

UNIVERSITY OF VIRGINIA SUSTAINABILITY

ANNUAL REPORT

2016 - 2017



SUSTAINABILITY · UVA
From the Grounds Up





TABLE OF CONTENTS

SUMMARY	
Progress.....	6
COLLABORATIVE GOVERNANCE.....	
Sustainability Plan and Committee on Sustainability.....	17
Civic Engagement Subcommittee.....	18
Environmental Stewardship Subcommittee.....	19
Teaching and Research Subcommittee.....	23
ENGAGE.....	
Outreach Programs.....	28
Outreach Events.....	33
Communications.....	40
STEWARD.....	
Greenhouse Gas Emissions.....	44
Energy Use.....	46
Transportation.....	50
Nitrogen.....	52
Water.....	54
Materials and Waste.....	56
Food.....	58
DISCOVER.....	
Curriculum.....	64
Research.....	66
Grounds as a Learning Tool.....	68
RECOGNITION.....	70



photo: SunTribe Solar

EXECUTIVE SUMMARY

The University of Virginia Sustainability Annual Report: 2016-2017

It has been a great year for sustainability at the University of Virginia, with meaningful progress across research, curriculum, and operations. Sustainability at UVA is highly collaborative amongst faculty, staff, and students, and together, last year, we launched UVA's first Sustainability Plan with 23 goals and specific actions. The funding provided for the Plan - \$3 million over four years - is enabling the development of new sustainability courses, additional sustainability research, career development support, professional development, enhanced orientation activities, equity and environment grants, a collaborative sustainability-diversity events, a University-wide rooftop solar plan, and action plan development with consultants and student interns.

In 2011, the Board of Visitors approved a greenhouse gas reduction goal for the University, to reduce emissions 25% below 2009 levels by 2025. This year, UVA published an updated Greenhouse Gas Action Plan to outline a path to meet the Board of Visitors' greenhouse gas goal. To date, an 11.6% reduction has been achieved, despite significant growth. UVA also significantly increased renewable energy within its electricity portfolio. In 2016-17, the University entered into power purchase agreements with Dominion Energy to purchase 100% of the output of two new utility-scale solar power projects. When completed in late 2018, these two projects will generate enough solar power to offset 21% of UVA's electricity demand and reduce 32,000 MTCDE of greenhouse gas emissions annually. On Grounds, solar panels have been installed on Clemons Library (126 kW), Skipwith Hall (15 kW), Ruffner Hall, and the UVA Bookstore (394 kW).

Additionally, a comprehensive rooftop solar plan has been developed to identify the best candidates for future solar installations.

Energy use intensity has been reduced by over 9%, a result of retro-commissioning work in buildings and improving the efficiency of energy generation in the heating and chiller plants. In 2016, energy-saving initiatives yielded more than \$5 million in avoided costs. Since FY2008, conservation activities have presented over \$32 million in avoided utility costs.

In spring 2017, UVA selected the Resilience Institute as one of its new pan-University research institutes. This will include new interdisciplinary cluster hires, particularly in environmental science, engineering, and policy, and will be one of the first in the nation to focus on the effects of climate change in such a way.

UVA students continue to be passionate sustainability leaders. Students volunteered over 5,500 hours in sustainability service projects and helped organize over 85 events this academic year to raise awareness and enhance UVA's excellence in sustainability. Building upon student passion for sustainability, the Career Center launched new programs aimed at supporting the next generation of student leaders through the Sustainability & Impact Fair, a Green Skills Workshop, and Alumni Career Conversations.

The UVA Sustainability Annual Report highlights some of the many sustainability initiatives from the 2016-2017 academic year and progress on the UVA Sustainability Plan. For a comprehensive overview of sustainability programs, initiatives, and progress at UVA, or to get involved, visit www.sustainability.virginia.edu

SUSTAINABILITY PLAN HIGHLIGHTS

SUSTAINABILITY PROGRESS

ENGAGE

GOALS



Increase sustainability awareness within the UVA community.



Increase sustainability engagement beyond Grounds.



Cultivate healthy and equitable places for learning, living, and working.

HIGHLIGHTS



85+ events



3,400+ event attendees



37,000 lbs donated goods



42 University and community Partners



300+ Attendees at first Food Justice MLK Event

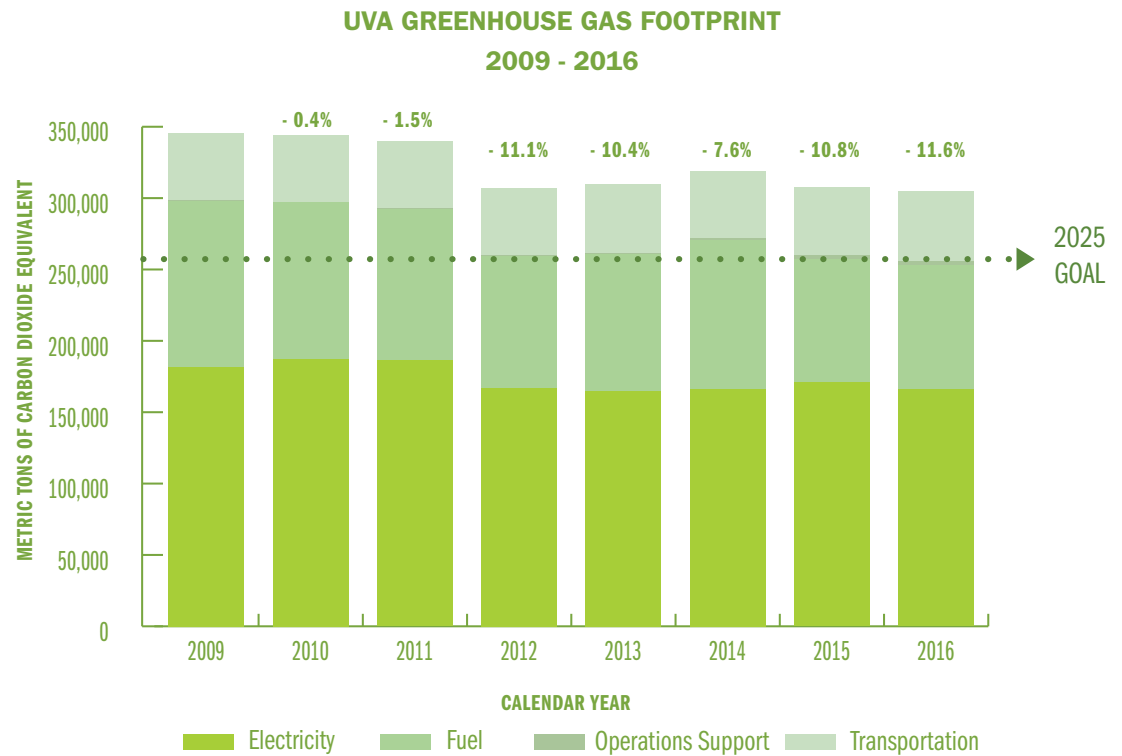


11,000+ U Bike trips

STEWARD

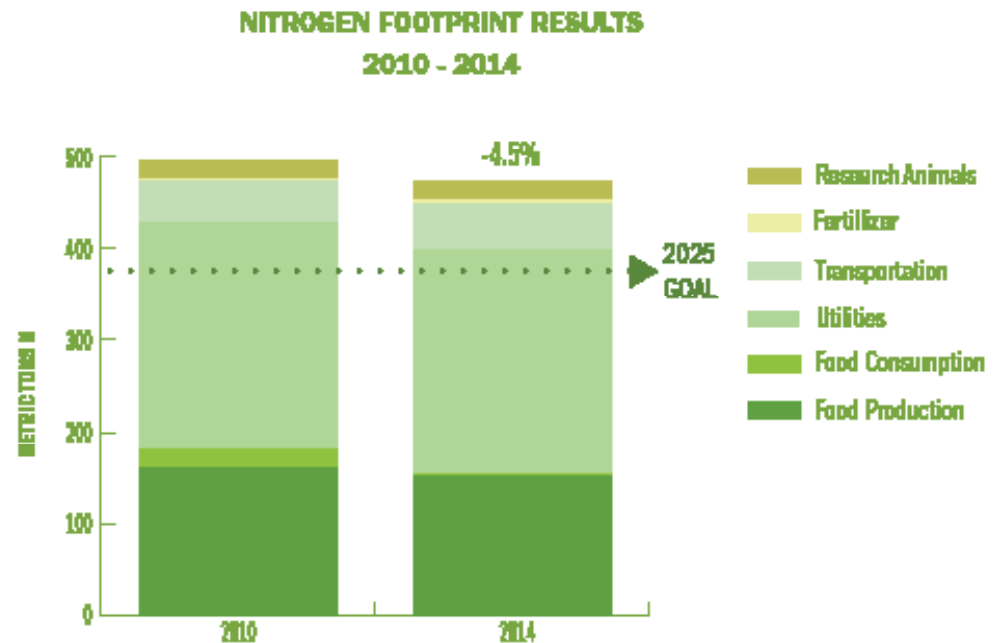
Goal: Reduce greenhouse gas emissions 25% below 2009 levels by 2025.

In 2009, the baseline year for emissions analysis, the total greenhouse gas emissions footprint was 345,196 metric tons of carbon dioxide equivalent (MTCDE). In 2016, emissions decreased to 305,030 MTCDE, an 11.6 percent reduction compared to 2009.



Goal: Reduce reactive nitrogen losses to the environment 25% below 2010 levels by 2025.

From 2010 to 2014, UVA reduced its nitrogen (N) footprint by 4.5 percent, despite increases in both square footage and population.

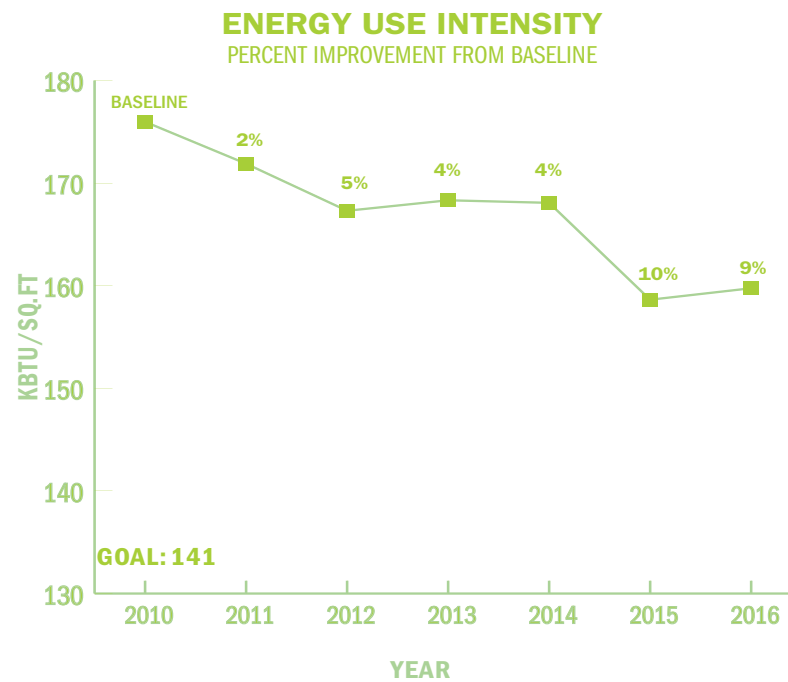


Goal: Reduce building energy use intensity 20% below 2010 levels by 2020.

UVA reduced its energy use intensity, defined as total energy use divided by total square footage, by 9.2 percent between 2010 and 2016. This is a result of extensive retro-commissioning work in buildings plus initiatives in the heating and chiller plants to improve the efficiency of energy generation.

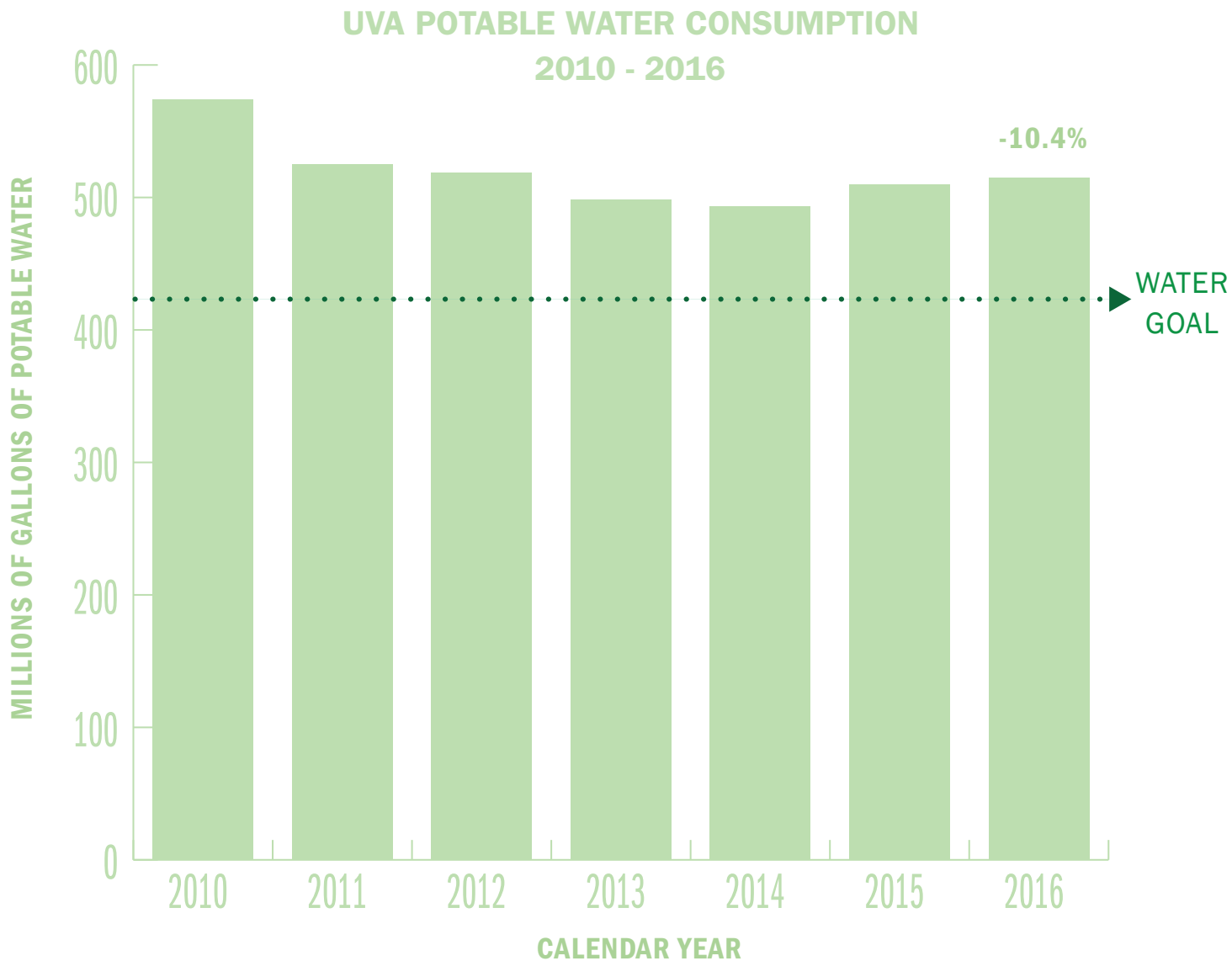
Since FY 2007-08, \$10.3 million has been invested in the Delta Force retro-commissioning program, focused on deep energy reductions in UVA's most energy-intensive buildings. With an avoided cost to date of nearly \$24.9 million, the simple return on investment is approximately 2.4:1 since the program's inception.

UVA requires LEED certification for all new construction and major renovation projects. UVA currently has 47 LEED certified buildings, with an additional 22 currently in progress.



Goal: Reduce potable water use 25% below 2010 levels by 2035.

