to medium slope metal roofs leaking into chemical storage and work areas.	\$348,000	Maintenance Reserve	HDH	TBD	Design is underway.
					TBD		
	Tidewater AREC - Batten Hall waterproofing	Batten Hall (portion of Building 0771) is subject to chronic flooding in basement requiring assesement of waterproofing and mitigation measures.	\$235,000	Maintenance Reserve	WDP Associates	TBD	Project on hold pending drain cleaning by AREC.
					TBD		
	Dairy Center Calan Gate installation	Conversion of 8 existing headlocks in special needs barn to accommodate removeable headlocks or 8 removeable calan gates	TBD	CALS / VAES	-	TBD	Estimate being developed.
					TBD		
	Beef Barn Repairs	Exterior and interior demolition followed by the installation of new roofing, hay loft flooring, doors, windows and lighting. This work was originally included in LPRF Phase 1, but removed due to scope concerns.	\$745,000	Maintenance Reserve	TBD	TBD	Architect procurement underway
					TBD		
	Judging Pavilion Repairs	Exterior and interior demolition followed by installation of new flooring, doors, windows, HVAC system, lighting, a covered walkway and exterior paint. This work was originally included in LPRF Phase 1, but removed due to scope concerns.	\$362,000	Maintenance Reserve	TBD	TBD	Architect procurement underway
					TBD		
	Southwest Virginia AREC - Exterior Building Repairs	Repair roof, siding and door damage on Tobacco Barns 1 (0749) and 2 (0747), Cattle Barn #5 (0741) and Workshop/Machinery Shed (0742).	\$243,000	Maintenance Reserve	TBD	TBD	Architect procurement underway
					TBD		
PROJECT INITIATION / PLANNING STAGE							
Eastern Virginia AREC - Bldg 0880 Experiment Building Renovation	Renovation and upgrade of existing under-utilized office, workshop and meeting space.	\$180,000	CALS / VAES	TBD	TBD	Scope and budget development. Construction planned in FY 2022.	
				TBD			
Southern Piedmont AREC	Road and parking lot repairs.	\$25,000	CALS / VAES	-	TBD	Scope development and contractor cost evaluation.	
				TBD			
Ag Engineering Building, Bldg 0545 Roof and Drainage Repairs	Mitigate flooding into workshop areas and repair roof leaks.	TBD	Maintenance Reserve	-	TBD	Work Order requested.	
				TBD			
Washington Street Greenhouse Complex Renovations	Repairs and upgrades to modernize aging controlled growth environments.	TBD	CALS / VAES / Maintenance Reserve	TBD	TBD	Overall scope and budget development. LED Lighting upgrade completed in one room (pilot project).	
				TBD			
Compost Facility (to support main campus & surrounding farms)	CALS is experiencing significant and growing land pressure to meet nutrient management plan requirements, which would be greatly eased by the proposed compost facility. This initiative also has an extremely high level of student support as well as potential partnerships with Dining Services, Athletics and Facilities. Project is included in 228-2 Capital Budget Request, but is a high priority for separate, earlier funding, if possible, due to regulatory risk exposure from limited manure storage during winter months.	\$1,823,000	TBD	Coker Composting & Consulting	TBD	Capital and operational costs for project under review internally.	
				TBD			
Turkey Farm Processing Building Repair	Interior Demolition followed by the installation of new cold-formed steel stud interior partitions, new doors and a window, fiberglass reinforced plastic paneling and epoxy painted floors. This work was originally included in LPRF Phase 1, but removed due to scope concerns.	\$140,000	Maintenance Reserve	TBD	TBD	Scope and budget development.	
				TBD			
Campbell Arena Repairs	New enclosure of the existing open-air steel structure constructed of metal panel siding over steel girts and posts. This work was originally included in LPRF Phase 1, but removed due to scope concerns.	\$93,000	Maintenance Reserve	TBD	TBD	Scope and budget development.	
				TBD			

