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# Annual Sustainability Report FY 2019-2020

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## VANDERBILT UNIVERSITY

### FY 2019/20 SUSTAINABILITY REPORT

VANDERBILT COMMITS TO **CARBON NEUTRALITY** BY 2050

FY 2019/20 VANDERBILT UNIVERSITY GREENHOUSE GAS EMISSIONS:

# 158,362

MTCO2E

**SCOPE 1:** On-campus sources (70,860 MTCO2E or 45%)  
**SCOPE 2:** Purchased electricity (39,661 MTCO2E or 25%)  
**SCOPE 3:** Commuting (47,841 MTCO2E or 30%)

**22** LEED CERTIFIED BUILDINGS

1 WELL BUILDING (PENDING CERTIFICATION) + 1 PETAL BUILDING (PENDING CERTIFICATION)

**ZERO WASTE GOAL**  
90 PERCENT DIVERSION FROM LANDFILL BY 2030

**136** TONS OF FOOD WASTE COMPOSTED

**12** PERCENT OF OVERALL GHGs REDUCED FROM LAST YEAR

COMMUNITY COLLABORATION LEADS TO REDESIGN OF **FLEMING YARD**

FIRST SECTION OF THE **WALK & ROLL** OPENED

VANDERBILT ENTERS INTO AGREEMENT WITH **TENNESSEE VALLEY AUTHORITY** AND **NASHVILLE ELECTRIC SERVICE** TO PROCURE **OFF-SITE LARGE-SCALE RENEWABLE ENERGY**

1ST TO CLAIM **CARBON-NEUTRAL** AND SET **NET ZERO + RESILIENCE** GOAL

1ST CUSTOMER IN THE TENNESSEE VALLEY REGION

OFFSET 100% OF SCOPE 2 GREENHOUSE GASES

([https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2021/03/22105126/Annual-Report-Graphic\\_2020\\_21-002-scaled.jpg](https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2021/03/22105126/Annual-Report-Graphic_2020_21-002-scaled.jpg))

# INTRODUCTION

A \$1 million gift from Commodore Cornelius Vanderbilt in 1873 established the University, with the mission to “contribute to strengthening the ties which should exist between all sections of our common country.” Today, Vanderbilt University is a top-15 private research university offering a full-range of undergraduate, graduate and professional degrees. Vanderbilt is situated on a 333-acre campus near the thriving city center of Nashville, TN, serving over 12,000 students and directly employing more than 6,000 faculty and staff. Its affiliated academic medical center, Vanderbilt University Medical Center (VUMC), is contiguously located and operates in close partnership and through a combined internal power grid with the University.

Vanderbilt University operates an on-site, natural gas fueled co-generation power plant that meets the steam and a portion of the chilled water needs of the University and Medical Center and 31% of the electrical needs. The remaining 69% electrical need is purchased from the Tennessee Valley Authority through Nashville Electric Service (NES). Vanderbilt emits Greenhouse Gases (GHGs) through these two processes as well as university fleet vehicle use, refrigerant releases, faculty and staff commuting to work, air travel paid for by the University, and waste disposal and recycling.

The six GHGs emitted into the atmosphere that comprise the majority of the carbon footprint are: carbon dioxide (CO<sub>2</sub>); methane (CH<sub>4</sub>); nitrous oxide (N<sub>2</sub>O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); and sulfur hexafluoride (SF<sub>6</sub>). The amount of emissions of each gas are converted to a standard unit of measure, or metric tons of carbon dioxide equivalents (MTCO<sub>2</sub>E) and then summed to determine Vanderbilt’s carbon footprint.

Vanderbilt University embarked on a new journey as an independent legal entity from VUMC on May 1, 2016. Vanderbilt University is now smaller in both number of people and square feet without the Medical Center, and, therefore, so are the 2016, 2017, and 2018 Greenhouse Gas inventories in comparison to previous inventories (2005-2015). Because of the

significant shift in GHG footprint due to the new organization, 2005-2015 GHG data was archived. The 2016 Annual Report contains first year baseline data for the University only, with the 2020 Annual Report presenting only the fourth year of trending data. Additionally, this report is fiscal year-based reporting for FY19-20 to better align with Vanderbilt's financial year and academic year cycle.

Campus operations and transportation were shifted significantly in March 2020 to respond to the COVID-19 pandemic. Significant parts of the university began remote-only work, classes transitioned to remote learning, and campus buildings were ramped-down to match reduced campus occupancies. As a result, Q4 GHG emissions reflect those impactful changes.

This sustainability report is intended to portray Vanderbilt's current carbon footprint as accurately as possible and to highlight other key sustainability gains in fiscal year 2020 from July 2019-June 2020.

This report is developed by the Vanderbilt Sustainability and Environmental Management Office (SEMO). Any questions should be directed to [futurevusustainability@vanderbilt.edu](mailto:futurevusustainability@vanderbilt.edu) (<mailto:futurevusustainability@vanderbilt.edu>).



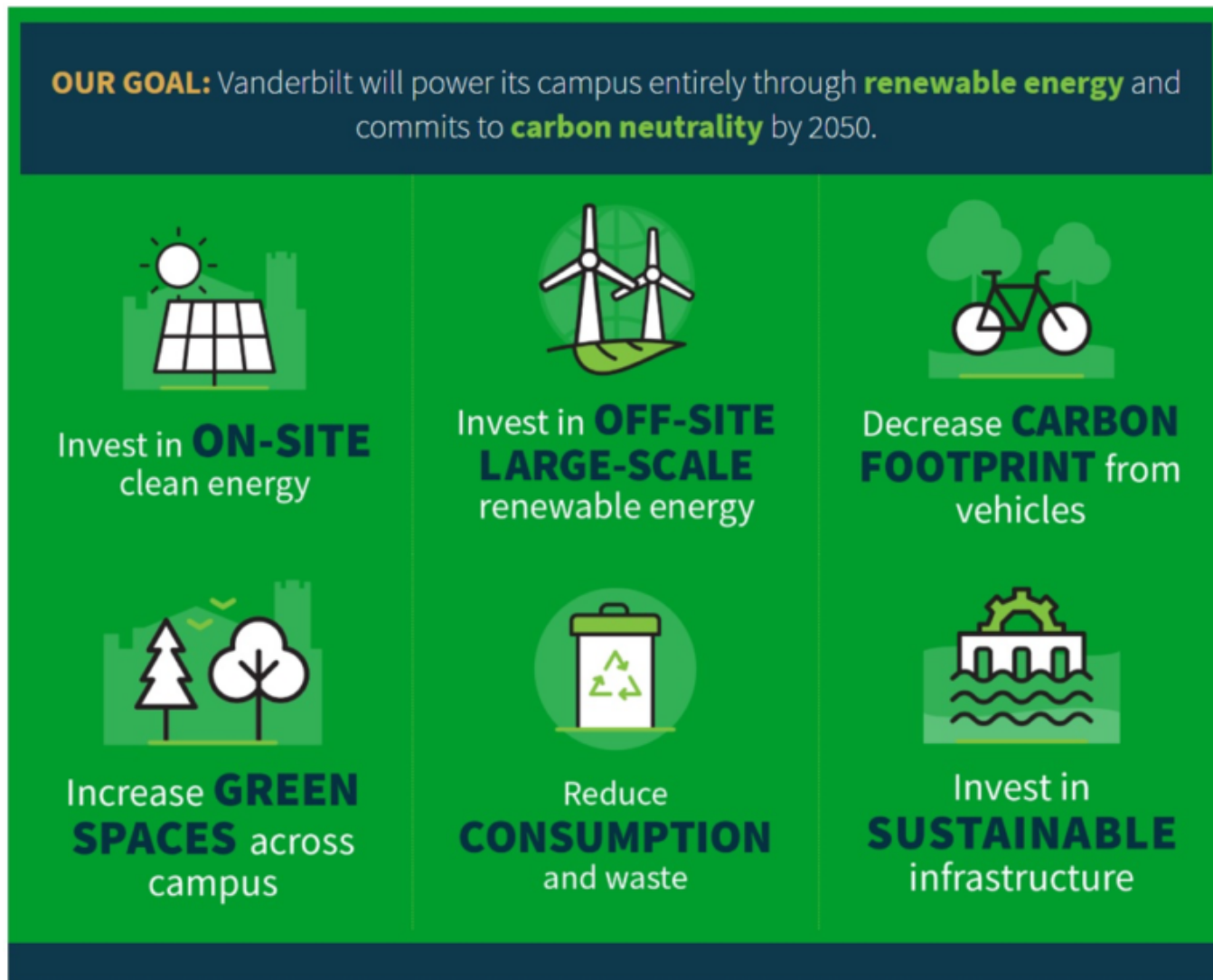
<https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2019/10/01163726/futurevu-sustainability-logo.png>

