



Temple University

Sustainability Annual Report

2019 - 2020



A Letter from the Office of Sustainability

The 2019-2020 academic year started with a renewed strategic vision for climate activism at Temple University. The updated Climate Action Plan, released in April 2019, provided a roadmap for continued progress towards carbon neutrality by 2050. Over 300 members of the Temple community collaborated to articulate goals in 5 different focus areas: Academics and Research, Culture, Design, Energy, and Operations. The Climate Action Plan reflects a true commitment from Temple students, faculty and staff to work together to shape a more sustainable and just climate future on campus, in Philadelphia and beyond.

What we anticipated would be a milestone year for the environmental movement—April 2020 marked the 50th anniversary of Earth Day—was overshadowed by the worldwide crisis that resulted from the COVID-19 outbreak. The transition to remote operations posed unprecedented and profound challenges to the University and its leadership.

Nonetheless, amidst this adversity, students, faculty and staff remained committed to climate action. This Sustainability Annual Report details significant progress towards a more environmentally, socially, and economically sustainable future. Highlights include memorable accomplishments and progress toward goals in all focus areas.

As we move forward, the Office of Sustainability will continue to engage longtime partners and identify new opportunities to grow our coalition. We will adapt and create strategies to respond to our new reality. We will take the lessons we have learned to build a more resilient, equitable and sustainable campus for all Philadelphians.

A handwritten signature in black ink that reads "Rebecca Collins".

Sincerely,
Rebecca Collins
Director of Sustainability

Temple's climate commitment began in 2008 when it pledged carbon neutrality by 2050.

Temple established a baseline year of 2006 and began reporting on progress towards carbon neutrality annually. Temple reports all Scope 1, and 2 emissions defined in the Greenhouse Gas Protocol. Temple also reports Scope 3 emissions from commuting, university financed travel, waste disposal, and transmission & distribution losses.

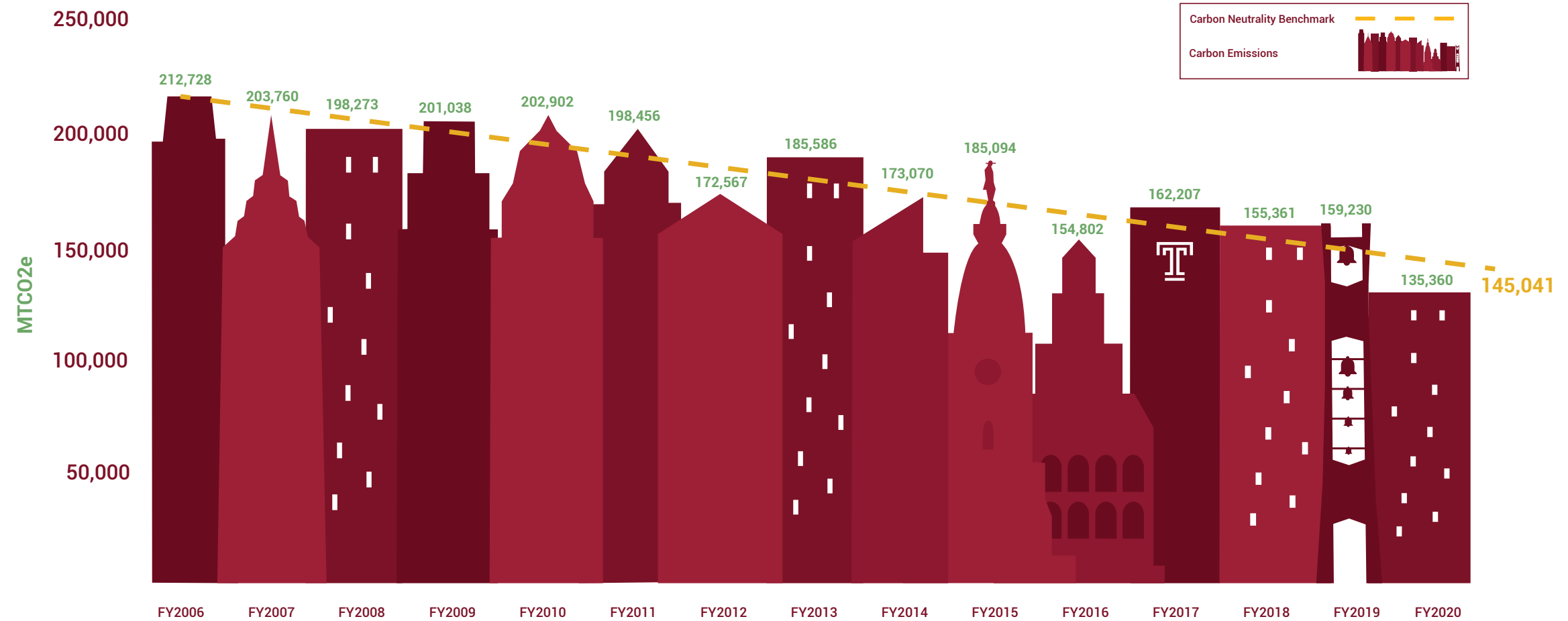
The University's primary emissions sources are purchased electricity (33%), stationary fuel combustion (38%) and student, faculty and staff commuting (21%).

Since 2006, Temple has reduced gross emissions by 36% even while increasing the physical space of the University by more than 30%. Strategies for reducing emissions include efficient operations, investing in new carbon reducing technology, sourcing renewable energy and shifting the culture of Temple students, faculty, and staff to become climate leaders.

Temple is on track to meet the goal of carbon neutrality by 2050. Our continued success would not be possible without the support of a multitude of campus partners.

Road to Carbon Neutrality

Greenhouse Gas Emissions

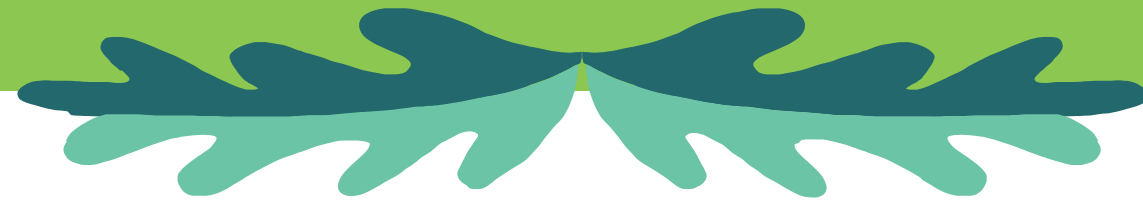


Climate Action Milestones:

- April 2008: Signed the American Colleges and Universities' Presidential Climate Commitment (ACUPCC)
- July 2008: Implement Two Tangible Actions
- May 2009: Completion of baseline Greenhouse Gas Inventory
- April 2010: Public Forums for review and comment on Climate Action Plan
- May 2010: Submission of Climate Action Plan
- November 2015: White House's American campuses Act of Climate Pledge signed
- April 2016 - Signed the Climate Leadership Statement
- April 2019: 2019 Climate Action Plan Released
- October 2019: Temple University joins the Climate Collaborative of Greater Philadelphia

50TH CELEBRATION OF EARTH DAY

2020 marked the 50th anniversary of Earth Day. Entirely online, it was unlike any previous demonstration at Temple University and in the world. As the reality of the coronavirus pandemic settled in, Temple University's Office of Sustainability and campus partners shifted gears from planning for in-person events to creating inspiring online content and programming that celebrated our history and encouraged climate activism in the present.



EARTH DAY AT 50:

A Look Back with Margery Sly

Fifty years ago, on April 22, 1970, 20 million Americans took to the streets, parks, and auditoriums to demonstrate for a healthy, sustainable environment in massive coast-to-coast rallies. Temple University's Special Collection Resource Center provided an opportunity to look back through Temple Libraries archives to remember the first Earth Day that started an environmental revolution. Thanks to Margery Sly, Director of the Special Collections Research Center, Temple's Office of Sustainability and Temple University Libraries' were able to team up to cull the archives for some of the best photos from this special day in April of 1970 and for a conversation about remembering our environmental and social history.

To read the full interview and access archived photos of the first Earth Day visit the [Temple Sustainability blog](#).

Photos: <https://sites.temple.edu/tusustainability/2020/04/22/stories-of-sustainability-earth-day-at-50/>



Earth week rally, April 22, 1970, from the Special Collections Research Center, Temple University, Philadelphia, PA



Earth Day rally, April 22, 1970, from the Special Collections Research Center, Temple University, Philadelphia, PA



Earth Day Rally, April 22, 1970, from the Special Collections Research Center, Temple University, Philadelphia, PA

ENVIRONMENTAL JUSTICE TEACH-IN:

Earth Day 50th Anniversary

Temple University's Office of Sustainability understands the importance of students teaching students. Not only is it an authentic way to build confidence, leadership, and empathy, but peer-to-peer engagement enhances learning outcomes and contributes to campus culture of sustainability.