PROJECT NAME		PROJECT DESCRIPTION	ESTIMATED TOTAL PROJECT COST	FUND SOURCE	PROJECT TEAMS	CONTRACT COMPLETION DATE	PROJECT STATUS	
CALS	B&G	Moore Farm Barn 0501 Repairs	TBD	Maintenance Reserve	TBD	TBD	Scope and budget development.	
		TBD						
		Moore Farm Shed 0508 Repairs	TBD	Maintenance Reserve	TBD	TBD	Scope and budget development.	
		TBD						
		Alson H. Smith AREC - Repair paving and parking	\$56,000	Maintenance Reserve	TBD	TBD	Scope and budget development. Construction planned in FY 2023.	
		TBD						
		Eastern Shore AREC - Exterior Building Repairs	\$160,000	Maintenance Reserve	TBD	TBD	Scope and budget development. Construction planned in FY 2022.	
		TBD						
		Eastern Virginia AREC - Repair Experiment Building	TBD	Maintenance Reserve	TBD	TBD	Scope and budget development. Construction planned in FY 2022.	
		TBD						
		Middleburg AREC - Exterior Repairs	\$158,000	Maintenance Reserve	TBD	TBD	Scope and budget development. Construction planned in FY 2022.	
		TBD						
		Reynolds Homestead FRRC - Exterior Repairs	\$30,000	Maintenance Reserve	TBD	TBD	Scope and budget development. Construction planned in FY 2023.	
		TBD						
		Shenandoah Valley AREC - Repair/Replace Sheep Barn	\$76,000	Maintenance Reserve	TBD	TBD	Scope and budget development.	
		TBD						
		Southern Piedmont AREC - Building Repairs	\$122,000	Maintenance Reserve	TBD	TBD	Scope and budget development. Construction planned in FY 2022.	
		TBD						
		Tidewater AREC - Water system repair	\$26,000	Maintenance Reserve	TBD	TBD	Scope and budget development.	
		TBD						
		Smithfield Equine Complex	TBD	Private	TBD	TBD	Scope and budget development.	
		TBD						
		Glade Road Greenhouse Wind Damage Repair	\$25,000	Insurance	TBD	February 2021	Demolition request under review by AARB and Department of Historic Resources.	
		TBD						
INFORMATION TECHNOLOGY (IT) EVALUTATION & PROJECTS								
CALS	B&G	PROJECTS COMPLETED						
		Network Equipment Upgrades	Upgrading network equipment to adequately manage current and future network data traffic, including VOIP, in anticipation of Smart Farm initiatives.	\$128,000	CALS / VAES	TBD	Complete	Network equipment has been upgraded at all ARECs within the last year and is operating satisfactorily. Sufficient expansion capacity exists for near-term technology needs.
						Cisco		
		WeatherSTEM	New WeatherSTEM weather station and sky camera installation at all ARECs and three campus farm locations.	\$104,000 initial cost and \$37,000 annually	CALS / VAES	TBD	Completed Summer 2019	All are functioning and data is readily accessible through web and WeatherSTEM app interfaces.
						WeatherSTEM		
		AREC A/V Upgrades, Phase 1	Installation of new audio and video equipment for ARECs to provide enhanced conferencing capability in meeting rooms. Phase 1 includes Alson H. Smith, Eastern Shore, Hampton Roads, Southern Piedmont and Tidewater ARECs.	\$34,000	CALS / VAES	TBD	Fall 2019	Phase 1 (five ARECs) is complete. Scope and schedule for Phase 2 project (remaining ARECs) to be evaluated upon completion of Phase 1.
						Lee Hartman and Sons		