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## CARBON FOOTPRINT

### OUR GOAL

On Earth Day 2019, Vanderbilt University unveiled a comprehensive long-term strategy to significantly reduce its environmental footprint in part by powering its campus entirely through renewable energy, putting the university on track to be carbon neutral by 2050.



## GHG EMISSION SOURCES

Vanderbilt reports greenhouse gas (GHG) emissions across all major sources.

Scope 1: The most significant source of Scope 1 emissions is natural gas use at the on-campus power plant and in individual buildings. Additional Scope 1 emissions include fleet vehicles, diesel use at the power plant, emergency generators, anesthetic gas use, and refrigerant releases.

Scope 2: Scope 2 emissions are entirely from electricity purchased from Nashville Electric Service (NES).

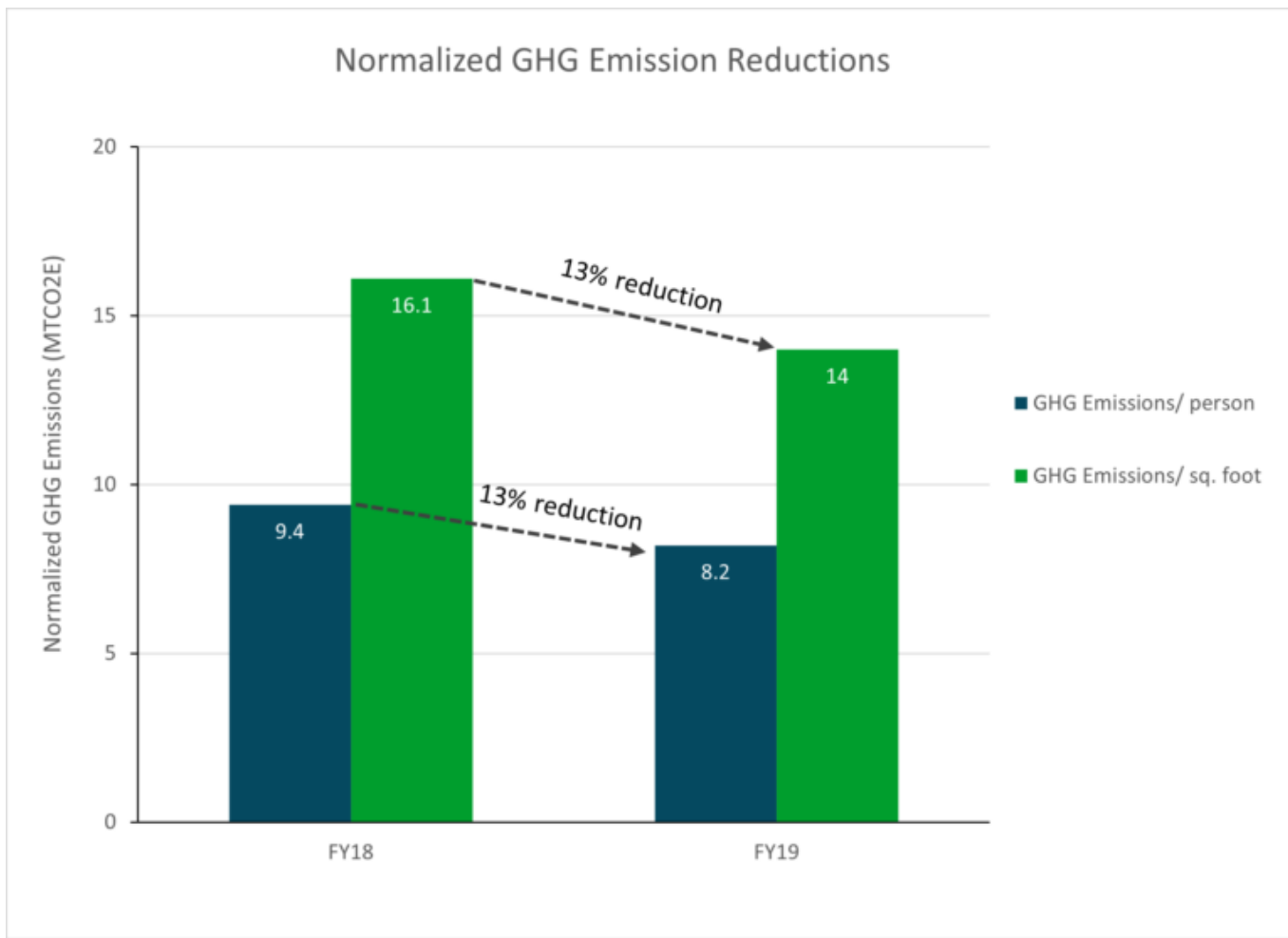
Scope 3: Scope 3 emissions at Vanderbilt include faculty, staff, and student commuting, air travel, waste disposal, and recycling.

More information related to Scope 1 and 2 emissions can be found in the Energy section of this report. Details related to Scope 3 emissions can be found in the Transportation and Waste sections of this report.

## **GHG EMISSION SCOPES**

Vanderbilt University emitted 158,362 metric tons of carbon dioxide equivalents (MTCO<sub>2</sub>E) in FY19-20. These greenhouse gas emissions were split between Scopes 1, 2, and 3 – 45%, 25%, and 30%, respectively. Scope 1 emissions are direct emissions from sources that are controlled by Vanderbilt, such as combustion of natural gas in the on-campus power plant. Scope 2 emissions are indirect emissions from purchased electricity. Scope 3 emissions are not directly controlled by Vanderbilt but are associated with Vanderbilt, such as employee commuting, air travel, and waste disposal.

