Temple University

Sustainability Annual Report

2022–2023

A Letter from the CFO and Provost

Envisioning our future

Since its founding in 1884, Temple University has worked to create a campus life that connects individuals, ideas and resources to envision and actualize a brighter and more promising future for the greater community. As we reflect on the accomplishments and the collective action Temple students, faculty and staff, took over the past year, Temple's dedication to a brighter future remains steadfast.

The 2022–2023 Sustainability Annual Report provides updates to goals set forth in Temple's 2019 Climate Action Plan and highlights the ways in which the Temple community works across silos, disciplines, and hierarchical levels to take charge in driving innovation and excellence in university operations, research and teaching, and institutional policy to protect diversity and access. Our commitment to sustainability was made evident through action, especially through innovative programming and communications campaigns like Climate in the Classroom and EcoRep Excursions, unique experiential and service learning and leadership development opportunities for students. Taking cues from industry leaders and best practices across higher education, Temple University has worked to promote and champion a more holistic conception of sustainability. Defining sustainability in a more inclusive way acknowledges the interconnection of stewarding a healthy and viable natural environment, systems of human and ecological health, and racial equity and economic and social justice.

Temple University took a huge step forward as a leader in sustainability this year when it received its first ever **Gold Sustainability Tracking, Assessment, and Rating System (STARS) rating.** The STARS survey, overseen by the Association for the Advancement of Sustainability in Higher Education, is a transparent, self-reporting framework utilized by over 800 colleges and universities across six continents to measure their sustainability performance. We are proud of this recognition fitting of a world-class institution, emblematic of realization the university's aspiration to become the most inclusive urban, public university to build connected and healthy communities and forge groundbreaking discoveries for the future of the world.

As the university enters a critical time of transition and concludes the Boundless Temple master planning process, we are hopeful that the integration of sustainable practices and policy will continue to propel this institution forward. Accelerating commitment to impactful civic and community engagement and cultivating knowledge that transforms human experience ensures a better, more just world for all future generations of Temple Owls.

Ken Kaiser
Senior Vice President
& Chief Operating Officer

Gregory N. Mandel
Senior Vice President & Provost
Laura H. Carnell Professor of Law

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Academics & Research

- Total: **10**
- Achieved Goals: **8**

Culture

- Total: **7**
- Achieved Goals: **5**

Design

- Total: **4**
- Achieved Goals: **3**

Energy

- Total: **7**
- Achieved Goals: **3**

Operations

- Total: **16**
- Achieved Goals: **6**

Temple's climate commitment began in 2008 when it pledged carbon neutrality by 2050, with an interim goal of achieving 45% reduction by 2030.

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 and distribution losses.

