VANDERBILT UNIVERSITY®

(https://www.vanderbilt.edu/sustainability/)

Annual Sustainability Report FY2021-2022

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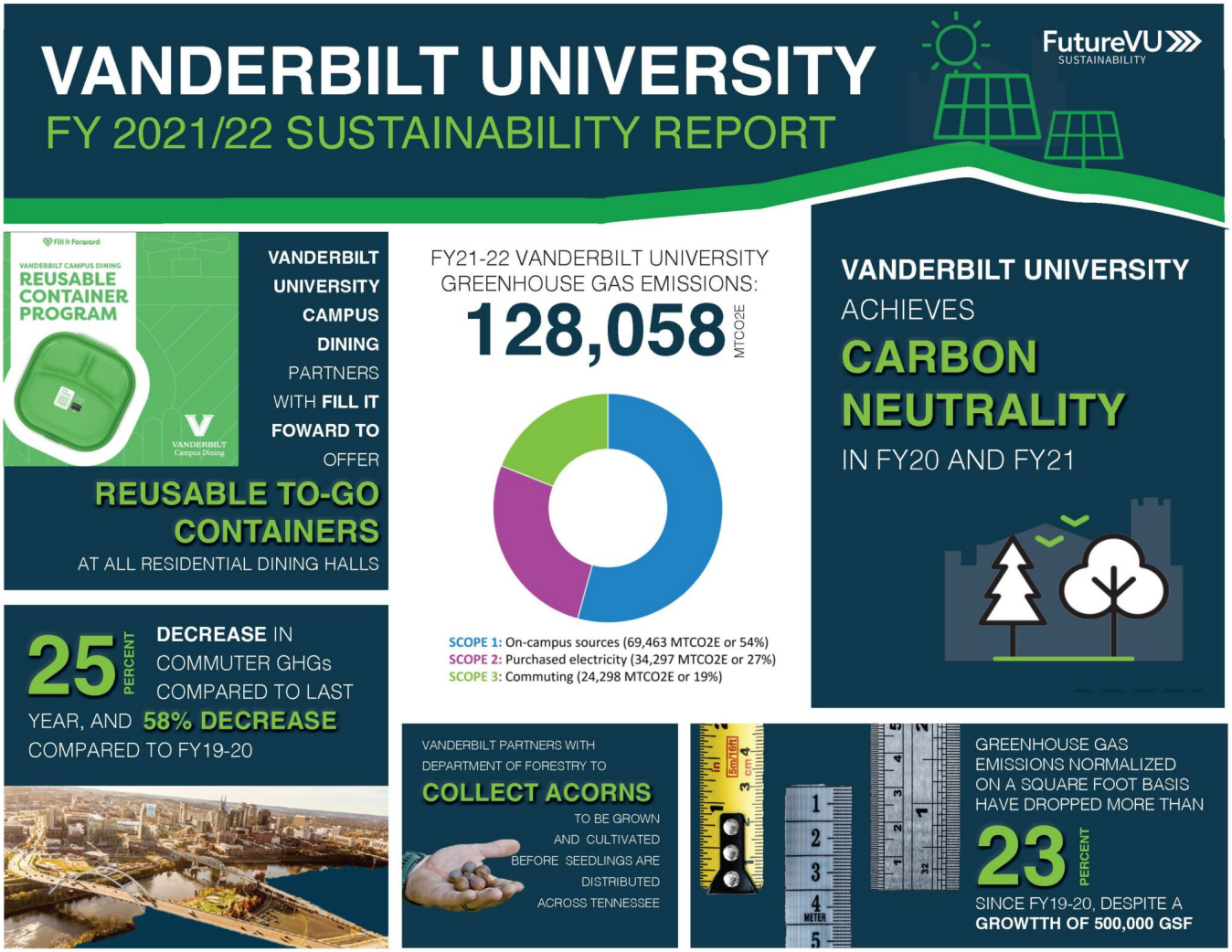
Explore the Annual Report »



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INTRODUCTION

A $1 million gift from Commodore Cornelius Vanderbilt in 1873 established the University following the Civil War, 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 340-acre campus near the thriving city center of Nashville, TN, serving over 13,700 students and directly employing over 5,800 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 29% of the electrical needs. The remaining 71% 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 (CO2); methane (CH4); nitrous oxide (N2O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); and sulfur hexafluoride (SF6). The amount of emissions of each gas are converted to a standard unit of measure, or metric tons of carbon dioxide equivalents (MTCO2E) and then summed to determine Vanderbilt's carbon footprint.

Vanderbilt University became 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 and forward 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 is archived. The 2016 Annual Report contains first year baseline data for the University only, with the FY21-22 Annual Report presenting the sixth year of trending data. 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 2022 from July 2021-June 2022, aligning with the Vanderbilt academic year cycle.

Due to the COVID-19 pandemic, campus operations during FY20-21 and FY21-22 were significantly altered compared to a pre-pandemic state. Throughout this report, we will compare the FY21-22 GHG emission profile to both the FY20-21 and FY19-20 reports so we can better understand emissions trends over a longer timeframe and the emissions impacts that were due to COVID-19 operational changes.

This report is developed by the Vanderbilt Environmental Health, Safety and Sustainability office. Any questions should be directed to futurevusustainability@vanderbilt.edu (mailto:futurevusustainability@vanderbilt.edu).

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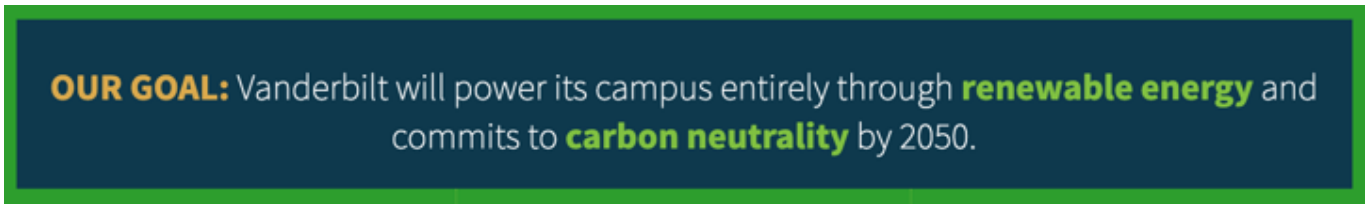
Back to top

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.



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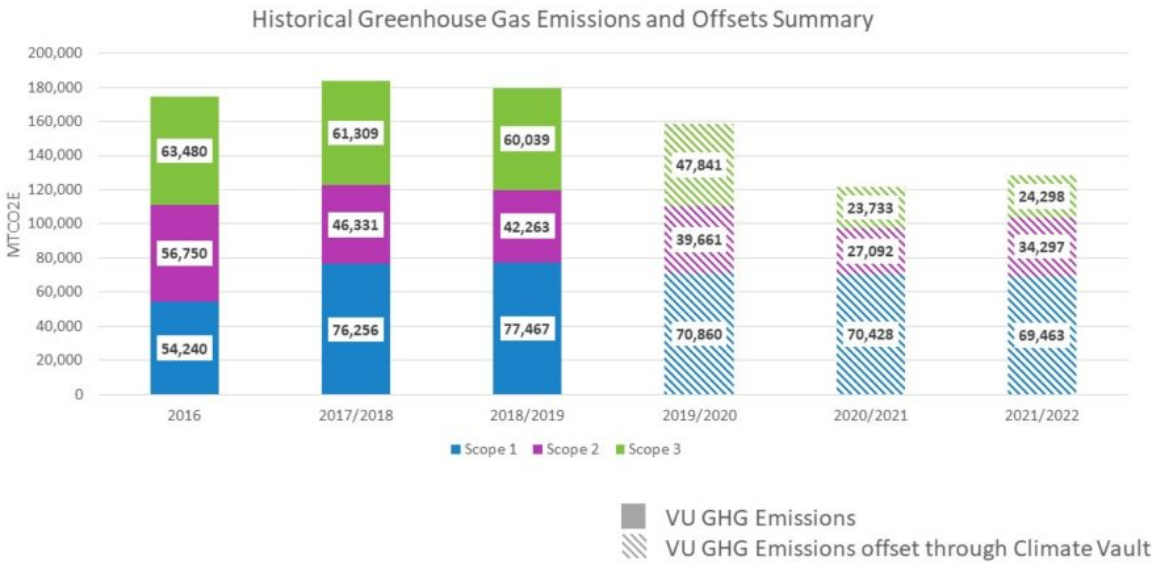
In 2021, Vanderbilt University announced a collaboration with the nonprofit organization Climate Vault that allows the university to address the full extent of its carbon footprint now, achieving carbon neutrality decades ahead of its initial goal. The initiative effectively removes carbon pollution permits from regulated carbon markets while simultaneously stimulating research into emerging carbon removal technologies. Several large efforts are already underway to make significant strides toward reducing Vanderbilt's emissions. While the university continues to push action and innovations on several fronts, it has identified a near-term opportunity to work with Climate Vault and use the cap-and-trade market—which is designed to limit harmful emissions—to accelerate its impact, allowing it to become the first member of the Association of American Universities to achieve carbon neutrality.

GHG emissions for FY19-20 and FY20-21 were offset through Vanderbilt's partnership with Climate Vault, making VU carbon neutral for these two reporting years. Vanderbilt plans to continue a carbon offsets program for FY21-22 with the arrival of the renewal cycle in Spring 2023.