Compared to the FY18-19 Greenhouse Gas (GHG) emissions footprint calculation, FY19-20 footprint shows an overall decrease of 12% metric tons of CO<sub>2</sub> equivalent (MTCO<sub>2</sub>E). VU's GHG emissions per gross square foot has dropped by 13% since FY18-19 and 19% compared to FY17-18, which is a significant decrease. Additionally, the GHG emissions per person decreased 13% compared to FY 18-19.



(<https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2021/03/21193911/Normalized-GHG-Emissions-Reductions-Graph-1.png>)

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# INVEST IN ON-SITE CLEAN ENERGY

## BLUESKY VISION ENERGY STRATEGY STUDY

The BlueSky Energy Vision was completed in 2018 with the publication of the BlueSky Energy Vision Report (<https://www.vanderbilt.edu/sustainability/blueskyenergy/>). The report identifies major potential opportunities to reduce Vanderbilt’s carbon footprint and improve central campus land use



within the University's on-campus energy production, distribution and consumption infrastructure and behavior. This culminated in a "BlueSky Vision" for campus energy in 2019, detailed below.

Vanderbilt, by the year 2050, will achieve Net Zero Energy with Resiliency by:

(<https://cdn.vanderbilt.edu/vu-wp0/wp->

[content/uploads/sites/69/2021/03/19112200/BlueSky-1.jpg](https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2021/03/19112200/BlueSky-1.jpg))

- being a leader in energy conservation
- producing on-site clean (without combustion) and renewable energy
- procuring off-site renewable energy to mitigate campus greenhouse gas emissions
- storing sufficient clean energy to provide campus resilience



## ON-SITE SOLAR

A solar-powered hot water heating system is installed in the Currey Tennis Center. Solar panels installed on the roof collect the sun's energy to heat the water for the building. A 20kW solar panel system is also installed on the roof of Currey Tennis Center. The solar panels generate electricity from the sun's energy, which is fed into the Vanderbilt electricity grid. A dashboard of the solar panel system can be viewed online with the login: [sustainvu@vanderbilt.edu](mailto:sustainvu@vanderbilt.edu) and password: VU\*Tennis.



<https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2021/03/19095108/Solar-Currey-Tennis-Center.jpg>

Campus also hosts four solar picnic tables. Each table features a solar array, LED nighttime lighting, four 120 volt and eight USB charging stations, and two large benches for students. The systems will be able to provide 75-100 iPhone charges per day. The tables are installed outside of Kissam Center, Highland Quad, and two at the Commons Center.



<https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2021/03/19095253/Solar-Picnic-Table.png>

## **INVEST IN OFF-SITE LARGE-SCALE RENEWABLE ENERGY**

### **LARGE-SCALE RENEWABLE ENERGY STUDY**

The [Large-Scale Renewable Energy Study](https://www.vanderbilt.edu/sustainability/l sre/) (<https://www.vanderbilt.edu/sustainability/l sre/>), conducted with input from the Large-Scale Renewable Energy Study Advisory Committee, a mix of diverse stakeholders on campus, explored potential options for off-campus, large-scale renewable energy sources, including solar and/or wind projects.

Following the [BlueSky Energy Vision Study](https://www.vanderbilt.edu/sustainability/blueskyenergy/) (<https://www.vanderbilt.edu/sustainability/blueskyenergy/>) and the [Large-Scale Renewable Energy Study](https://www.vanderbilt.edu/sustainability/l sre/), (<https://www.vanderbilt.edu/sustainability/l sre/>) in FY2020, Vanderbilt entered into a pioneering agreement with the Tennessee Valley Authority and Nashville Electric Service to procure off-site large-scale renewable energy to help mitigate the campus' greenhouse gas emissions. The 20-year agreement will support Vanderbilt's goal to power its campus entirely through renewable energy. The renewable power will come from two solar farms to be built in Bedford County and Tullahoma, Tennessee, by Nashville-based Silicon Ranch Corporation, the U.S. solar platform for Shell and one of the largest independent solar power producers in the country.

Vanderbilt will reach its renewable energy goal just over four years after the university made its initial commitment in 2019. Vanderbilt's [initial partnership](https://news.vanderbilt.edu/2020/01/22/vanderbilt-commits-to-first-of-its-kind-renewable-energy-partnership-with-tva-nes/) (<https://news.vanderbilt.edu/2020/01/22/vanderbilt-commits-to-first-of-its-kind-renewable-energy-partnership-with-tva-nes/>), announced in January 2020, will mitigate approximately 70 percent of the university's indirect greenhouse gas emissions by fall 2022. The [second Green Invest project](https://www.vanderbilt.edu/sustainability/2020/11/vanderbilt-and-nashville-undertake-bold-new-renewable-energy-partnership-to-address-climate-change/) (<https://www.vanderbilt.edu/sustainability/2020/11/vanderbilt-and-nashville-undertake-bold-new-renewable-energy-partnership-to-address-climate-change/>) will supply enough renewable energy to offset by fall 2023 the remaining 30 percent of the university's annual indirect greenhouse gas emissions from purchased electricity. The agreement is also anticipated to provide hundreds of new jobs during the construction of the solar project as well as unique educational and research opportunities for the Vanderbilt community with both solar farm locations within close proximity to the Nashville area.



(<https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2021/03/21194306/LSRE-1.jpg>)

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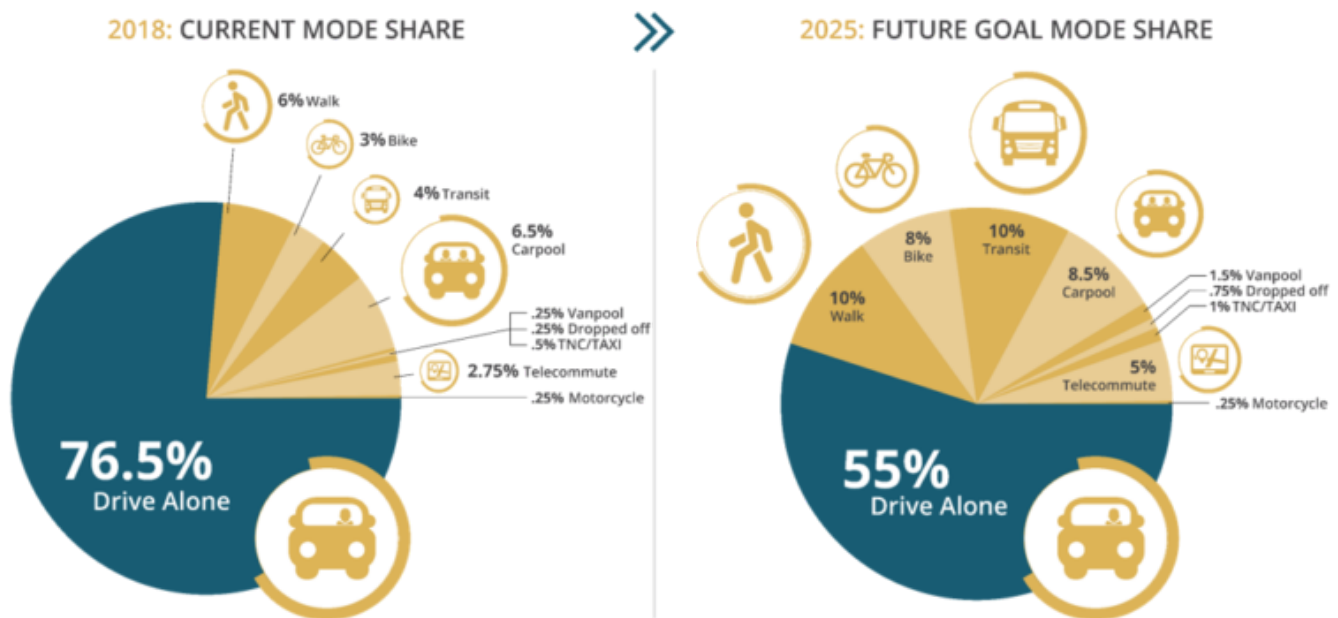
# DECREASE CARBON FOOTPRINT FROM VEHICLES