Since 2006, the university has purchased voluntary renewable energy credits (REC) to meet annual carbon emission goals.
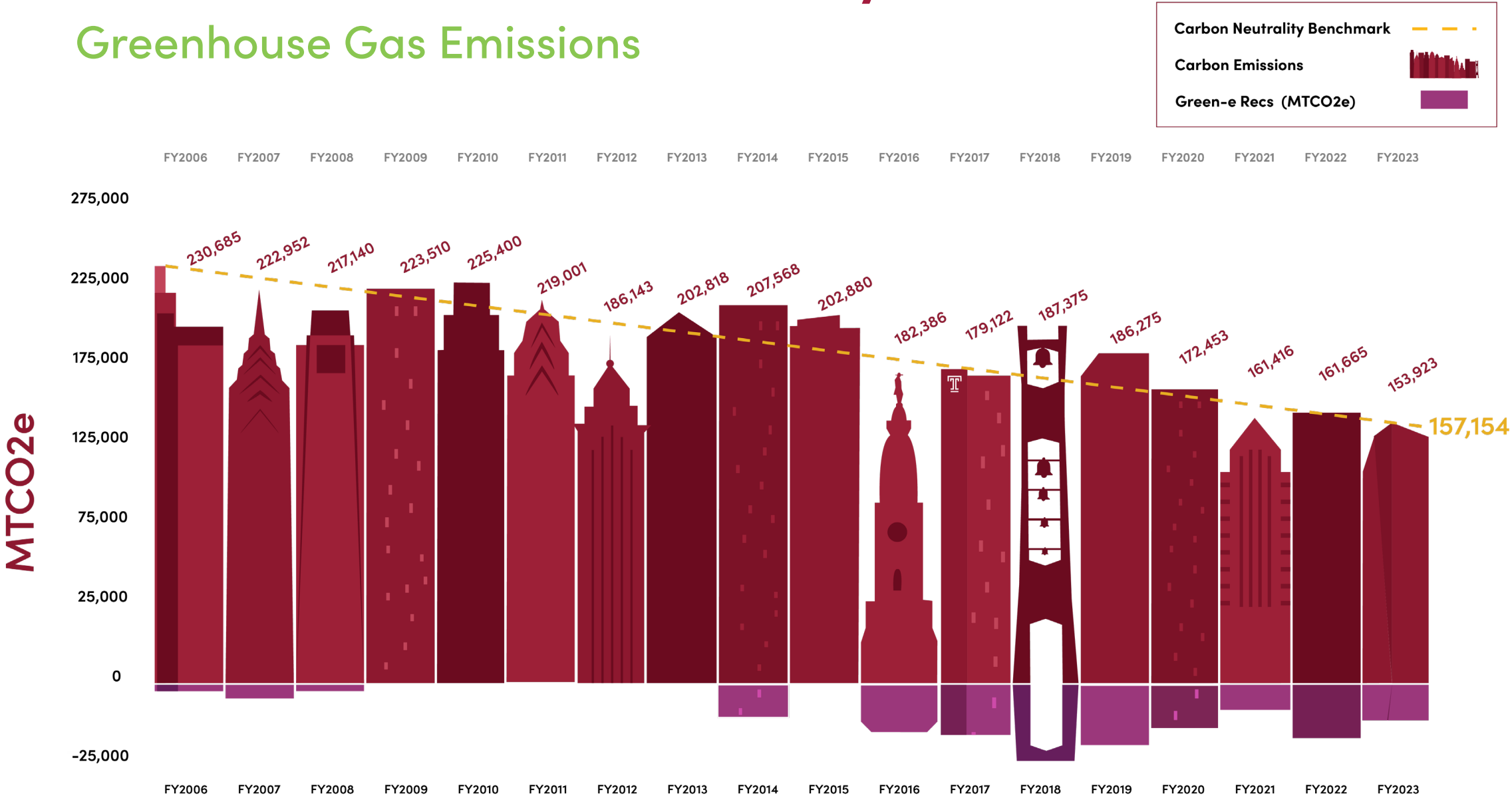
The university's primary emissions sources are purchased electricity (32%), stationary fuel combustion (33%) and FERA, or all emissions that occur upstream from stationary fuel combustion (13%).

Since 2006, Temple has reduced gross emissions by 33% even while increasing the physical space of the university by more than 36%. 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 our interim goal of achieving 45% reduction by 2030 and will continue to investigate strategies to achieve 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

Legend:
- Carbon Neutrality Benchmark
- Carbon Emissions
- Green-e Recs (MTCO2e)

MTCO2e

Chart values by year:
- FY2006: 230,685
- FY2007: 222,952
- FY2008: 217,140
- FY2009: 223,510
- FY2010: 225,400
- FY2011: 219,001
- FY2012: 186,143
- FY2013: 202,818
- FY2014: 207,568
- FY2015: 202,880
- FY2016: 182,386
- FY2017: 179,122
- FY2018: 187,375
- FY2019: 186,275
- FY2020: 172,453
- FY2021: 161,416
- FY2022: 161,665
- FY2023: 153,923
- Benchmark endpoint: 157,154

Climate Action Milestones

April 2008–Signed the American Colleges and Universities' Presidential Climate Commitment (ACUPCC)

July 2008–Implemented two tangible actions

May 2009–Completion of baseline greenhouse gas inventory

April 2010–Held public forums to review and comment on climate action plan

May 2010–Published 2010 Climate Action Plan

November 2015–White House's American Campuses Act of Climate Pledge signed

April 2016–Signed the Climate Leadership Statement

April 2019–Published the 2019 Climate Action Plan

October 2019–Temple University joins the Climate Collaborative of Greater Philadelphia

Academics & Research

Temple University Office of Sustainability seeks to prepare future practitioners, entrepreneurs, researchers and scholars to take the lead in generating innovative climate solutions. 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 grow the impact of sustainability-focused courses, degree programs and learning outcomes in every school and college within the university.