To mark the 50th Anniversary of Earth Day, the Office of Sustainability hosted a student-led teach-in that included a brief overview of environmental justice, environmental racism, and climate justice in the Philadelphia area, the U.S., and beyond. Students gained insights on equity in environmentalism, how issues of environmental justice might impact their neighborhood, and an idea of how to put these principles into practice to be more inclusive sustainability leaders on campus.

EARTHFEST CELEBRATES EARTH DAY EVERY DAY

April 2020 marked another important milestone for Temple University's climate activism, Temple Ambler EarthFest, now EarthFest Presents, turned 17. Just like nature, EarthFest adapted to the realities of 2020 and developed new ways to serve students, teachers and families.

The mission of EarthFest Presents programming is to provide meaningful, impactful educational experiences for all ages throughout the year. Instead of one day and one event, EarthFest programming takes place year-round. While in-person programming was not possible in 2020, EarthFest Presents developed comprehensive personalized opportunities to virtually engage in citizen science with Temple University and many other program partners with events like the Great American Campout throughout the summer and the Science of Scary during the fall months.

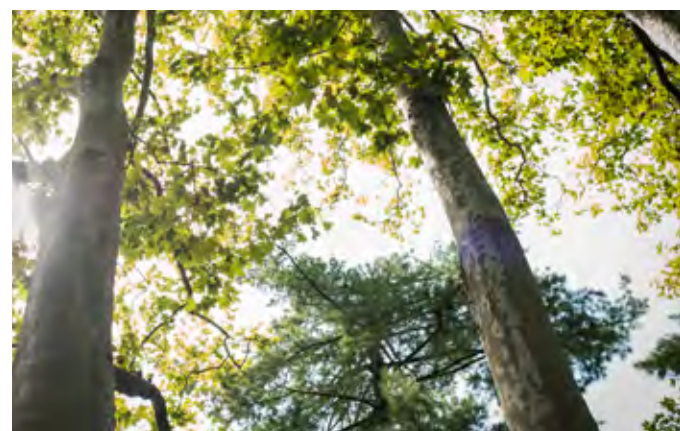
Learn more about EarthFest Presents at ambler.temple.edu/earthfest.



Academics & Research

Temple University understands it has a responsibility to shape a sustainable and resilient future through curriculum, instruction and support for climate-related research. By expanding opportunities for students to learn about environmental sustainability, social equity, environmental justice and climate action; students will graduate with the tools necessary to build a just and sustainable climate future.

The Office of Sustainability understands the importance of integrating themes of sustainability into coursework. For that reason, the Office of Sustainability supports the development and promotion of courses that focus or include themes of sustainability. In tracking and supporting sustainability curricula across departments, the Office of Sustainability ensures Temple continues to prepare the next generation of sustainability and climate change practitioners, entrepreneurs, researchers, and scholars.



Ambler Research Field Station

One of Temple University's Climate Action Plan goals is to secure the designation of Ambler Campus as a research field station. In 2020, the 187-acre campus in Montgomery County was designated as a Field Research Station. The Field Research Station leverages the Ambler Campus and Arboretum as a living laboratory and site for future sustainability research and study.

For more information visit: <https://ambler.temple.edu/research/temple-ambler-field-station>

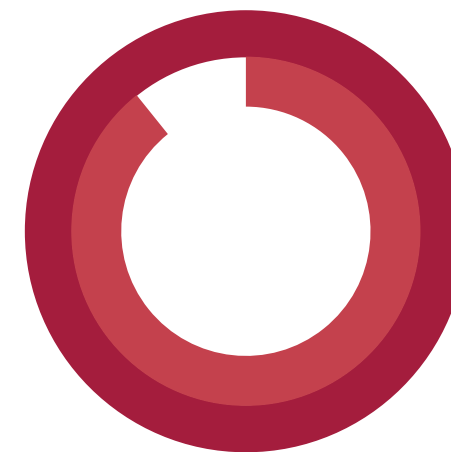


GRASP Awardee

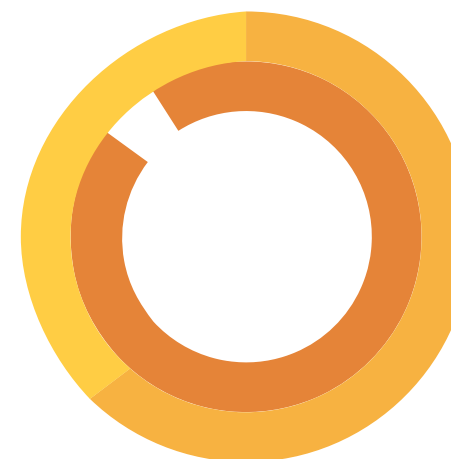
The Office of Sustainability supports student sustainability research through the Graduate Research Award Sustainability Program (GRASP). The award provides funding to a graduate student research project focused on sustainability. The 2019-2020 GRASP recipient was Kyle Schwab, a MS student in the College of Engineering. More information about his research project, "Sustainable 3D Printing with Soy-derived Bioink," can be found on our website.



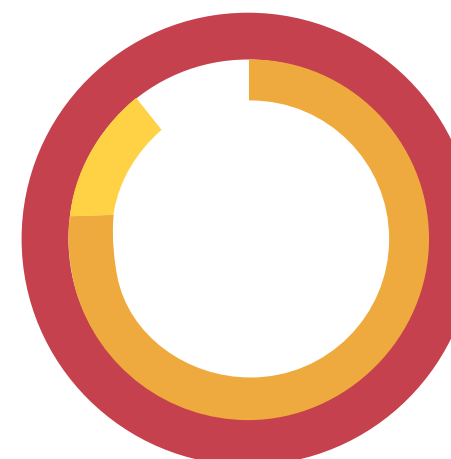
Featured Goals:



Increase the number of departments with sustainability course offerings by two (2) departments from an October 2017 baseline by June 2022.



Increase the number of undergraduate/graduate sustainability courses by ten (10) courses from an October 2017 baseline by June 2022.



Increase the number of undergraduate/graduate courses that include sustainability by twenty (20) courses from an October 2017 baseline by June 2022.



Exploring Interdisciplinary Climate Solutions with Sustainability Faculty

Artifishal Screening and Panel Discussion

During Campus Sustainability Month 2019, we partnered with the Biology Department to host a film screening of *Artifishal*, a Patagonia film about people, rivers, and the fight for the future of wild fish and the environment that supports them.

Our accompanying panel discussion highlighted the talent and diversity of sustainability faculty: Kolson Schlosser from the College of Liberal Arts, Patrick Murphy from Klein College of Media and Communication, and Rob Jennings from the College of Science and Technology. A robust dialogue with the faculty and more than 60 students in attendance articulated the key roles of academic stakeholders: contributing collaborative, interdisciplinary climate solutions and serving as campus thought leaders in sustainable action.

Learn more at: <https://www.patagonia.com/stories/artifishal/video-79192.html>



The Hub: A Sustainability Research and Development Incubator

A Partnership with Blackstone Launchpad and Bucha Leather Inc.

In Fall 2019, the Office of Sustainability collaborated with Blackstone Launchpad to identify student entrepreneurs that could benefit from a dedicated research and development space. Through this partnership the Office of Sustainability was introduced to several student businesses, one of which applied for and received a Green Grant to turn the Hub into a research and development space for their business, Bucha Leather.

Bucha Leather's bacterial nanocellulose vegan leather is a new low carbon product at the intersection of several emergent sustainable industries and a solution to an unsustainable animal and plastic leather industry. The Hub provided a vertical farming space for Bucha Leather to grow material for commercial durability testing.

For more information visit: <https://www.buchaleather.com/>

Goal Progress

Restructure the Undergraduate Certificate in Sustainability and the Interdisciplinary Undergraduate Certificate in Sustainability Committee (University College) by June 2019.

The restructuring of the Undergraduate Certificate in Sustainability is currently underway and will be completed by 2021.

Secure designation of the 187-acre Ambler Campus/Arboretum as a research field station providing facilities and a diverse ecosystem that support both basic and applied research in sustainability disciplines by June 2019.

Ambler Campus received field station designation in 2020.

Identify, validate and amplify current sustainability research using the Electronic Research Administration (eRA) database to document sustainability research and include sustainability research in Office of the Vice President for Research's annual fact sheet by June 2019.

This goal is in progress.

Develop a strategy for co-curricular sustainability education that integrates academic courses and non-credit learning experiences that are connected to or mirror the academic curriculum. The strategy is to include a process for collecting data regarding co-curricular sustainability education and an assessment tool by June 2020.

This goal is in progress

Coordinate with the University College Office of Digital Education (ODE) to create an online format for sustainability courses by June 2020.

This goal is in progress.

Create an online repository for existing and future sustainability exercises and course material to assist faculty in integrating sustainability into their courses by June 2020.

This goal is in progress.

Partner with the Center for the Advancement of Teaching (CAT) to create professional development opportunities for faculty that promote interdisciplinary, inter-college sustainability courses and teaching methods for undergraduate and graduate degree programs, to be offered by spring 2020.