PROJECT NAME		PROJECT DESCRIPTION	ESTIMATED TOTAL PROJECT COST	FUND SOURCE	PROJECT TEAMS	CONTRACT COMPLETION DATE	PROJECT STATUS
	PROJECTS IN PROGRESS						
	Bandwidth and Internet Connectivity	ARECs: All ARECs have 200 Mb service except Shenandoah Valley (50 Mb), Southwest Virginia (10 Mb), Reynolds Homestead (2 Mb), Hampton Roads (50 Mb), Eastern Shore (30 Mb) and Virginia Seafood (30 Mb). Northern Piedmont Center has a 50 Mb cable connection. Goal is to upgrade all to at least 200 Mb. Campus Farm locations: Kentland Farm has adequate 200 Mb service. Moore Farm and Urban Horticulture Center share a 50 Mb cable service which is currently adequate. The CSES Research Farm (Agronomy Farm) also has a 50 Mb cable connection. Prices Fork Research Center has a 50 Mb fiber connection. Turkey Farm only has cable service (50 Mb) to 1 building. Upgrades are needed to provide sufficient bandwidth for existing video-based research and future initiatives after LPRF phase 1 construction. Turfgrass center is currently using a cellular hotspot for internet service. Providing standard service requires excessive installation cost. Alternative service providers are being sought. No complaints have been received about service to facilities in the Livestock Center along Plantation Road, but service levels and coverage is being reviewed.	\$117,000 Annually	CALS / VAES	CALS IT	Ongoing	Alternative service providers are being sought for turfgrass center. Reviewing service levels and needs at Livestock Facilities on Plantation Road.
					Various		
	AREC Voice-Over Internet Protocol (VOIP) Conversion	Conversion of legacy voice telephone system at all ARECs to unified VOIP system matching voice service on campus.	\$75,000	CALS / VAES	CALS IT	Ongoing	VOIP conversion projects have been, or will soon be, completed at 6 of the 11 ARECs. Remaining locations include Hampton Roads, Reynolds Homestead, and Southwest Virginia ARECs where the existing telephone service has been adequate. The Virginia Seafood AREC will be converted to VOIP with the construction of their new building. The College has funded the conversion project at Middleburg, but installation has not been completed.
					Division of IT		
PROJECT INITIATION / PLANNING STAGE							
SmartFarm Projects	A project has been initiated by faculty in the Department of Animal and Poultry Sciences, in partnership with CALS IT and the Division of IT, to potentially install new technology, similar to Wi-Fi but with better exterior coverage and security management, in fields at Shenandoah Valley and Middleburg ARECs. The proposal is to study the effectiveness of this equipment for supporting data-intensive agricultural, animal-based research. Citizens Band Radio Service (CBRS) technology was investigated and deemed unsuitable for this project.	TBD	TBD	TBD	TBD	Funding request submitted to State.	
				TBD			



Update on Agricultural Facilities Planning and Construction

Alan L. Grant, PhD

Dean of the College of Agriculture and Life Sciences

Robin White, Ph.D.

Associate Professor, Animal and Poultry Sciences

Kristy Daniels, Ph.D.