As an R1 research institution, Temple empowers students, faculty, staff and alumni innovators in a world-class research and knowledge enterprise that has achieved excellence at the cutting edge of discovery in basic and life sciences, the advancement of the frontiers of science and technology, and translational and societal research that addresses the most complex, compelling and challenging problems we face for generations to come.

Curricular

Curricular goals and initiatives support the integration of sustainability into curriculum across Temple's 17 schools and colleges.

Featured Goal

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

In the 2022–2023 academic year, the number of departments with sustainability course offerings was 80. This is an increase of 12 departments from the 2016–2017 academic year baseline, and 10 more than the stated goal.

Goal AY22–23

| Baseline | 68 | 70 |
| Goal | | 80 |

Resources, Support and Incentives for Developing Sustainability-focused Courses

Sustainability partners with the Center for the Advancement of Teaching

The Center for Advance of Teaching (CAT) is committed to fostering evidence-based teaching, so students learn, develop and succeed, and hosts a variety of workshop series including seminars, book groups and other events aimed at promoting excellent teaching at Temple. In accordance with goals laid out in the 2019 Climate Action Plan, the Office of Sustainability engaged in a yearlong partnership with CAT and guest facilitator, Marissa Cloutier, assistant professor of social and behavioral sciences in the College of Public Health, which culminated in a workshop entitled "Teaching Climate Change in Any Classroom." The two-session program, which included participation in the Climate in the Classroom Bell Tower Takeover, looked to illuminate the important role of teaching faculty in guiding current and incoming students towards finding success in their selected professions given the backdrop of the climate emergency. Instructors from several different colleges joined CAT to examine how best to prepare students for an uncertain future within the scope of existing curricula. Participants learned that no matter their discipline, they can incorporate climate change in their teaching and pedagogy in a way that is engaging and empowering.

Goal Progress

Goal	Status
Restructure the undergraduate certificate in sustainability and the Interdisciplinary Undergraduate Certificate in Sustainability Committee (University College) by June 2019.	**ACHIEVED:** The restructured undergraduate certificate of sustainability was approved in spring 2021.
Increase the number of departments with sustainability course offerings by two (2) departments from an October 2017 baseline by June 2022.	**ACHIEVED:** In the 2022–2023 academic year, the number of departments with sustainability course offerings was 80. This is an increase of 12 departments from the 2016–2017 academic year baseline, and 10 more than the stated goal.
Partner with the CAT to create professional development opportunities for faculty that promote interdisciplinary, intercollege sustainability courses and teaching methods for undergraduate and graduate degree programs.	**ACHIEVED:** CAT initiated a Green Pedagogy Faculty Learning Community. In April of 2023, CAT and guest facilitators hosted a two-part workshop called "Teaching Climate Change in Any Classroom."
Coordinate with the University College Office of Digital Education (ODE) to create an online format for sustainability courses by June 2020.	**ACHIEVED:** The shift to virtual learning resulted in the creation of an online format for sustainability courses.
Create an online repository for sustainability exercises and course material to assist faculty in integrating sustainability into their courses by June 2020.	**ACHIEVED:** The Office of Sustainability partnered with Temple University Libraries' Special Collections Research Center to create the Climate Change, Sustainability, and Environmental Justice TUScholarShare repository.
Increase the number of undergraduate/graduate sustainability courses by 10 courses from an 2016–2017 baseline by June 2022.	**IN PROGRESS:** In the 2022–2023 academic year, the number of undergraduate and graduate sustainability-focused course offerings decreased by 60 courses from the 2016–2017 baseline.
Increase the number of undergraduate/graduate courses that include sustainability by 20 courses from an October 2017 baseline by June 2022.	**IN PROGRESS:** In the 2022–2023 academic year, the number of undergraduate and graduate sustainability-inclusive courses decreased by 36 courses from the 2016–2017 baseline.

Co-curricular

The Office of Sustainability seeks to provide students with unique opportunities for experiential learning and applied practice through research and co-curricular activities. Faculty and staff ensure co-curricular activities are situated in a context of sustainability and offer opportunities to apply classroom learning to real-world problems and actual research. The university campuses serve as a vibrant learning laboratory for sustainability education and research and will offer co-curricular programs that build essential core competencies for sustainability action and scholarship.