The Office of Sustainability and the Center for the Advancement of Teaching will begin developing the course in Spring 2021.

Increase the number of undergraduate/graduate sustainability courses by ten (10) courses from the 2016-2017 academic year baseline by June 2022.

In the 2019-2020 academic year the number of undergraduate/graduate sustainability courses increased by twelve from a 2016-2017 baseline.

Increase the number of undergraduate/graduate courses that include sustainability by twenty (20) courses from the 2016-2017 academic year baseline by June 2022.

In the 2019-2020 academic year the number of undergraduate/graduate courses that included sustainability increased by five from a 2016-2017 academic year baseline.

Increase the number of departments with sustainability course offerings by two (2) departments from the 2016-2017 academic year baseline by June 2022.

In the 2019-2020 academic year the number of departments with sustainability course offerings was sixty-eight. This remained the same from the 2016-2017 academic year baseline.

Culture

Temple's Office of Sustainability understands that strategic partnerships, leadership development, and interdisciplinary collaboration are the keys to creating a more inclusive and pervading sustainable culture on campus.

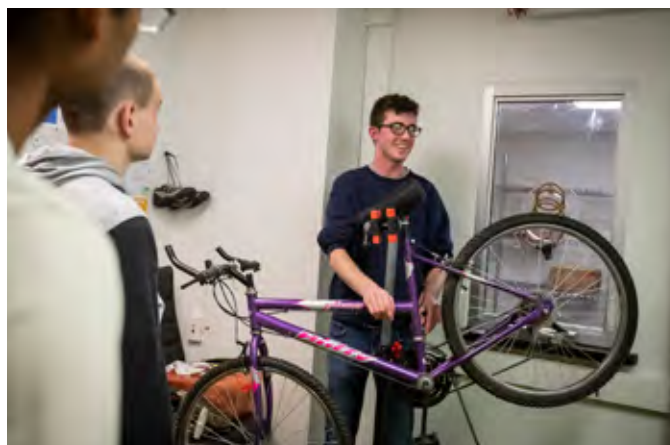
For this reason, the Office of Sustainability strives to infuse sustainability in all aspects of campus life and aims to include more voices in this important conversation by strengthening existing partnerships and developing new ones. These partnerships support the development of programs that promote connections between environmental sustainability and public health, environmental and racial justice, food sovereignty, wellness, access, and inclusion.

A truly sustainable campus culture exists when the entire campus community is engaged in education, advocacy, and action aimed at fostering sustainable change in the individual, institutional, and public spheres.



Zero Waste Solutions

As the result of a grant through the Office of Sustainability's Green Grant program, students launched Diamond Compost, a student-led net zero compost collection program. During a virtual event hosted by students in spring 2020, twenty students received a basic introduction to zero waste initiatives and organic waste minimization efforts at Temple and in Philly. Additionally, attendees learned about avenues for student leadership development and skill building.

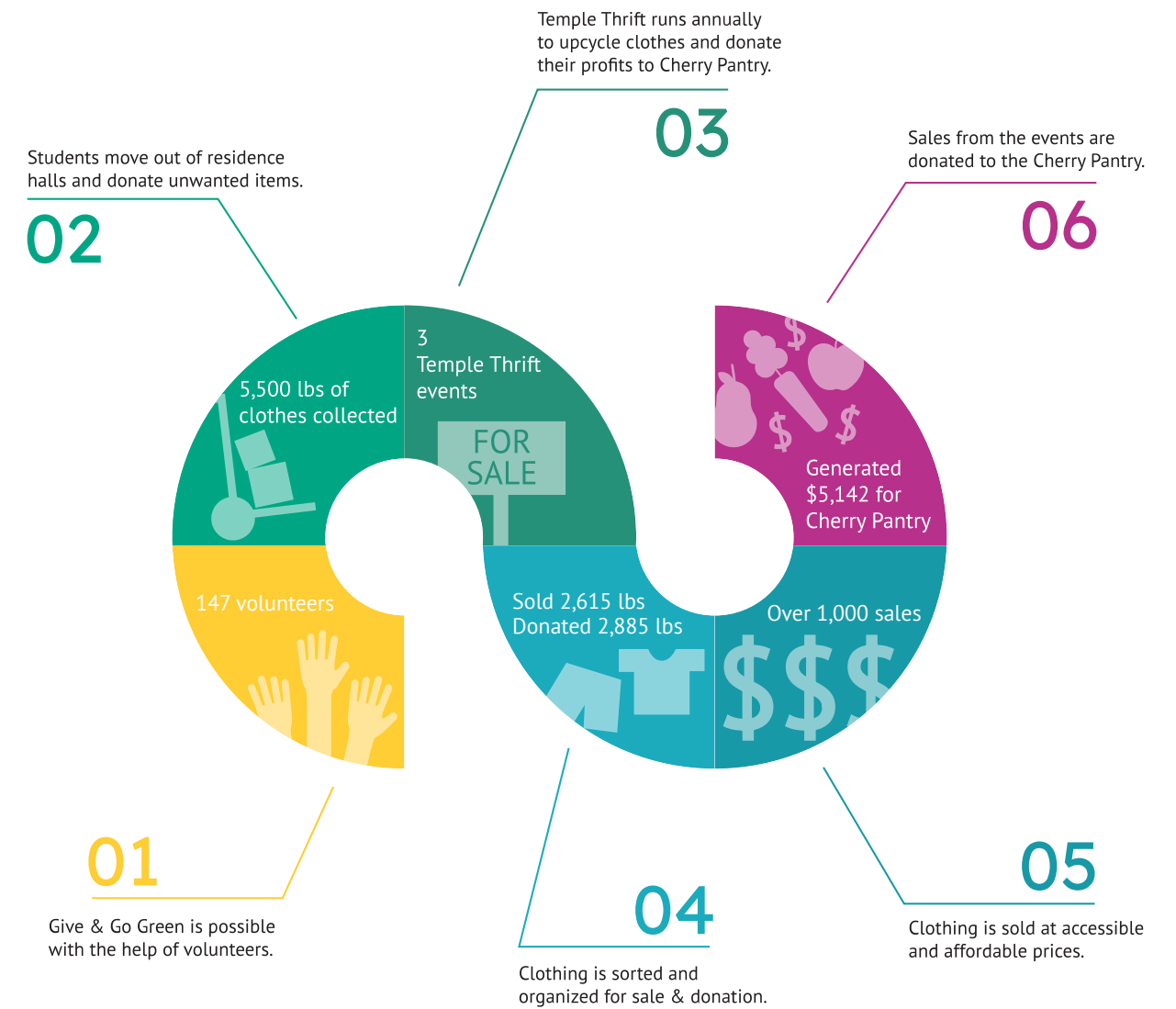


Bicycle Repair Clinics

In Spring 2020, the Office of Sustainability piloted a student-led bicycle repair apprenticeship program. The weekly clinic was a way for students to learn bicycle repair and maintenance skills. Students would hone their newfound skills to refurbish abandoned bikes to be sold at the Office of Sustainability's Secondhand Bike Sale. Additionally, by participating in the program, students were eligible for future leadership opportunities through Temple's EcoReps program.

Give & Go Green

Temple Thrift and the Cherry Pantry



To learn more about Temple University's Cherry Pantry visit:
<https://studentcenter.temple.edu/cherry-pantry>

Environmental Wellness

The Office of Sustainability collaborated with the Wellness Resource Center for a conversation about the intersection between environmental justice and collective well-being. Students helped to lead discussions about climate action journeys and ways they engage in self-care during times of uncertainty and global worry. WRC and OoS staff facilitated discussion with over 20 students from across the university to generate ways to cultivate hope through action, as well as connect climate action with self-care practice.



Transportation Fair

The Office of Sustainability hosts an annual Transportation Fair for students and staff during fall semester. The event educates participants about green transportation resources, initiatives, and advocacy opportunities.

In fall 2019, more than 300 students and staff had the opportunity to speak with the Office of Sustainability as well as six community partners about how to get around the city safely and sustainably. Our partners included Indego, SEPTA, Clean Air Council, Bicycle Coalition of Greater Philadelphia, 5th Square, and Cycles PHL.

For more information about participating in the event, please email sustainability@temple.edu.



Audubon Campus Chapter

A virtual information session focused on the development of an Audubon Campus Chapter was hosted in collaboration with Audubon Pennsylvania. This conversation centered on unique opportunities for science education, urban ecology and naturalist engagement and conservation actions that are made possible through the development of an Audubon Campus Chapter. In addition to the virtual event, the Office of sustainability coordinated a visit to the Audubon Discovery Center. The Center is located less than a mile from Main Campus and is a resource for students, faculty and staff.

Winter Preparedness Pop-up

The Office of Emergency Management invited the Office of Sustainability to co-host a Winter Preparedness Pop-up. During the event, more than 100 students learned about winter emergency preparedness, the importance of winter weatherization and energy savings.