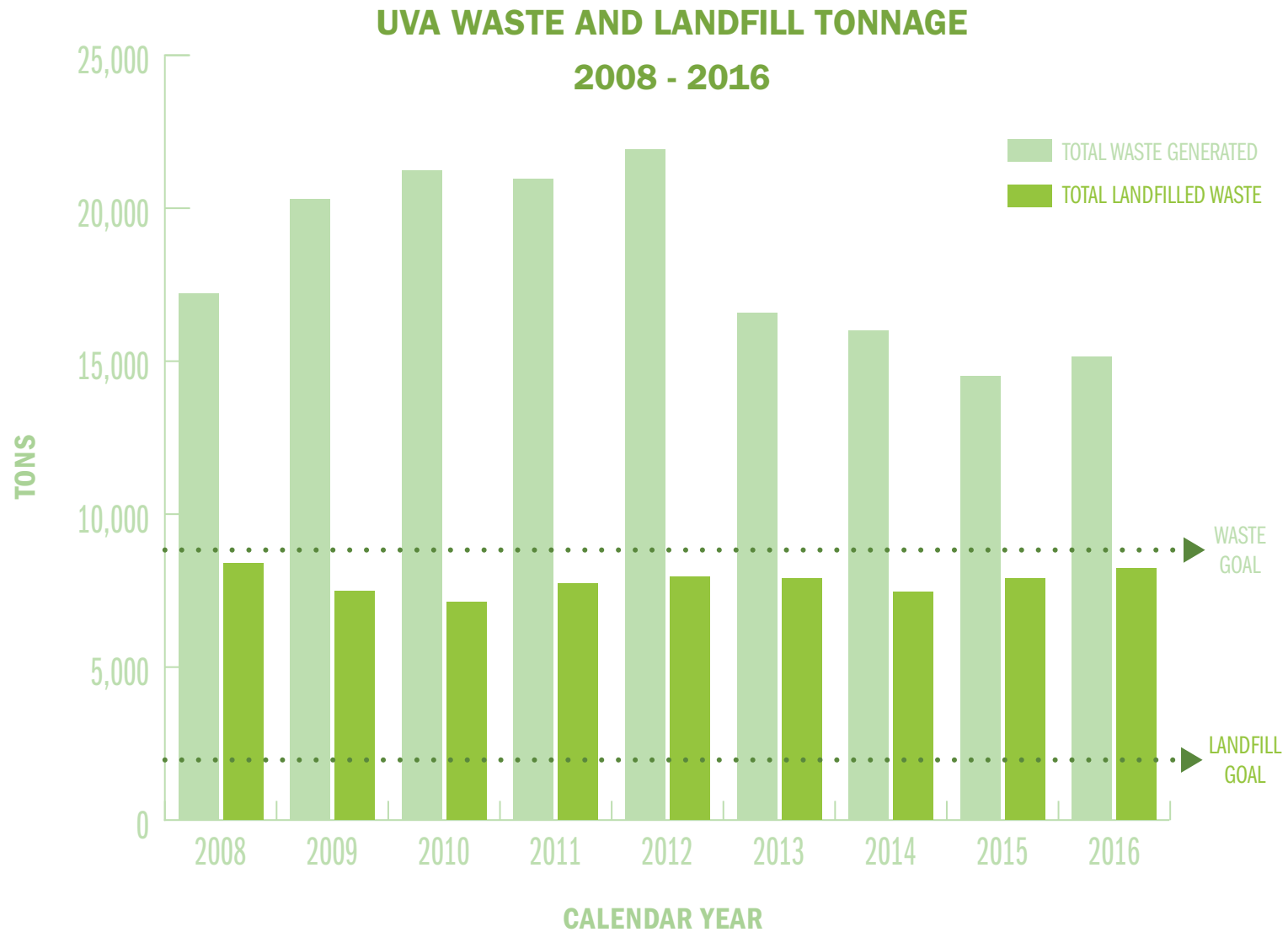
Total water usage in 2016 was down more than 23.4 percent from its peak in 1999 despite growth in population and area served. Since 2010, the baseline year, total water use is down 10.4 percent. This is due to water efficiency and conservation work in buildings plus water recovery projects such as collecting air conditioning condensate for use in the chiller plants.



Goal: Reduce the total tonnage of waste generated at UVA 50% below 2014 amounts by 2035.

Goal: Landfill less than 2,000 tons of waste annually by the year 2035.

In 2016, UVA generated 15,140 tons of waste. This is 5.3 percent less than the waste generated in 2014, the baseline for this goal. In 2016, UVA diverted 45.7 percent of all waste from the landfill by recycling 6,917 tons of material. This includes containers, organic materials (landscape and food waste), paper, cardboard, metals, surplus materials, ash, e-waste (batteries, electronics, etc.), and wood.



GOALS



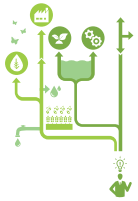
Enhance and expand the number of sustainable and meaningful sites and buildings.



Annually increase the percentage of sustainable food and beverages available on Grounds.



Reduce food waste and single-use food serving items sent to landfill.



Increase student, staff, and faculty awareness of sustainable food systems.



Collaborate within UVA and with the region, bringing together faculty, staff, students, and dining operations to advance sustainable food systems in the broader community.

HIGHLIGHTS



47 LEED certified buildings, reducing the environmental impacts of new construction and major renovations



Sustainable Food Strategy Task Force developed a Sustainable Food Strategy Action Plan, with specific metrics and targets

16 UVA Dining sustainability theme meals, **5** UVA Dining pop-up events



750 lbs of food waste composted across UVA Dining facilities, including Darden and the Health System, in CY 2016

5,355 single-use cups saved via the Cupanion program



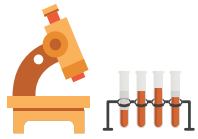
3 Food Collaborative Food Film Forums featuring documentary films & panel discussions about how food impacts community, health, justice, and the environment



UVA, GMU, JMU, and Virginia Tech developed the The Virginia Food Systems Leadership Institute, an interdisciplinary summer program aimed at fostering rising leaders in the area of sustainable food systems, particularly by providing a means for students to gain practical skills and hands-on experience

DISCOVER

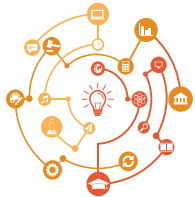
GOALS



Enhance sustainability research and UVA's reputation as a locus of sustainability.



Enhance sustainability-focused teaching and curricular development.



Utilize the Grounds as a learning tool through collaboration between operational and academic units.

HIGHLIGHTS



8 Sustainability Plan research development grants, totaling \$58,000



8 Sustainability Plan course development grants, totaling \$64,000



13 GIFT grants, totaling \$35,575 awarded for on-Grounds student projects

150 students, 30 sustainability projects, and 10 UVA staff mentors for Global Sustainability student projects

COLLABORATIVE GOVERNANCE

PROGRESS THROUGH PARTNERSHIPS



COLLABORATION AS A SOURCE OF INNOVATION

From Thomas Jefferson’s visions of environmental stewardship, to the first student sustainability group in the 1980s, the UVA community has demonstrated decades of progress in exemplifying a commitment to being a good steward of the place that has been entrusted to the University, on Grounds and beyond.

UVA’s deeply held values of honor, diversity, student self-governance, and public service have fostered a strong network of programs that support individual, community, and social development. In UVA’s strategic plan, the Cornerstone Plan, collaboration is an institutional hallmark, which is also reflected in the University’s sustainability structure. UVA has cultivated a sustainability culture from the Grounds up, with over 35 sustainability-focused student groups, a robust University Committee on Sustainability structure with dozens of working groups and task forces consisting of students, staff, and faculty, an Office for Sustainability with fourteen full-time staff, and several departments with sustainability intertwined in their mission.

Sustainability Retreat

UVA Sustainability Retreats, which bring together approximately sixty sustainability leaders from across UVA, have been held annually since 2013. The Fall 2016 Sustainability Retreat built upon the past three retreats – from building a vision, to seeking to articulate means of embodying that vision, developing a framework for advancing sustainability in the next 5-10 years, and now to longer-term sustainability strategic planning and a vision for sustainability at UVA across topic areas.

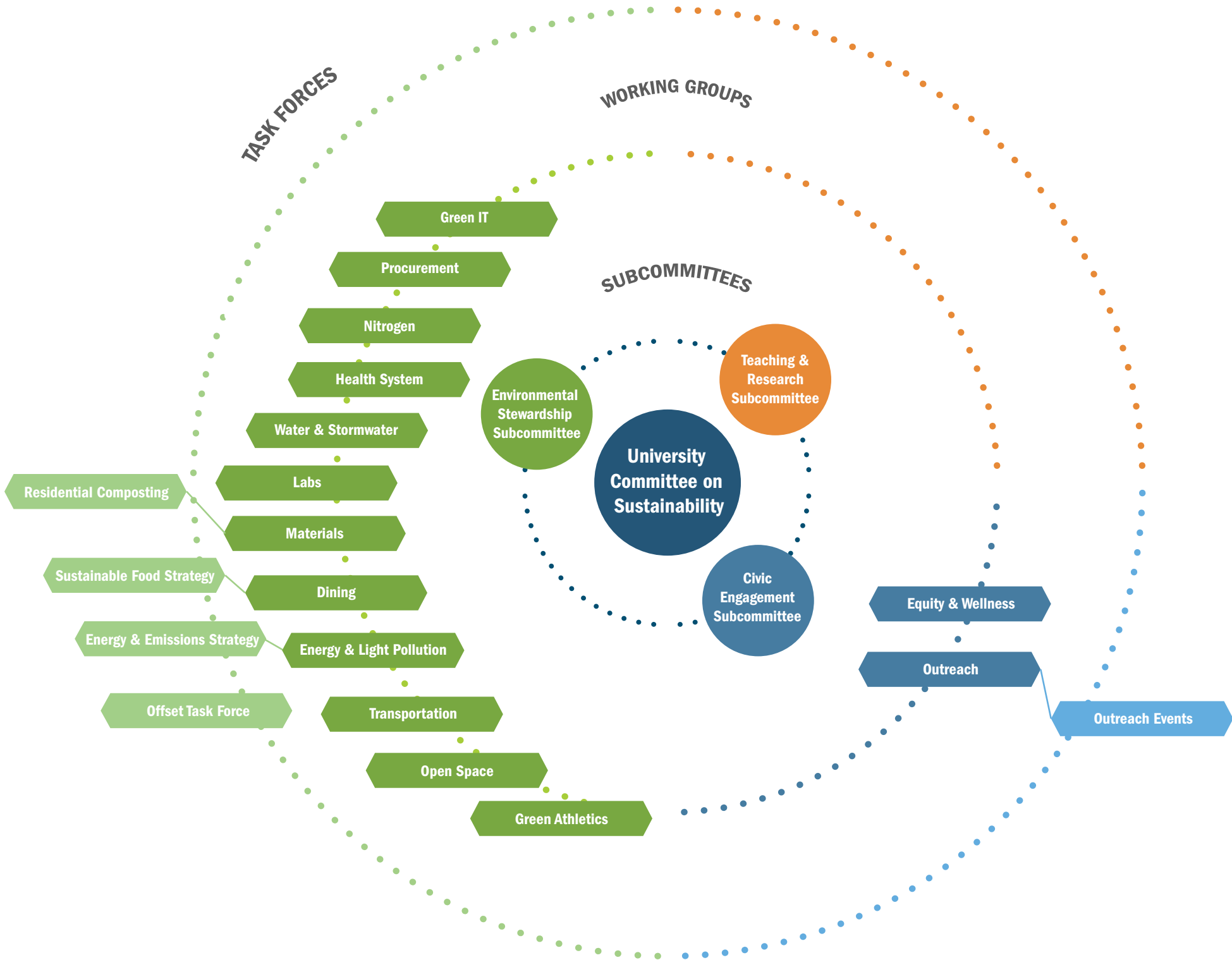


Sustainability Retreat panelists Kevin Fay, Bill Sherman, John Fitzgerald Gates, and Dorrie Fontaine

Attendees sought to define what it means to address burgeoning topics within higher education sustainability in a meaningful and integrated way, to enrich the longer-term view of the Sustainability Plan and to develop a more complete vision for sustainability at UVA. The questions explored included “How do we link the Engage, Steward, Discover aspects of sustainability at UVA? How do we engage the community in these topics? How do we implement these ideas on Grounds? and How do we support research and curriculum in these topic areas?” A panel of speakers shared their vision within each topic area:

- **Climate Action Beyond 2025:** Kevin Fay, UVA Board of Visitors and Chair of the Building and Grounds Committee
- **Resilience:** Bill Sherman, Professor of Architecture and Associate Vice President for Research in Design, Arts and Humanities
- **Equity, Diversity, and Inclusion:** Dr. John Fitzgerald Gates, Associate Dean of Diversity and Inclusion, School of Engineering and Applied Sciences
- **Health and Wellness:** Dorrie Fontaine, Dean of the School of Nursing

After the panel shared their thoughts, attendees worked in small groups to brainstorm potential next steps for UVA.



UVA COMMITTEE ON SUSTAINABILITY STRUCTURE, 2016 - 2017

SUSTAINABILITY PLAN AND COMMITTEE ON SUSTAINABILITY

The University Committee on Sustainability (CoS) advises the Executive Vice Presidents on matters regarding sustainability. The CoS is co-chaired by Cheryl Gomez – Director of Operations and Phoebe Crisman – Associate Professor of Architecture. Forty-one members were appointed for 2016-2017, representing faculty, staff, and students. Three subcommittees – Civic Engagement (co-chairs Nina Morris and Scott Norris), Teaching & Research (co-chairs Jim Galloway and Bill Shobe), and Environmental Stewardship (co-chairs Andrea Trimble and Don Sundgren) – align with the Engage, Discover, and Steward approaches of UVA's Sustainability Plan. Under the first year of Sustainability Plan funding, the three subcommittees helped prioritize new projects. For Engage goals, funding supported welcome week programming, student career workshops,



CIVIC ENGAGEMENT SUBCOMMITTEE

In its third full academic year, the Civic Engagement Subcommittee (CES) accelerated and expanded UVA's sustainability community, initiating 19 of the 24 actions outlined in the Engage section of the Sustainability Plan. CES engaged diverse representation from Student Council, the Office of the Vice President and Chief Officer for Diversity and Equity, Madison House, Community Relations, Office for African American Affairs, the UVA Career Center, and others, to catalyze projects, events, and campaigns that explored the intersection diversity, equity and the environment. The inaugural Equity & Environment Fund supported over \$28,000 of student projects and events such as service projects for local school yard gardens and providing Access UVA students with sustainable food through the student-run "Greens to Grounds" program. CES also organized the first environmental justice speaker hosted as part of the UVA Community Martin Luther King Jr. Celebration. With an audience of almost 300 students, community members, faculty, and staff, James Beard Award Winner Bryant Terry shared his signature afro-vegan recipes while educating the audience on food justice issues.

Outreach Working Group: This year, the Outreach Working Group (co-chaired by Dana Schroeder, Office for Sustainability) and Liam Kiniry (student in the School of Architecture), focused on two primary goals: building sustainability education into Orientations and Residence Life and supporting a Green Career Series with the UVA Career Center. Outcomes included a Green Career Fair, Alumni Career Conversations, Green Skills Workshop, co-branding UVA21's reusable water bottle, and developing resources for Resident Advisors.



ENVIRONMENTAL STEWARDSHIP SUBCOMMITTEE

The Environmental Stewardship Subcommittee connects students, staff, and faculty in developing sustainability initiatives across topic areas. Each working group is co-chaired by a student and a staff or faculty member. Working groups developed projects for on-Grounds implementation, while task forces brought together subject-matter experts to develop strategic initiatives, such as UVA's Greenhouse Gas Action Plan and the Sustainable Food Action Plan.



Students and staff volunteer at Morven Kitchen Garden



FM Sustainability Council at the annual FM Ice Cream Social

MATERIALS WORKING GROUP

- Worked on enhancing UVA Recycling's communication
- Supported the Hoos ReUse move-out donation drive
- Provided outreach support for new co-located recycling and trash bins

RESIDENTIAL COMPOSTING TASK FORCE

- Identified the needs and goals of Housing & Residence Life, students, and Facilities Management
- Drafted an agreement for students to self-manage compost
- Piloted compost collection in Brown College and IRC

OPEN SPACE WORKING GROUP

- Supported a Global Sustainability class project – McCormick Road dorms open space
- Held a Sustainability Stroll and OHill Trail Trek during Earth Week
- Conducted an Earth Week Open Space survey
- Provided a proposal to the School of Engineering and Applied Sciences for potential Dell hydropower phone charging stations
- Collaborated with Green Grounds on an OHill trail map

NITROGEN WORKING GROUP

- Recalculated the 2010 nitrogen footprint baseline and updated the 2014 N footprint with additional information
- Conducted a second sustainability labeling study in the UVA Fine Arts café
- Collaborated with The Organic Center to calculate the nitrogen impacts of organic foods purchased by institutions
- Assessed the social cost of the nitrogen pollution associated with UVA activities

ENERGY AND LIGHT POLLUTION WORKING GROUP

- Designed a display to build awareness about energy procurement, distribution, and consumption on Grounds
- Eight total display panels were drafted - four focused on an energy primer and four on how UVA is seeking to reduce energy consumption

ENERGY AND EMISSIONS TASK FORCE

- Developed and published UVA's Greenhouse Gas Action Plan, analyzing potential strategies and outlining a proposed path forward

WATER AND STORMWATER WORKING GROUP

- Created a functional bioretention area and improved pedestrian safety in the Clark Nook
- Held a Beta Bridge stream cleanup to raise awareness of ongoing trash issues under Beta Bridge, where 50 volunteers collected 35 bags of recycling and 25 bags of trash
- Purchased a portable water bar to be used at events, with the goal of reducing bottled water purchases (GIFT grant funded)
- Co-sponsored a tour of the expanded Ragged Mountain Reservoir
- Designed signage at the biofilter on Engineer's Way (GIFT grant funded)



TRANSPORTATION WORKING GROUP

- Held 22 Bike UVA Maintenance Clinics to teach cyclists basic maintenance skills
- Conducted outreach through infrastructure, programs, partnerships, and social media
- Continued to support U Bike, UVA's bike share program
- Conducted an employee mode-split survey

SUSTAINABLE FOOD STRATEGY TASK FORCE

- Further developed UVA's Sustainable Food Action Plan
- Drafted a sustainable food survey

PROCUREMENT WORKING GROUP

- Developed America-to-Go zero waste designation and logos
- Developed connections to raise awareness about sustainable procurement
- Held training for individual purchasers and department head

GREEN DINING WORKING GROUP

- Held residential dining sustainability-themed events throughout the year, typically serving 1500 - 3000 guests
- Expanded UVA Dining's partnership with Morven Kitchen Garden
- Collaborated with hydroponics research and class visits
- Collaborated with the Office for Sustainability on zero waste events, the Bryant Terry "Stirring Up Food Justice" event, and Earth Week

GREEN IT WORKING GROUP

- Piloted an active power management program
- Presented to the University Information Technology Advisory Council (ITAC)
- Presented at a Local Support Partners (LSP) conference
- Contributed to UVA's Greenhouse Gas Action Plan

GREEN ATHLETICS WORKING GROUP

- Developed proposals for potential sustainability sponsorship opportunities
- Identified opportunities, with a Green Athletics intern, to increase landfill diversion rates in Scott Stadium

HEALTH SYSTEM SUSTAINABILITY COMMITTEE

- The UVA Health System and Morrison (the Health System's dining provider) created 'The Power of Sustainability' video
- Conducted a Reusable Office Supply Exchange (ROSE) survey

GREEN LABS WORKING GROUP

- Facilitated participation in the North American Laboratory Freezer Challenge
- Refined UVA's green labs certificated checklist
- Held a Green Labs Resource Fair during Earth Week
- Developed a Green Labs pilot program

TEACHING AND RESEARCH SUBCOMMITTEE

The primary focus of the Teaching and Research Subcommittee in 2016-2017 was issuing requests for proposals, reviewing, and awarding grants for sustainability research and new course development. In the process, the group made connections with many departments not previously active in sustainability-related topics. The subcommittee also explored future opportunities to connect faculty with facilities project to provide students with living-learning lab experiences on Grounds.