## EMISSIONS SUMMARY

Vanderbilt is a major employer in Nashville. The university consists of more than 6,000 faculty and staff, is home to nearly 7,000 undergraduate students, and is the place of study for an additional 6,200 graduate and professional students. Combined, Vanderbilt's normal commuting population is 12,918, which contributes 35,528 MTCO<sub>2</sub>E to the University's carbon footprint, or 78% of transportation emissions. Air travel for faculty and staff accounts for another 9,919 MTCO<sub>2</sub>E, or 22% of transportation emissions. Transportation emissions are 28% of Vanderbilt's overall emissions. In Q4, both these areas of emissions were impacted enormously from the COVID-19 pandemic resulting in a 93% decrease in commuting emissions from a normal quarter.

# MOVEVU

MoveVU is Vanderbilt's strategic transportation and mobility plan that falls under the FutureVU comprehensive campus planning efforts. MoveVU goals align with FutureVU guiding principles to beautify the campus, preserve and enhance the park-like character people enjoy, create a walkable and sustainable campus and better connect areas of campus that feel disconnected. MoveVU calls for diversification of transportation options, reduction of the drive alone rate to campus that aligns with university goals to become carbon neutral, prioritization of pedestrian and micromobility, and improvement of accessibility. The MoveVU plan outlines ways the university can shift its mode share and reduce the drive alone rate to campus. Vanderbilt University's current drive alone rate is around 76.5%, and the MoveVU goal is to reduce the drive alone rate to 55% by 2025. In order to achieve this goal, the percentage of individuals taking alternative commute modes, such as walking, biking, taking transit, carpooling, vanpooling, and more, will need to increase.



(<https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2021/03/22075842/MoveVU-1.png>)

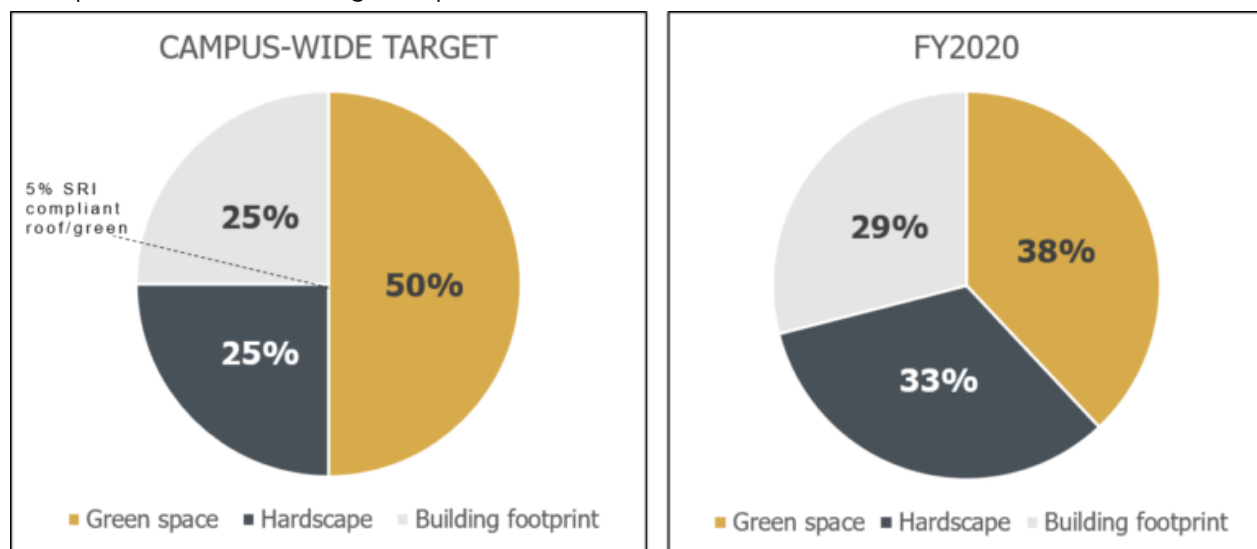
Vanderbilt implemented a daily parking pilot program for a limited number of commuters in 2020. In response to data and feedback from the campus community, the daily parking pilot gives commuters more options to choose from when making their daily decision on how they will travel to campus and provide greater flexibility than the traditional annual permit to better match their dynamic lifestyles. Daily parking participants have access to the MoveVU commute app, which will connect them to available transportation options and allow them to track their daily commutes. The university implemented a parking charge of \$3 per day with

the potential to provide a small financial incentive to participants when they take certain sustainable commute modes. Vanpool and Carpool trips are also financially incentivized through the MoveVU Commute Hub.

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## INCREASE GREEN SPACES ACROSS CAMPUS

A guiding principle of FutureVU is that Vanderbilt resides in a unique and distinctive park-like setting. The plan looks to balance the distribution of open lawns throughout campus through careful evaluation of built and open space targets. The FutureVU framework calls for an overarching campus-wide target of 50% green space, 25% hardscape and 25% building footprint. As of the end of FY2020, the current campus breakdown is 38% green space, 33% hardscape and 29% building footprint.



(<https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2021/03/22075941/Campus-Green-Target.png>)

To achieve this expansion of green spaces across campus, Vanderbilt has a variety of initiatives underway, including the development of a greenway network, stormwater management practices, a landscape master plan, smart irrigation practices, and green roofs, detailed below.

## FLEMING YARD

The redesign of the outdoor space, located between Alumni Lawn and Sarratt Student Center, was the culmination of collaborative initiatives among students, faculty and administrators from the [Division of Administration](https://www.vanderbilt.edu/administration/). After listening to students and other university stakeholders during FutureVU feedback sessions, the Division of Administration partnered with [Lori Troxel](https://engineering.vanderbilt.edu/bio/lori-troxel), professor of the practice of civil and environmental engineering, to include students in the planning process for creating and maintaining sustainable, accessible and park-like environments across campus. The final design represents a significant reimagining of the space while maintaining all of the trees in the area. It features recycled plastic decking and furniture, accessible pathways and routes, a hydration station for filling water tumblers, LED lighting, audio speakers for future outdoor events and a storm water capture and filtration system that will supply water to a fountain sculpture later this fall.