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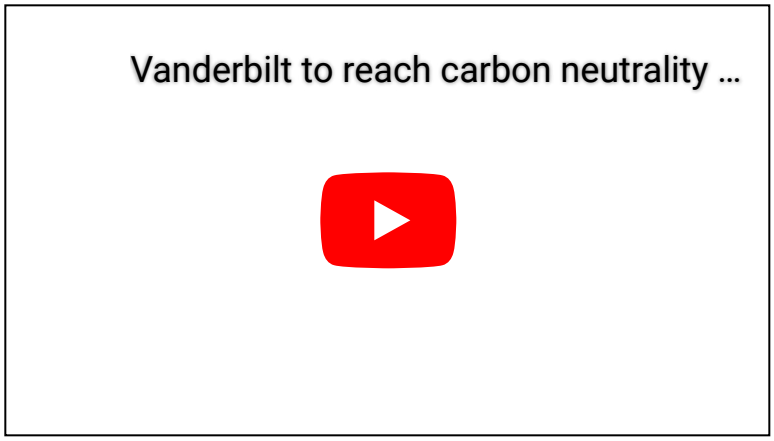


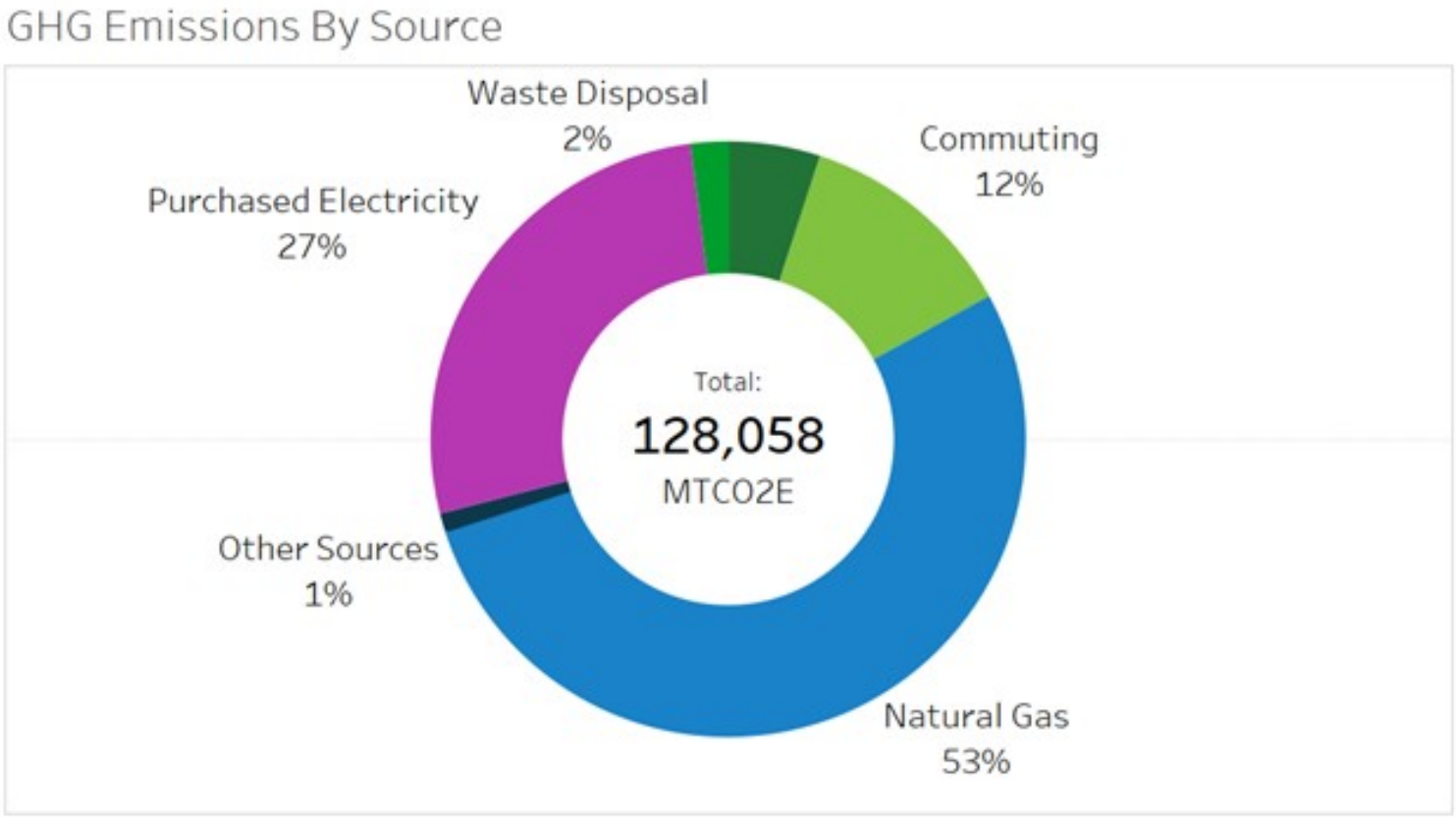
GHG EMISSION SOURCES

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).

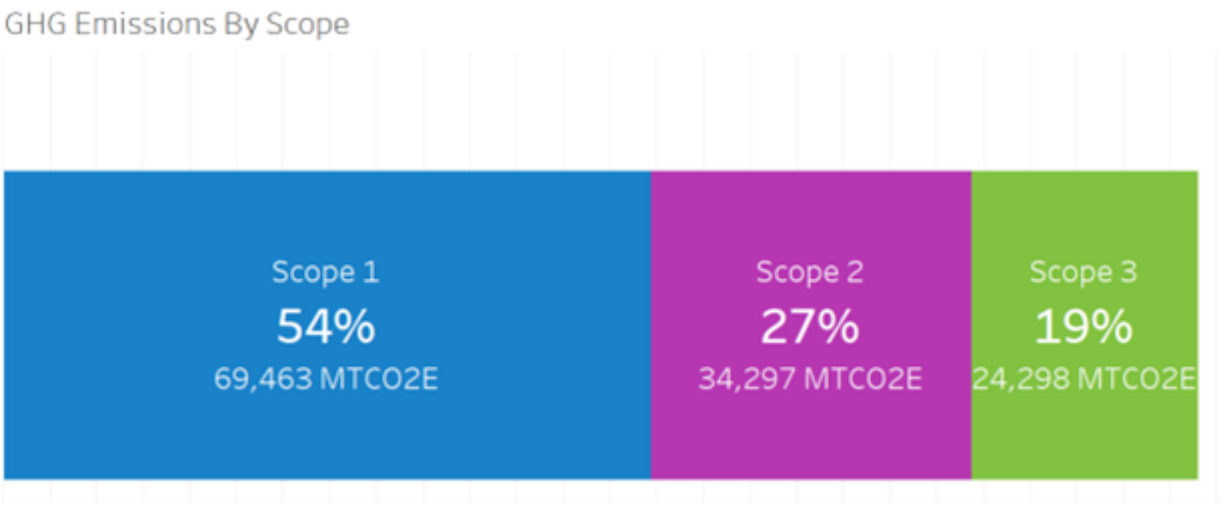
Scope 3: Scope 3 emissions at Vanderbilt include faculty, staff, and student commuting, air travel, waste disposal, and recycling.



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.

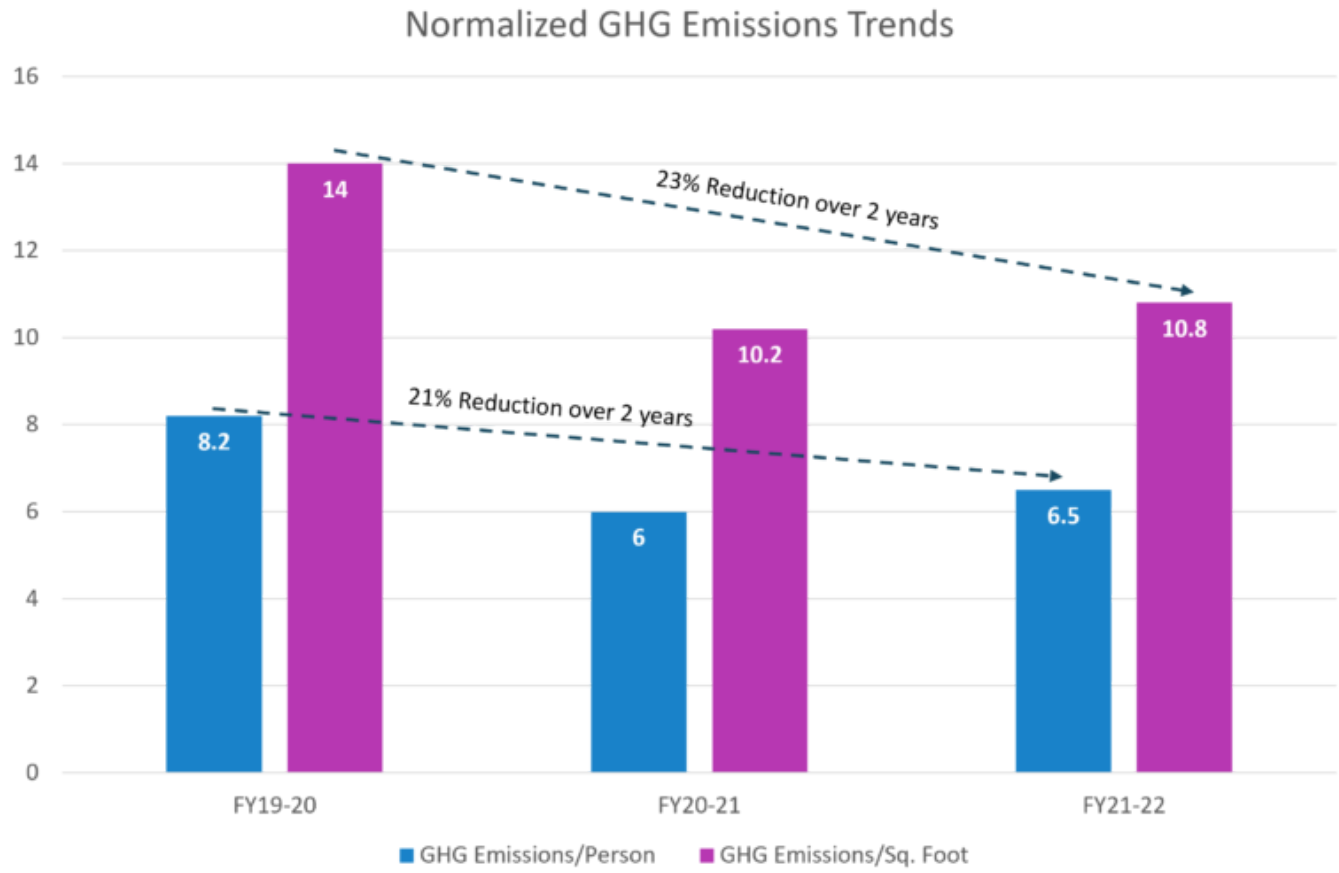
GHG EMISSION SCOPES

Vanderbilt University emitted 128,058 metric tons of carbon dioxide equivalents (MTCO2E) in FY21-22. These greenhouse gas emissions were split between Scopes 1, 2, and 3, at 54%, 27%, and 19%, 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.