STUDENT COUNCIL SUSTAINABILITY COMMITTEE

The Sustainability Committee of Student Council works to connect and unify the 35+ sustainability-minded CIOs on Grounds through an annual Sustainability Student Retreat, as well as monthly “Sustainability Forums.” Over the past year, the Student Council Sustainability Committee focused on expanding its zero-waste mission to events like the Second Year Council Welcome Back Bash, Phi Eta Sigma Induction Ceremony, and China Dialogue Dinners.

Additionally, the committee took on other projects such as bringing greenery to Clemons Library by means of a GIFT grant, hosting the 4th annual and most highly attended SustainaBanquet during Earth Week, and leading tours of important sustainability facilities, including Black Bear Composting and the Main Heat Plant.

OFFICE FOR SUSTAINABILITY

The primary focus areas of UVA’s Office for Sustainability (OFS) are leadership, facilitation, and implementation of programs and projects towards achievement of the goals outlined in UVA’s Sustainability Plan. Topics include greenhouse gas, energy, water, materials and waste, food, engagement, curriculum, research, and using the Grounds as a learning tool. In addition to program management, project planning, and implementation, OFS staff led, facilitated, or participated in dozens of subcommittees, working groups, and task forces throughout the year, and coordinated with numerous student organizations, departments, and individual staff, faculty, and students to advance sustainability throughout the culture and institution at UVA. OFS also led and participated in state and regional sustainability discussions, presented at the AASHE and Smart and Sustainable Campuses conferences, connected with other Virginia higher education institutions in multiple ways, and hosted the annual meeting of the Southeast Campus Sustainability Network, with 20 sustainability directors from across the southeast. These collaborations have built meaningful new connections across Grounds, the community, and beyond.



Student sustainability employee Nick Brown shares UVA's progress and ongoing initiatives with peers

SUSTAINABILITY AT UVA

University of Virginia calls for collaboration and integrity to promote the well-being of the community. Progress through scholarship and practice, educate ethical leaders and stewards of a better planet.

UNIVERSITY OF VIRGINIA SUSTAINABILITY UVA
From the Ground Up

ENGAGE

Education, outreach and behavior change programs, events, and campaigns build sustainability literacy and awareness across the University, which translates into action. A strong network of sustainability committees empowers individuals to enact change.

ANNUAL EVENTS

- JAN Sustainability Week
- MAR Green Week
- APR World Water Day
- MAY Climb to the Clouds
- JUN Sustainability Week
- AUG Sustainability Week
- NOV Sustainability Day

ONGOING PROGRAMS

- Green Workplace Program**
GWP is a 90 credit checklist that engages UVA employees and workers in actions that conserve energy, save money, and advance sustainability.
- Sustainability Advocates**
The mission of Sustainability Advocates is to use a peer-to-peer network to build knowledge, empower students, and create awareness of the impact of their decisions.

STEWARDSHIP

Stewardship of Grounds, Finances, & People

GREENHOUSE GAS EMISSIONS 2000-2015

To date, UVA has achieved a reduction in greenhouse gas emissions and a 28% reduction in building energy use intensity despite an increase in overall square footage.

DELTA FORCE PROGRAM

UVA's Transportation Demand Management Program provides multi-modal options for students, faculty and staff, including a bike share program consisting of 125 bikes.

AVOIDED COST (\$)

2014	7,700
2015	7,700
TOTAL	110.4 MILLION
PI 2014	4,449,197

The University has met 28 LEED certified buildings. Grounds just one of the oldest LEED buildings in the nation.

UVA's Building Services cleaning practices contribute to UVA, holding one of only three Green Seal certifications in higher education.

Total water consumption in FY 2015 has been reduced 42% compared to the prior year and more than 24% since the 1999 peak despite an increase in square footage and the number of faculty, staff, and students.

In calendar year 2014, UVA recycled 22 percent of its municipal solid waste (MSW), which represents 284 tons of paper, cardboard, plastic, glass, and metal. Other non-MSW materials were also recycled, totaling 204 tons.

DISCOVER

Interdisciplinary Learning

RESEARCH

UVA was the first institution in the world to commit to reducing reactive nitrogen. UVA researchers developed tools for tracking nitrogen hotspots, which are now used internationally.

CURRICULUM

Global Studies - Environmentals + Sustainability Major & Minor. This interdisciplinary major and minor address problems associated with human transformations of the earth through the triple lens of environment, equity, and economy.

Moreno Summer Institute. The Moreno Summer Institute is an innovative summer program based on UVA's 2,000-acre farm. Students with interests in sustainability, design, food systems, and ecology have the opportunity to learn outdoors.

AWARDS

Recognition For Excellence

- Green Ribbon Schools
- Stars
- International District Energy Association

CONTACT: SUSTAINABILITY@VIRGINIA.EDU



ENGAGE

BUILD AWARENESS, INSPIRE ACTION

ENGAGING CHANGE AGENTS

OUTREACH PROGRAMS

ENGAGING OUR COMMUNITY

With one year of the Sustainability Plan underway, the UVA community continues to embrace and advance sustainability throughout the culture of the University. The major agents of sustainable change consist of over 35 sustainability-related student organizations, the Committee on Sustainability network, the Office for Sustainability, and many departments and offices across Grounds. These drivers for sustainability have built exciting new bridges across Grounds and into the larger community to expand the impact of sustainability awareness and engagement.



STUDENT LEADERSHIP



Sustainability Student Employees

The Office for Sustainability's Student Employee Program is a selective program of some of UVA's top sustainability student leaders who develop and implement student-focused sustainability outreach and communications initiatives. The 14 student employees work on four teams (Energy and Water, Recycling, Outreach, and Promotions),

between four and 20 hours per week. Major accomplishments this year include coordinating more than 150 volunteers for Game Day Challenge Football and Basketball, organizing a 40-person tour of Charlottesville's reservoir as part of UVA World Water events, and releasing sustainability videos with over 1,890 views on Facebook.

Sustainability Advocates

In its 14th year, the Sustainability Advocates program is a well-established student volunteer program, comprised of 50 sustainability advocates, ten advocate leaders and four off-Grounds sustainability advocates, managed by three sustainability student employees.

This year, the SA Program focused on careers in sustainability, bringing in local sustainability professionals for networking and industry insight.

Building in leadership training, the SAs developed outreach events on sustainable lifestyle habits, volunteered at zero waste events, and tackled semester-long sustainability projects that focused on water conservation and food waste.



OTHER STUDENT PROGRAMS - HIGHLIGHTS

- ARCHITECTURE SCHOOL ECO REPS
- BIKE AMBASSADORS
- SUSTAINABLE DINING EDUCATORS

STUDENT ORGANIZATIONS - HIGHLIGHTS

- CAMPUS KITCHEN
- CHARITY : WATER
- CLIMATE ACTION SOCIETY
- CRAFTING FOR CONSERVATION
- DECAF
- ECOMOD
- ENACTUS
- ENGINEERING STUDENTS WITHOUT BORDERS
- ENVIRONMENTAL SCIENCE ORGANIZATION
- GLOBAL BRIGADES
- GREEN DINING
- GREEN GROUNDS
- GREENS TO GROUNDS
- HEREFORD GARDEN
- IFC SUSTAINABILITY
- MADISON HOUSE COMMUNITY GARDEN
- NET IMPACT
- OXFAM AMERICA @ UVA
- SLOW FOOD
- STUDENT COUNCIL SUSTAINABILITY COMMITTEE
- UVA COMMUNITY GARDEN

COLLABORATION

Equity and Environment Awards

The Civic Engagement Subcommittee launched the Equity & Environment Fund to catalyze projects and programs across UVA that explore the intersections of social and environmental issues.

SustainaPitch Night: Social Justice Edition

Large Project Winner - Greens to Grounds Boxes for Access UVA Students

To help address food insecurity for college students, Greens to Grounds has developed an anonymous process for Access UVA students to get six weeks of free local, sustainable food boxes.

Discovering Minority Leaders in Sustainability

Professor Michael Mason and his Peer Support Program Research, Design and Evaluation class developed a survey and research project to understand minority students' perspectives towards sustainability and food.

Green Career Services

The Outreach Working Group, Green Grounds, and the UVA Career Center collaboratively developed the Green Career Series, a collection of workshops, networking sessions and career fairs focused on building students' skills and connections in sustainability-related careers. The series was developed in response to student demand in alignment with the Sustainability Plan's engage goals.

Engaging Students in Environmental Justice & Activism

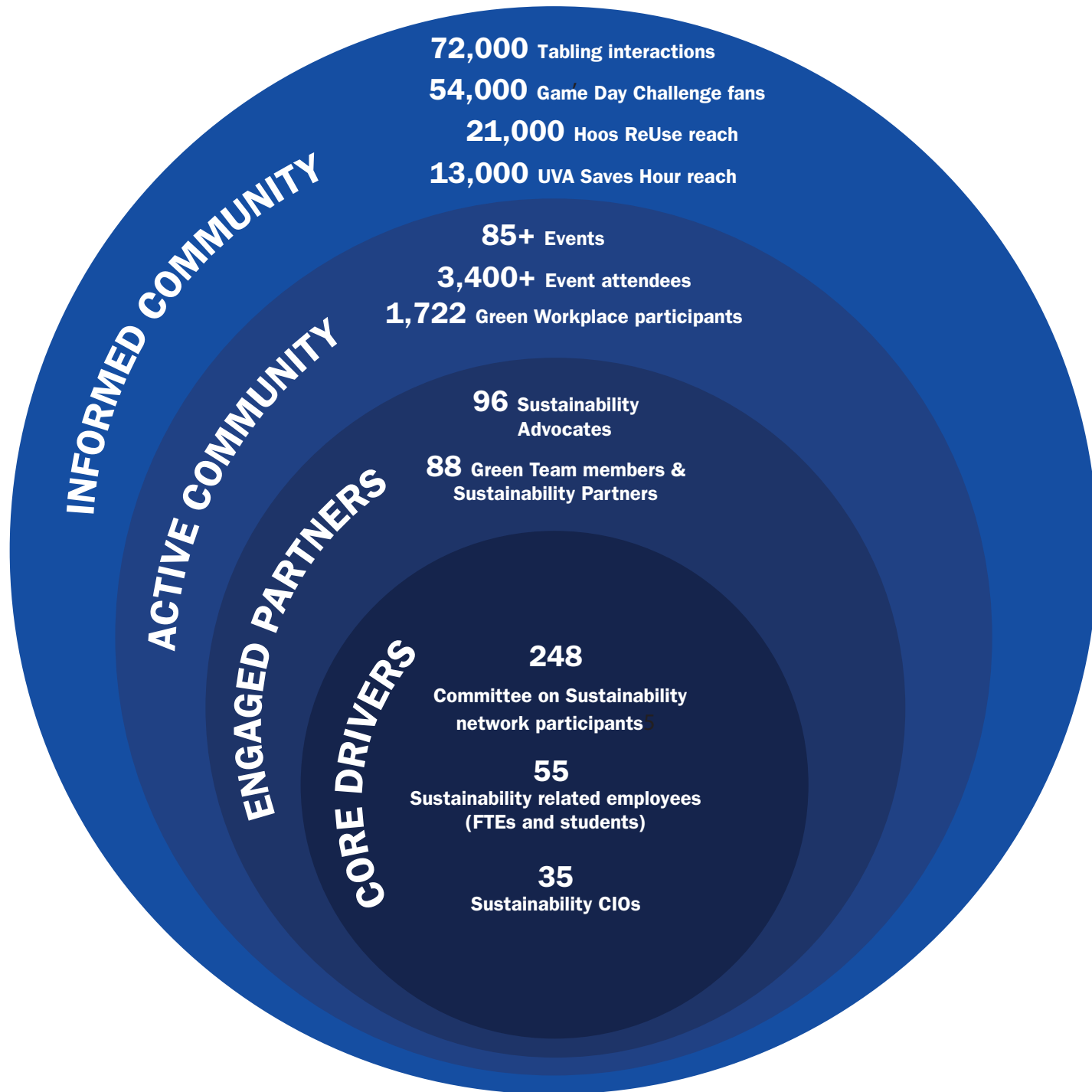
The Black Presidents Council & the Office of African American Affairs addressed food justice through Black Fridays, a weekly event in April to bring the UVA African American community together. Each Friday featured different food from across the world, with discussions on the social and environmental context of the food in the African American community.

City Schoolyard Garden Service

Roughly 40 UVA student volunteers installed gravel pathways, an arbor trellis, and new raised beds for Greenbrier Elementary students to grow their own produce and learn about sustainable food.

Visiting environmental justice researcher Dorcetta Taylor with Michael Mason and other UVA partners





COLLABORATION



Green Workplace Program

Now in its third year, the Green Workplace Program has over 23 workplaces, comprised of over 1,000 UVA employees working to embed sustainable practices into their places of work. New green teams have found innovative ways to reduce environmental impacts. Examples range from IM-Rec's powerless treadmills pilot, to the Weldon Cooper Center's single-serve coffee maker compostable coffee pod program.



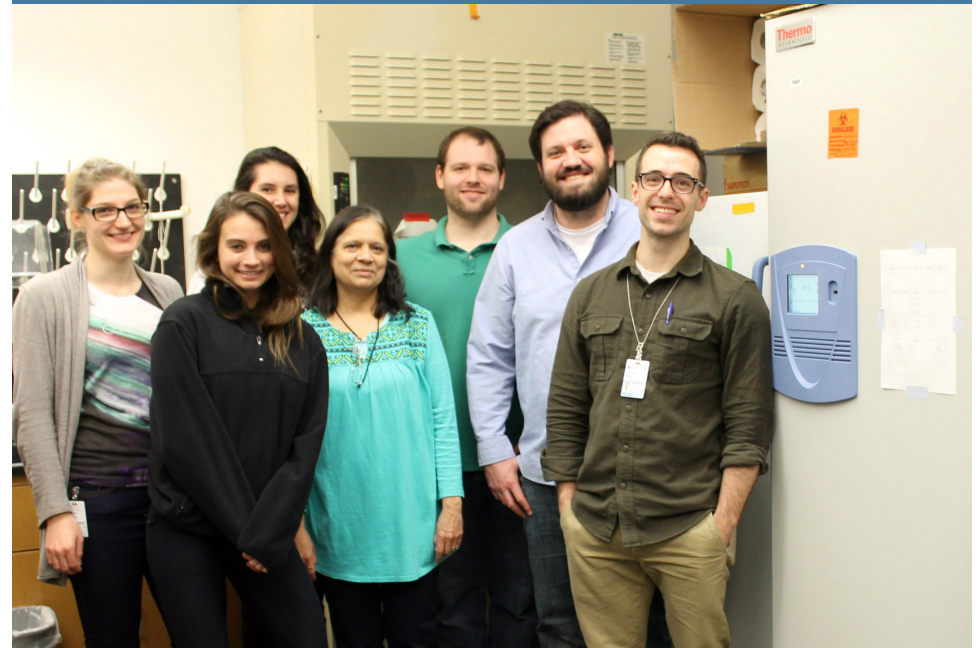
Sustainability Partners

The Sustainability Partners are a network of over 60 UVA employees that come together six times per year to learn more about sustainability from engaging speakers and from each other. Connected to the Green Workplace Program, Sustainability Partners brings in speakers to address key sustainability issues. This year, the program focused on topics such as Cradle to Cradle design, Charlottesville's bike and pedestrian plans, and even a green tour of the recently renovated, soon-to-be LEED certified Rotunda.