Associate Professor, Dairy Science

November 15, 2020



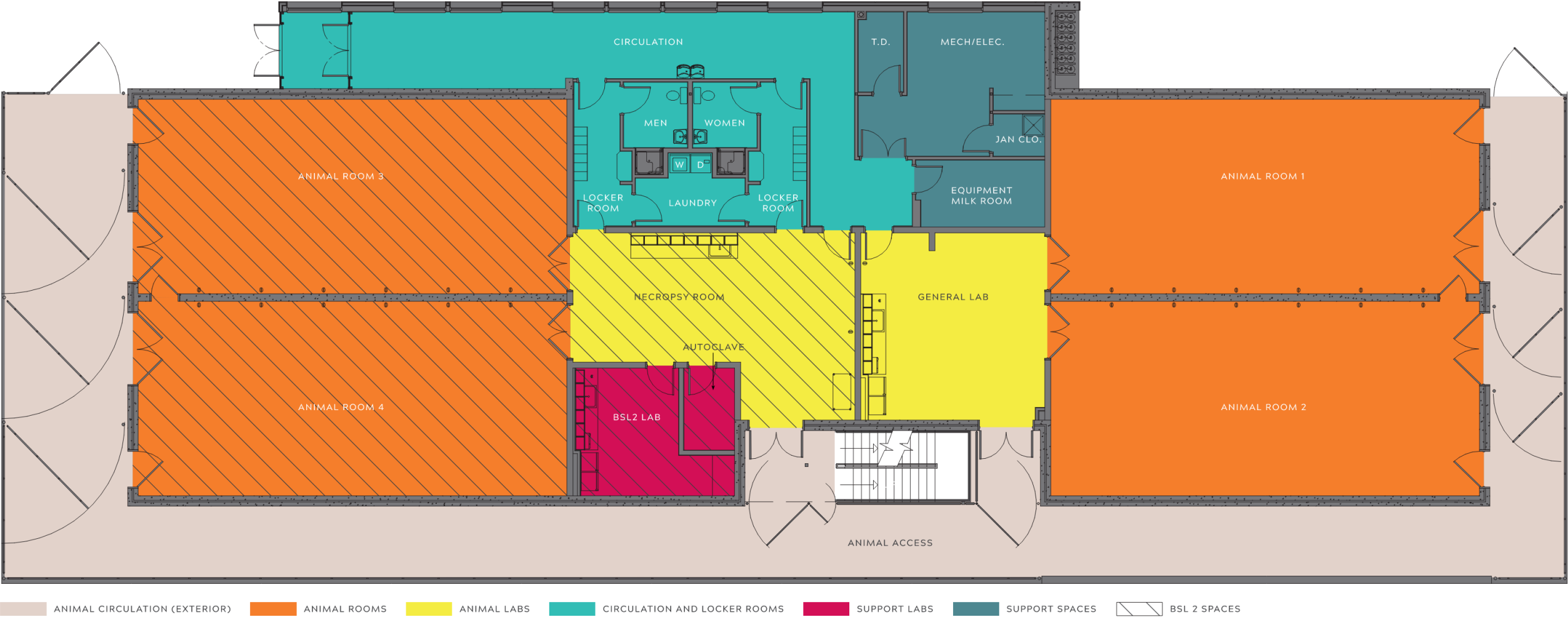


\$8.5M Construction cost,
including FF&E
and soft costs

11,330 gross
square
feet

METABOLIC RESEARCH LABORATORY

MAIN LEVEL FLOOR PLAN





INVESTING IN THE FUTURE OF AGRICULTURE AND LIFE SCIENCES

- Metabolic Research Laboratory – **completes** the Improve Kentland Facilities project
- Livestock & Poultry Research Facilities, Phase I - **underway**
- Seafood AREC Replacement Project - **underway**
- System-wide AREC Improvements (capital and non-capital projects) – **proposed**
- Revised Global Systems Science Building - **proposed**
- Livestock & Poultry Research Facilities, Phase II - **proposed**

DESIGN REVIEW FOR CORPS LEADERSHIP AND MILITARY SCIENCE BUILDING

Located in the Northeast & Upper Quad District along Old Turner Street, the Corps Leadership and Military Science Building (CLMS) will serve as a central location for Corps of Cadets administration and Military Science staff, bringing together Corps and ROTC functions that are currently disbursed across several buildings, and accommodate growth of the programs. The Rice Center for Leadership Development, Integrated Security Education Research Center (ISERC) black box space, a military museum, and Corps and ROTC support and training spaces will also be accommodated. The facility provides approximately 75,460 gross square feet including three stories of new, above grade construction, and addresses basement renovation and expansion to retain the existing water treatment facility for the adjacent Power Plant.

The project is in the working drawings phase with construction substantial completion anticipated July 2023. This \$52 million project is funded with non-general funds.

Capital Project Information Summary – Corps Leadership and Military Science Building

BUILDINGS AND GROUNDS COMMITTEE

November 15, 2020

Title of Project:

Corps Leadership and Military Science Building (CLMS)

Location:

The project is sited in the Northeast & Upper Quad District along Old Turner Street, over the current footprint of Art and Design Learning Center (ADLC), originally called the Mechanical Engineering Laboratory, which will be partially demolished. The project is located adjacent to the future New Upper Quad Residence Hall.

Current Project Status and Schedule:

The project is currently in working drawings phase. Construction is anticipated to begin July 2021 with targeted occupancy scheduled for July 2023.

Project Description:

The facility provides approximately 75,460 gross square feet of new construction and renovation, including: three stories of new, above grade construction; 14,726 gross square feet of basement renovation, with life-safety upgrades; and a partial footprint expansion to retain the existing water treatment facility for the adjacent Power Plant. The existing above grade, single story portion of ADLC will be demolished to make room for the project. The CLMS primary entrance will be at grade, oriented to front a new plaza which visually connects to Lane Hall across the Upper Quad.

Brief Program Description:

This project provides space to support Corps of Cadets administration and Military Science staff and accommodates growth for the programs. CLMS will also house the Rice Center for Leadership Development, Integrated Security Education Research Center (ISERC) black box space, a military museum, and Corps and ROTC support and training spaces. Several flexible classrooms also support general assignment usage.