(https://www.vanderbilt.edu/sustainability/wp-content/uploads/sites/69/Picture1.png)Compared to the FY19-20 Greenhouse Gas (GHG) emissions footprint calculation, the FY21-22 footprint shows an overall GHG decrease of 19%, despite a 6% increase from FY20-21. Campus operations were shifted moderately for response to the COVID-19 pandemic during FY20-21. Portions of the university operated under hybrid remote/in-person work during this time and campus buildings were ramped down to match those reduced campus occupancies. As a result, energy use, commuting, and air travel emissions were moderately lower last year to reflect those modifications.

VU's GHG emissions per gross square foot has dropped by 23% over two years, despite a growth of 540,000 square feet over the same period.



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Back to top

INVEST IN ON-SITE CLEAN ENERGY

BLUESKY VISION ENERGY STRATEGY STUDY

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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, will achieve Net Zero Energy with Resiliency by:

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

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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 and password: VU*Tennis.

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.

INVEST IN OFF-SITE LARGE-SCALE RENEWABLE ENERGY

LARGE-SCALE RENEWABLE ENERGY STUDY

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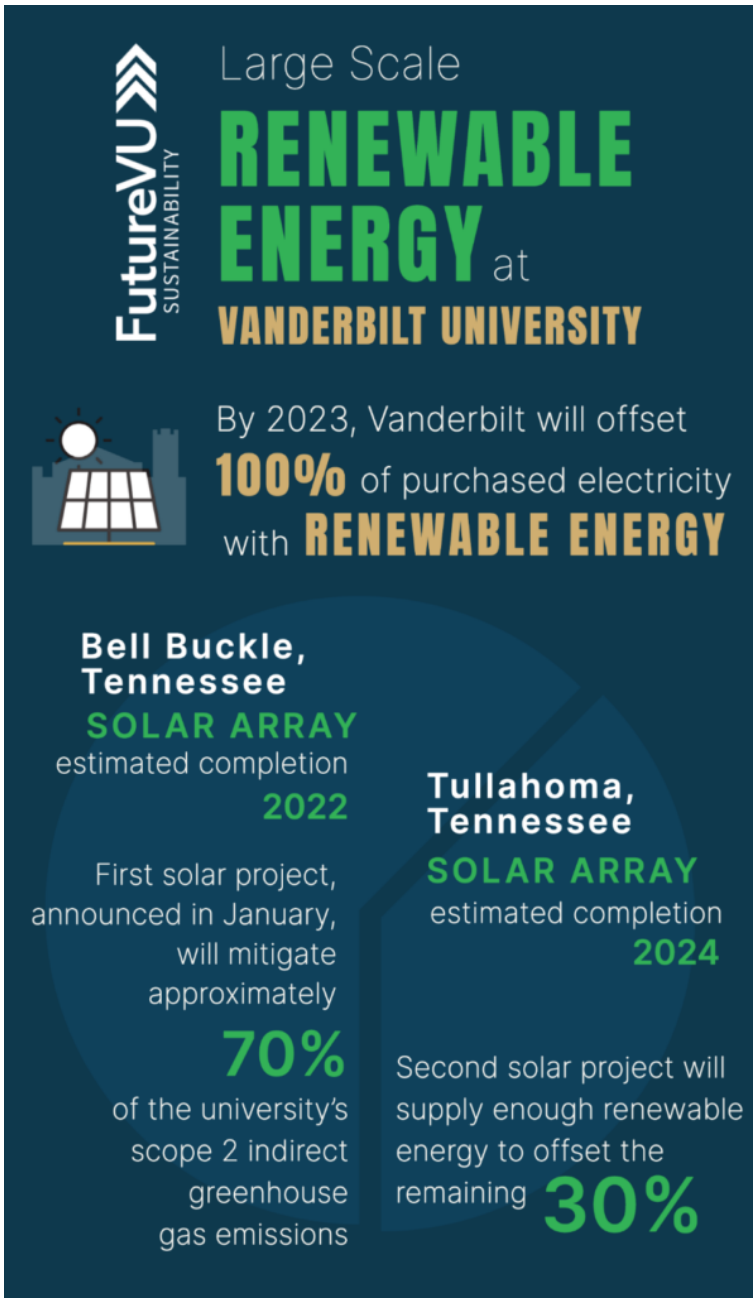
The Large-Scale Renewable Energy Study (https://www.vanderbilt.edu/sustainability/lsre/), conducted with input from the Large-Scale Renewable Energy Study Advisory Committee, a mix of diverse stakeholders on campus, explored potential options for off-campus, large-scale renewable energy sources, including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

Following the BlueSky Energy Vision Study (https://www.vanderbilt.edu/sustainability/blueskyenergy/) and the Large-Scale Renewable Energy Study, (https://www.vanderbilt.edu/sustainability/lsre/) in FY19-20, 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 Green Invest Program 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, one of the largest independent solar power producers in the country.

Through this agreement, Vanderbilt will reach its renewable energy goal just over five 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/), announced in January 2020, will mitigate approximately 70 percent of the university's indirect greenhouse gas emissions from purchased electricity in late 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/) will supply enough renewable energy to offset 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 projects as well as unique educational and research opportunities for the Vanderbilt community with both solar farm locations within close proximity to the Nashville area.

Vanderbilt University's Green Invest Program partnership with the Tennessee Valley Authority and Nashville Electric Service was recognized (https://news.vanderbilt.edu/2021/07/09/vanderbilt-wins-governors-environmental-stewardship-award-for-energy-and-renewable-resources-progress/) with a 2021 Governor's Environmental Stewardship Award. The annual honors are considered the most prestigious environmental and conservation awards in Tennessee.