GREEN LABS

The Green Labs Program formally launched in late 2016, with the addition of a full-time Green Labs Specialist, to optimize and reduce environmental impacts of energy-intensive lab spaces at UVA. The Green Labs Program brings together strategic building system improvements and engagement with lab occupants to achieve the highest reductions in energy, water and waste.

This year, the Green Labs Program facilitated 15 labs participating in the North American Freezer Challenge to minimize energy consumption of cold storage. UVA received an Honorable Mention in the competition. The program also worked with labs to decommission eight cold storage freezers, host a Green Labs Resource Fair to highlight sustainable lab products, and initiated a Green Labs Pilot Program in two labs.



AWARENESS TO ACTION

OUTREACH EVENTS

Sustainability events bring the UVA community together to build community and raise awareness. With over 85 events throughout the year and over 3,000 event attendees, sustainability topics seem to be important to the UVA community. Highlights from the year included events focused on renewable energy, experiential sustainability, and exploring sustainability across diverse disciplines.





Bridging the Divide: Communicating Climate Change

As part of the Outreach Working Group's focus on sustainability career resources, the group partnered with the UVA Career Center, Green Grounds, the Frank Batten School of Leadership & Public Policy, and the Department of Environmental Sciences to host two green skills workshops.

Bringing in experts from the Center for Research on Environmental Decisions (CRED) at Columbia University, the workshops explored the challenges of communicating climate change and presented research-based tools for communicators to develop messages that encourage action.



2017 GameDay Challenge Basketball

A major milestone reached this year, Game Day Challenge Basketball, achieved a 93.4 percent diversion rate at the sold-out men's basketball game against UNC on February 27. This achievement was the result of Office for Sustainability, UVA Dining, UVA Recycling, JPJ staff,

and UVA Athletics' strategic coordination and the dedication of over 100 volunteers minimizing materials sent to the landfill.



World Water Reservoir Trek

World Water at UVA, a collaborative event series hosted by the Center for Global Health and several major co-sponsors, focused on global and local water issues and potential solutions to address the world's biggest challenges.

This year, the Office for Sustainability hosted a Ragged Mountain Reservoir Tour and Trek to educate an estimated 40 attendees about the sustainable design of the reservoir and the impacts of Charlottesville's water demand on local ecosystems.

Members of the Galloway lab in the UVA greenhouse



Stirring Up Food Justice with Bryant Terry

The Civic Engagement Subcommittee, in partnership with UVA Dining, City Schoolyard Garden, the Charlottesville Food Justice Network, the UVA Food Collaborative, and UCARE, hosted UVA's first environmental justice speaker as part of UVA's annual Community Martin Luther King, Jr. celebration. To highlight and advance dialogue around food justice issues in the Charlottesville and UVA communities, the team invited Bryant Terry, a James Beard Award winning chef and food justice advocate, to speak both at UVA and at the Jefferson School.

A roundtable lunch with Bryant Terry, facilitated by the Charlottesville Food Justice Network, focused on assessing Charlottesville's current food climate and some possible partnerships and solutions to increase access to sustainable food.

The keynote evening event held at the Jefferson School in downtown Charlottesville, brought together 300 community members, UVA faculty, students, and staff to see Bryant Terry's keynote address and cooking demo, as well as a panel of Charlottesville food justice leaders. The energy in the room was high, with engaged participants sharing a meal and learning from each other and Bryant Terry about plant-forward food and the historical and social barriers to healthy food.



UVA Dining utilized Bryant Terry's afro-vegan recipes to create an outstanding meal for attendees and African dance troupe Chihamba performed.



Farmers Market

To kick off Earth Week, UVA Dining hosted its first on-Grounds Farmers Market with 12 local vendors selling fresh produce and prepared goods. Over 500 students attended and over \$3,600 of local food was sold, with 100% of revenue from sales going to the

local vendors. Student groups focused on sustainable food were also present, such as Greens to Grounds, who sold out of their local strawberries in the first 30 minutes of the Farmers Market.



Sustainability Awards Banquet

UVA launched its first university-wide Sustainability Award to celebrate students, faculty, and staff who are leading UVA's sustainability efforts. Pulling from the academic and health system sides of UVA, 16 nominations were made within two weeks, with many well deserved submissions in support of their peers' work to advance sustainability. The first Sustainability Award winner, Suchita Chharia, received 5 nominations and was honored at the annual SustainaBanquet during Earth Week for her leadership on Green Grounds, the Committee on Sustainability and her commitment to building an inclusive sustainable community.



Earth Week Expo

The annual Earth Week Expo brought state-wide recognition for UVA's growing renewable energy portfolio, with Governor Terry McAuliffe cutting the ribbon for UVA's largest owned and operated solar array on Grounds, installed on Clemons Library.

An estimated 300 attendees heard Governor McAuliffe's remarks on the future of the solar industry in Virginia, as well to the remarks of Pat Hogan (UVA's Executive Vice President and Chief Operating Officer), Suchita Chharia (UVA Committee on Sustainability Student Representative), Angela Navarro (Deputy Secretary of Natural Resources) and Taylor Brown (Sun Tribe Solar co-founder). The Expo also featured exhibits from UVA and local sustainability groups, such as Babylon Micro-Farms, an undergraduate-led company, who brought in their table-top hydroponic garden to demonstrate their innovative solution for increasing access to sustainable food.





Governor McAuliffe cuts the ribbon to celebrate the solar installation on Clemons Library

FALL 2016 EVENTS

- JUNE 14 FM GIRLS DAY
- JUNE 23 UVA SAVES HOUR
- JUNE 27 ORIENTATION LEADER TRAINING
- JUNE 28 DESIGNING HEALTHY BUILDINGS
- JUNE 29 TIPS FOR A HEALTHY, BALANCED WORK DAY
- JUNE 30 MAINTAINING & SERVICING HEALTHY BUILDINGS
- JULY 19 SUSTAINABILITY PLAN OPEN HOUSE
- AUGUST 16 UVA SUSTAINABILITY RETREAT
- AUGUST 23 MOBILE REUSABLE OFFICE SUPPLY EXCHANGE
- MULTIPLE SUSTAINABILITY STATION & GREEN SUITES
- SEPTEMBER 7 COS RECRUITMENT FAIR
- SEPTEMBER 8 ENGINEERING, SCIENCE, AND TECH BLOCK PARTY
- SEPTEMBER 13 CSA & LOCAL FOOD HIGHLIGHT
- SEPTEMBER 24 TOMTOM FEST TABLING
- OCTOBER 6 SUSTAINAFORUM
- OCTOBER 7 NO IMPACT CONCERT
- OCTOBER 13 SUSTAINABILITY PLAN 101
- OCTOBER 15 GAME DAY CHALLENGE-FOOTBALL
- OCTOBER 17 LEED ROTUNDA TOUR
- OCTOBER 20 RENEWABLES RESEARCH FAIR
- OCTOBER 21 FALL CLOTHING SWAP
- OCTOBER 27 ENERGY ACTION TOWN HALL
- NOVEMBER 1 SUSTAINABILITY RESUME WORKSHOP
- NOVEMBER 8 SUSTAINAFORUM
- NOVEMBER 8 PLASTIC BAG EXCHANGE
- NOVEMBER 15 UVA SUSTAINABILITY DAY- THINK GLOBAL, ACT LOCAL
- NOVEMBER 15 AMERICA RECYCLES DAY
- NOVEMBER 15 GREEN CAREER CONVERSATIONS
- NOVEMBER 15 MORVEN KITCHEN GARDEN WORK DAY
- NOVEMBER 15 BIKE MAINTENANCE WORKSHOP
- NOVEMBER 28 FOOD FILM FORUM
- DECEMBER 1 GREEN RESTAURANT CELEBRATION
- DECEMBER 6 SOLAR RIBBON CUTTING

UVA SUSTAINABILITY DAY

TUESDAY NOV. 15

MORVEN KITCHEN GARDEN WORKDAY
9am - 11am - Morven Farm

AMERICA RECYCLES DAY FAIR
11am - 2pm - Newcomb Patio

POP UP LOCAL FOOD STAND
11am - 2pm - Fresh Food Co.

THINK GLOBAL, ACT LOCAL EXPO
2pm - 3:00pm - Newcomb Plaza

GREEN CAREER CONVERSATIONS
3:30pm - 5:30pm - Newcomb 470

BIKE - BIKETVA POP-UP MAINTENANCE WORKSHOP
5:30pm - Newcomb Plaza

A celebration of our endless pursuit of a sustainable future

SUSTAINABILITY.VIRGINIA.EDU

STIRRING UP FOOD JUSTICE

WITH

BRYANT TERRY

**WEDNESDAY
JANUARY 18, 7:30PM**

**JEFFERSON SCHOOL
(233 4TH ST NW)
CARVER REC.
MULTI-PURPOSE ROOM**

LIVE COOKING DEMO & TALK
2017 COMMUNITY MARTIN LUTHER KING CELEBRATION

Bryant Terry, a 2015 James Beard Foundation Lead Award-winning chef, educator, and author will share insights on providing healthy food choices for all wh cooking up examples of his signature Afro-Vegan cuisine.

MLK.VIRGINIA.EDU/BRYANTTERRY

HANGOUT DAY

OCT 16 2 - 4 PM

SAVE MONEY

DID YOU KNOW?
MACHINE DRYING CLOTHES USES 3.5 KWH. THAT'S EQUIVALENT TO DRIVING A CAR FOR 5 MILES.

ENERGIZE UVA **DORM ENERGY RACE**

SUSTAINABILITY.VIRGINIA.EDU

GAME DAY CHALLENGE

VOLUNTEER TO HELP UVA WIN!
OCTOBER 15
FREE T-SHIRT AND FOOD

HOOS RECYCLE!

SUSTAINABILITY.VIRGINIA.EDU

World Water EVENTS

<p>Wednesday, March 15</p> <p>Amphibious Territories and Urban Wetlands</p> <p>Dr. Benner Professor, School of Architecture 5:30pm (Carver 108)</p>	<p>Thursday, April 13</p> <p>Flint, Two Years Later: Water Quality, Infrastructure and Social Justice</p> <p>Dr. Probst Professor, Department of Civil and Environmental Engineering Graduate Education in the Graduate School, Virginia Tech</p>
<p>Tuesday, March 28</p> <p>The Next Urban Water Revolutions: A Path for Addressing Water Scarcity</p> <p>David Sedlak Professor and Director Institute for Environmental Science University of California, Berkeley</p>	<p>Dr. Sullivan Sullivan and CDE, Arlington</p> <p>Cole Jaffe Director, Professor of Law Director, Environmental and Regulatory Law Clinic University of Virginia</p>
<p>Friday, March 24</p> <p>Rugged Mountain Reservoir Trek</p> <p>Dylan Richter Staff Water Scientist, The Nature Conservancy</p>	<p>Saturday, April 8</p> <p>Water Quality Testing at Riverview Park</p> <p>Robin Savage Executive Director, Roanoke Conservation Alliance</p>

For more information: EVA.sustainability.virginia.edu

CONCERT GARDEN 8 **NO IMPACT** **101** **SUSTAINABILITY PLAN** **RESEARCH FAIR** **PLAN TOWN HALL**

OCT 7 **OCT 13** **OCT 20** **OCT 27**

6 - 8 PM **6 - 8 PM** **2 - 4 PM** **6 - 8 PM**

SPRING 2017 EVENTS

- JANUARY 18 STIRRING UP FOOD JUSTICE WITH BRYANT TERRY
- FEBRUARY 2 GREEN CAREER CONVERSATIONS
- FEBRUARY 2 LIVING LAB LECTURE IN ENVI SCI
- FEBRUARY 15 CRADLE TO CRADLE DISCUSSION
- FEBRUARY 17 VA GREEN TRAVEL CONFERENCE
- FEBRUARY 17 SUSTAINAFORUM
- FEBRUARY 26 FOOD FILM FORUM
- FEBRUARY 27 GAME DAY CHALLENGE- BASKETBALL
- MULTIPLE GLOBAL DEVELOPMENT ORG DINNERS
- MARCH 13 FLINT, TWO YEARS LATER
- MARCH 15 AMPHIBIOUS TERRITORIES AND URBAN WETLANDS
- MARCH 18 CLASS COUNCIL SERVICE FAIR
- MULTIPLE DAYS ON THE LAWN TABLING
- MARCH 21 COMMUNICATING CLIMATE CHANGE WORKSHOP
- MARCH 24 RAGGED MOUNTAIN RESERVIOR TOUR & TREK
- MARCH 24 TECH TAKE BACK
- MARCH 28 THE NEXT URBAN WATER REVOLUTIONS
- APRIL 5 SUSTAINABILITY & IMPACT CAREER FAIR
- APRIL 8 WATER QUALITY TESTING
- APRIL 17 FARMERS MARKET
- APRIL 17 HUNGER ALLIANCE
- APRIL 17 COMMUNITY WRENCH NIGHT
- APRIL 18 EARTH WEEK EXPO & SOLAR RIBBON CUTTING
- APRIL 19 SUSTAINABANQUET
- APRIL 19 FUTURE OF FOODS PANEL DISCUSSION
- APRIL 20 FARM TO FORK LUNCH
- APRIL 20 YOGA IN THE GARDEN
- APRIL 20 SUSTAINAPITCH NIGHT: SOCIAL JUSTICE EDITION
- APRIL 20 COMPOSTING PANEL AND FILM SCREENING
- APRIL 21 GREEN LABS RESOURCE FAIR
- APRIL 21 ACADEMICAL VINTAGE - MARKET AND CLOTHING SWAP
- APRIL 22 BETA BRIDGE STREAM CLEAN UP
- APRIL 23 CVILLE ECO-FAIR
- MAY 3 MADISON HOUSE & OAAA COOK OUT
- MAY 3 HOOS REUSE
- MAY 16 COMPLETE STREETS TALK

HOOS REUSE

DONATE
your gently used clothing, furniture, electronics,
non-perishable foods and other useful stuff to benefit
CHARLOTTESVILLE CHARITIES

**ON-GROUNDS
MAY 3-13**

**OFF-GROUNDS
MAY 22-23**

UNIVERSITY OF VIRGINIA **sustainability.virginia.edu** SUSTAINABILITY - UVA
From the Grounds Up

A WEEK OF EVENTS CELEBRATING OUR PLANET
EARTH WEEK

APRIL 17 - 23

one helluVa planet

17 Mon.	18 Tue.	19 Wed.	20 Thur.	21 Fri.	22 Sat.	23 Sun.
UVA FARMERS MARKET	EARTH WEEK EXPO	SUSTAINA BANQUET	SUSTAINA PITCH NIGHT	ACADEMICAL VINTAGE MARKET	22 EARTH DAY OF ACTION	CVILLE ECO FAIR
3:00PM - 6:00PM	10:30AM - 2:30PM	5:30PM - 7:00PM	5:30PM - 7:00PM	12:00PM - 4:00PM		11:00AM - 5:00PM
AMPHI-THEATER	NEWCOMB BALLROOM	NEWCOMB BALLROOM	OPEN GROUNDS	1515 UNIVERSITY AVE		DOWNTOWN MALL