<https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2021/03/22080140/Fleming-Yard-1-1.png>

## COMMUNITY GARDEN

The Vanderbilt Community Garden transitioned to a more central location on campus in FY20. The new community garden continues the partnership of Vanderbilt Community Garden student group with the Campus Dining and Facilities groups. The garden includes more than just plants and produce, it acts as a testing ground for sustainable gardening



methods. The garden is available for use by the broader Vanderbilt community, and is creating strong ties to the Vanderbilt Children and Family Center who use the garden as part of their curriculum.

## STORMWATER MANAGEMENT/SMART IRRIGATION

<https://cdn.vanderbilt.edu/vu-wp0/wp->



**Total stormwater  
management  
units on campus**

<https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2021/03/24143132/Stormwater-2.png> Stormwater management practices are in place across campus. The Engineering Science Building has a cistern that collects stormwater from the roof for irrigation and includes a landscape with bioswales and a green roof to retain stormwater on site. Many additional sites across campus include stormwater pollution prevention measures, including vegetated drainage swales utilizing native plants, reduction in the amount of impervious area (replaced by landscaping) and pervious pavement, and use of the RainBird IQ system which allows for on-demand, efficient water use.

One of Vanderbilt's most significant efforts to conserve potable water is the collection of water from underground utility tunnels, which is used to irrigate sports fields and lawns on campus. In addition, air conditioning condensation collection systems are now in the Commons Center and two of the Medical Research Buildings.

## LANDSCAPE STRATEGIC PLAN

The Landscape Strategic Plan was developed to ensure that campus landscapes support the FutureVU principle that Vanderbilt is a university that resides in a unique and distinctive park-like setting and seeks to strengthen and expand the university's aesthetic character. The

Landscape Master Plan also supports the FutureVU goal of increasing green space to 50% or more across campus. In support of this vision, the Landscape Strategic plan sets standards and governance for the campus outdoor spaces. This is accomplished by establishing long-term goals, maintenance standards, record keeping procedures, advisory committee, and targets for the university landscape.



(<https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2021/03/22081318/Landscape-Strategic-Plan-2.png>)

## GREEN ROOFS

Vanderbilt has six green roofs across campus, which provide multiple benefits including reduced energy use in buildings, reduced urban heat island effect, improved stormwater management, increased roof longevity, and improved aesthetics.

Many of the green roofs at Vanderbilt are “hidden in plain sight” and act as plazas or lawns. The newest green roof was installed as a part of a major renovation of Eskin Library. A group of students organized a green roof awareness event in 2017 that led participants through the green roofs across campus to highlight these unique features and share information about the benefits.



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# REDUCE CONSUMPTION AND WASTE

## ZERO WASTE STUDY AND PLAN

This Zero Waste Study and Master Plan was developed in 2019 by the Zero Waste Advisory Committee to address the portion of Scope 3 emissions related to waste disposal and recycling and to accelerate progress towards Vanderbilt's carbon neutrality goal. Of Vanderbilt's Scope 3 emissions, waste and recycling is responsible for 2,394 metric tons of CO<sub>2</sub> equivalent (MTCO<sub>2</sub>E) or 1.5% of the total GHGs that Vanderbilt emitted in FY19-20.

Based on past data, the Committee recommended that the university should aim for the following two goals, along with two supporting actions:

**GOAL 1: Zero waste (90 percent diversion from landfill) by 2030**

## GOAL 2: Reduce waste generated 30 percent by 2030

### Supporting Actions:

End institutional single-use plastic purchases by 2025, except in laboratories\*; and

Expand food waste collection to include all dining areas and residential halls by 2025

\*Laboratories are exempt due to lack of available alternatives and safety concerns.

**ZERO WASTE BY 2030**

**REDUCE WASTE GENERATED BY 30 PERCENT BY 2030**

**90 PERCENT DIVERSION FROM LANDFILL**

**END INSTITUTIONAL SINGLE-USE PLASTIC PURCHASES BY 2025**

**EXPAND FOOD WASTE COLLECTION TO INCLUDE ALL DINING AREAS & RESIDENTIAL HALLS BY 2025**

**REDUCE CONSUMPTION AND WASTE**

The infographic features a central image of a large pile of trash. To the right is a circular icon of a recycling bin with a recycling symbol. The bottom-left quadrant shows a window with a sign that says "NO. MORE. PLASTIC." and a view of a trash bin. The bottom-right quadrant shows a large dining hall with many people seated at tables.

The Committee also examined current waste streams, waste generation activities, existing strategies, challenges and opportunities for improvement throughout campus. Data and feedback were gathered from almost 100 stakeholders through a series of meetings with various groups from across the university. This plan (<https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2020/01/03105312/Zero-Waste-Master-Plan-12.18.19-Accessible-Version.pdf>) contains suggested

paths for reducing or eliminating waste streams, increasing diversion rates with more recycling and food waste collection and reusing or repurposing specific waste streams, as well as strategies for outreach and education.

## CAMPUS WASTE AND RECYCLING

Vanderbilt has a 30-year history of recycling efforts to reduce waste going to landfills. In addition to traditional recycling programs for materials such as paper, plastic, cardboard, and glass, Vanderbilt has recycling programs for non-traditional materials like construction and demolition debris, toner cartridges, batteries, light bulbs, scrap metal, and electronics. Additionally, the [ReUse program](https://www.vanderbilt.edu/sustainability/what-we-do/surplus/) that started in 2016 sustainably manages unneeded furniture and equipment owned by Vanderbilt University departments and laboratories. Vanderbilt has also made significant efforts to reduce waste from its dining facilities in the form of food waste reduction, and the reduction of waste from food service.

These efforts are creating major environmental impacts. Vanderbilt sent 30% less waste to the landfill from FY 19-20 compared to FY 18-19 which was positively impacted by the COVID-19 pandemic, and had a diversion rate for the University of 65% in FY 19-20.

## **RECYCLING STREAMS**

In FY20, Vanderbilt University generated 4,530 tons of waste and 8,260 tons of recycling. Waste disposal accounts for 2,394 MTCO<sub>2</sub>E from Vanderbilt or about 1.5% of our total emissions.

Vanderbilt's 8,260 tons of recycling are broken down into specific streams below.

## **SINGLE USE PLASTIC**



In line with Vanderbilt's Zero Waste and single use plastic elimination goals, Vanderbilt University no longer sells single-use plastic water and soda bottles in its dining facilities, markets and vending machines. This move aligns with Vanderbilt's goal to eliminate single-use plastic purchases by 2025. The collaborative effort has reduced plastic waste by more than 430,000 plastic bottles per year and over 1.7 million bottles during a graduating class's four-year experience. All undergraduate students were given a free, reusable water bottle and there are over 160 hydration stations across campus.

In 2020 Vanderbilt announced a new partnership with PepsiCo as the official beverage provider of the university in efforts to continue reducing waste. PepsiCo provides the university with beverages packaged in either glass or aluminum to align with Vanderbilt Campus Dining's "No More Plastic" campaign, while also providing a variety of drinks to account for student needs.