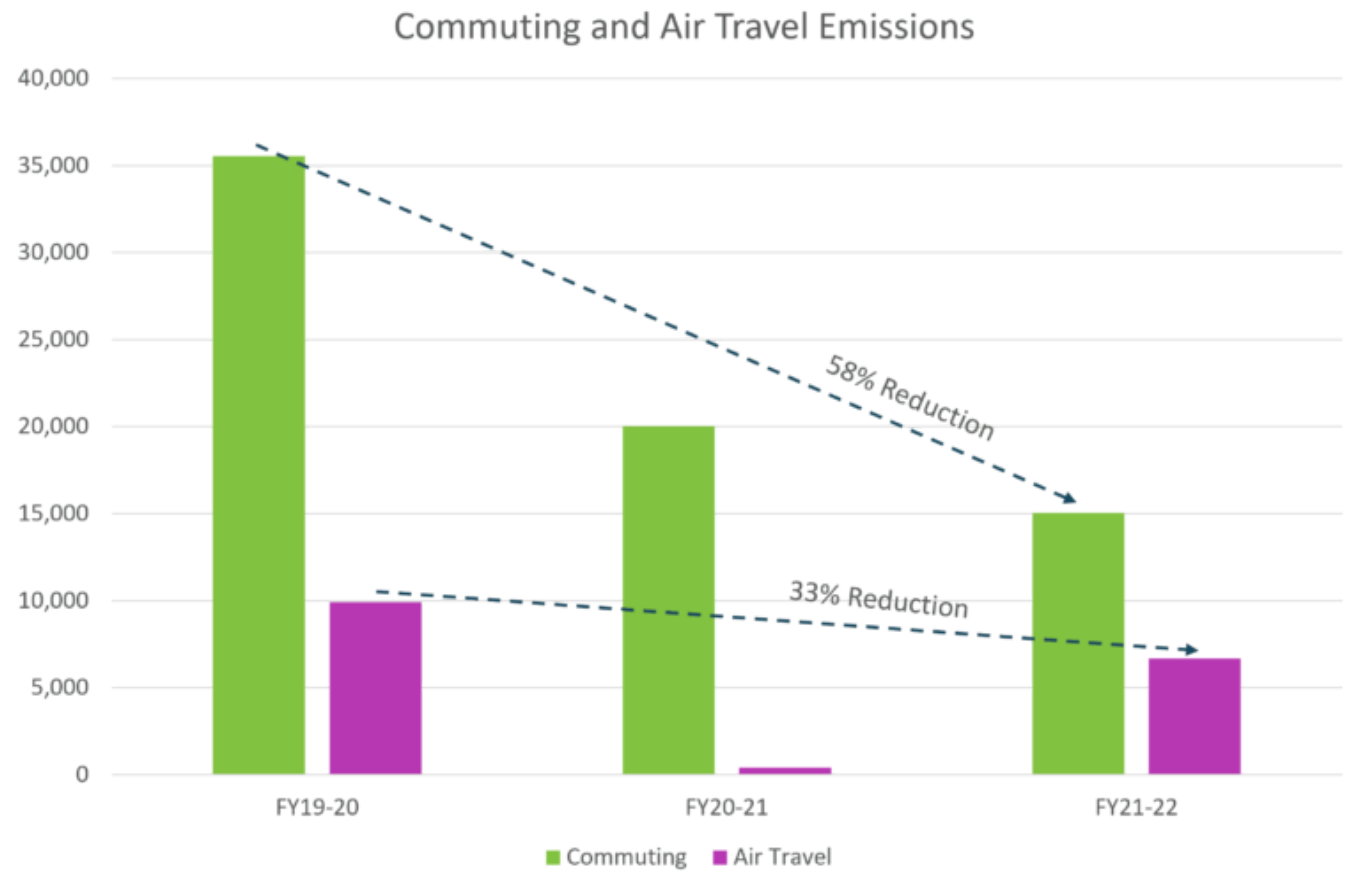
Back to top

DECREASE CARBON FOOTPRINT FROM VEHICLES

EMISSIONS SUMMARY

Vanderbilt is a major employer in Nashville. The university consists of close to 6,000 faculty and staff, is home to more than 7,000 undergraduate students, and is the place of study for an additional 6,600 graduate and professional students. Due to a transition to more remote work, Vanderbilt's regularly commuting population shrank to about 3,400 people, compared to about 12,000 two years ago. Commuting emissions contribute 15,047 MTCO2E to the University's carbon footprint and decreased 25% in FY21-22 compared to FY20-21, and 58% compared to FY19-20. This decrease reflects the Vanderbilt community's shift in commuting and remote work patterns.

In addition to the changes in commuting patterns, air travel during FY21-22 was significantly reduced from pre-pandemic years, accounting for another 6,647 MTCO2E. Though air travel increased significantly in FY21-22 compared to FY20-21, emissions from air travel are still down 33% from FY 19-20. Transportation emissions are 17% of Vanderbilt's overall footprint.



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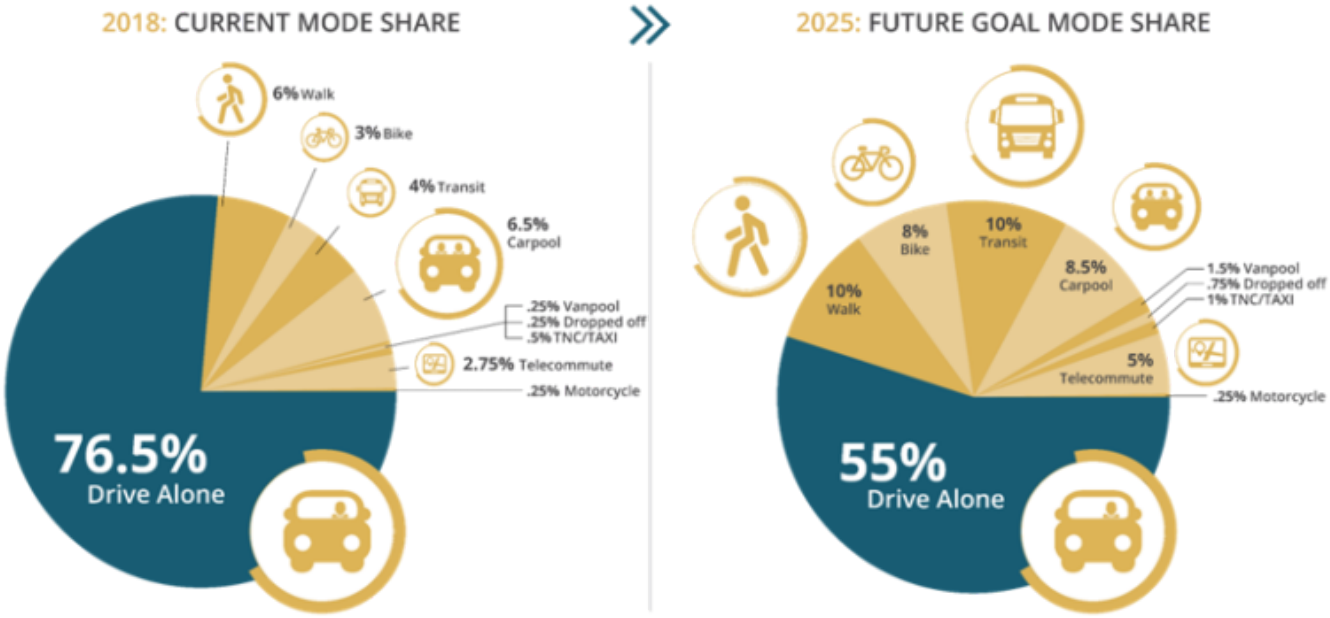
MOVEVU

MoveVU (https://www.vanderbilt.edu/movevu/) is Vanderbilt's strategic transportation and mobility plan that falls under the FutureVU comprehensive campus planning efforts (https://www.vanderbilt.edu/futurevu/). 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 walking and bicycling trips, 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 for commute trips 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 other transportation modes, such as walking, biking, taking transit, carpooling, vanpooling, and more, will need to increase.



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In 2020, Vanderbilt explored a daily parking pilot program for a limited number of commuters. In FY21-22, the formalized program included over 2,000 participants. The daily parking program 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. Individuals enrolled in the daily parking program who take sustainable commutes to campus will earn a $0.50 daily incentive each time they choose a sustainable commute up to a total of $10 per month, assuming a 20-day work month. Eligible sustainable commutes include walking, biking, transit, carpooling and vanpooling. Vanpool and Carpool trips are can also be split between Vanderbilt faculty, staff, and graduate/professional student through the MoveVU Commute Hub. Vanderbilt will conduct a new commute survey in the Fall of 2022 to recalibrate the future mode share goals in response to commuting behavior changes related to COVID-19. In FY21-22, only 23% of commuters who participated in the daily parking program commuted to campus each day.

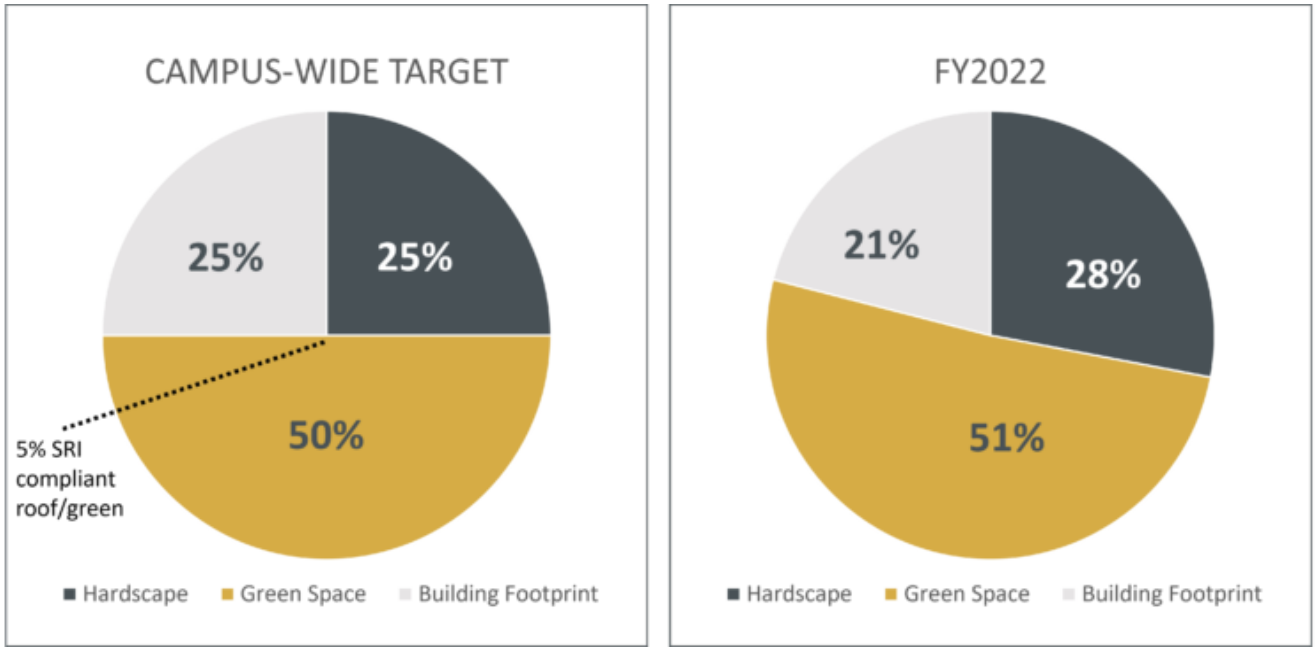
Launched in 2022, Commute Concierge services are now available to the Vanderbilt University community:

- Learn how to ride WeGo public transit to, from and across campus
- Plan out sustainable commutes, including tips on where to park and ride the bus
- Identify bicycle amenities around campus like showers and repair stations
- Receive guidance on sustainable options to travel downtown, to the airport, grocery stores, etc.
- Receive assistance planning group excursions
- View presentations on information about the daily parking program and sustainable commute options

Back to top

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 FY21-22, the current campus breakdown is 51% green space, 28% hardscape and 21% building footprint.