FOR FULL SCHEDULE OF EVENTS VISIT: **SUSTAINABILITY.VIRGINIA.EDU**

SUSTAINABILITY - UVA From the Grounds Up

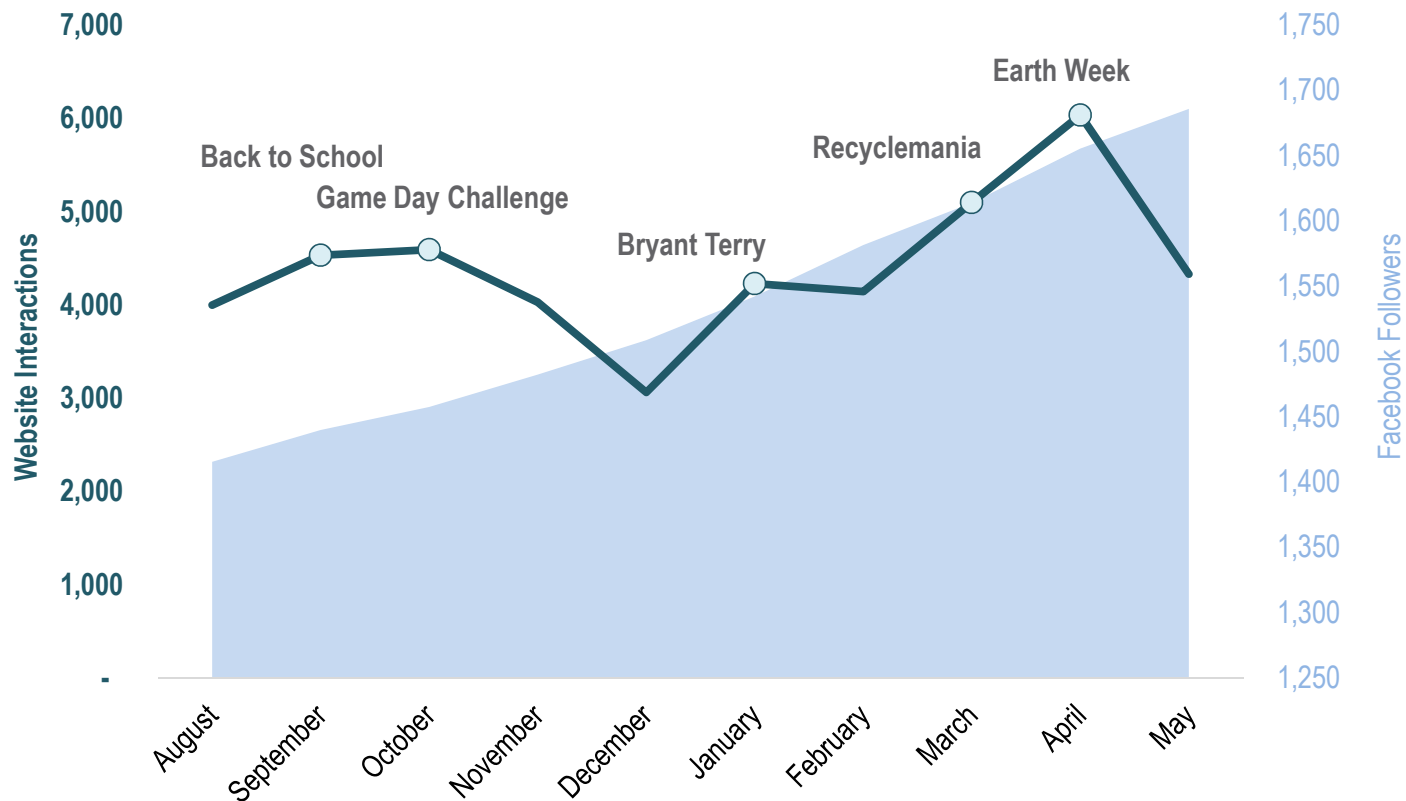
AWARENESS TO ACTION

COMMUNICATIONS

60+ MEDIA ARTICLES ABOUT UVA SUSTAINABILITY INITIATIVES

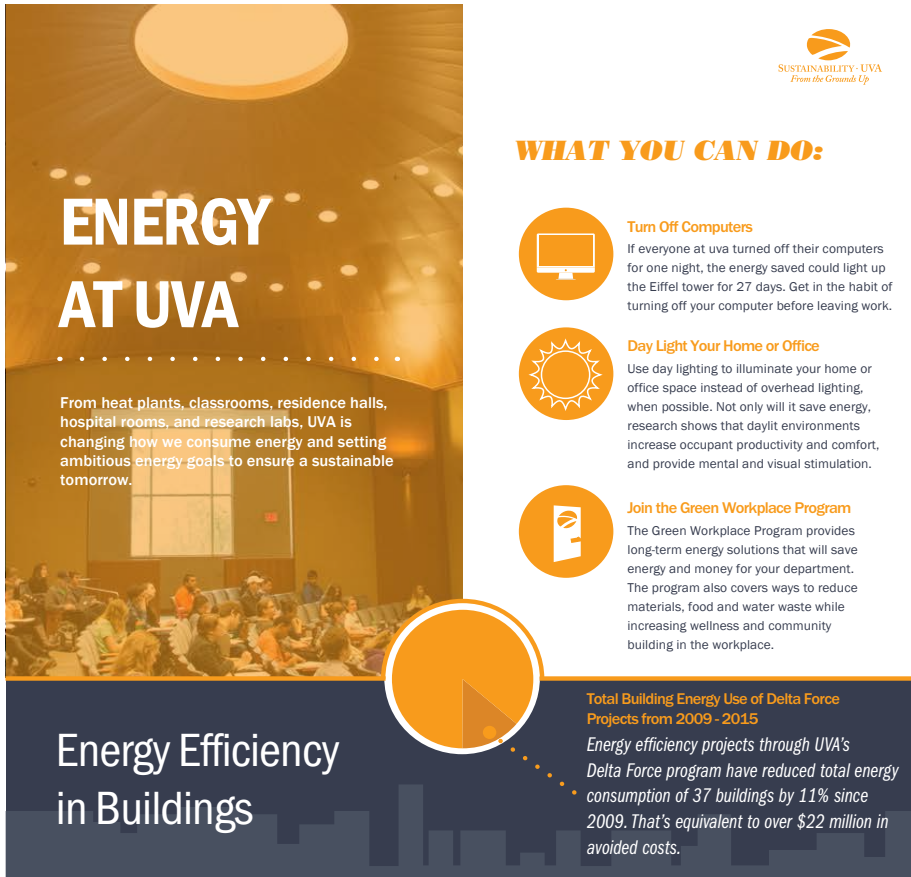
2,694 NEWSLETTER FOLLOWERS

3,364 SOCIAL MEDIA FOLLOWERS



GREEN TIPS

To help support a sustainable lifestyle, the Office for Sustainability releases a green tip monthly. Most have a theme, such as Energy in October and Greening your Holidays in December. All green tips highlight sustainable actions individuals can take on and off Grounds. They can all be downloaded from the UVA Sustainability website.



ENERGY AT UVA

From heat plants, classrooms, residence halls, hospital rooms, and research labs, UVA is changing how we consume energy and setting ambitious energy goals to ensure a sustainable tomorrow.

Energy Efficiency in Buildings

WHAT YOU CAN DO:

- Turn Off Computers**
If everyone at UVA turned off their computers for one night, the energy saved could light up the Eiffel tower for 27 days. Get in the habit of turning off your computer before leaving work.
- Day Light Your Home or Office**
Use day lighting to illuminate your home or office space instead of overhead lighting, when possible. Not only will it save energy, research shows that daylight environments increase occupant productivity and comfort, and provide mental and visual stimulation.
- Join the Green Workplace Program**
The Green Workplace Program provides long-term energy solutions that will save energy and money for your department. The program also covers ways to reduce materials, food and water waste while increasing wellness and community building in the workplace.


Total Building Energy Use of Delta Force Projects from 2009 - 2015
Energy efficiency projects through UVA's Delta Force program have reduced total energy consumption of 37 buildings by 11% since 2009. That's equivalent to over \$22 million in avoided costs.

WHAT IS NEXT AT UVA

- * Increase energy derived from renewable resources
- * Eliminate coal as a fuel source within the next 10 years

UVA seeks to provide energy that is cost effective, lowers emissions and ensures reliable power for our community. Learn more about UVA's energy & sustainability goals in the UVA Sustainability Plan.

SUSTAINABILITY.VIRGINIA.EDU



HOW TO MAKE A DIFFERENCE AT UVA

IF YOU WANT TO REDUCE ENVIRONMENTAL IMPACTS AT UVA
Join an Environmental Stewardship Subcommittee working group. There are 12 working groups tackling sustainability issues in water, energy, waste, stormwater and much more.

HERE'S HOW: Sustainability Recruitment Fair
Wednesday, Sept 7, 4:00-5:30PM, Clark Hall Lobby

IF YOU WANT TO EDUCATE & PROMOTE A MORE SUSTAINABLE LIFESTYLE
HERE'S HOW: Apply online at sustainability.virginia.edu/programs/advocates.html

IF YOU WANT TO NETWORK WITH FELLOW FACULTY & STAFF
Join the Sustainability Partners

HERE'S HOW:
September 13: Which CSA might be right for you?
Time & Location: Noon - 1:00pm in Newcomb Hall Gallery
Speaker: Jess Palmer from the Piedmont Environmental Council.

October 17: How "green" is the Rotunda?
Time & Location: 4:00-5:00pm meet on Lawn side of Rotunda
Speaker: Brian Hogg, Senior Historic Preservation Planner, will give us a quick (30 minute) behind-the-scenes tour of the UVA

February 15: What is Cradle2-Cradle Design?
Time & Location: Noon-1:00pm in Newcomb Hall Gallery
Speaker: Ken Alston, MDC's CEO and President of Consulting and Education Services

IF YOU WANT TO BUILD A SUSTAINABLE, EQUITABLE, COMMUNITY
Join the Civic Engagement Subcommittee working groups.

HERE'S HOW: Sustainability Recruitment Fair
Wednesday, Sept 7, 4:00-5:30PM, Clark Hall Lobby

GET INVOLVED SUSTAINABILITY.VIRGINIA.EDU

STEWARD

RESOURCES & PEOPLE

ENVIRONMENTAL FOOTPRINT

GREENHOUSE GAS EMISSIONS

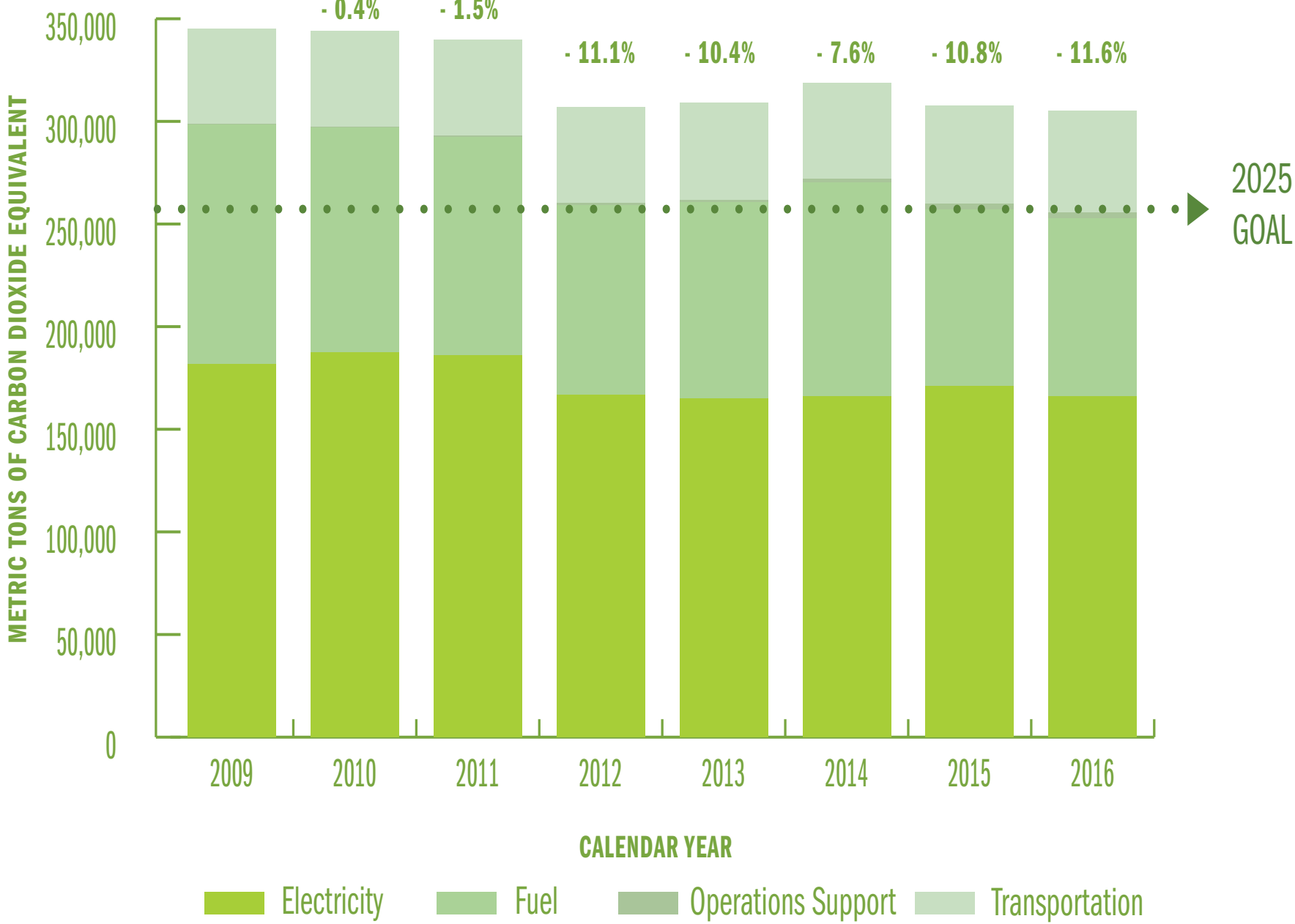
Goal: Reduce greenhouse gas (GHG) emissions 25% below 2009 levels by 2025.

UVA's Greenhouse Gas Action Plan, released in spring 2017, outlines a strategy to achieve the greenhouse gas reduction goal endorsed by the BOV, which will also help the University achieve its nitrogen reduction goal. UVA's Greenhouse Gas Action Plan seeks to bring alignment and clarity to UVA staff, faculty, students, and alumni actively and collaboratively implementing strategies within the plan. Additionally, the Action Plan aims to provide the UVA community and its partners with a transparent roadmap of specific strategies for how the University seeks to meet its GHG emissions reduction goal, currently projected to require a reduction of approximately 120,000 Metric Tons of Carbon Dioxide Equivalent (MTCDE).

In 2009, the baseline year for emissions analysis, the total greenhouse gas emissions footprint was 345,196 metric tons of carbon dioxide equivalent (MTCDE). In 2016, emissions decreased to 305,030 MTCDE, an 11.6 percent reduction in emissions compared to 2009. This decrease is due primarily to extensive energy efficiency and conservation work in existing buildings and district energy plants, reduced coal consumption on-Grounds, and a shorter heating season compared to previous years. UVA's GHG footprint includes the Health System, which contributes approximately 40 percent of the total emissions produced by the University. Expansion to the University's offerings has resulted in growth in both population and building area. Since 2009, there has been a population increase of 5.2% (2,207 students, faculty, and staff). To support the University's growth, 48 facilities have been constructed or acquired since 2009, resulting in an increase of approximately 2.4 million square feet (a 16.2 percent increase) included within the boundaries defined for UVA's GHG inventory. The University's commitment to achieving this goal in light of the continuing expansion is driving heavy investments in sustainability efforts to enhance the University's operations and building portfolio.

UVA GREENHOUSE GAS FOOTPRINT

2009 - 2016



ENVIRONMENTAL FOOTPRINT

ENERGY USE

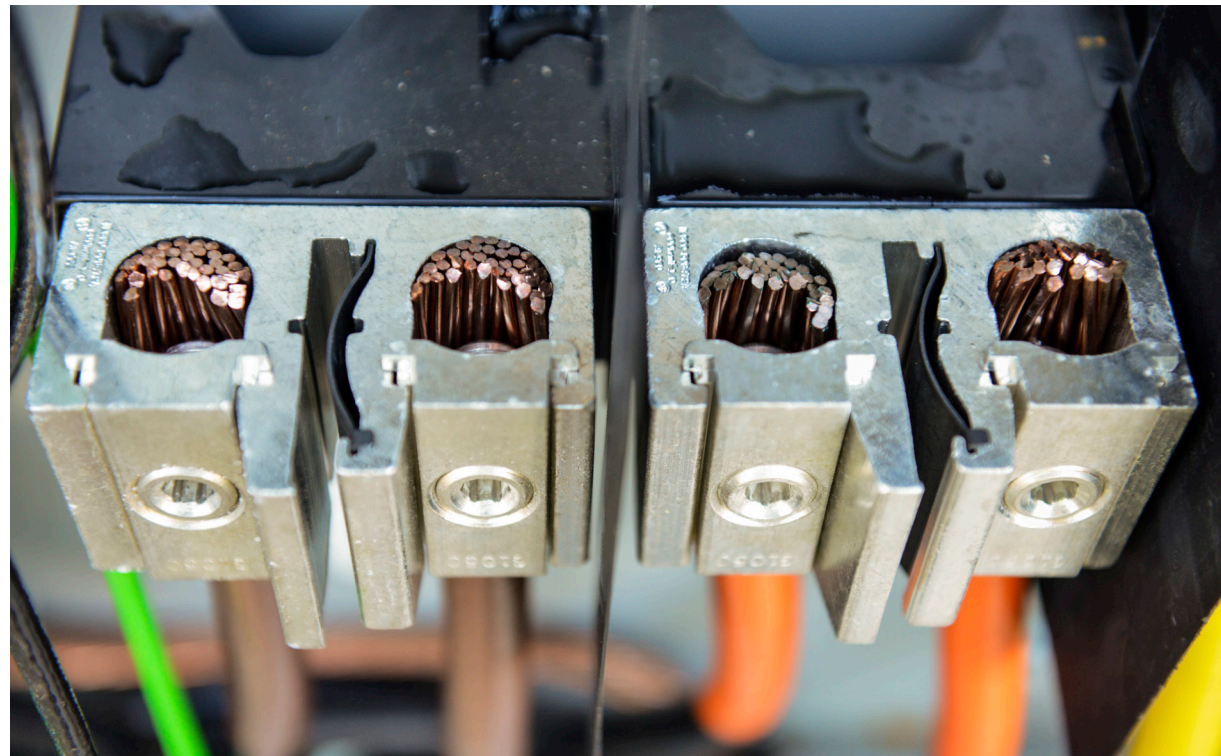
Goal: Reduce building energy use intensity 20% below 2010 levels by 2020.