Campus Dining has transitioned all to-go food containers, utensils, cups, napkins, etc., to be compostable across campus to further reduce Vanderbilt's use of single use plastics. Kissam center added a dish room in 2019 to initiate conversion reusable dishware, and a reusable container program was piloted at Kissam, with plans to expand in the future. Additionally, a pilot program for "rented" hard china for events was launched in 2019 but suspended during the pandemic. Once reinstated, campus groups can check out the service ware for their event or meeting and return it to the dining hall to be washed at no charge.



<https://cdn.vanderbilt.edu/vu-wp0/wp->

<content/uploads/sites/69/2019/10/01154903/no-more-plastic-1.png>



<https://cdn.vanderbilt.edu/vu->

<wp0/wp-content/uploads/sites/69/2019/10/01154912/water-bottle.png>

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# FOOD WASTE REDUCTION

## MINIMIZING FOOD WASTE

Campus Dining has adopted two innovative systems to help reduce food waste. A cloud-based system, known as Fusion, offers a complete food and nutrition solution from menu planning to production, food service operations, purchasing and cost management, and student mobile nutrition information. The second system utilized is a technology called LeanPath. This system tracks all pre- and post-consumer waste as well as composted food

waste and records the information in a cloud base system allowing for department wide analytics and waste analysis. LeanPath also helps avoid overbuying and reduce the need for unwanted food donation programs.

Unused food that remains is donated on Second Spoon Food Truck. Started by Vanderbilt football player Mo Hasan, the nonprofit distributes unused food from Dining locations, all from a food truck. The truck allows Second Spoon to mobilize to different corners of Nashville in search of those suffering from hunger.

## COMPOST

A program for composting food waste was started in October 2017 in the Common's Center Dining Hall. The program currently includes pre-consumer collection for all dining prep locations, as well as post-consumer collection at Rand dining hall and the Commons Center dining hall. Food waste is collected and composted by the [Compost Company](http://compostcompany.com/) (<http://compostcompany.com/>), a local vendor. In addition to food composting, all to-go food containers, cups, flatware, and straws offered are made out of compostable materials. Composting was suspended for a time during Q4 but reinstated later in the pandemic once safety protocols could be established.

Composting is a process in which organic waste is broken down into a rich, soil additive under controlled conditions. Compost can be used to promote plant growth while also reducing landfill waste by recycling organic materials back into the soil. The compost program has been expanded to include all dining locations and will be expanded in the future to support Vanderbilt's Zero Waste Plan.



(<https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2021/03/22173458/Compost-Recycling.png>)

# SUSTAINABLE FOOD PRACTICES

## SUSTAINABLE DINING

[VU Campus Dining](https://campusdining.vanderbilt.edu/) supports the well-being of diners and the health of our environment. Dining's sustainability program is designed to give diners information about Vanderbilt's kitchen principles and how they affect your environment, community and well-being. VU is also a member of the Menu of Change University Research Collaborative ([MCURC](http://www.moccollaborative.org/)). MCURC is a working group of leading scholars, foodservice business leaders, and executive chefs from invited universities who are accelerating efforts to move Americans toward [healthier, more sustainable, plant-forward diets](http://www.menusofchange.org/images/uploads/pdf/MOC_Principles.pdf).

Principles of sustainable dining that are in place currently include:

- Serving more kinds of seafood, more often.

- Substantially reducing sugary beverages with innovative replacements

  - Adding hydration stations across campus

  - Reducing soda options in fountain machines

  - Adding sparkling water dispensers and more tea options

- Serving less red meat, less often.

  - Reducing number of times beef is offered while increasing seafood and vegetarian options

  - Serving burgers across campus that are 75% beef and 25% mushrooms.

Offering the Impossible Burger (plant-based option) at our burger stations.

Using poultry and eggs in moderation.

Serving only cage-free eggs across campus.

Reducing portions.

Emphasizing calorie quality over quantity.



© 2017 The Calman Institute of America and President and Fellows of Harvard College, as published in the Menus of Change Annual Report. All rights reserved. See the full version of the principles at [www.menusofchange.org/principles/resources/moc-principles/](http://www.menusofchange.org/principles/resources/moc-principles/)

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# SUSTAINABLE PURCHASING

Vanderbilt is exploring a Sustainable Purchasing Policy that establishes standards for the purchase of goods and services consumed by the University with the goals of:

Reducing the environmental footprint of the University's operations

Leveraging Vanderbilt University's purchasing power to encourage transparency and environmentally friendly manufacturing practices within product industries

Influencing generations of environmentally conscious product users through educational programs and by example

If two products are competitive in performance characteristics and pricing, the University will favor the environmentally preferable product or supplier. For example, [Vanderbilt's Purchasing and Payment Services](https://finance.vanderbilt.edu/purchasingservices/) (<https://finance.vanderbilt.edu/purchasingservices/>) has worked closely with the University's preferred suppliers of office products, janitorial products, and laboratory products to provide more easily identified environmentally preferable product selections. These products are readily identifiable in Vanderbilt's procurement system by a special symbol. Purchasing and Payment Services partners with suppliers that are committed to sustainability practices and offer the Vanderbilt community products like FSC recycled paper, remanufactured toner cartridges, and EnergyStar or EPEAT electronics.

The Sustainable Purchasing Policy will enable Vanderbilt to plan its future growth in balance with economic, environmental, and socially responsible values.

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## **INVEST IN SUSTAINABLE INFRASTRUCTURE**

### **ENERGY – EFFICIENCY PROJECTS**

Greenhouse gas emissions normalized on a square foot basis have dropped more than 19% since FY18 and 13% since FY19 due to a combination of ongoing energy efficiency improvements of existing buildings by [Plant Operations](https://vanderbilt.edu/plantops/) and green building techniques employed in new construction by [Campus Planning and Construction](https://www.vanderbilt.edu/campusplanning/home/). These building practices are described in the Sustainable Infrastructure section below.

## LEED

Vanderbilt has a long history of building with sustainable and green features, which are more efficient and last longer. The U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Building Rating System is the nationally accepted benchmark for the design, construction, and operation of high-performance sustainable buildings. This third-party certification is recognized as confirmation that a building is environmentally responsible. LEED projects earn points across nine categories: integrative process, location and transportation, sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, innovation, and regional priority.

Vanderbilt University has a total of 22 LEED certified projects and was the first university in Tennessee to earn LEED certification.

Vanderbilt University was honored with a 2020 Leadership Award from the U.S. Green Building Council for the institution's achievements in green building and its commitment to creating a healthy, sustainable future. The council noted in its award announcement that Vanderbilt places a high priority on incorporating sustainability into the university's construction and renovation projects. The council's award announcement also referenced Vanderbilt's commitment to carbon neutrality by 2050.

Gold:



Silver:



Certified:



(<https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2021/03/22081828/LEED-3.11.21.png>)

# WELL

Looking forward, Vanderbilt will explore other certifications for sustainable buildings in addition to LEED. The [School of Nursing building expansion](https://news.vanderbilt.edu/2019/01/17/pioneering-vanderbilt-school-of-nursing-building-designed-with-health-in-mind/) is Vanderbilt's first WELL certification pilot, in addition to pursuing LEED Gold. [WELL certification](https://www.wellcertified.com/) serves as a credible label for a building's effect on occupants' health and well-being.