Contextual Issues and Design Intent:

The CLMS building is designed to complement the Collegiate Gothic Revival architecture of Pearson Hall East, Pearson Hall West, and the future New Upper Quad Residence Hall within the District, and is consistent with the Campus Design Principles and Campus Master Plan. Exterior materials are comprised of Hokie Stone, architectural precast panels and trim with decorative reveals and heraldry, and aluminum windows in punched openings. The building is oriented on axis with

Lane Hall tower, fronting a new formal plaza between Shanks Hall and Major Williams Hall, which also facilitates improved accessibility through the north end of the Quad.

Funding:

This \$52 million total project authorization is funded through non-general funds which includes \$3.65 million of auxiliary revenue, \$17 million of private gifts, and \$31.35 million of debt service.

Architect/Engineer:

Clark Nexsen

Construction Manager at Risk:

Vannoy Construction

Corps Leadership and Military Science Building

Board of Visitors Design Review

Liza L.C. Morris, NCARB

Assistant Vice President for Planning and University Architect

November 15, 2020



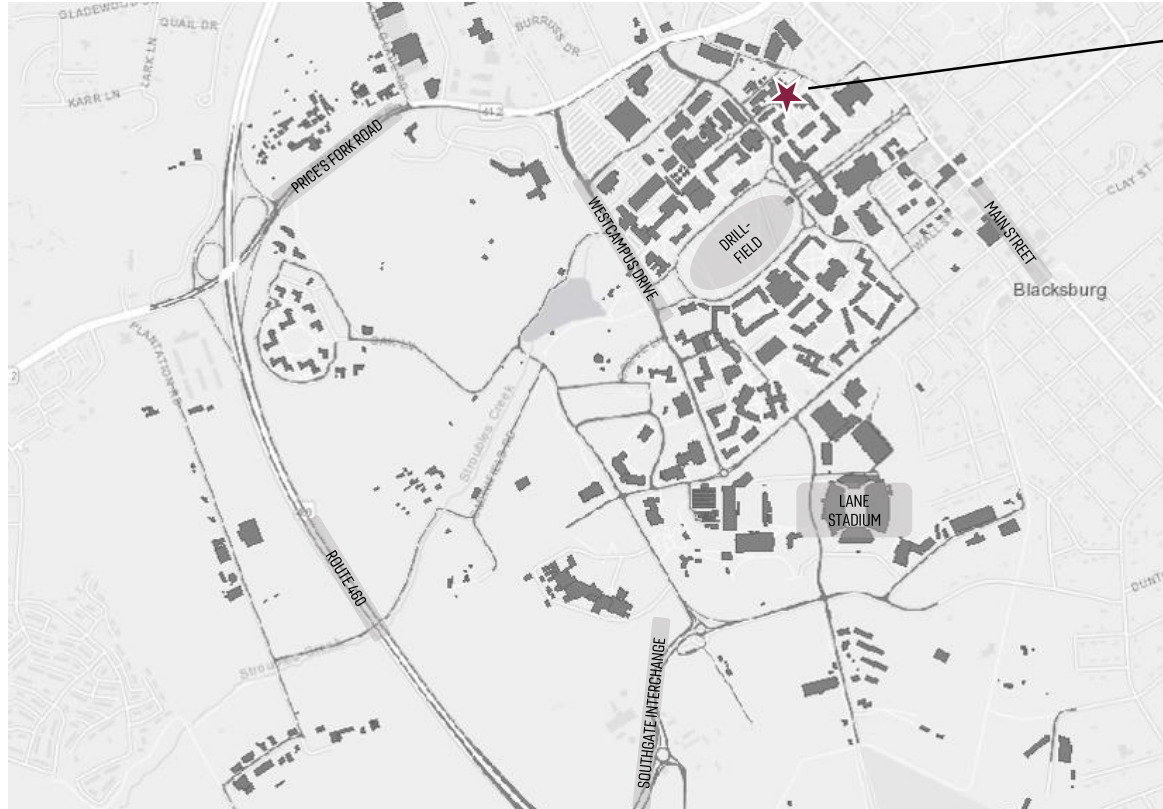


- Scope: 75,460 GSF
- Delivery method: Construction Manager at Risk
- Total project authorization: \$52 million
- Design phase: Working Drawings
- Estimated construction start: July 2021
- Targeted Occupancy: July 2023