UVA reduced its energy use intensity, defined as total energy use divided by total square footage, by 9.2 percent between 2010 and 2016. This is a result of extensive retro-commissioning work in buildings and initiatives in the heating and chiller plants to improve the efficiency of energy generation.

In calendar year 2016, energy-related activities yielded more than \$5 million in avoided costs and more than 20,000 tons of avoided greenhouse gas emissions (MTCDE). Since FY2007-08, conservation activities at the University have presented over \$32 million in avoided utility costs.

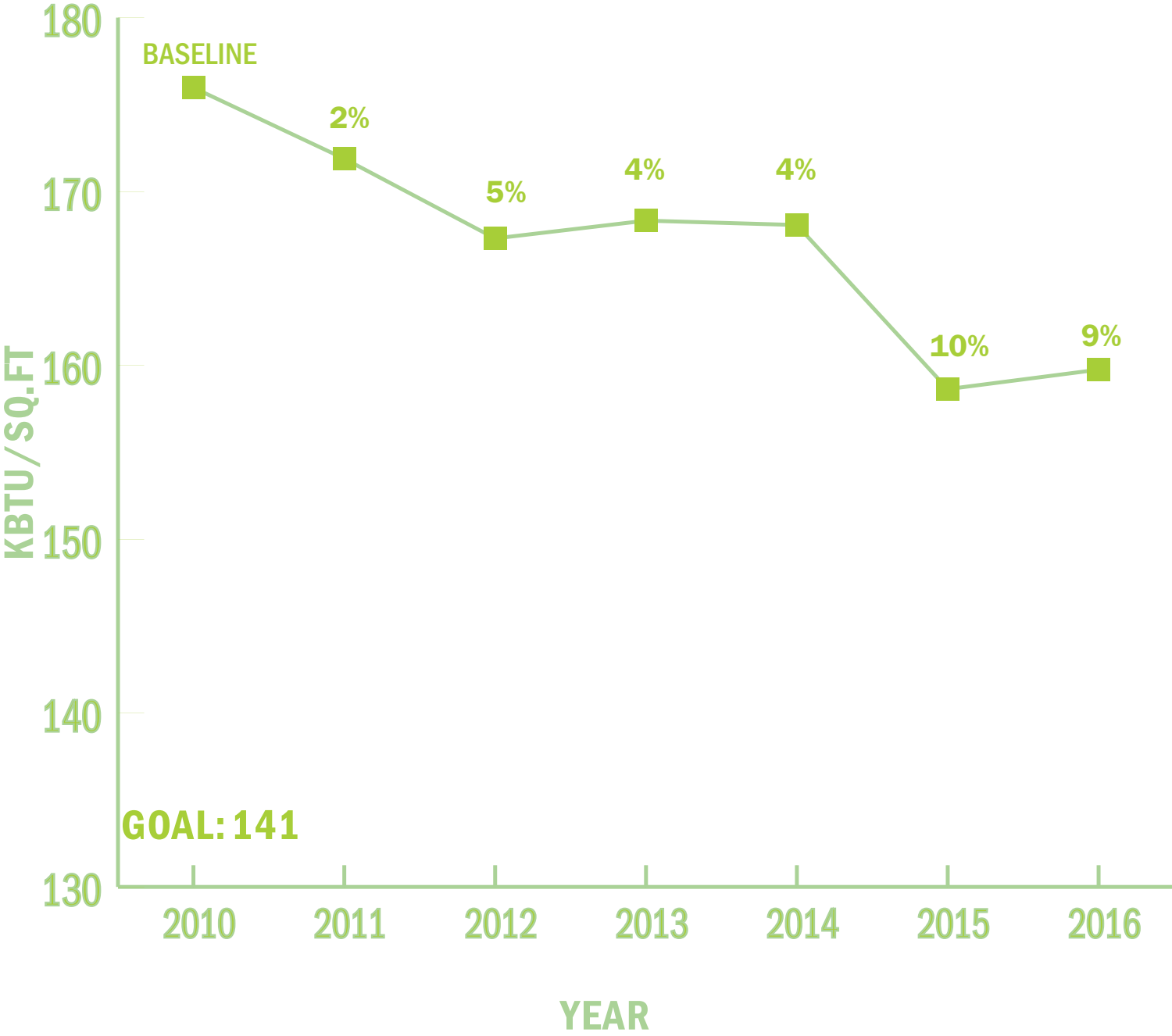
Since fiscal year 2007-08, \$10.3 million has been invested in the Delta Force retro-commissioning initiative, focused on deep energy reductions in UVA's most energy-intensive buildings. With an avoided cost to date of nearly \$24.9 million, the simple return on investment is approximately 2.4:1 since the program's inception.

Having completed its first full year of operation since its conversion to a low temperature hot water plant with heat recovery units, the North Grounds Mechanical Plant is using almost half the energy and 10 percent less water than it did when operating with the old conventional boilers and chillers.



ENERGY USE INTENSITY

PERCENT IMPROVEMENT FROM BASELINE



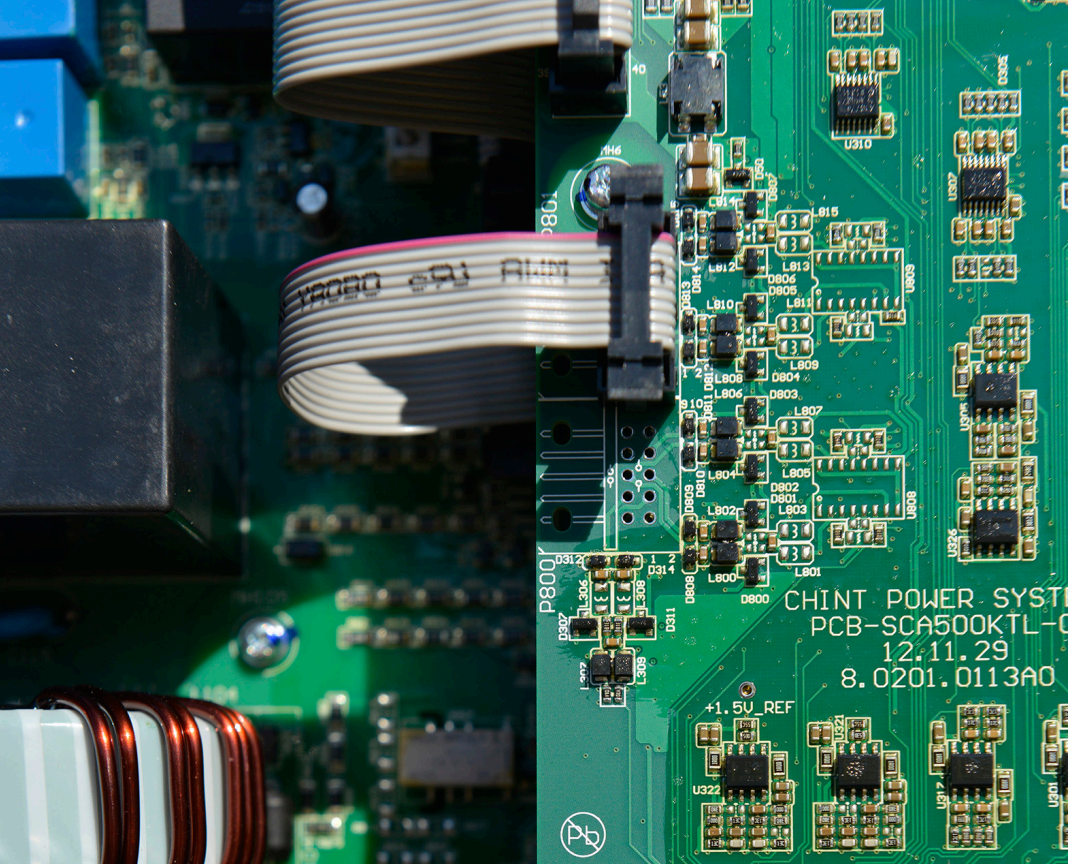


Renewable Energy

UVA's renewable energy portfolio has expanded greatly in the past year, under three models: off-Grounds utility scale solar photovoltaic (PV), rooftop solar PV owned by UVA, and roof space leased to Dominion Virginia Power for solar PV owned by the utility.

In 2016-17, UVA entered into power purchase agreements with Dominion Virginia Power to purchase **100 percent of the output of two new utility-scale solar power projects**. When completed in late 2018, these two projects will generate **enough solar power to offset 21 percent of UVA's power consumption and 32,000 MTCDE of its greenhouse gas emissions each year**. The 17 MW Hollyfield project, consisting of 65,000 panels on 160 acres in King William County, has peak capacity to power the equivalent of up to 4,250 average homes. Under the 15 MW Puller project agreement, the University will also purchase the entire output of electricity produced at a 120-acre Middlesex County solar facility for the next 25 years.

On Grounds, solar panels have been installed on Clemons Library, Skipwith Hall, Ruffner Hall, and the UVA Bookstore, all within the past year and a half. The 126 kW solar PV array (324 panels) on Clemons Library was dedicated by Governor McAuliffe in April and is estimated to provide up to 15% of the building's electricity use. The 15 kW solar PV project on the newly-constructed Skipwith Hall building is paired with a green roof. Additionally, the 450 kW of solar panels in operation atop Ruffner Hall and the UVA Bookstore feed directly into the electric grid as part of Dominion's Solar Partnership Program.



ENVIRONMENTAL FOOTPRINT

TRANSPORTATION

Thanks to on-going efforts in Parking & Transportation (P&T), the Office of the Architect, and more, members of the UVA community have many options for getting to and from Grounds without having to rely on single-occupancy vehicles. The Transportation Demand Management division of P&T strives to make mass transit and active transportation modes as efficient and user friendly as possible. Services include University Transit Service bus routes that complement the Charlottesville Area Transit system, the UBIke system that allows members to check bikes out from more than 20 hubs across Grounds, as well as programs like Cavpool, Zipcar, Zimride, and occasional parking permits.

BIKING AROUND GROUNDS

Commuting by bike is fun and safe when you know the rules of the road and follow safety precautions. Inspect your bike by checking your tires and brakes before you hit the road. Don't forget to grab a helmet and bike lights!

RULES OF THE ROAD



Obey all traffic laws, signs, and signals



Ride with the flow of traffic



Stay off sidewalks



Wear a helmet* and ride with bike lights



Be Predictable—signal when turning



Yield to pedestrians

*UBike users get 15% off the purchase of a helmet at Blue Ridge Cyclery with membership confirmation

BICYCLE RESOURCES

UBIKE
UBike enhances mobility around Grounds with easy to reserve and ride bikes. Use them to get to class or run errands

UVA SMART TRANSIT MAP
An online portal for all your UVA transit needs. With interactive maps, guides, and tips

BIKE UVA
Bike UVA promotes safe biking on Grounds. They hold maintenance and traffic skills workshops

BIKE FIX-IT STATIONS
Need to adjust your bike? Stop by the Fix-It stations at Clark, Campbell, O'Hill, Rank, or Student Health

GREEN TRANSIT TIPS

-  Biking and walking is healthy. The American Heart Association suggests 30 minutes of cardio each day to reduce the risk of heart attacks
-  Try public transportation. UTS and CAT are free community bus services for UVA students, faculty and staff
-  Biking to work once a week can reduce your commuting emissions by 14% annually
-  Want to save gas while carpooling? Cruise control reduces fuel consumption by 7%
-  By turning off your car if idling for more than 1 minute can save up to 14% of energy
-  Want to learn how to fix your bike? Bike UVA and Charlottesville Community Bikes hosts free bike maintenance sessions. Charlottesville is also home to 4 bike shops



UNIVERSITY OF VIRGINIA
Parking and Transportation

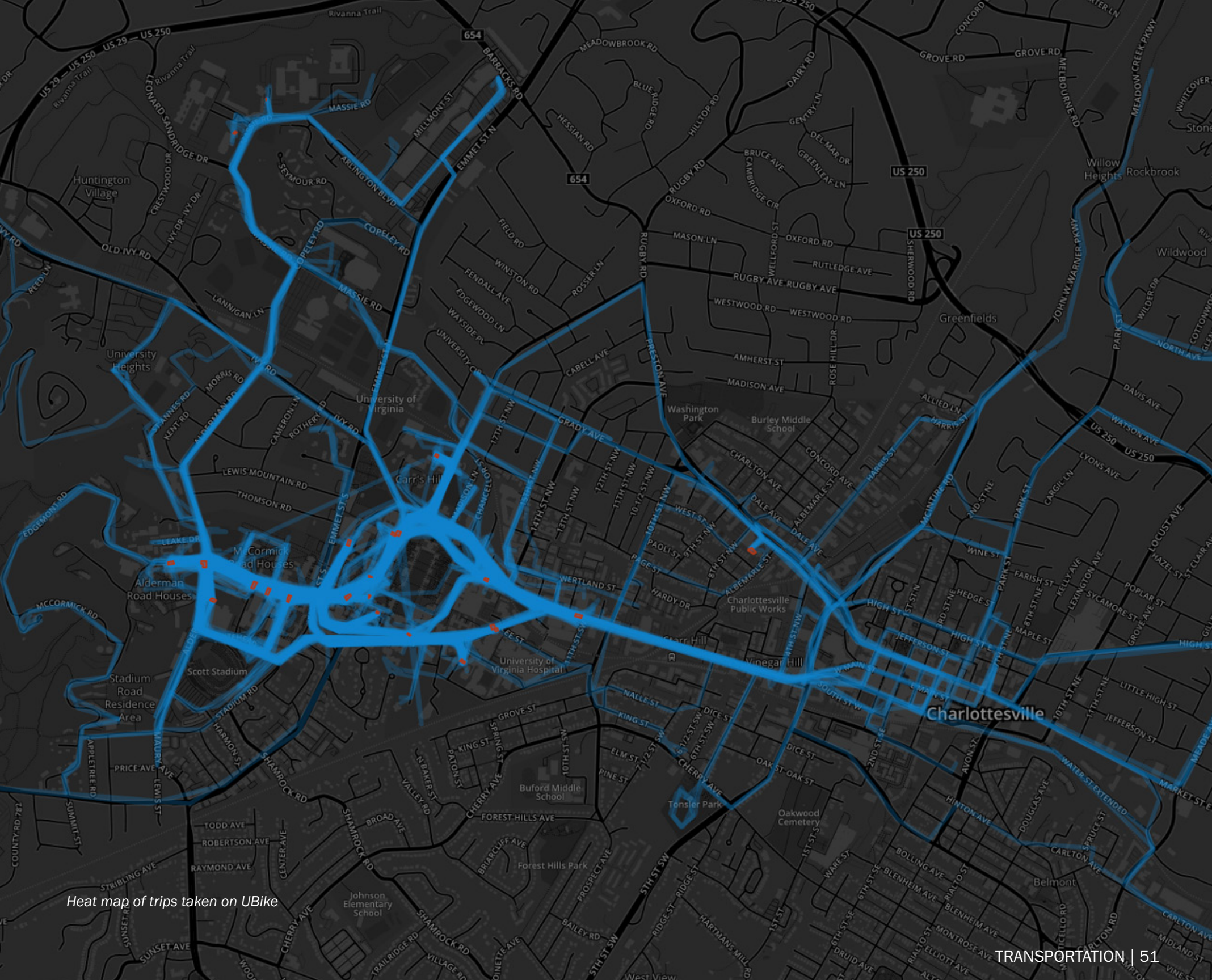
For more information about bicycling and other sustainable transportation options at the University of Virginia, please visit www.virginia.edu/parking/TDM or call: 434.924.0016

UVA Department of Parking and Transportation
1101 Millmont Street, P.O. Box 400000







Heat map of trips taken on U Bike

ENVIRONMENTAL FOOTPRINT

NITROGEN

Goal: Reduce reactive nitrogen losses to the environment 25% below 2010 levels by 2025.

UVA's nitrogen footprint measures the amount of reactive nitrogen (N) released to the environment as a result of UVA's resource use.