(<https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2019/10/01154849/leed-well-1.png>)

## LIVING BUILDING CHALLENGE

Vanderbilt is also exploring the [Living Building Challenge](https://living-future.org/lbc/) certification, which certifies buildings that are regenerative and positively impact the environment. Vanderbilt's first petal certification pilot is underway for the Peabody Home Economics and Mayborn Hall building complex, which is pursuing the materials petal. The intent of the Materials Petal is to help create a materials economy that is non-toxic, ecologically restorative, transparent, and socially equitable.



(<https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2019/10/01154852/leed-well-2.png>)

## WATER

Vanderbilt has taken significant steps to reduce its water usage. Since 2007, Plant Operations has retrofitted 3,500 bathroom fixtures on campus in an effort to make them more water efficient. These efforts include low flow and no touch faucets, low flow and dual flush toilets, high-efficiency showerheads and water free urinals.

## **GREEN CLEANING**

Vanderbilt is expanding the use of green cleaning products and practices throughout VU Facilities as part of its focus on WELL building principles. VU is implementing a Green Cleaning Policy requiring:

Each building to have an individualized Green Cleaning Plan

Campus green cleaning practices to be tracked

The use of pre-approved green cleaning products and equipment

Routinely providing education on best practices, new technologies, and procedures for green cleaning

Policy revisions every five years

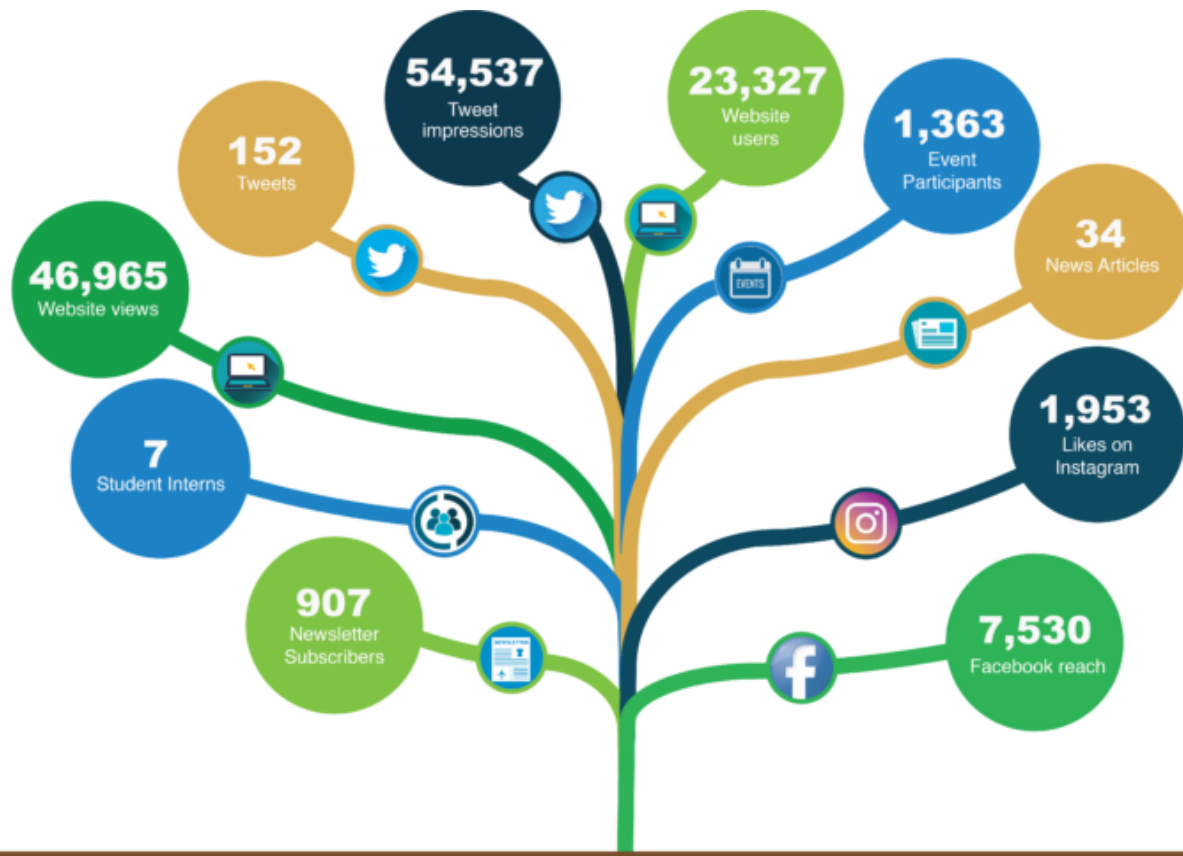


<https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2019/10/01154831/Green-Cleaning1.png>

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## ENGAGEMENT AND EDUCATION

FutureVU Sustainability acts as the sustainability information hub for Vanderbilt University. Together with the FutureVU Sustainability website, newsletter, social media, and in-person education and training, FutureVU Sustainability has had the following engagement impact:



# CAMPUS ENGAGEMENT

## Sustainability & Environmental Management Office

([https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2021/03/22082055/Campus-Engagement-Graphic-19\\_20-1.png](https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2021/03/22082055/Campus-Engagement-Graphic-19_20-1.png))

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## GREEN FUND

The Vanderbilt Green Fund (VGF) provides funding specifically to projects that are student-initiated and reduce the greenhouse gas emissions or improve the overall sustainability of the Vanderbilt University campus. VGF enables students, faculty, and administration to directly engage in the process of transitioning to a clean and sustainable energy future. Any student, faculty, or group associated with Vanderbilt University can propose a project for consideration.

The Office of Housing and Residential Education (<https://www.vanderbilt.edu/resed/>) and Plant Operations (<http://www.vanderbilt.edu/plantops/>) make a combined annual input of \$150,000 to the VGF. Green Fund proposals are first evaluated by a student committee that is organized jointly

by [VSG](https://studentorg.vanderbilt.edu/vsg/) and [SPEAR](https://vandyspear.wordpress.com/). Top proposals are recommended by the student committee to the Green Fund Working Group, which makes the final funding decisions. The Working Group is comprised of six administrators, six students, and one faculty member. To propose a project to VGF, complete this [application](https://anchorlink.vanderbilt.edu/submitter/form/step/1?Guid=4e30efd0-2a7b-49e6-ae7f-6868bde88bcc).