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

VANDERBILT ARBORETUM

When Bishop Holland McTyeire oversaw the planting of more than a thousand trees on Vanderbilt's campus nearly 150 years ago, he set in motion a time-release canopy that now provides widespread shade for the university community. Vanderbilt's entire campus is designated as an arboretum (https://www.vanderbilt.edu/trees/). In 2013 the campus contained 6181 identified and geolocated trees and shrubs, with approximately 190 species of trees and shrubs. Each year 150 to 200 new trees are planted to replace trees that die or as landscaping for new construction.

As steward of today's arboretum, University Landscape Architect James Moore carries that legacy forward, working not only to beautify campus and preserve its botanical diversity, but also to study the trees' resilience to disease and better understand how they absorb heat and stormwater for midtown Nashville.

The arboretum's white oaks are also helping to reforest Tennessee. Last year a joint project of the university, the Metro Tree Advisory Committee and the Tennessee Department of Forestry collected mountains of acorns to raise in nurseries. The goal of this project is to increase the genetic diversity among the state's population of trees.

COMMUNITY GARDEN

The Vanderbilt Community Garden was transitioned to a more central location on campus in FY19-20. The new community garden continues to use the efforts of the Vanderbilt Community Garden student group with support from the Campus Dining and Facilities groups. The garden will include 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, as well as creating strong ties to the Vanderbilt Children and Family Center who will use the garden as part of their curriculum. The Community Garden donates any leftover produce to Shade Tree Clinic (https://www.shadetreeclinic.org/).

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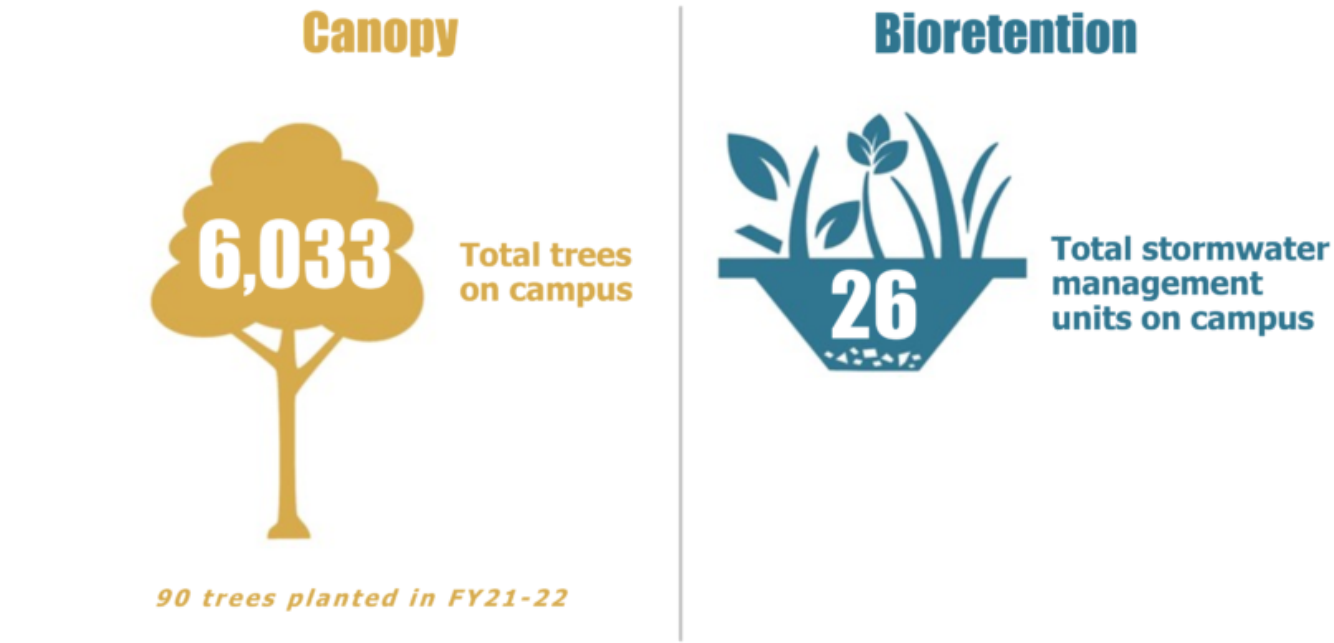
STORMWATER MANAGEMENT/SMART IRRIGATION



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Stormwater management practices are in place across campus. Nicholas S. Zeppos College collects and reuses rainwater from the roof to flush toilets. 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 (https://www.vanderbilt.edu/campusplanning/landscape/) 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.

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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 Eskind 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.

Back to top

REDUCE CONSUMPTION AND WASTE

ZERO WASTE STUDY AND PLAN

The Zero Waste Study (https://www.vanderbilt.edu/sustainability/reduce-waste/) and Master 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) were 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 help progress towards Vanderbilt's carbon neutrality goal. Of Vanderbilt's Scope 3 emissions, waste and recycling is responsible for 2,606 metric tons of CO2 equivalent (MTCO2E) or 2% of the total GHGs that Vanderbilt emitted in FY21-22.

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.

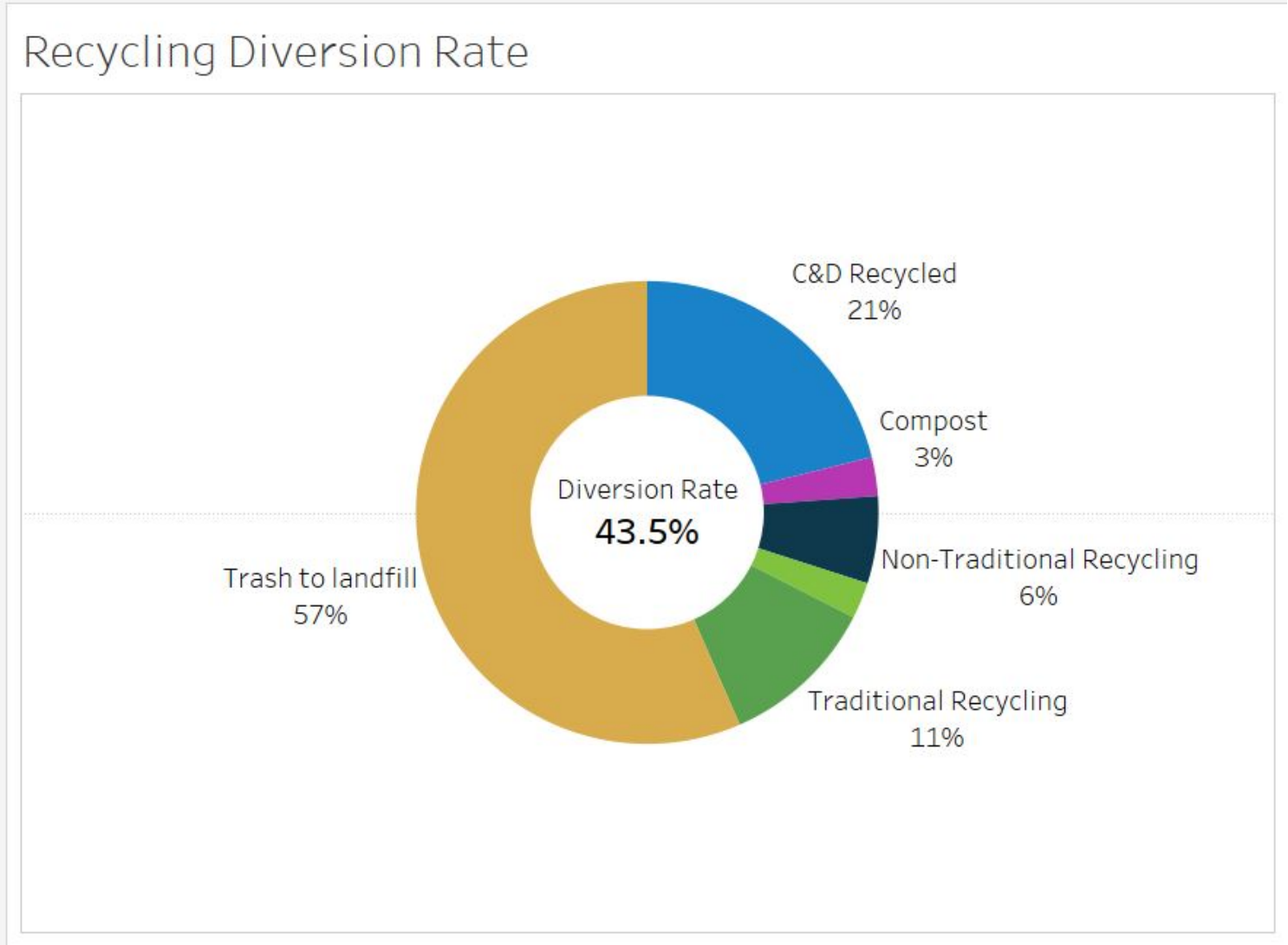
The Committee also examined current waste streams, waste generation activities, existing strategies, challenges and opportunities for improvement throughout campus. Data and feedback were gathered from almost 100 stakeholders through a series of meetings with various groups from across the university. The plan 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 positive environmental impacts. Vanderbilt's emissions related to waste and recycling were 20% lower in FY21-22 compared to FY20-21, and marginally higher than FY19-20 by 6%. In FY21-22, Vanderbilt had a diversion rate for the University of 43.5%. During FY20-21, materials that contribute to waste and recycling, especially within dining facilities, were significantly shifted to accommodate safety precautions for COVID-19. This shift in operations resulted in the increase in emissions related to waste and recycling.