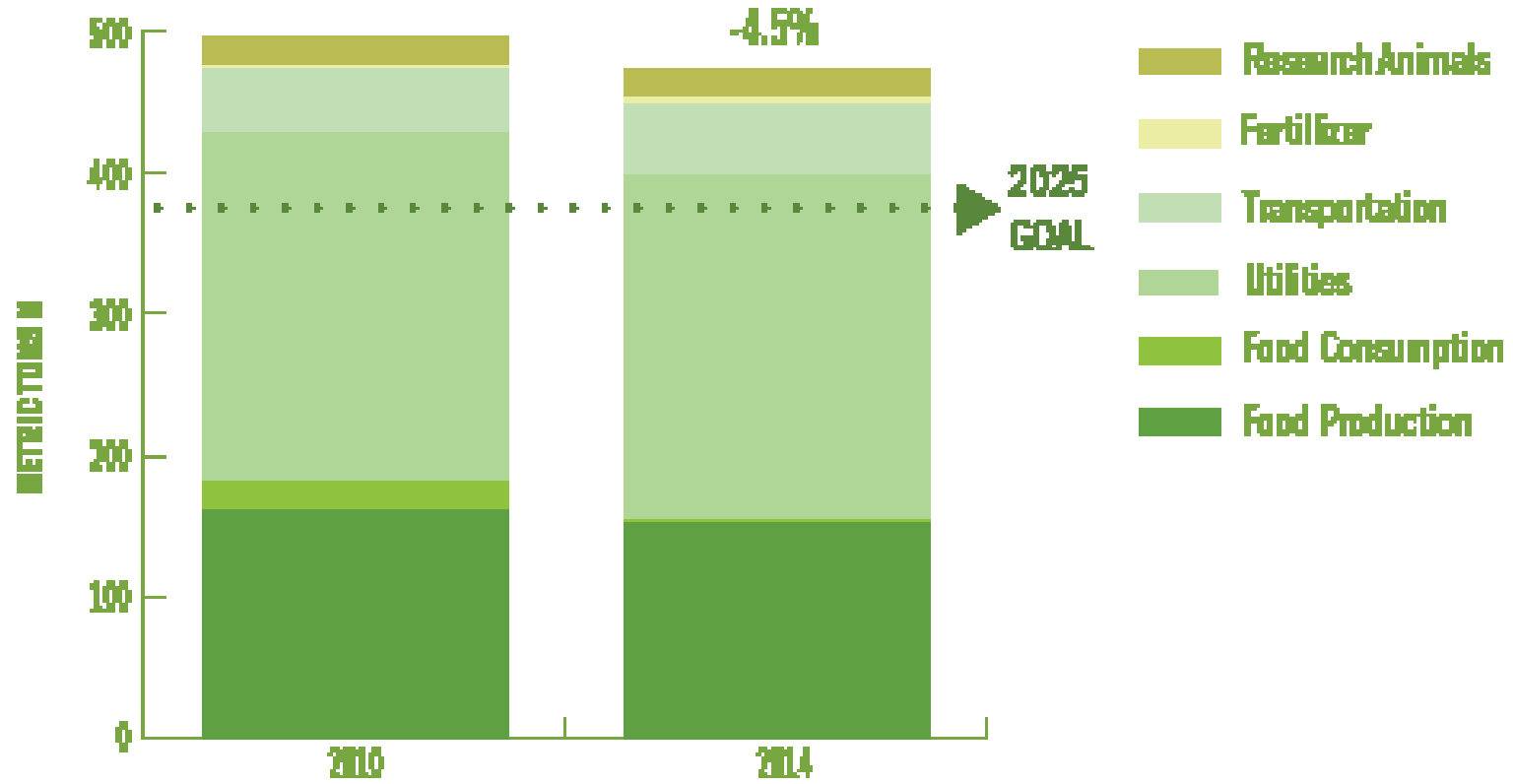
From 2010 to 2014, UVA has reduced its N footprint by 4.5 percent, despite increases in both square footage and population. This reduction is attributed to improvements in sewage treatment, less coal burned at the Main Heating Plant and a reduction in beef consumption.

UVA is making great strides towards reaching its 25 percent reduction goal. Planned strategies under the Greenhouse Gas Action Plan, such as increasing renewable energy and reducing coal combustion, would reduce the N Footprint significantly. Other strategies to reduce UVA's N footprint include replacing some of the animal products served in dining halls with plant-based products. For more detailed information, see the 2014 UVA Nitrogen Footprint Report.



Attendees of the Nitrogen Footprint Network's 2017 annual meeting, hosted at UVA

NITROGEN FOOTPRINT RESULTS 2010 - 2014



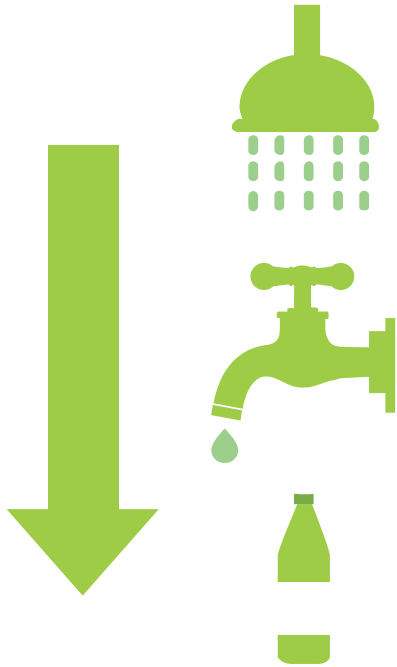
ENVIRONMENTAL FOOTPRINT

WATER

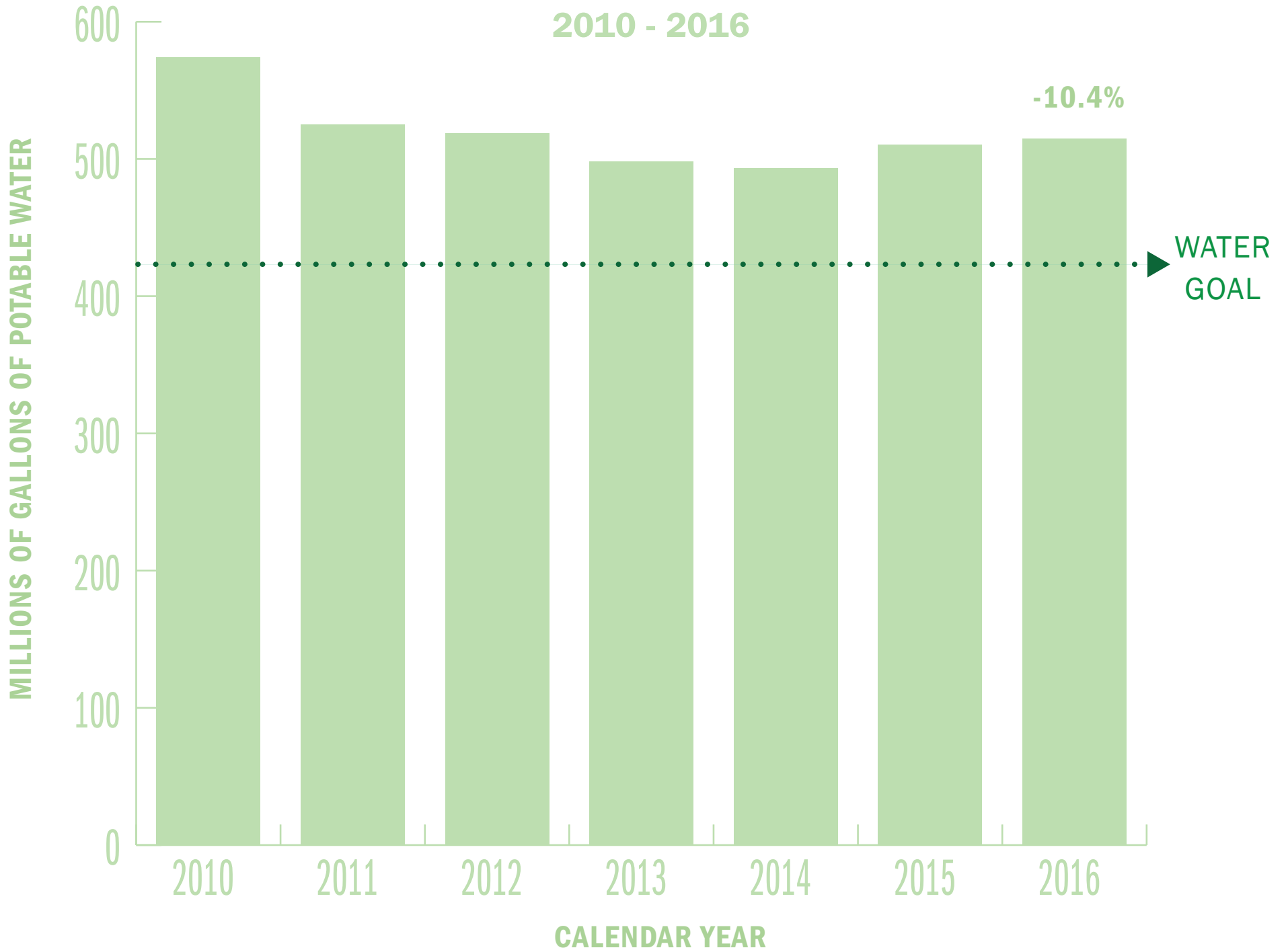
Goal: Reduce potable water use 25% below 2010 levels by 2020.

Total water usage in 2016 was down more than 23.4 percent from its peak in 1999 despite growth in population and area served. Since 2010, the baseline year for the goal, total water use is down 10.4 percent. This is due to water efficiency and conservation work in buildings and water recovery projects such as collecting air conditioning condensate for use in the chiller plants.

Students refill their water bottles using UVA's new hydration station, made possible by a GIFT grant



UVA POTABLE WATER CONSUMPTION 2010 - 2016



ENVIRONMENTAL FOOTPRINT

MATERIALS & WASTE

Goal: Reduce the total tonnage of waste generated at UVA 50% below 2014 amounts by 2035.

Goal: Landfill less than 2,000 tons of waste annually by the year 2035.

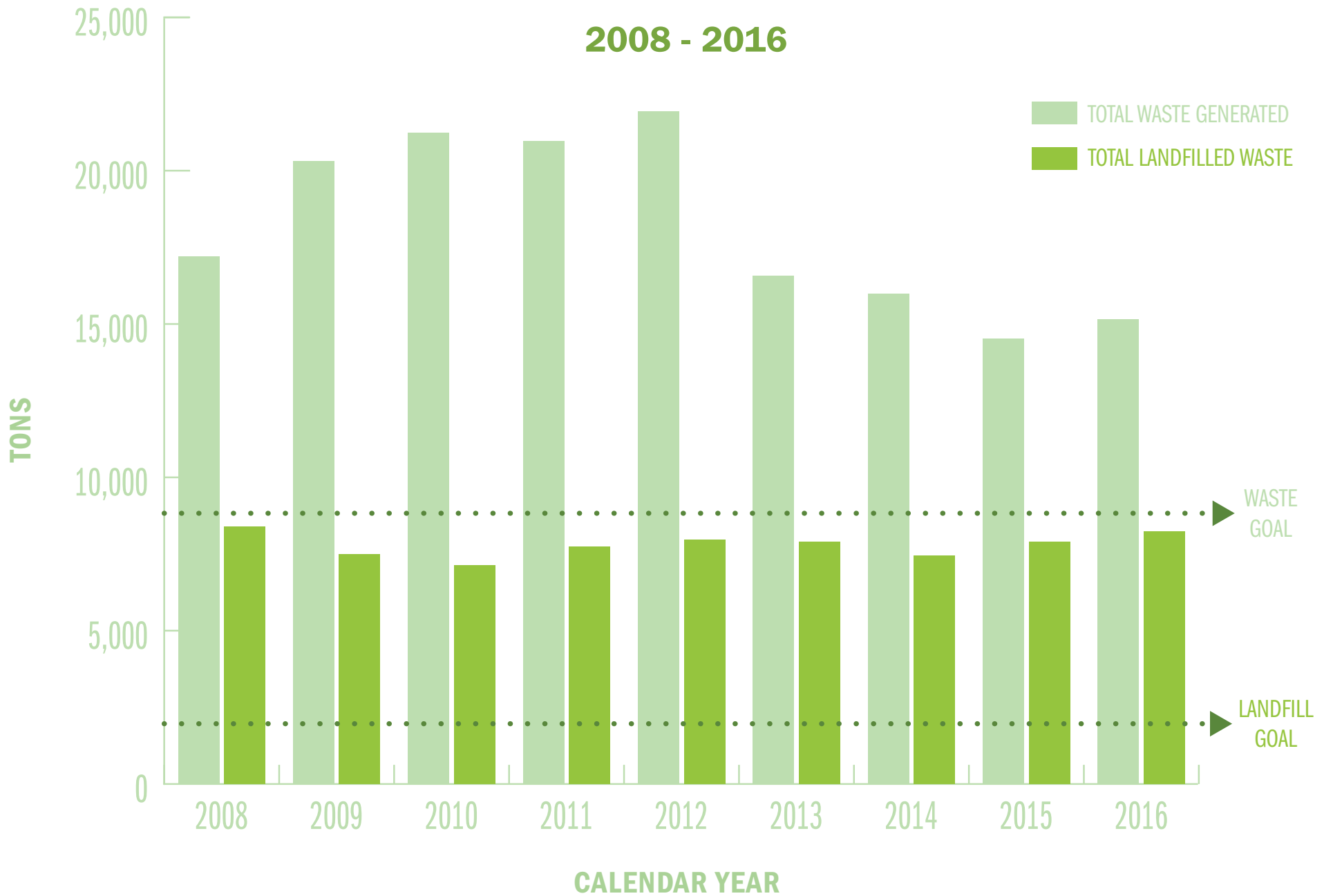
In 2016, UVA generated 15,140 tons of waste. This is 5.3 percent less than the waste generated in 2014, the baseline for this goal. This includes containers, organic materials (landscape and food waste), paper, cardboard, metals, surplus materials, ash, e-waste (batteries, electronics, etc.), and wood. In 2016, UVA diverted 45.7 percent of all waste from the landfill by recycling 6,917 tons of waste. A Waste Action Plan is being developed to outline discrete strategies to decrease the amount of waste generated on Grounds and reduce the amount of material that is landfilled.

The installation of co-located and centralized recycling and landfill containers, with updated signage, continues with implementations in AFC, Slaughter, Brooks Hall, Rotunda, 1515 University Avenue, and more. A new Recycling Program Coordinator was hired to support the implementation of this integrated waste program across Grounds. The Reusable Office Supply Exchange (ROSE) program has expanded into additional buildings, including the Law School, Newcomb Hall, and others.

Students pick up recycling and waste as part of a service project



UVA WASTE AND LANDFILL TONNAGE 2008 - 2016



ENVIRONMENTAL FOOTPRINT

FOOD

Goal: Annually increase the percentage of sustainable food and beverages available on Grounds.

Goal: Increase student, staff, and faculty awareness of sustainable food systems and seek to translate this heightened awareness into informed choices.

Now entering its second year of work, the Sustainable Food Strategy Task Force includes a broad array of representatives interested in food and its impacts: UVA Dining (Aramark), UVA Health Systems dining (Morrison), Darden dining (Compass), the Institute for Environmental Negotiation, the Office for Sustainability, Environmental Resources, Morven Kitchen Garden, the Nitrogen Footprint project, Green Dining, Greens to Grounds, School of Medicine, and the UVA Food Collaborative, and the Department of Politics. Meeting once a month, the task force has been developing strategies to develop and implement under Sustainability Plan food goals.

This year the task force agreed that UVA will use the nationally accepted definition and metrics for sustainable food developed by the Association for the Advancement of Sustainability in Higher Education (AASHE). Before setting specific targets for sustainable food purchases, the task force agreed that the first step was to establish UVA Dining's (Aramark) current baseline of sustainable food purchases. However, UVA continued to implement exciting sustainability initiatives, such as pop-up food stations featuring local and sustainable foods, several new partnerships with Charlottesville-based producers, a farmers market event, and tweaking the Fine Arts Café menu to include more local and sustainable foods. Additionally, the Nitrogen Footprint project continued working with Dining on a study of the effects of labeling on student choices.

Chef David harvesting kohlrabi at Morven Kitchen Garden



Goal: Reduce food waste and single-use food serving items sent to landfill by 2030, in alignment with the overall UVA waste goals.

Goal: Collaborate within UVA and with the region, bringing together faculty, staff, students, and dining operations to advance sustainable food systems in the broader community.

The Food Collaborative held its fifth year of “Food Film Forum” series featuring documentaries on how food impacts community, health, food justice, and the environment. Each film was followed by a lively discussion between a panel of experts and the audience.

The Task Force applied for and received funding for two upcoming symposiums – one funded by the Sustainability Plan (Virginia University Collaboration for Sustainable Food Procurement) and another funded by the Bicentennial (on UVA and Transformations of Local Agricultural Systems Today and Tomorrow: Growing From Jefferson’s Founding Values Into Culture, Equity, Science, and Stewardship). Both symposiums will be held in the 2017-2018 academic year.



Earth Week Farmers Market at the Amphitheater



One of many green dining education efforts in UVA Dining locations



photo: SunTribe Solar



Student groups, UVA staff, and community members work together to clean up under Beta Bridge

DISCOVER

TEACHING, RESEARCH, AND CURRICULUM

EDUCATING THE NEXT GENERATION

CURRICULUM

Interdisciplinary sustainability and resilience curriculum and research at UVA have wide-reaching global impacts. Participation is growing in both the major and minor programs in Global Studies: Environments and Sustainability, and sustainability is increasingly being taught through unique lenses including ethics, anthropology, history, and even music. UVA faculty continue to offer more interdisciplinary courses that aim to prepare the next generation of leaders to face the environmental, economic, and social challenges of the 21st century.