Low Carbon Eating

The Office of Sustainability organized peer-led discussions on sustainability and food. Sessions focused on educating individuals about the connection between carbon emissions and food production. After the round table, students participated in a cooking demonstration on how to prepare a low-cost vegan and vegetarian meal.

Engagement by #s



Goal Progress

Increase student sustainability engagement through the development of a student green fund by 2019.	The Green Grant was first awarded in 2019. To find out more about the Green Grant and to learn about past awardee's, visit the Green Grant page on our website.
Begin to address food insecurity at Temple by 2019.	The Office of Sustainability donates non-perishable food as well as the money generated from the sale of clothing collected during Give & Go Green to the Cherry Pantry.
Create a student educator program to build student awareness on campuses by 2020.	Temple University EcoReps program was launched in Fall 2020. We will continue to provide updates on participation and outcomes in the Temple University's Sustainability Annual Report.
Work with Residential Life to incorporate the responsibility of sustainability engagement with students in the residence halls into an existing staff member's essential duties by 2020.	The Office of Sustainability and Residential Life have been working together to formally integrate sustainability engagement into an existing staff member's essential duties.
Establish a housing and dining services and academic working group to identify opportunities for collaboration and cooperative programs by 2020.	This goal is in progress.
Conduct an assessment on sustainability culture by 2021.	The Office of Sustainability is currently working with the Department of Institutional Research and Assessment to develop a strategy for survey administration and data analysis.
Create sustainability certificate program through continuing education by 2023.	This goal is in progress.

Design

More than 70% of Temple's greenhouse gas emissions are attributed to its built environment. Since 2006 Temple has added more than 3,000,000 square feet of new building space but has managed to reduce greenhouse gas emissions in part through energy efficient design. In order to achieve Temple's carbon neutrality goal by 2050, we must continue to improve the efficient use of Temple's existing buildings and incorporate innovative design and technology strategies.

Charles Library

Completed in Fall 2019, Charles Library will soon be added to Temple's list of LEED Certified Buildings. LEED, which stands for Leadership in Energy and Environmental Design, is a widely accepted green building rating system. In order to receive LEED certification, Charles Library was designed and constructed with sustainability in mind. Energy efficient lighting, daylighting strategies, sustainable materials and one of the largest green roofs in Pennsylvania make Charles one of Temple's most sustainable buildings.



Featured Goal:

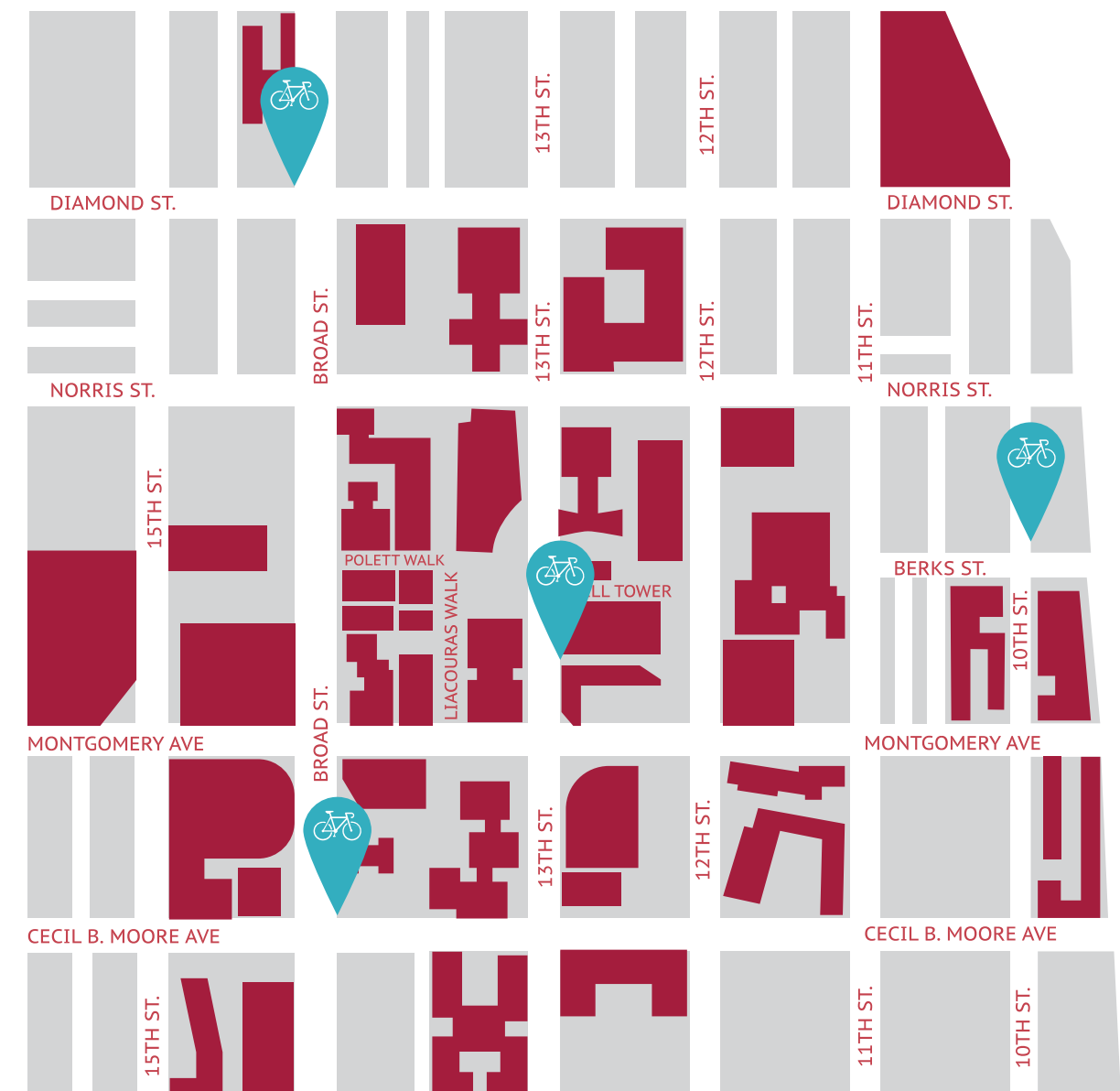
Complete the full implementation of the Verdant Temple Landscape Master Plan by 2030.

Plan Recommendation:

Locate a minimum of 6 bike share stations on or adjacent to Main Campus.

Progress Towards Plan Recommendation:

Four bike share stations are located on or adjacent to Main Campus.



- 2015: Tuttleman Center (Montgomery Ave at 13th Street)
- 2015: Temple Regional Rail Station (Berks Avenue at 10th Street)
- 2020: Temple Community Garden (Diamond at Broad)
- 2020: Broad at Cecil B. Moore



Designing a Climate Resilient Campus

Walking through the center of campus you may not realize that you are treading on a sustainable design feature – permeable pavers lining Polett and Liacouras Walk. Permeable pavers allow water to infiltrate the pavement and drain into the ground. This sustainable design feature along with the installation of bioretention infrastructure, tree trenches and rain gardens help us to adapt to a wetter Philadelphia. These resilience design features help prepare Temple’s campus for increased precipitation, a known effect of climate change.



Creating Additional Campus Green Space

A priority capital project listed in the Verdant Temple Landscape Master Plan broke ground in 2019. An underutilized area between Anderson Hall and Gladfelter Hall in the College of Liberal Arts will be transformed into a beautiful green gathering place on campus. The design includes sustainable stormwater management infrastructure and solar powered charging stations.

Goal Progress

<p>Incorporate green building standards for renovation, new construction and landscape projects into the university’s adopted green building policy by 2019.</p>	<p>Many Green Building Standards are being incorporated into Temple Design Standards. New large construction projects set LEED Silver minimum as the goal.</p>
<p>Develop Temple standards for new and existing building design and campus infrastructure that incorporate sustainability and climate resilience by 2020.</p>	<p>All new major construction and major renovation projects will be designed to meet or exceed LEED silver. All campus infrastructure and systems will be designed to ASHRAE 90.1- 2019.</p>
<p>Develop and adopt technical specifications for all projects that incorporate its sustainable design framework by 2021.</p>	<p>Technical specifications for plumbing have been developed for all projects. Technical specifications for mechanical and electrical systems are being developed for publication by 2021.</p>
<p>Complete the full implementation of the Verdant Temple Landscape Master Plan by 2030.</p>	<p>Temple University has completed many iconic projects including the transformation of significant portions of Polett and Liacouras Walk. Both projects integrated sustainable stormwater management.</p>



Energy

The need for a new approach to energy use and sources is inherent in Temple's climate commitment. Temple is committed to implementing a balanced three-pronged approach to reducing greenhouse gas emissions. The approach focused first on efficiency of systems, second on sourcing less carbon intensive forms of energy and, as a last resort, purchasing carbon offsets. This strategy has been successful and has helped Temple to achieve progress towards carbon neutrality year after year.