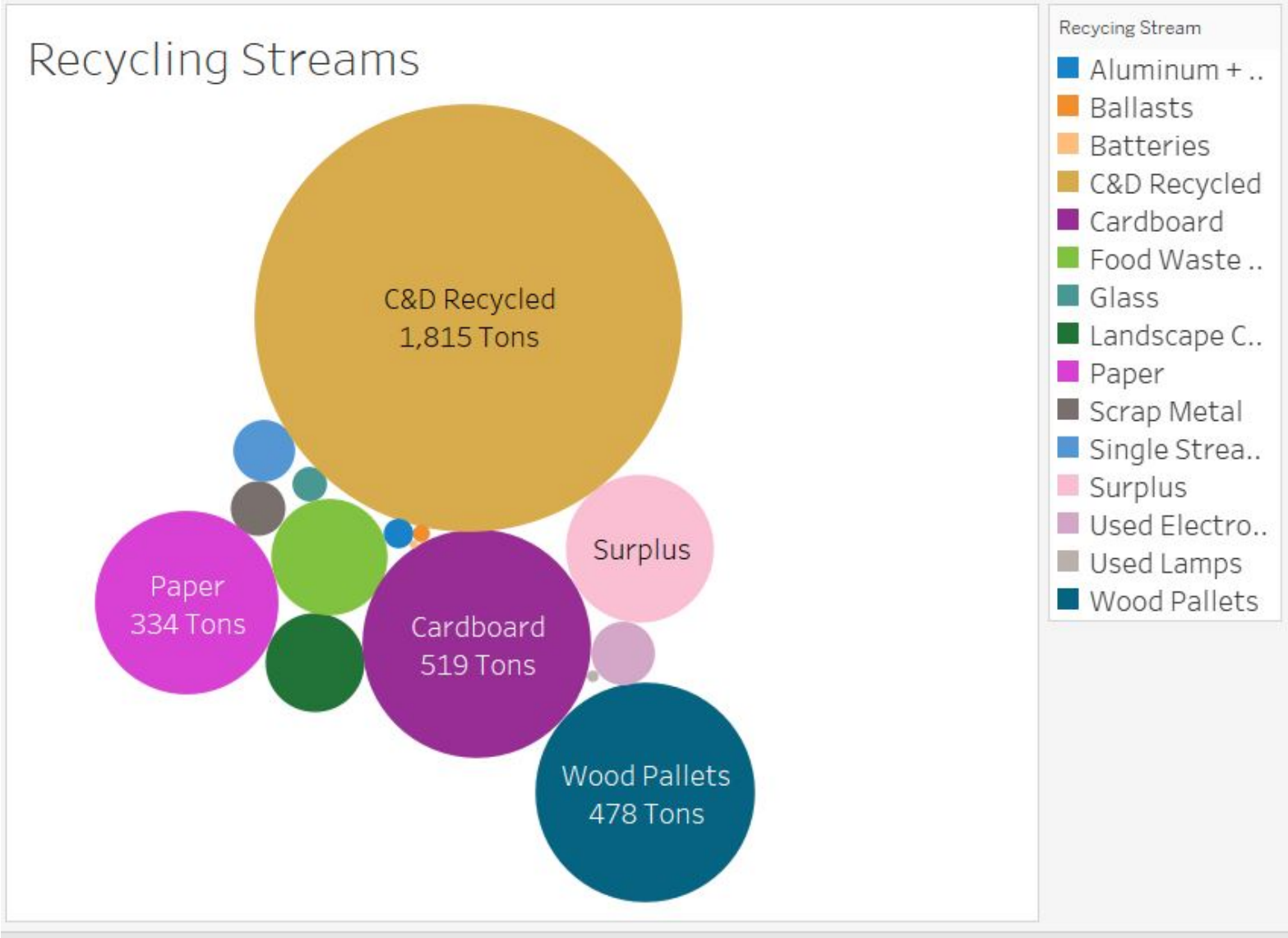


RECYCLING STREAMS

In FY21-22, Vanderbilt University generated 4,850 tons of waste and 3,511 tons of recycling. Waste disposal accounts for 2,606 MTCO2E from Vanderbilt or about 2% of our total emissions.

Vanderbilt's 3,511 tons of recycling are broken down into specific streams below.

Recycling Streams



SINGLE USE PLASTIC

In line with Vanderbilt's Zero Waste and single use plastic elimination goals sustainability efforts, Vanderbilt University no longer sells single-use plastic water and soda bottles in its dining facilities, markets and will soon not see them in all vending machines. This move aligns with Vanderbilt's goal to eliminate single-use plastic purchases by 2025. The collaborative effort involved will reduce 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 150 hydration stations across campus. All to-go containers, cups, flatware, utensils, and napkins are compostable.

In 2020 Vanderbilt announced a new partnership with PepsiCo as the official beverage provider of the university in efforts to continue reducing waste. PepsiCo will provide 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.

Commodore Concessions, a partnership between Athletics and Campus Dining, (https://vucommodores.com/concessions-updates/)joined the "No More Plastic" initiative at all Vanderbilt University athletics venues beginning in August 2021. The university ended the sale of all single-use plastic bottles, and as a result, fans now enjoy more sustainable beverage options at baseball, football, basketball, soccer, and lacrosse games. As an enhancement to the gameday experience, fans can purchase beer and water in recyclable, aluminum containers or reusable commemorative soft drink cups with unlimited Pepsi refills at self-service drink fountains. The impact of this shift has been significant, eliminating more than 25,000 single-use plastic bottles sold annually at Vanderbilt concessions stands. Additionally, recycling collection has been implemented at the Vanderbilt football stadium and will continue to be implemented at other sporting locations across campus.

(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)

REUSABLE CONTAINER PROGRAM

As part of that Vanderbilt's commitment to waste reduction, Vanderbilt Campus Dining launched a reusable container program in fall 2022, designed to significantly reduce the institution's dependence on disposable to-go containers.

Vanderbilt Campus Dining (https://vu.edu/dining) is partnering with Fill it Forward to offer reusable to-go containers at all residential dining halls, including Commons, E. Bronson Ingram, Rothschild, and Zeppos. Each undergraduate student will receive one free container that can be used in all-you-care-to-eat residential dining locations, and can be returned for cleaning and sanitizing. Using the Fill it Forward app, students can track their return, then scan a new code to rent a new container.

With the Fill it Forward app, students can rent and return our reusable food containers, while also tracking the impact of their personal reusable bottles. Every scan unlocks a donation and tracks the environmental impact of diverting another single-use item from our landfills and oceans. Watch the How it Works Video (https://nam04.safelinks.protection.outlook.com/?url=https%3A%2F%2Fvimeo.com%2F684276162&data=05%7C01%7Csean.carroll%40vanderbilt.edu%7C5c03ad38f7d24d9e5b0d08da7af8f2bf%7

The reusable to-go containers replace the compostable to-go containers that were previously available in dining facilities, reducing waste created on campus.

Back to top

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 to local non-profits to be redistributed to the Nashville community. Any food that cannot be donated is composted.

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 all dining halls. Food waste is collected and composted by the Compost Company (http://compostcompany.com/), a local vendor. In addition to food composting, all to-go food containers (outside of the reusable containers), cups, flatware, and straws offered are made from compostable materials.

Composting is a process in which organic waste is broken down into a rich, soil additive under controlled conditions. Vanderbilt is now reusing the compost created from our waste at the Compost Company to support our campus landscape, closing the loop on this waste stream. 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)

Back to top

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 Menus of Change University Research Collaborative (https://www.menusofchange.org/) (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).

Vanderbilt Campus Dining prioritizes increasing local purchasing to reduce our carbon footprint and support the local community. Local vendors include Bongo Java, Bobby John Henry Bakery, Kernels Nashville, Porter Road Butcher, and Frothy Monkey. Additionally, local produce is sourced through Creation Gardens when possible.

Back to top

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/) 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.

Back to top

INVEST IN SUSTAINABLE INFRASTRUCTURE

ENERGY – EFFICIENCY PROJECTS

Greenhouse gas emissions normalized on a square foot basis have dropped more than 23% since FY19-20 due to a combination of ongoing energy efficiency improvements of existing buildings by Plant Operations (https://vanderbilt.edu/plantops/), green building techniques employed in new construction by Campus Planning and Construction (https://www.vanderbilt.edu/campusplanning/home/), increased efficiency in the NES electricity grid, and operational changes due to the COVID-19 pandemic.

These building practices are described in the sections below.