PROJECT LOCATION

Attachment C



Site

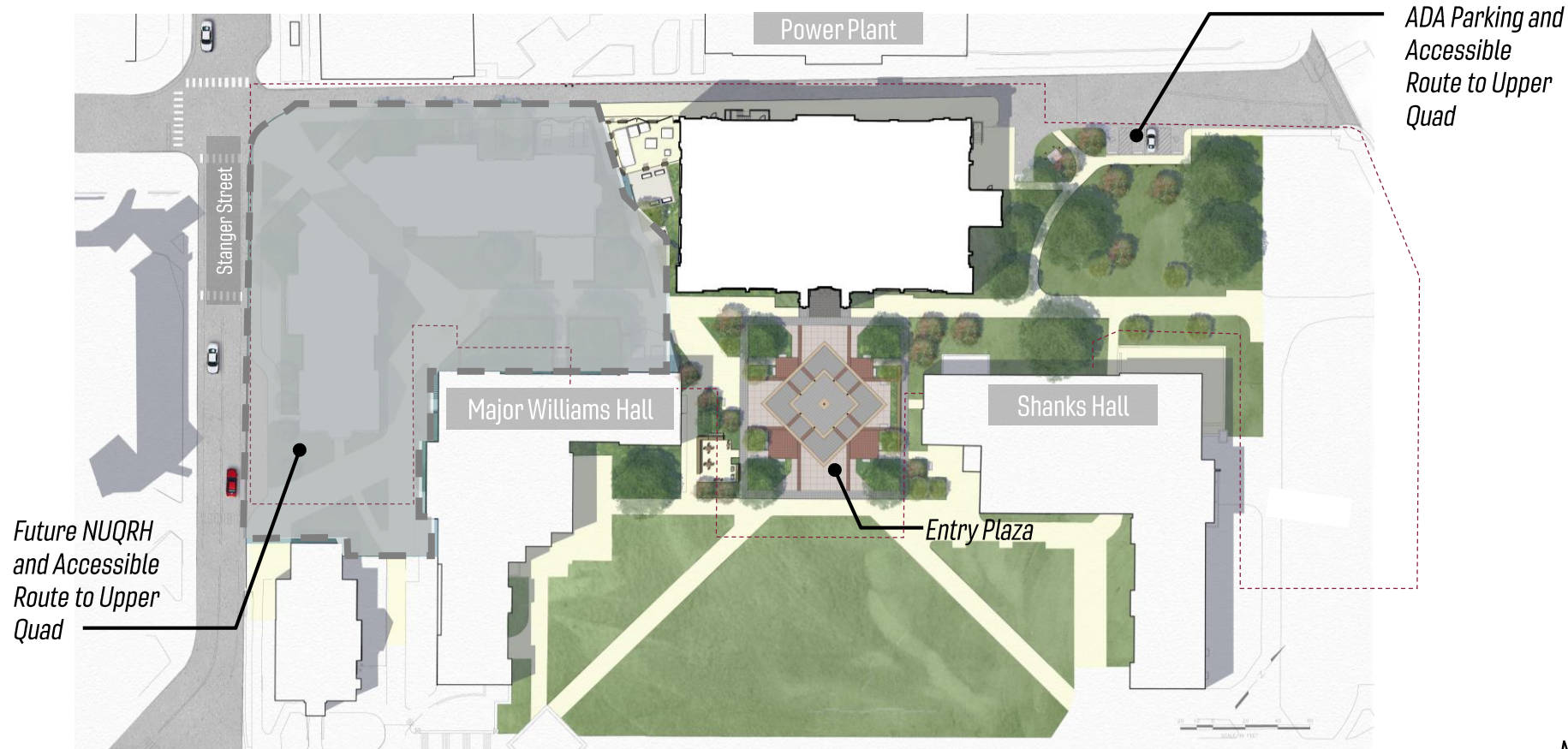
/ CORPS LEADERSHIP AND MILITARY SCIENCE BUILDING





SITE PLAN

Attachment C



/ CORPS LEADERSHIP AND MILITARY SCIENCE BUILDING



EXTERIOR RENDERING

Attachment C



EXTERIOR RENDERING

Attachment C



EXTERIOR RENDERING

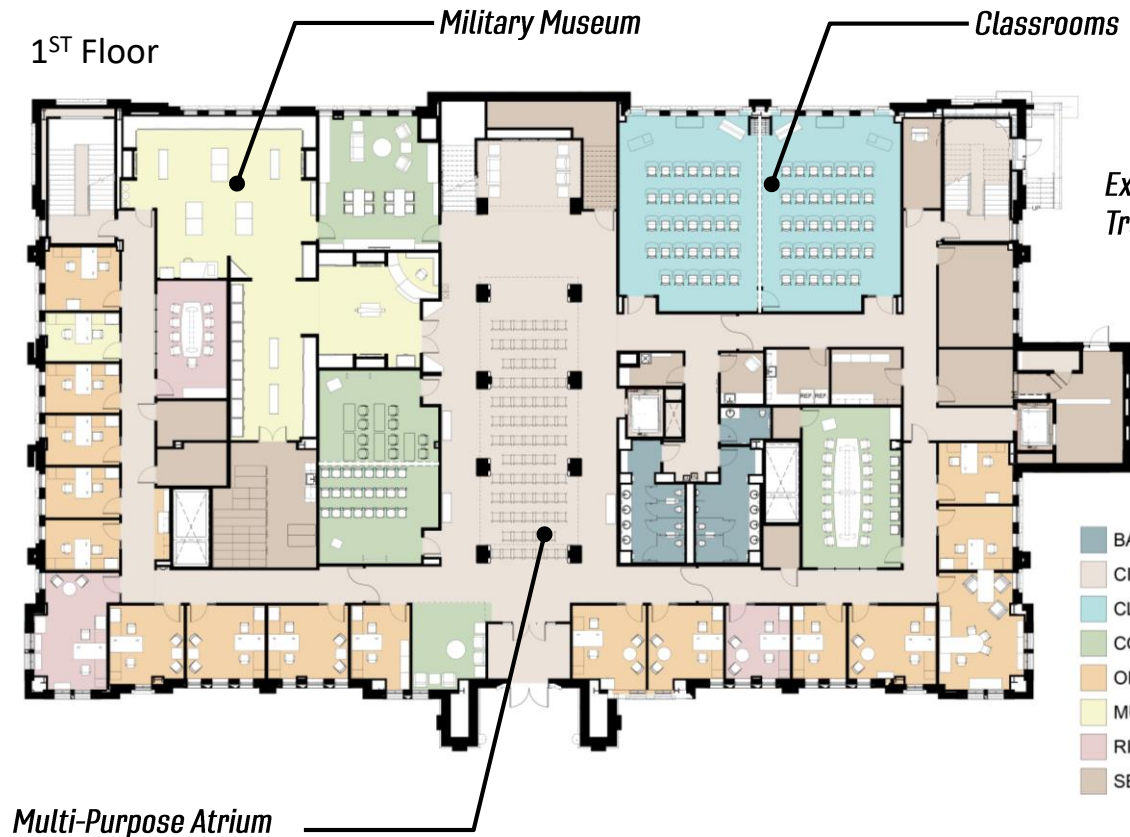
Attachment C





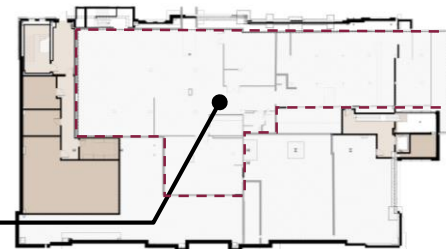
FLOOR PLAN

Attachment C



Existing Water
Treatment Facility

Basement



2nd Floor



3rd Floor





Atrium Skylight

Third Floor
Enclosed Overlook

Multi-Purpose
Atrium



That the Design Review graphics be approved, and authorization be provided to continue with the project design consistent with the drawings shown.



Future Agenda Items and Closing Remarks

BUILDINGS AND GROUNDS COMMITTEE

November 15, 2020

The Committee will discuss future agenda items and make closing remarks.