Greening Labs

Labs are very resource-intensive spaces - that is why it is so important to identify opportunities to reduce water use, energy consumption, and waste. At Temple, labs across campus are doing their part to reduce consumption by identifying underutilized lab equipment for recycling. If the underutilized lab equipment still has a useful life it can be repurposed in another lab space. If the equipment cannot be repurposed, it is responsibly disposed of by Temple University.



Investing in Renewable Energy

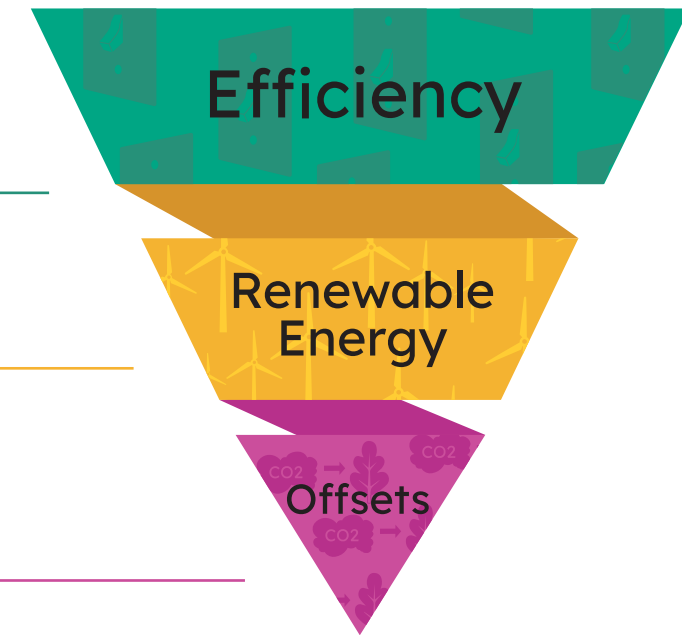
Temple university has committed to reducing carbon emissions associated with its electricity use through an investment in renewable electricity. In 2019, Temple issued an RFP for the purchase of renewable energy. While this effort was challenged by market disruptions resulting from the coronavirus pandemic, Temple is committed to revisiting this effort and making good on its climate action commitments.

1810 Liacouras Walk

Temple's portfolio of sustainable buildings expanded when the major renovation of 1810 Liacouras Walk was completed. This project provided new offices, classrooms and collaborative space for the Fox School of Business while incorporating high performance design and construction elements, as well as green operations. Sustainable strategies such as a partial green roof, water efficient fixtures and irrigation, recycled and regional building materials, and renewable energy were employed throughout to reduce the building's impact on the environment.

Temple's approach to eliminating carbon emissions from energy sources.

1. Using equipment or technology that requires less energy to perform the same function is how we reach efficiency.
2. Energy from a source that is not depleted when used, such as wind or solar is renewable energy.
3. When you buy an offset, you fund projects that reduce greenhouse gas emissions. Offsets are a form of trade.



Goal Progress

Create a Green Revolving Fund in 2018 to direct the actual energy cost savings into additional energy projects.

This goal is in progress.

Create requirements for the designers of projects of a certain size to collaborate with the energy team to incorporate energy implications in design decisions by the end of 2018.

This goal is in progress.

Adopt mechanical, electrical and architectural standards for renovation and new building projects which limit dependency on fossil fuels and promote established sustainable practices by 2020.

ASHRAE 90.1 - 2019 is Temple University's mechanical and electrical standard. LEED Silver certification or the equivalent is Temple University's architectural standard for new construction and major renovations. Both ASHRAE and LEED promote established sustainable practices which limit dependency on fossil fuels.

Continue to invest in energy efficiency projects, starting in 2020 through the allocation of initial seed funds. Completion of additional projects will be contingent on verified savings.

Seed funding has been identified. A list of projects under consideration for funding are being evaluated.

Sign another Power Purchase Agreement (PPA) by end of 2021.

Temple University released a Request for Proposals from renewable energy developers in 2019. This project has been temporarily put on hold due to market uncertainty resulting from the coronavirus pandemic.

Develop at least 100+ kW of renewable energy systems at Temple's facilities by 2022.

Temple University is investigating opportunities to develop small scale renewable energy systems at Temple's facilities.

Reduce energy use in existing building stock by 18% in a typical climatic year by 2030.

Existing building stock energy use was reduced by 6% from a FY17 baseline.

Operations

Temple has a strong history of integrating sustainability and resilience into its campus operations. To fully meet Temple's climate commitment, the university needs to continue to innovate campus operations while incorporating sustainability into decision making processes.

In order to advance sustainable and resilient operations, Temple must not only develop sustainable best practices and operational policies, but individuals from the Temple community must have the opportunity to easily support and participate in the development of a more sustainable campus environment.

Operations goals are organized into six subcategories (see below). These goals play an important role in achieving a sustainable campus environment for students, faculty, staff and the community.



Dining



Waste Minimization & Recycling



Transportation



Air Quality



Grounds



Sustainable IT



Dining

Dining goals and initiatives strive to integrate sustainable sourcing and waste minimization strategies into dining services.

Featured Goal:

Temple University will require its dining services provider to submit annual procurement reporting consistent with the STARS assessment program by 2018.

During the 2019-2020 academic year, Aramark's total annual food and beverage expenditures included:



Tackling Food Waste

One way that Temple reduces the amount of food waste being disposed of as trash is through the installation of commercial biodigesters in Morgan, Johnson & Hardwick and Howard Gittis Student Center. Microbes and other bacteria break down organic materials in the biodigester helping to reduce disposal costs and support a more sustainable method of disposal.

Goal Progress

Temple University will require its dining services provider to submit annual procurement reporting consistent with the STARS assessment program by 2018.

Aramark, Temple University's dining service provider, has submitted annual procurement reporting consistent with STARS assessment program for FY 2019 and FY 2020.

Temple University's dining services will ensure that a minimum of 20% of its procurement spend is used on food that meets STARS definition of locally sourced by 2020.

This goal is in progress.

Temple University will reach a 50% food waste diversion target by 2022 in its four largest dining facilities (J&H, Morgan Hall Food Court, Morgan Hall Dining Center, and Student Center).

Aramark, Temple's dining service provider, and the Office of Sustainability have identified a strategy for measuring and verifying food waste generated in J&H, Morgan Hall and Howard Gittis Student Center food service operations. An update on progress to goal will be made at the close of FY 2021.



Waste Minimization & Recycling

Waste Minimization & Recycling goals and initiatives strive to create zero-waste operations that embrace the four R's: Rethink, Reduce, Reuse and Recycle.

Featured Goal:

Achieve a 50% **diversion rate** by 2020:



Increase **core recycling** to 30% by 2020:



Campus Race to Zero Waste

Every spring semester, Temple University joins 100's of institutions of higher education in the Campus Race to Zero Waste. Managed by the National Wildlife Federation, the mission of the Campus Race to Zero Waste program is to promote and incentivize behavior change to minimize waste and increase recycling across campus operations.



Generation Conscious

The Office of Sustainability partnered with the sustainable personal care company Generation Conscious to campus to host a museum-style, pop-up sales experience. The pop-up featured a high-impact educational campaign spotlighting the plastic crisis and resultant environmental justice issues. More than 300 students engaged with the zero waste personal care product popup sale and signed a Plastic Free Pledge.



MRE Recycling Relay

The Office of Sustainability is often asked to develop unique sustainable solutions for challenges identified by individual business units and departments. When Temple University's Army Reserve Officer Training Corps (ROTC) asked the Office of Sustainability to help sustainably dispose of expired MRE's we saw it as an opportunity to engage students. Part conversation, part competition - more than 75 students learned about the importance of source separating materials for waste, recycling and composting before participating in a fast-paced competition to sort through and properly dispose of the MRE's. The event resulted in just under 600 pounds of organic waste diverted from the landfill.

Goal Progress

Dedicate a staff person in university housing to achieve compliance with the university's waste minimization and recycling initiatives by fall 2019.	The Office of Sustainability has been working with dedicated staff in university housing to achieve compliance with the University's waste minimization and recycling initiatives.
Develop a comprehensive Materials Management plan and implementation schedule to achieve City of Philadelphia's Zero Waste partner status by 2020.	The Office of Sustainability, with input from campus partners, is finalizing a comprehensive Materials Management Plan. Once completed, the Office of Sustainability will submit the plan as part of Temple University's Zero Waste Partner application.
Achieve a 50% diversion rate by 2020.	In FY2020, Temple achieved a diversion rate of 35%.
Increase the core recycling rate to 30% by 2020.	In FY2020, Temple's core recycling rate was 33%.