NEW COURSES

\$58,000 of Sustainability Plan funding was awarded to help faculty develop **8** new sustainability courses, to be offered in spring 2018:

- Corporate Resilience and Sustainability
- Examining Sustainability in Place: The Environment in the Middle East & South Asia
- Smart Cities Enabling Sustainability
- The Ethics of Food
- Water Sustainability (expanded) Sustainability Science
- Global Sustainability (expanded)
- Population, Resources, and Environmental Sustainability

Darden School of Business: Business Innovation and Climate Change Initiative

Led by Darden's Batten Institute for Entrepreneurship and Innovation, this initiative informs and explores the intersections between business and public policy in regards to addressing climate change. Programs will include a biannual Sustainability Innovators Roundtable a multi-day innovation summit, a leadership academy, and a fellows program.

McIntire School of Commerce: Certificate in Sustainable Business

A new certificate program will teach undergraduates, graduate students, and/or professionals in liberal arts, science or business-related majors. This 13 week online program teaches business through the lens of social, environmental, and fiscal responsibility. The program focuses on areas such as energy and climate change, water, biodiversity, strategic sustainability, finance, life cycle assessment, and building sustainable communities.



160+
UNDERGRADUATE
COURSES



150+
GRADUATE COURSES



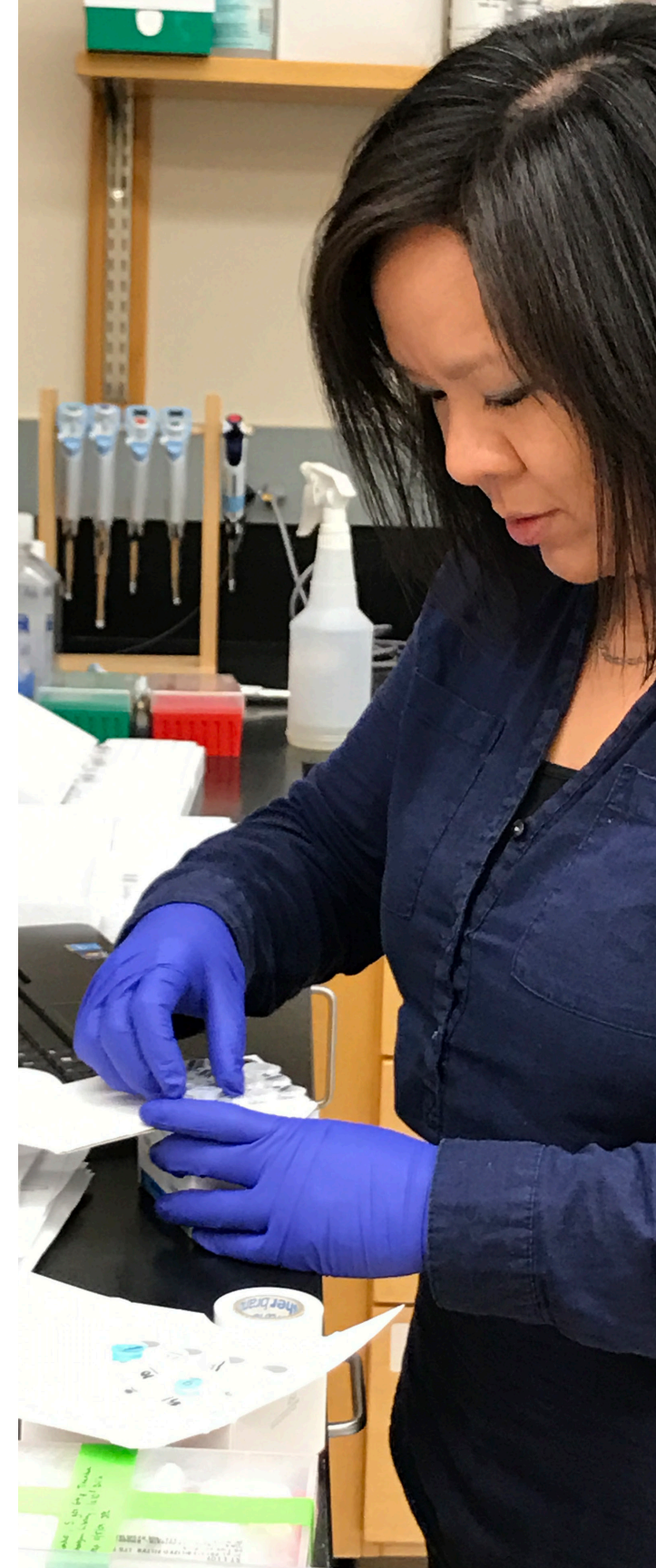
>\$100,000
INTERNAL SEED GRANTS
FOR RESEARCH + COURSE
DEVELOPMENT

INNOVATING FOR THE FUTURE

RESEARCH

In Spring 2017, UVA selected the Resilience Institute as one of its pan-University research institutes. This will include new interdisciplinary cluster hires, particularly in environmental science, engineering, and policy, and will be one of the first in the nation to focus on the effects of climate change in such a way. Per the Office of the Vice President for Research, the mission of the Institute is to “bring together UVA faculty, students, and external partners to conduct trans-disciplinary research at the intersection of environmental change and human wellbeing...overarching goal is to identify solutions to some of society’s most challenging and complex social-environmental problems.”

Ongoing research on the Eastern Shore



RESEARCH HIGHLIGHTS

Through funding allocated for the Sustainability Plan Discover goals, **\$64,000** was awarded to help faculty develop **8** new sustainability-related research projects :

1. Toward Meaningful, Data-Driven Sustainability Decision-Making: Developing an Internet of Carbon and Nitrogen for UVA (SEAS)
 2. Adaptive Real-Time Control of Stormwater Management Systems (SEAS)
 3. Shifting Consumer Demand with Environmental Impact Labeling and Social Psychological Interventions” (Environmental Sciences and Psychology)
 4. Is Landscape Lighting with Energy-Efficient LED Lights an Ecological Trap? (Environmental Sciences)
 5. Evaluating Bee Hotels as Conservation Tools (Environmental Sciences)
 6. Fostering University Collaboration for Sustainable Food Procurement (Institute for Environmental Negotiation)
 7. University of Virginia Food Sustainability Student Survey (Politics)
 8. Fostering Sustainable Behavior in the UVA Community (McIntire)
- **UVA Environmental Sciences’ research and leadership in the Nitrogen Footprint Tool (NFT) Network** was featured in an April special issue of the academic journal “Sustainability: The Journal of Record”. The NFT Network is a group of **20** institutions of higher education managed by an EPA-funded research program based at UVA.
 - **The Nitrogen Footprint team hosted the annual Nitrogen Footprint Tool Network annual meeting** with **15** schools from across the country. During the annual meeting, a Public Forum on UVA’s Nitrogen Footprint Reduction Goal was held to showcase UVA’s application of the nitrogen footprint research on Grounds.
 - **The annual UVA Food Collaborative Student Research Symposium**, held in conjunction with Earth Week, gave students the opportunity to present their work on food-related issues.
 - **The Solar Car Team** was awarded **\$20,771** from the Jefferson Trust: “to bring a new dimension to experiential learning at UVA that will not only elevate the intellectual pursuits of the students involved, but also the recognition of UVA engineering on the national scale.” (UVA Today)

Professor T'ai Roulston studying bee-plant interactions



LEARNING IN ACTION

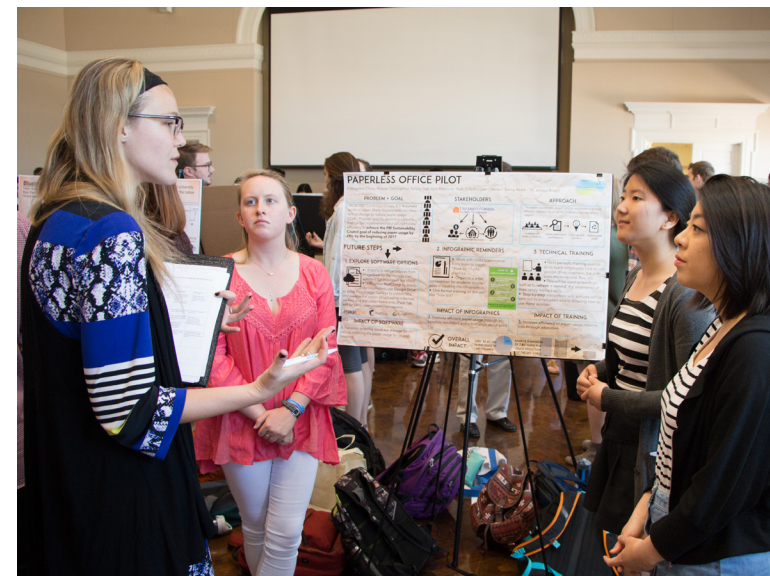
GROUNDS AS A LEARNING TOOL

GLOBAL SUSTAINABILITY COURSE

The Fall 2016 Global Sustainability course's "Think Global/Act Local" project taught students about a wide array of issues facing our planet and humanity, along with innovative strategies for addressing those issues. To encourage them to be part of the solution, students worked in teams on a project with the UVA Committee on Sustainability subcommittees and other UVA staff. Mentors were assigned to each project group to help project teams fully achieve the potential for their project. Mentored by staff deeply engaged in sustainability, the projects developed were designed to be readily implemented at UVA. The Fall 2016 class included **150** students, **30** projects, **10** mentors.

INTRO TO GREEN ENGINEERING COURSE

In Spring 2017, the Office for Sustainability partnered with Prof. Andres Clarens' CEE 3050 "Intro to Green Engineering" class to assess the rooftop solar potential at UVA. The students were provided with a dataset that captured over 4,000 roof segments on Grounds. They used that dataset to determine the optimal locations for solar panels. This work actively informed UVA's solar PV investigation and planning. Of their top five buildings, Ruffner Hall already has solar PV. The other four (AFC, Mechanical Engineering, Slaughter Hall and the Facilities Management Shop Buildings) are being considered for solar PV. Their work has been incorporated into a larger rooftop solar plan and additional rooftop solar PV installations will begin in 2018.



GIFT GRANT

The Green Initiatives Funding Tomorrow (GIFT) Grant is an exciting program that provides funds for student-led sustainability projects on Grounds.

One innovative grant this year helped support hydroponic projects on Grounds. Five indoor hydroponic systems were installed this year, a project led by Alexander Olesen with a team of students in HackCville. GIFT funding was granted to expand beyond a prototype at Newcomb Hall to also include Observatory Hill Dining Hall. These installations grow plants in nutrient-rich solutions without the use of soil. This high-tech farming method uses **90%** less water and grows food up to four times more quickly.



GLOBAL SUSTAINABILITY COURSE PROJECTS

- MINDFULNESS + CONNECTIONS TO NATURE**
- SUSTAINABILITY PLEDGE**
- CHUCK IT FOR CHARITY REBRANDING**
- INCORPORATING SUSTAINABILITY INTO BICENTENNIAL PLANNING**
- INTERPRETIVE SOLAR SIGNAGE FOR UVA'S SOLAR TABLE**
- ENERGY EFFICIENCY IN ATHLETICS**
- ENERGY SAVINGS + COMPUTERS**
- INNOVATIVE WASTE HEAT UTILIZATION**
- SUSTAINABILITY RESEARCH AT UVA**
- FRAMEWORKS FOR RENEWABLES – SOLAR PANELS**
- LOCAL FOOD IMPACTS ON THE VIRGINIA FARM + JOB ECONOMY**
- FOOD WASTE MESSAGING CAMPAIGN**
- UVA DINING MICRO-SOURCING FEASIBILITY**
- SUSTAINABLE FOOD AT EVENTS**
- SUSTAINABLE FOOD SYMPOSIUM**
- PROCUREMENT – PACKAGING ORDERS IN RESIDENCE HALLS**
- RESIDENCE HALL – DORM MATERIALS**
- RESIDENCE HALL WASTE STREAMS**
- ROSE PROGRAM**
- CRADLE TO CRADLE DESIGN EDUCATION**
- STORMWATER BMP/ DELL POND AWARENESS:**
- COPELEY HOUSING APARTMENTS STORMWATER**
- SUSTAINABLE TRANSPORTATION AND HEALTH & WELLNESS**
- STUDENT TRANSPORTATION SURVEY**
- ENHANCING OUTDOOR SOCIAL SPACE**
- WATER BOTTLE CUPANION EXPANSION**
- RAINWATER COLLECTION AT MORVEN KITCHEN GARDENS**
- RESPONSIBLE WATER USE IN LABS**
- O'HILL TRAILS**
- WATER AWARENESS EVENT**

RECOGNITION

SUSTAINABILITY ON GROUNDS

Awards and Ongoing Recognition

UVA's sustainability programs have received national recognition, particularly within recycling, facilities management, energy, diversity and affordability, environmental stewardship, and outreach and engagement. Recognition received this academic year, includes:

- AASHE STARS Gold (2015-2018)
- AASHE 2016 Sustainable Campus Index Top Performer - Diversity and Affordability
- Darden School of Business – Virginia Green Travel Star Award
- Princeton Review – Green Schools List
- Sierra Club Cool Schools List
- U.S. Department of Education Green Ribbon School
- UVA Dell – Chesapeake Stormwater Network Best Maintained Best Management Practice – First Place
- UVA Hospital Green Roof – Chesapeake Stormwater Network Best Ultra-Urban Best Management Practice – Third Place
- UVA Dining – VA Department of Environmental Quality Environmental Excellence Program – Exemplary Environmental Enterprise Level (E3)
- North American Laboratory Freezer Challenge - Honorable Mention
- Boars Head Inn - 2016 Sustainability Champion Award of Excellence from the Historic Hotels of America

Presentations at National Conferences on UVA Practices

- Contrasting Approaches to Effective GHG Reduction Strategies
- Sustaining the Memory of Enslaved Laborers at the University of Virginia
- Engage, Steward, Discover: Aligning Global Sustainability Curriculum with Strategic Student-Led On-Campus projects
- The Role of Biophilic Design in Supporting the Student Athlete
- Using Technology to Reduce Cup Waste
- Project Managing STARS 2.1 Submission Process



- Sustainability in Facilities Management
- Combining Carbon and Nitrogen Footprints
- Meeting a Nitrogen Footprint Reduction Goal
- Management Strategies for Carbon and Nitrogen
- Institutional Nitrogen Footprints
- How Carbon and Nitrogen Footprints can inform Sustainability Practices at Colorado College
- Building Partnerships to Mobilize Diversity, Equity
- Green Career Toolbox: Skills Workshops for SustainaStudents

PHOTO CREDITS

The photos in this report were provided by individuals from the following departments:

- UVA Communications + UVA Today
- UVA Dining
- Facilities Management
- Office for Sustainability - Staff & Students
- Parking & Transportation
- Sun Tribe Solar

To use any of these images and graphics or to identify the photographer, email sustainability@virginia.edu.



COMMITTEE ON SUSTAINABILITY

2016 - 2017

Committee Co-Chairs:

Cheryl Gomez - Director of Operations & **Pheobe Crisman** - Associate Professor of Architecture

Jason Bauman

Associate Athletics Director for Facilities & Operations

Reba Camp

Administrator, Medical Center

Jon Cannon

Professor of Law & Director of Environmental and Land Use Law Program

Matt Charles

Deputy Spokesperson

Suchita Chharia

Undergraduate Student

Teresa Culver

Associate Professor & Assistant Chair of Undergraduate Studies

Tanya Denckla-Cobb

Director, Institute for Environmental Negotiation Lecturer

Kevin Fox

Administrator, Medical Center FP&C

Paul Freedman

Associate Professor and Department Chair of Politics

James Galloway

Professor of Environmental Sciences

Robert Geraci

Associate Professor of History

Erika Herz

Director, Research & Thought Leadership - Darden

Ronald Hutchins

Vice President for Information Technology

Elizabeth Main

Undergraduate Student

Robert McCarthy

Undergraduate Student

Karen McGlathery

Associate Vice President for Research, Sustainability & the Environment

Frederick Missel

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Program Director for Diversity & Equity

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Angela Orebaugh

Director and Assistant Professor for the Graduate Certificate in Cyber Security

Matthew Oreska

Graduate Student

Gay Perez

A.V.P. Associate Dean of Students & Executive Director of Housing & Residence Life

Alice Raucher

Architect for the University

Dana Schroeder

Sustainability Coordinator for Outreach & Engagement (Ex-Officio)

Bill Sherman

Chair, Department of Architecture

Jay Shimshack

Associate Professor of Public Policy and Economics

Bill Shobe

Director, Center for Economic and Policy Studies, Weldon Cooper Center for Public Service

Matt Smythe

Resident District Manager of Aramark

Mike Stroud

Director of Facilities and Operations, Department of Athletics

Wynne Sturt

Associate Provost for Academic Support

Donald Sundgren

Associate Vice President and Chief Facilities Officer

Andrea Trimble

Director of the Office for Sustainability

Matt Trowbridge

Associate Professor of Emergency Medicine & Assistant Professor of Public Health

Becca White

Director of the Department of Parking & Transportation

Mark White

Associate Professor of Commerce

Timothy White

Senior Immigration Consultant for Human Resources