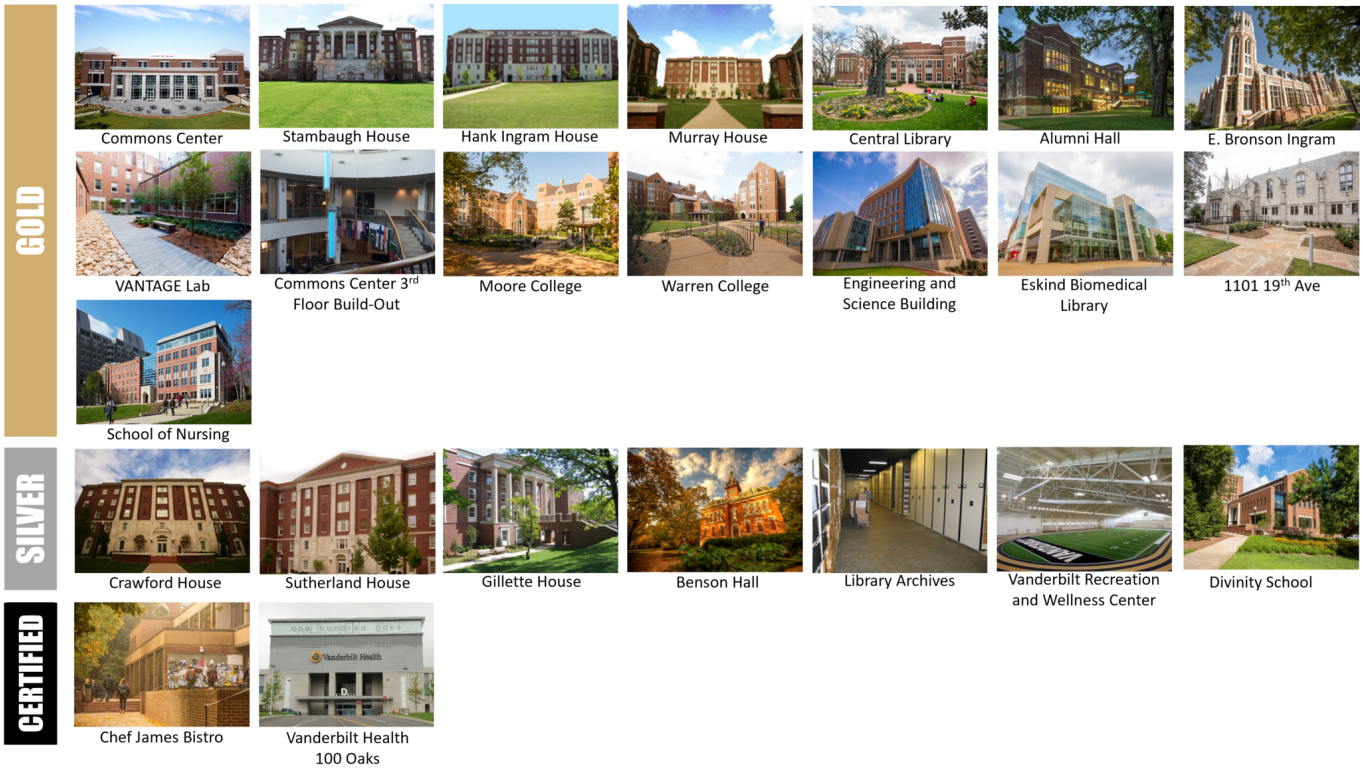
LEED

(HTTPS://CDN.VANDERBILT.EDU/VU-WP0/WP-CONTENT/UPLOADS/SITES/69/2021/03/22081828/LEED-3.11.21.PNG)

Vanderbilt University was honored with a 2020 Leadership Award from the U.S. Green Building Council (https://www.vanderbilt.edu/sustainability/2020/11/vanderbilt-receives-leadership-award-from-u-s-green-building-council/) for the institution's achievements in green building and its commitment to creating a healthy, sustainable future. The U.S. Green Building Council's Leadership in Energy and Environmental Design rating system, known as LEED, has become the nationally accepted benchmark for the design, construction and operation of high-performance sustainable buildings. The council noted in its award announcement that Vanderbilt places a high priority on incorporating sustainability into the university's construction and renovation projects.

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 24 LEED certified projects and was the first university in Tennessee to earn LEED certification.



(https://www.vanderbilt.edu/sustainability/wp-content/uploads/sites/69/2022-LEED-Graphic.png)

WELL

Looking forward, Vanderbilt will explore other certifications for sustainable buildings in addition to LEED. The School of Nursing building (https://news.vanderbilt.edu/2019/01/17/pioneering-vanderbilt-school-of-nursing-building-designed-with-health-in-mind/) expansion is Vanderbilt's first WELL certification pilot, in addition to achieving LEED Gold. certification 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)

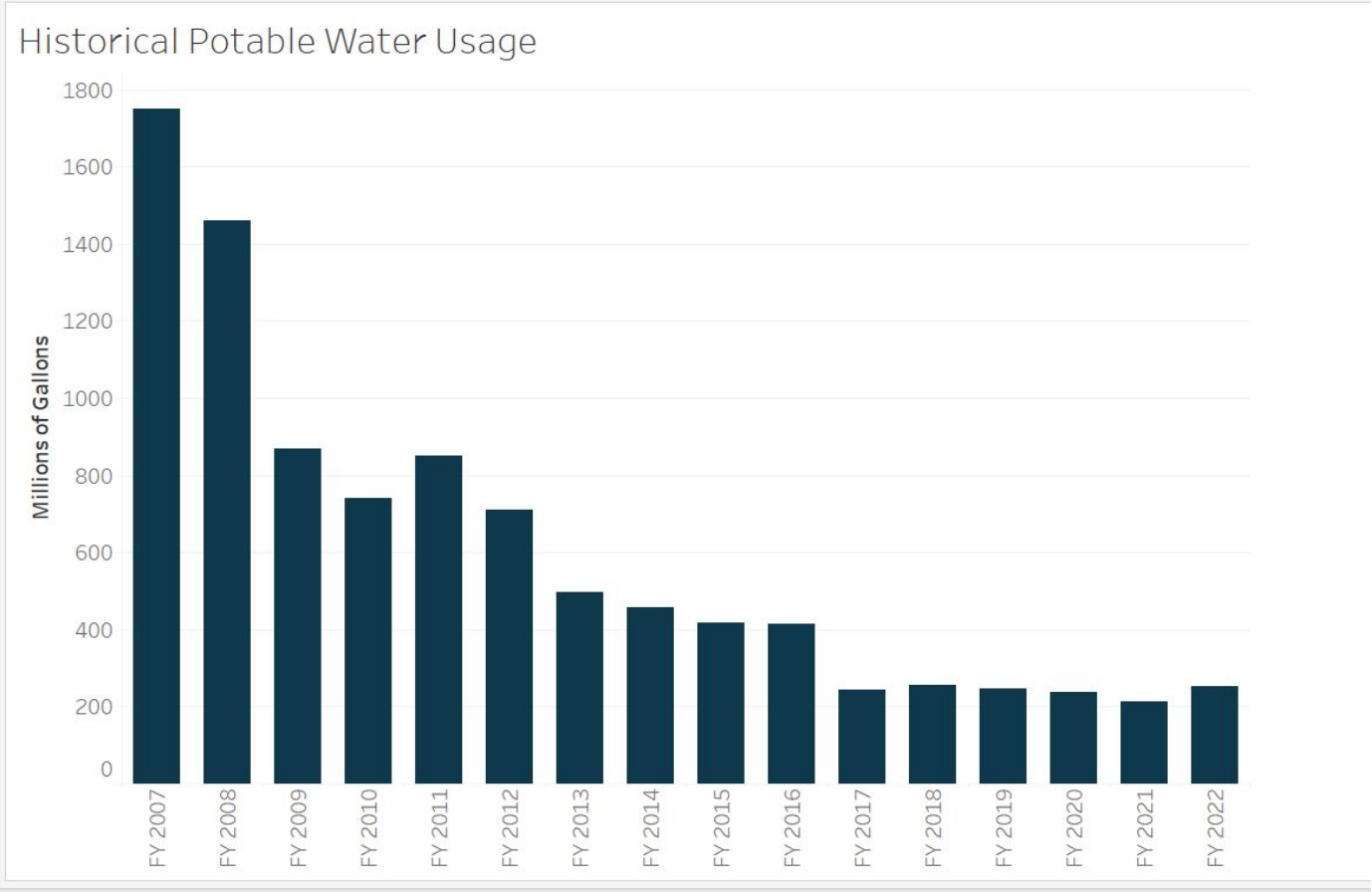
LIVING BUILDING CHALLENGE

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 planned 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

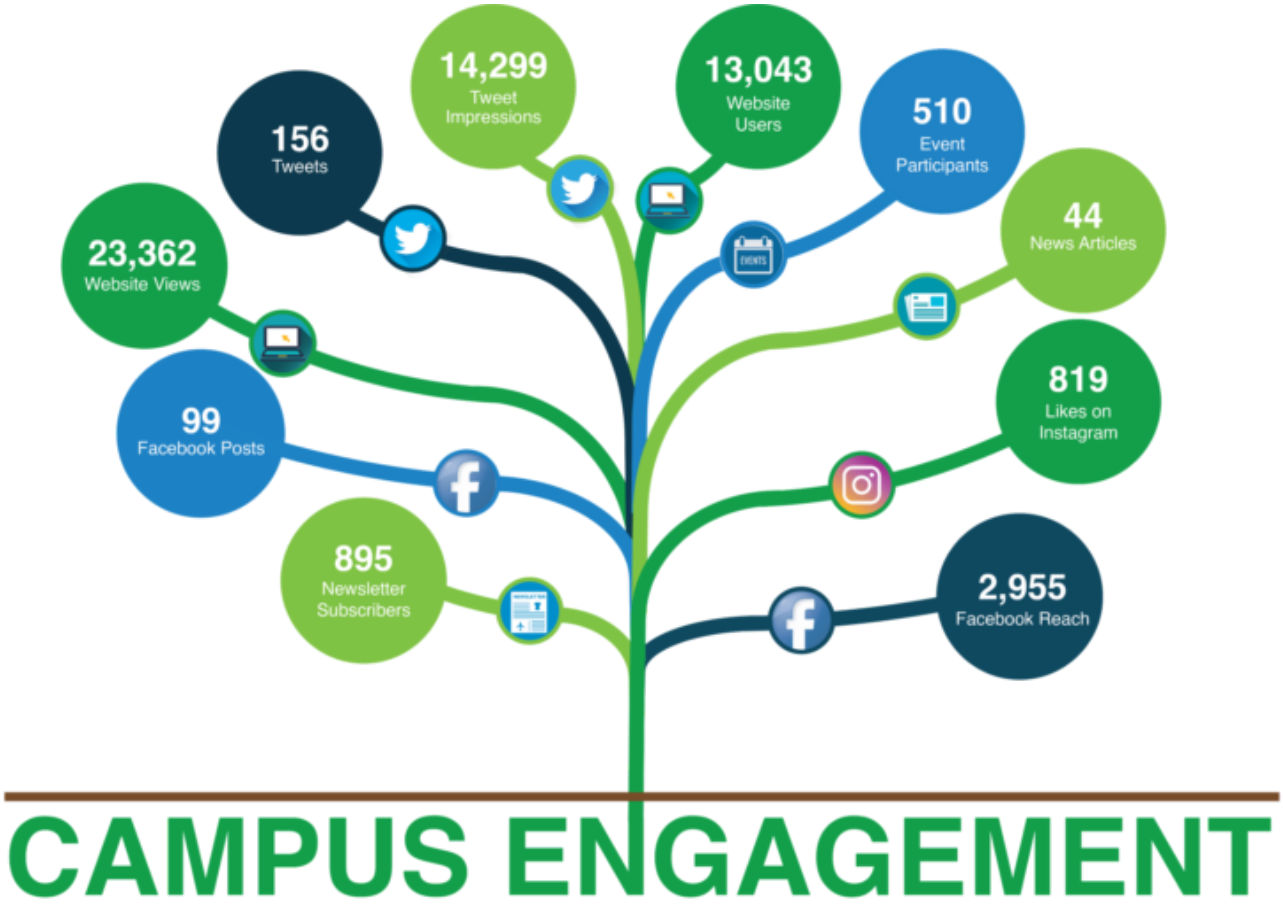
Policy revisions every five years

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

Back to top

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:

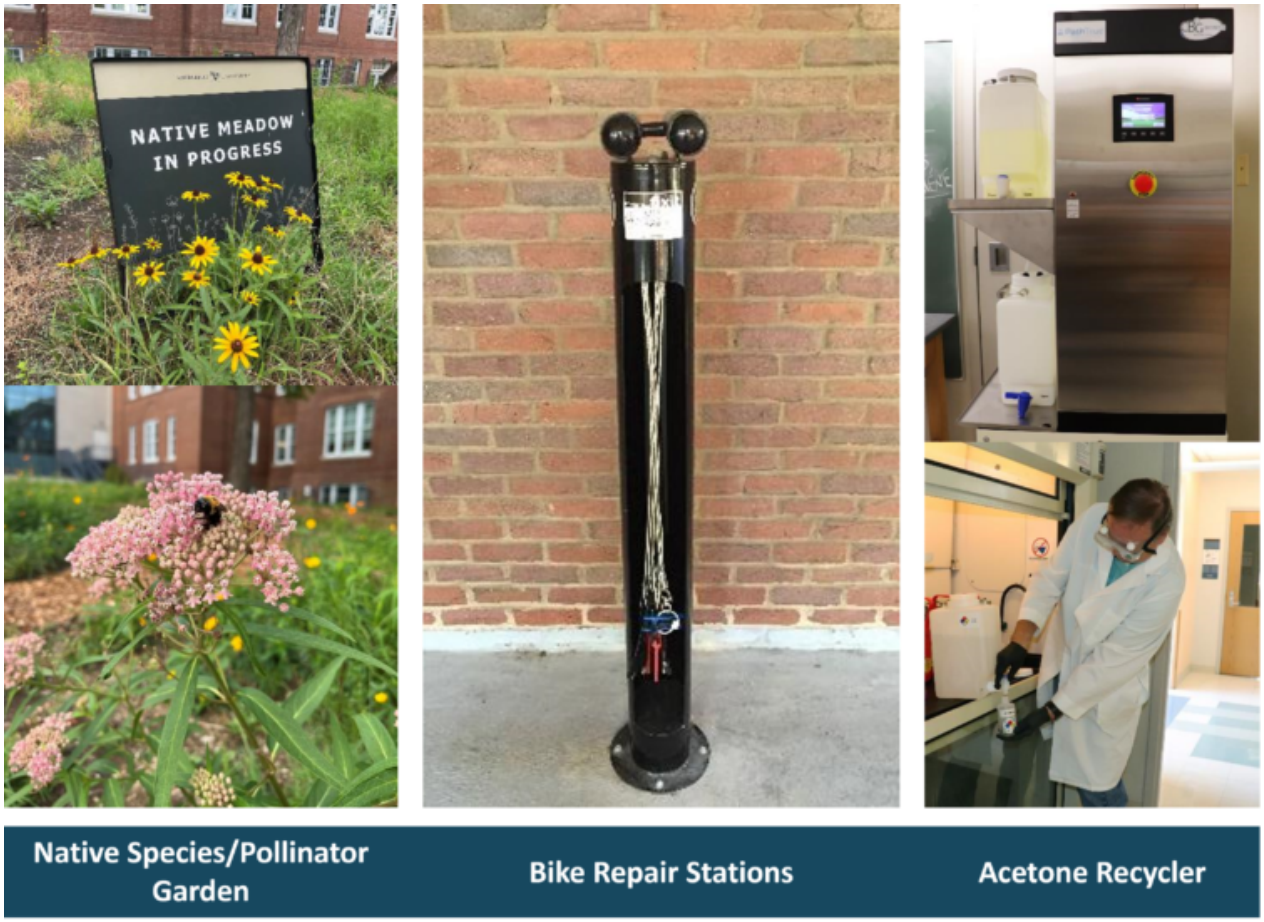


(https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2022/09/27153844/Campus-Engagement.png)

Back to top

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.



(https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2022/09/28085057/Green-Fund-Final-2022-2.png)

Facilities makes an 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.

(https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2022/09/28085507/FY21-22-Green-Fund.png)

Back to top

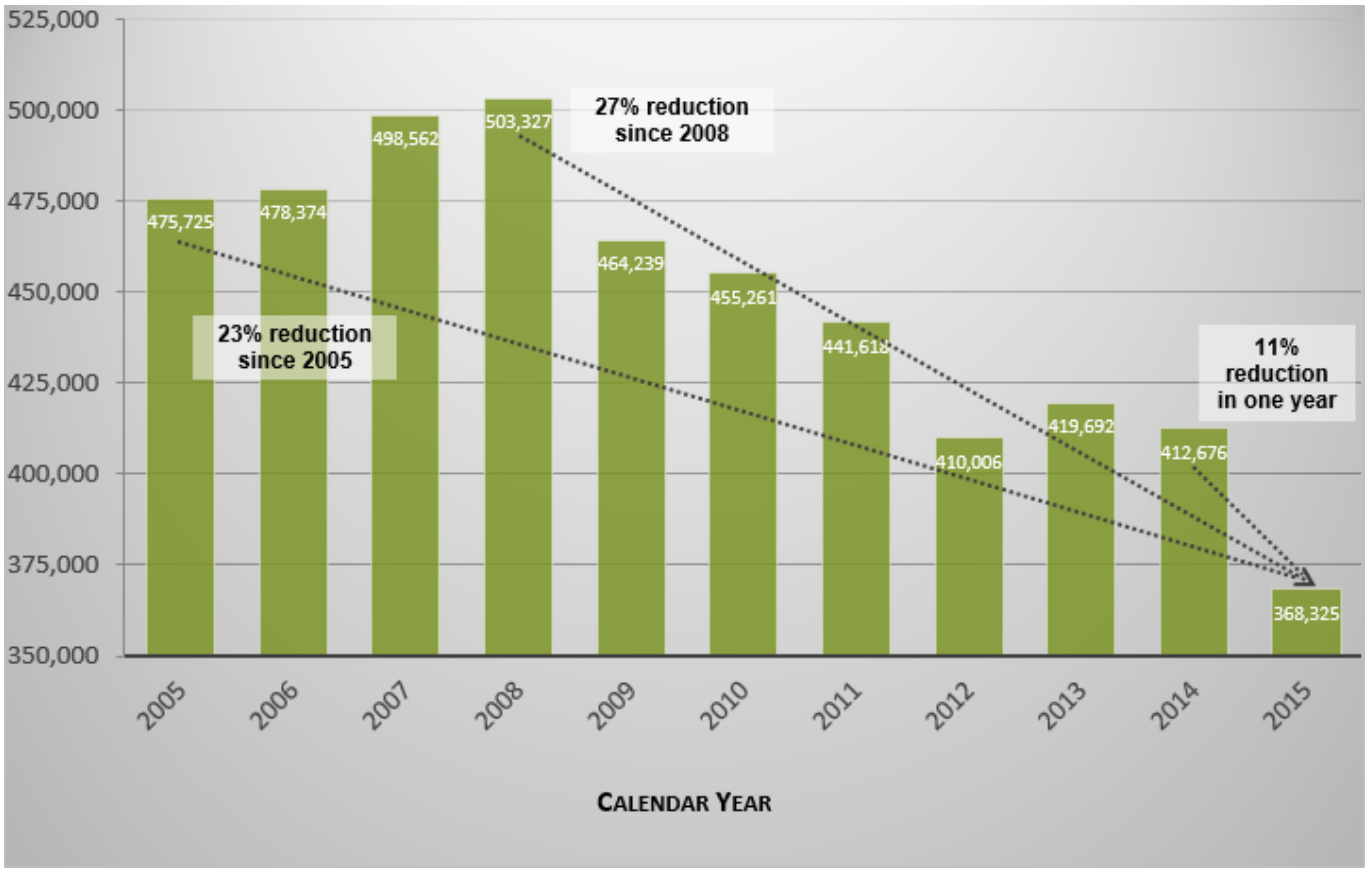
PAST REPORTS

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 2020-2021 Annual Sustainability Report (https://www.vanderbilt.edu/sustainability/annual-sustainability-report-2021/)

FY 2019-2020 Annual Sustainability Report (https://www.vanderbilt.edu/sustainability/annual-sustainability-report-2020/)

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

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

2016 Annual Sustainability Report (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)

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)

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)

2012 Greenhouse Gas Emissions Inventory Update,
Published October 2013 (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)

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)

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)

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

Back to top

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Back to top