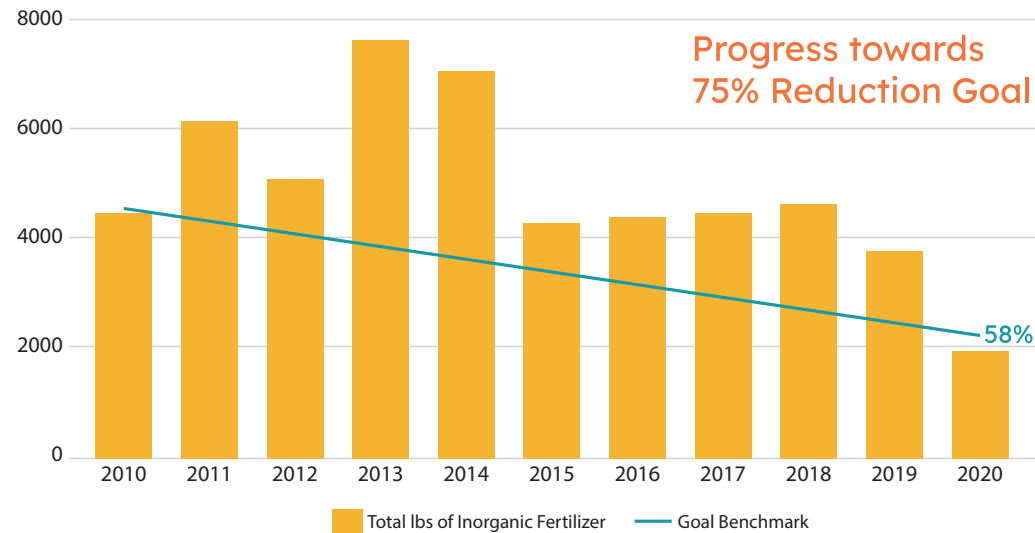


Grounds

Grounds goals and initiatives build upon Temple University's sustainable landscape management best practices.

Featured Goal:

Reduce the use of inorganic fertilizers and chemical pesticides, fungicides and herbicides by 75% by 2025 from the 2010 baseline.

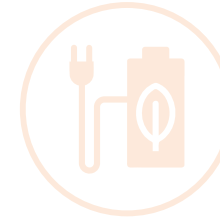


Stormwater Gardens

Temple University is host to many stormwater gardens; a sustainable landscape feature. Stormwater gardens not only beautify Temple's campuses, but they also provide environmental benefits. Benefits include helping to reduce runoff and flooding, and filter pollutants carried in stormwater runoff. Additionally, rain gardens create excellent habitat for birds and butterflies.

Goal Progress

- Develop and implement a plan for sustainable landscape management that builds on recommendations in the Verdant Temple Landscape Master Plan and incorporates plantings, soil management, water conservation, and integrated pest management by 2022.
The Office of Sustainability is working with Grounds to develop a sustainable landscape management plan.
- Reduce the amount of water required for landscape management by 25% by 2025 from the 2006 baseline.
The Office of Sustainability is partnering with Grounds to establish a baseline and implement a plan for future data collection.
- Reduce the use of inorganic fertilizers and chemical pesticides, fungicides and herbicides by 75% by 2025 from the 2010 baseline.
In FY2020, Temple University reduced inorganic fertilizers and chemical pesticides, fungicides and herbicides by 58% from the 2010 baseline.



Sustainable IT

Sustainable IT goals and initiatives focus on reducing the environmental impacts associated with the operations of IT equipment and services.



Giving Back Through Reuse

Temple's Computer Recycling Center

Temple University's Computer Recycling Center (CRC) is an award-winning operation that gathers surplus computer and electronic equipment from around the university to refurbish, redeploy, donate and, where appropriate, securely dispose of equipment. On average the CRC processes more than 90 tons of equipment each year.

Temple Tech for Philly is an initiative of Temple's Computer Recycling Center, working to bridge the digital divide by partnering with community organizations such as the Philadelphia Housing Authority, Esperanza, Congreso de Latinos Unidos, and Asociación Puertorriqueños en Marcha (APM) delivering refurbished technology directly to underserved, underresourced communities. In April 2020, shortly after the coronavirus pandemic necessitated a transition to virtual instruction, Temple's Computer Recycling and the Lenfest North Philadelphia Workforce Initiative donated over 150 refurbished computers, and 40 laptops from Temple's College of Education and Human Development to families in North Philadelphia.

Goal Progress

- ITS team will develop a comprehensive strategic plan for sustainable IT at the university by the end of 2019 and begin to implement its recommendations by 2020. The plan will look at procurement, operations and engagement.
Opportunities to improve sustainable IT at Temple University have been identified. A steering committee made up of individuals in IT and the Office of Sustainability are in the process of determining priorities and next steps.



Air Quality

Indoor Air Quality goals and initiatives strive to improve the indoor air quality of Temple's buildings.

Goal Progress

- Temple University will ensure that 100% of its paint, adhesives and sealers are third party verified as VOC free by 2019.
Temple University paint standard specifies that all paint is third party verified as VOC free.

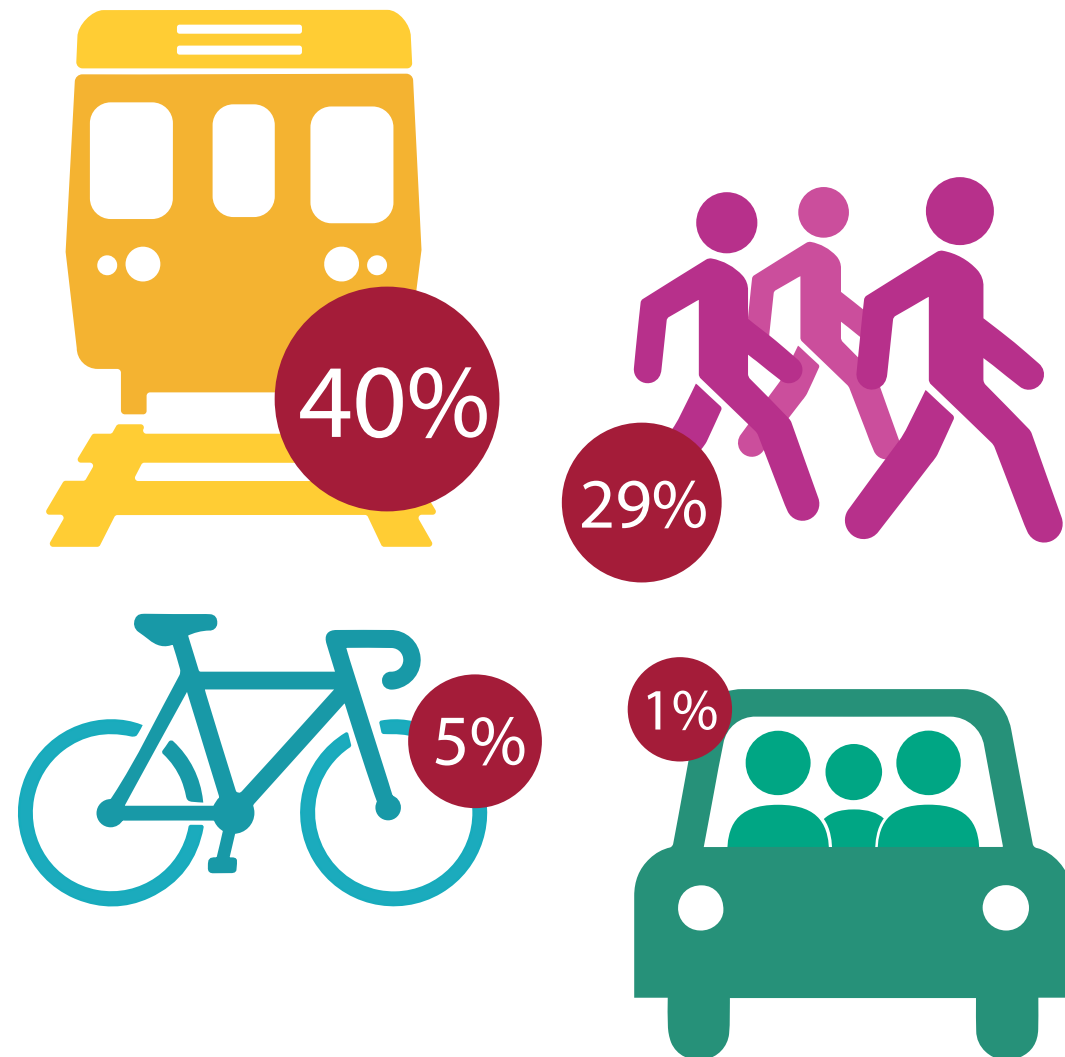


Transportation

Transportation goals and initiatives promote sustainable transportation and transitioning Temple's fleet towards less carbon intensive vehicles. and transitioning Temple's fleet towards less carbon intensive vehicles.

Featured Goal:

Increase the number of commuters who utilize a sustainable form of transportation to the campus to 75% by 2025.



75% of Temple student, faculty, and staff utilized a sustainable form of transportation to campus during the 2019 -2020 academic year.