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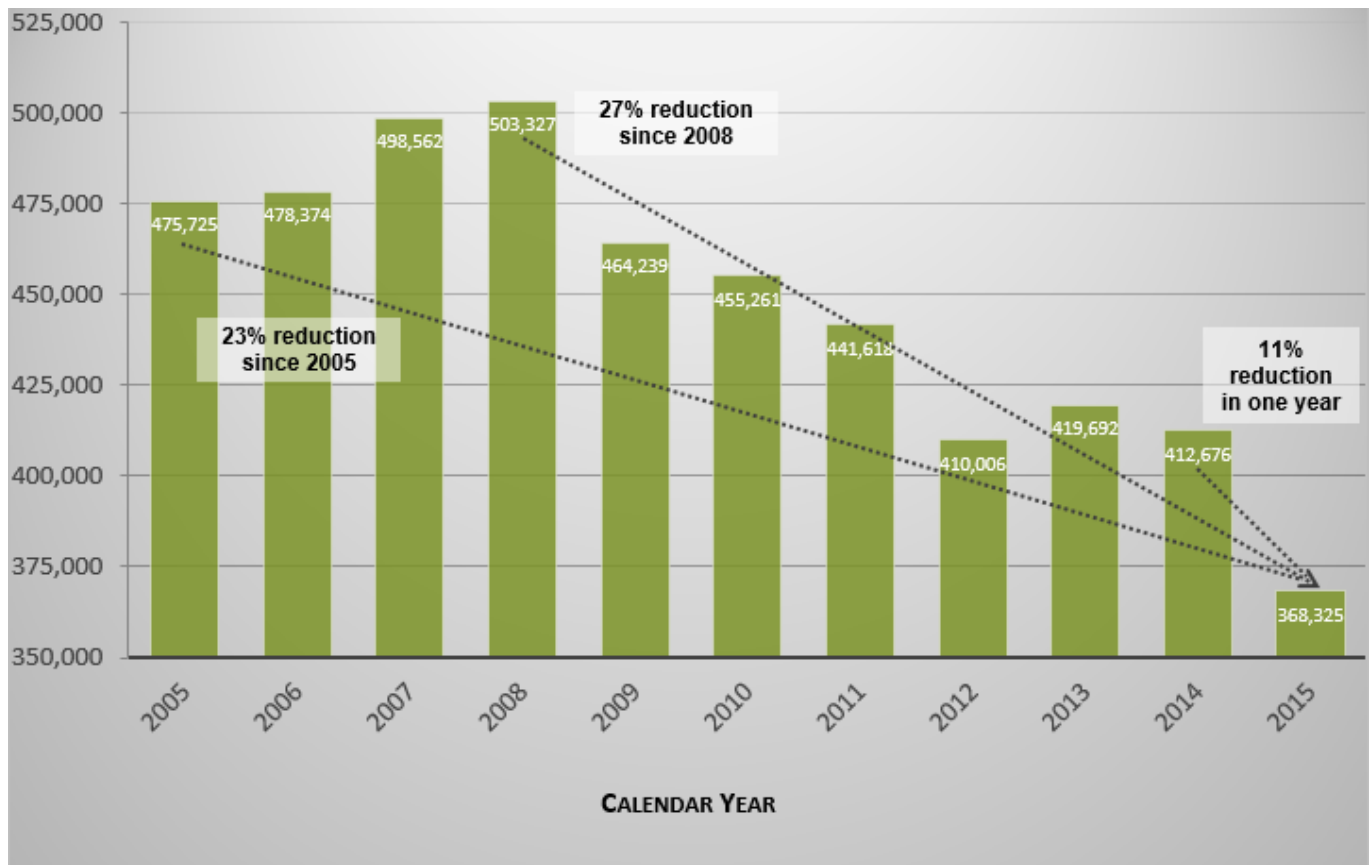
## PAST REPORTS

Vanderbilt is committed to the highest standards of transparency and sustainability through a process of environmental responsibility and accountability at every level of the University. With regards to climate change, this commitment translates to actions aimed at reducing greenhouse gas (GHG) emissions at the university, departmental, and individual level.

The completion of a university-wide GHG emissions inventory has occurred annually since the first publication in 2005. These reports provide many key data points, past trends and successes of Vanderbilt University and its efforts to curb greenhouse gas emissions and operations.

The listing to the right provides downloadable files of our past greenhouse gas inventories and reports.

From 2008 to 2015, Vanderbilt University, including Vanderbilt University Medical Center, reduced its overall greenhouse gas emissions by 27%. In 2016, the University separated from the Medical Center, resulting in changes to its boundaries, operations, and size of population, which necessitated a new 2016 baseline.



(<https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2019/10/01154839/Historical-Emissions1.png>)

[FY 2018-2019 Annual Sustainability Report \(https://www.vanderbilt.edu/sustainability/annual-sustainability-report-2019/\)](https://www.vanderbilt.edu/sustainability/annual-sustainability-report-2019/)

[FY 2017-2018 Annual Sustainability Report \(https://www.vanderbilt.edu/sustainability/annual-sustainability-report-2017/\)](https://www.vanderbilt.edu/sustainability/annual-sustainability-report-2017/)

[2016 Annual Sustainability Report \(https://www.vanderbilt.edu/sustainability/annual-sustainability-report-2016/\)](https://www.vanderbilt.edu/sustainability/annual-sustainability-report-2016/)

[2015 Greenhouse Gas Emissions Inventory Update, Published October 2016 \(https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2019/03/27133744/2015-GHG-Emissions-Inventory-Full-Report-Color.pdf\)](https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2019/03/27133744/2015-GHG-Emissions-Inventory-Full-Report-Color.pdf)

[2014 Greenhouse Gas Emissions Inventory Update, Published October 2015 \(https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2019/03/27134226/2014-GHG-Full-Report-10.27.15.pdf\)](https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2019/03/27134226/2014-GHG-Full-Report-10.27.15.pdf)

[2013 Greenhouse Gas Emissions Inventory Update, Published October 2014 \(https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2019/03/27134541/2013-GHG-Full-Report-Color-Final-10-20-14.pdf\)](https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2019/03/27134541/2013-GHG-Full-Report-Color-Final-10-20-14.pdf)

### [2012 Greenhouse Gas Emissions Inventory Update,](#)

[Published October 2013 \(https://www.vanderbilt.edu/wp-content/uploads/sites/69/2012-GHG-Full-Report.pdf\)](https://www.vanderbilt.edu/wp-content/uploads/sites/69/2012-GHG-Full-Report.pdf)

### [2011 Greenhouse Gas Emissions Inventory Update,](#)

[Published October 2012 \(https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2012/10/27135442/2011-GHG-Full-Report.pdf\)](https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2012/10/27135442/2011-GHG-Full-Report.pdf)

### [2010 Greenhouse Gas Emissions Inventory Update,](#)

[Published October 2011 \(https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2019/03/27140017/Final-2010-GHG-Full-Report-Color1.pdf\)](https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2019/03/27140017/Final-2010-GHG-Full-Report-Color1.pdf)

### [2005-2009 Greenhouse Gas Emissions Inventory Update,](#)

[Published October 2010 \(https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2010/06/27140430/GHG-Report-2005-2009\\_Color\\_Final.pdf\)](https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2010/06/27140430/GHG-Report-2005-2009_Color_Final.pdf)

### [2005-2007 Original Greenhouse Gas Emissions Inventory](#) ([https://cdn.vanderbilt.edu/vu-wp0/wp-](https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2010/09/27140524/ghg_baseline_report_color.pdf)

[content/uploads/sites/69/2010/09/27140524/ghg\\_baseline\\_report\\_color.pdf\)](https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2010/09/27140524/ghg_baseline_report_color.pdf)

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