Group Bike Rides

As part of the Office of Sustainability's student leadership program, EcoReps, the Transportation EcoLead led weekly bike rides in Fall 2019. Over a six-week period, students explored Philadelphia by bicycle. The weekly rides were attended by individuals that with less experience riding in an urban environment and individuals that were avid cyclists. Organized group rides are a key piece of programming that supports Temple University's Climate Action goal to increase the number of commuters who utilize a sustainable form of transportation.

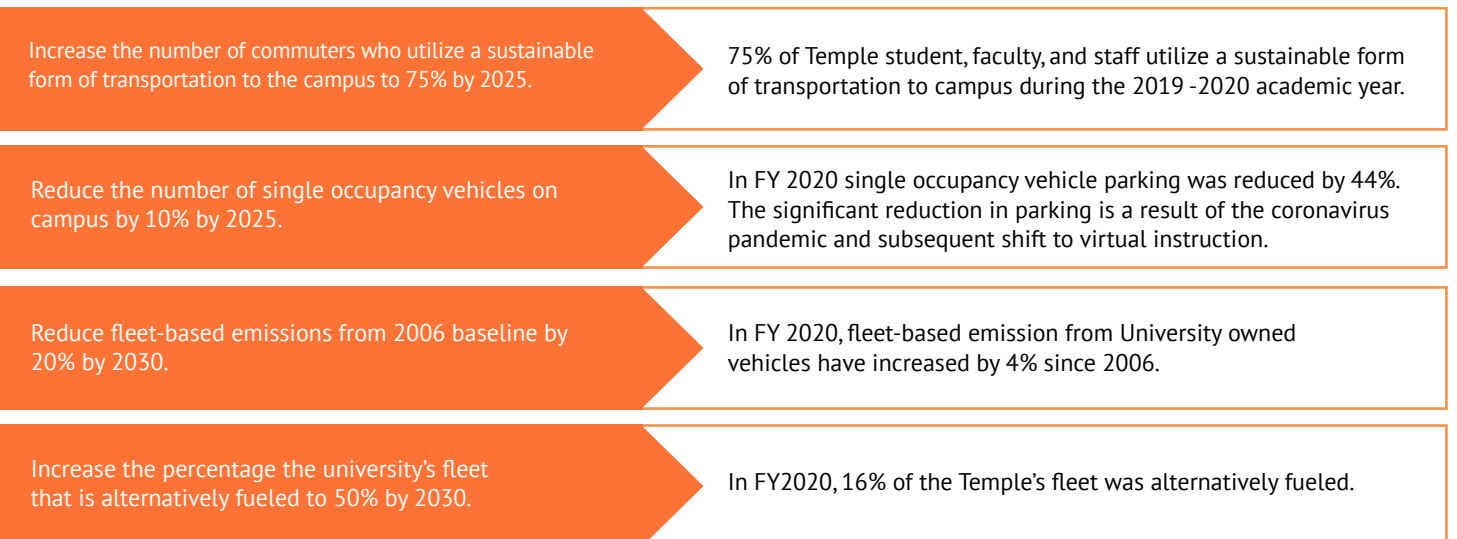
Alternatively Fueled Vehicles

An alternative fuel vehicle is a motor vehicle that runs on alternative fuel, an energy other than traditional petroleum fuels (gasoline and diesel). Temple has invested in alternative fuel vehicles, in part, to help reduce emissions. Temple currently has a fleet of XX shuttle buses that are powered by an alternative fuel source.

SEPTA Pass

Temple University offers full time students the opportunity to purchase a discounted SEPTA pass at the start of each semester. Pass are good for SEPTA's regional rail lines or subway system. In addition to saving money, students that utilize the discounted SEPTA pass are helping Temple reduce its greenhouse gas emissions.

Goal Progress





Temple University FY 2020 Greenhouse Gas Inventory Greenhouse Gas Emissions Summary FY 2006-2020

prepared by the Office of Sustainability

	Emissions Source	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	Difference FY19 to FY20	% Change FY06 to FY20	%Change FY19 to FY20	
Scope 1 Emissions (MT CO2E)	Stationary (oil, natural gas, propane)	57,174	55,351	47,001	61,960	56,916	52,374	47,641	55,558	55,006	57,881	52,627	49,395	55,273	54,810	51,795	(3,014)	-9%	-6%	
	Mobile (University Fleet)	625	645	621	886	849	898	860	930	895	852	841	844	1,041	874	724	(150)	16%	-21%	
	Refrigerants & Chemicals	1,930	1,868	1,848	2,522	2,516	2,510	2,506	2,504	2,504	2,516	114	151	127	763	432	(331)	-78%	-77%	
	Fertilizer	10	7	8	4	2	4	4	3	4	3	2	2	2	2	2	3	1	-71%	45%
	Total Gross Emissions Scope 1	59,738	58,052	49,479	65,373	60,284	55,786	51,010	58,996	58,409	61,250	53,584	50,392	56,893	56,448	52,954	(3,494)	-11%	-7%	
Scope 2 Emissions (MT CO2E)	Purchased Electricity	104,559	97,958	101,507	90,305	98,257	98,215	84,691	82,868	71,359	83,455	53,516	61,065	55,648	50,090	44,279	(5,811)	-58%	-13%	
	Purchased Steam	278	318	330	360	353	349	294	435	366	1,028	1,126	1,074	699	694	694	-	150%	0%	
	Total Gross Emissions Scope 2	104,837	98,276	101,838	90,665	98,610	98,564	84,985	83,303	71,725	84,483	54,642	62,140	56,346	50,784	44,973	(5,811)	-57%	-13%	
Scope 3 Emissions (MT CO2E)	Faculty Commuting	2,177	2,113	2,129	2,223	2,301	2,287	2,286	2,197	2,279	2,342	3,785	2,753	2,749	5,871	2,064	(3,806)	-5%	-184%	
	Staff Commuting	3,959	3,949	3,924	3,989	3,803	3,642	3,630	5,302	5,052	6,210	8,346	7,157	7,667	12,052	8,902	(3,150)	125%	-35%	
	Student Commuting	12,325	12,319	12,568	13,345	14,069	14,425	13,930	12,858	13,547	13,757	17,860	18,665	18,824	22,863	17,162	(5,701)	39%	-33%	
	University Financed Travel	5,582	6,031	5,885	6,019	6,699	7,438	386	7,664	8,509	6,337	6,440	9,559	9,249	7,877	6,251	(1,627)	12%	-26%	
	Solid Waste	13,760	13,109	12,209	10,509	11,079	10,254	17,802	6,912	9,420	6,362	6,571	7,969	(3)	1	1	(0)	-100%	-16%	
	Transmission & Distribution Losses	10,353	9,917	10,256	8,931	6,073	6,070	8,551	8,367	4,150	4,367	3,590	3,586	3,636	3,335	3,054	(281)	-71%	-9%	
	Total Gross Emissions Scope 3	48,155	47,437	46,972	45,015	44,024	44,116	36,585	43,299	42,956	39,374	46,590	49,689	42,122	51,998	37,433	(14,565)	-22%	-39%	
Scope 1-3 Gross Emissions (MT CO2E)	Total Gross Emissions	212,731	203,765	198,289	201,053	202,917	198,467	172,579	185,598	173,090	185,108	154,816	162,221	155,361	159,230	135,360	(23,870)	-36%	-18%	
	Gross Square Footage (GSF)1	8,266,175	8,271,765	8,271,765	9,171,147	9,055,532	9,055,532	9,245,532	9,320,791	10,468,357	10,564,903	10,212,488	9,665,936	10,509,012	10,908,684	11,349,154	440,470	37%	4%	
	Full-Time Equivalent Students (FTE)	27,055	27,560	28,535	29,901	31,363	32,251	31,939	31,811	33,563	33,955	34,450	35,750	36,397	36,423	35,641	(782)	32%	-2%	
	Total Gross Emission Intensity/1000 GSF	26	25	24	22	22	22	19	20	17	18	15	17	15	15	12	(3)	-54%	-22%	
	Total Gross Emission Intensity/FTE	8	7	7	7	6	6	5	6	5	5	4	5	4	4	4	(1)	-52%	-15%	
Scope 1-3 Net Emissions (MT CO2E)	Offsets (On-site Compost)	(3)	(5)	(16)	(15)	(15)	(10)	(12)	(12)	(19)	(14)	(14)	(14)	-	-	-	-	-100%	0%	
	Total Net Emissions	212,728	203,760	198,273	201,038	202,902	198,456	172,567	185,586	173,070	185,094	154,802	162,207	155,361	159,230	135,360	(23,870)	-36%	-18%	
	Total Net Emission Intensity/1000 GSF	26	25	24	22	22	22	19	20	17	17.52	15	17	15	15	12	(3)	-54%	-22%	
	Total Net Emission Intensity/FTE	8	7	7	7	6	6	5	6	5	5	4	5	4	4	4	(1)	-52%	-15%	

Academics & Research Progress to Goals



Increase the number of undergraduate/graduate sustainability courses by ten (10) courses from an October 2017 baseline by June 2022.

- The Office of Sustainability will provide a complete list of courses upon request.



Increase the number of undergraduate/graduate courses that include sustainability by twenty (20) courses from an October 2017 baseline by June 2022.

- The Office of Sustainability will provide a complete list of courses upon request.



Increase the number of departments with sustainability course offerings by two (2) departments from an October 2017 baseline by June 2022.

2019-2020 Departments:

<ul style="list-style-type: none"> • Advertising • Africology/ African American Studies • American studies • Anthropology • Architect & Env Design • Architecture • Art History • Asian Studies • Biology • Botany • Business • Business: Strategic Management • Chemistry 	<ul style="list-style-type: none"> • Civil Engineering • Comm & Social Influence • Communication Science • Community & Regional Planning • Criminal Justice • Dance • Earth & Environmental Science • Economics • Engineering • English • Environmental Studies • Film & Media Arts • Finance 	<ul style="list-style-type: none"> • Gender, Sexuality & Womens Studies • Geography & Urban Studies • Graphic Interactiv Design • Health Services Admin & Policy • History • Horticulture • Legal and Real Estate • Legal Studies • Marketing & SCM • Mechanical Engineering • Media Studies Production • Medical Technology • Philosophy 	<ul style="list-style-type: none"> • Physics • Planning & Community Development • Policy, Organization, Leadership Studies • Political Science • Religion • Science & Technology • Social & Behavioral Science • Social Work • Sociology • Sport Tourism Hospitality Mgt • Strategic Communication • Teaching & Learning 	<ul style="list-style-type: none"> • Tourism/Hospitality • Epidemiology/ Biostatistics • Higher Education • Bioethics Urban Health Policy • CIS • Beasley School of Law • Landscape Architecture • Nursing • Pharmaceutical Science • Pharmacy • Psychology Studies in Education • Strategic Management • Human Resource Mgt
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Culture Progress to Goals



Office of Sustainability Green Grant

2018-2019 Recipients

Academic Year	Green Grant Recipient	Outcomes	Award Amount
2018-2019	Temple Student Government	Started an off-campus compost collection service.	\$1,500.00
2018-2019	Bucha Leather	Received funds to set-up research and development space for their start-up, Bucha Leather.	\$1,000.00
2018-2019	Thrift and Flop	Received funds to purchase materials for Thrift & Flop workshops focused on reuse.	\$350



Temple University Dining 2019 Food Insecurity

Begin to address food insecurity at Temple by 2019.

Monetary Donation generated from Thrift Sales

Month	Day	Year	Fiscal Year	Cash Sales	DD Sales	Total Revenue
September	9.11.19	2019	2020	\$ 1,197.90	\$ 805.04	\$ 2,002.94
September	9.25.19	2019	2020	\$ 640.00	\$ 586.00	\$ 1,226.00
October	10.17.19	2019	2020	\$ 1,118.45	\$ 795.20	\$ 1,913.65

Energy Progress to Goals



Building Stock

Reduce energy use in existing building stock by 18% in a typical climatic year by 2030.

Energy Type	FY 17	FY 18	FY 19	FY 20
Natural Gas (MMBtu)	919,104	1,027,252	1,025,445	974,442
Purchased Steam (MMBtu)	14,729	9,577	9,509	10,257
#2 Oil (gallons)	7,935	57,446	7,483	6,453
#6 Oil (gallons)	38,263	44,492	26,209	0
#2 Oil (MMBtu)	1,119	8,100	1,055	910
#6 Oil (MMBtu)	5,778	6,718	3,958	0
Electricity (kWh)	220,593,291	204,843,658	198,955,428	182,175,389
Electricity (kWh) Charles Library				4,027,235
Electricity (MMBtu)	752,115	698,417	678,341	607,398
Total Energy (MMBtu)	1,692,845	1,750,064	1,718,307	1,593,007
% Change FY17	0	3%	1%	-6%

Operations Progress to Goals



Waste Minimization

Achieve a 50% diversion rate by 2020.
Increase core recycling to 30% by 2020.

	2018	2019	2020
Basic Materials			
Mixed Office Paper ¹	615.50	469.42	260.13
Corrugated Cardboard	84.32	85.26	66.15
Single Stream Recycling	1,594.32	1,587.16	1,054.87
Municipal Solid Waste (MSW)	3,374.48	3,933.83	2,757.69
Subtotal - Basic Materials (Recycling)	2,294.13	2,141.84	1,381.15
Subtotal - Basic Materials (Trash)	3,374.48	3,933.83	2,757.69
Secondary Materials			
Biodigesters	14.31	80.15	45.36
Fryer Oil ²			4.20
Vegetation Compost ³	34.20	9.36	5.00
Construction & Demolition (Recycling)		135.06	176.08
Construction & Demolition (Trash)		40.01	97.10
Subtotal - Secondary Materials (Recycling)	48.51	89.51	54.55
Subtotal - Secondary Materials (Trash)	0.00	40.01	97.10
Special Materials			
Computer Equipment - Reused/Recycled ⁴	4.70	4.66	2.93
Toner & Ink Jet Cartridges			
Universal & Chemical Waste (Recycled)		0.00	9.26
Universal & Chemical Waste		0.00	3.93
Incinerated Medical Waste		0.00	51.51
Scrap Metal ⁶			56.75
Surplus Sales ⁷		0.00	92.50
Pallets			
Tyler Glass			
Donations			
Plastic Bags			
Residential Give & Go Green ⁹			0.97
Subtotal - Special Materials (Recycling)	4.70	4.66	162.41
Subtotal - Special Materials (Waste)	0.00	0.00	55.44
RECYCLING Campus Totals	2,347.34	2,236.01	1,598.11
WASTE Campus Totals	3,374.48	3,973.84	2,910.23
Total Recycling %	41%	36%	35%
Core Recycling %	40%	35%	33%



Grounds

Reduce the use of inorganic fertilizers and chemical pesticides, fungicides and herbicides by 75% by 2025 from the 2010 baseline.

Fiscal Year	Total lbs Inorganic Fertilizer	Goal (lbs)	% Reduction Goal	% Reduction Actual
2010	4,510	4,510	0%	
2011	6,176	4,285	5%	-37%
2012	5,123	4,059	10%	-14%
2013	7,663	3,834	15%	-70%
2014	7,125	3,608	20%	-58%
2015	4,325	3,383	25%	4%
2016	4,425	3,157	30%	2%
2017	4,475	2,932	35%	1%
2018	4,625	2,706	40%	-3%
2019	3,775	2,481	45%	16%
2020	1,906	2,255	50%	58%



Dining

Temple University will require its dining services provider to submit annual procurement reporting consistent with the STARS assessment program by 2018.

Sustainably or ethically produced food and beverage : purchases met one of the following sustainability standards	
Rainforest Alliance Certified (SAN Standard of Sustainable Agriculture)	
USDA Transitional Organic	
Fair Trade Certified (Fair Trade USA)	
MSC Certified Fisheries	
American Humane Certified (Cage Free and Enriched Colony Eggs)	
Total Spend	\$ 119,644.96

Plant-based food and beverage : includes food meeting one or more of the following categories	
Fruits	Soy foods
Vegetables	Nuts and seeds
Whole grains	Pant oils
Beans	Herbs and spices
Other Legumes	Vegetarian/vegan alternatives to meat and dairy
Total Spend	\$ 1,270,612.81

Transportation



Reduce fleet-based emissions from 2006 baseline by 20% by 2030.

Fiscal Year	Fleet Based Emissions (MTC02e)	Goal (MTC02e)	% Actual
2006	624.88	624.88	
2007	644.97	615.27	3%
2008	621.33	605.66	-1%
2009	886.39	596.05	42%
2010	849.40	586.44	36%
2011	898.15	576.83	44%
2012	859.80	567.22	38%
2013	930.22	557.61	49%
2014	895.34	548.00	43%
2015	851.67	538.39	36%
2016	841.2	528.78	35%
2017	843.64	519.17	35%
2018	1041.21	509.56	67%
2019	875.04	499.95	40%
2020	649.55	490.34	4%



Increase the number of commuters who utilize a sustainable form of transportation to the campus to 75% by 2025.

	2016	2019
Bus	7.0%	8.0%
Cars	27.6%	23.2%
Taxi, Uber, Lyft	0.7%	1.7%
Subway	16.7%	18.1%
Regional Rail	14.1%	13.8%
Bicycle	25.3%	4.5%
Walk	3.3%	29.3%
Carpool	5.3%	1.4%



50% of the university's fleet will be alternatively fueled by 2030.

FY2020	
VEHICLE TYPE	NUMBER OF VEHICLES
Gas	102
Diesel	15
CNG	12
Electric	2
Propane	8
TOTAL VEHICLES	139
TOTAL ALT. VEHICLES	22
% ALT. VEHICLES	16%



Credits

COPY

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Sustainability Annual Report Temple University
2019 - 2020



<https://sustainability.temple.edu/>



TempleEcoOwls



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TempleEcoOwls