Students Gain Critical Equity-focused Community Engaged Research Experience

Project-based Learning with National Science Foundation Grant

Christina Rosan is Associate Professor of Geography and Urban Studies at Temple University and the principal investigator of the National Science Foundation's Planning for Resilience and Equity through Accessible Community Technology (PREACT) grant. PREACT seeks to develop a multipurpose and multi-scalar climate preparedness and neighborhood planning software application informed by community needs and assets, to be piloted in the city of Philadelphia. While most planning tools are designed and built in a top-down manner, centering software developers and planners, this project articulates a framework that allows for the integration of social and scientific data for more informed decision-making.

Dr. Rosan designed co-curricular project-based learning assignments for several sections of both undergraduate and graduate students, affording them the opportunity to help advise and design the NSF PREACT project for Philadelphia. Students worked in groups to model a community-based planning tool, informed by both data and stories. The student deliverables deepened research contributions and built toward more intersectional policymaking and planning around climate, investments and emergencies. Gaining real-world experience gives students a new perspective on climate resiliency coursework and demonstrates the importance of equitable, bottom-up policy and practice that empowers residents and makes the government more responsive to community needs.

Goal Progress

Develop a strategy for co-curricular sustainability education that integrates academic courses and noncredit 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.

ACHIEVED: The Office of Sustainability developed a strategy for co-curricular sustainability education via the Walk Audit Certification Program in collaboration with local nonprofit and academic partners. The program was first offered in fall 2020 and a data collection process and an assessment tool was piloted during the initial phase of the program and continues to monitor progress on co-curricular initiatives.

Sujith Ravi's earth and environmental science students study the benefits and trade-offs of multifunctional solar projects in urban areas that provide renewable energy while supporting food production at the agrivoltaic field site at Temple Ambler, constructed in February of 2023. For more information about Ravi's work visit here.

Research

Research goals strive to create a culture to support sustainability research by recognizing, incentivizing and connecting the faculty and student community. Key research initiatives of the Office of Sustainability include funding student sustainability research and developing, promoting and curating Temple University Libraries TUScholarShare Climate Change, Sustainability and Environmental Justice Collection.

Interdisciplinary Sustainability Science Research Initiative Enhances Competitiveness

Office of the Vice President of Research Catalytic Collaborative Funding

A program of the Office of the Vice President of Research (OVPR), the Catalytic Collaborative Funding Initiative (CAT program) supplies internal funding to eligible Temple principal investigators in support of catalytic and cross-cutting research. The aim of this initiative is to enhance Temple University's competitiveness for grants from federal agencies by leveraging interdisciplinary and/or multicollege efforts that expand on existing strengths or develop new and innovative research related to thematic and strategic research areas of emphasis, such as sustainability science.

Sustainability science research is focused on interactions between natural and social systems towards the aim of analyzing how interactions between them affect the challenge of advancing a sustainable world at any geographic scale. Many of these efforts focus on analyzing the alignment between current challenges and needs with future impacts to nature and society through the study of such topics as: social and ecological systems; biodiversity and ecosystem services; vulnerability, adaptation and resilience with respect to climate and global change; energy, food, water and technology systems; and policy and governance with respect to the advancement of sustainability. OVPR's research development resources such as the CAT program's sustainability science emphasis provide strategic, proactive and capacity building activities in service of Temple's climate action goals and the university's sustainability research enterprise at large.

Featured Goal

Identify, validate and amplify current sustainability research using the Electronic Research Administration (eRA) database to document sustainability research.

UN Sustainable Development Goals In Temple Research

The Office of Sustainability developed a new methodology for measuring the volume and impact of sustainability research produced at Temple University. Taking cues from the Association for the Advancement of Sustainability in Higher Education and other advocates who champion a more holistic conception of sustainability, Temple expanded the search queries for the analysis of Temple's major research awards to align with all 17 United Nations sustainable development goals (UN SDGs).

A keyword search for relevance to all 17 UN SDGs was performed on the proposal titles in an inventory of all major research grants awarded to the university with award period end dates after the start of the FY23 fiscal year.

Temple University principal investigators are engaged in research relevant to all 17 goals with over 100 occurrences of keywords related to the following goals: good health and well-being; quality education; sustainable cities and communities; decent work and economic growth; gender equality; and peace, justice and strong institutions.
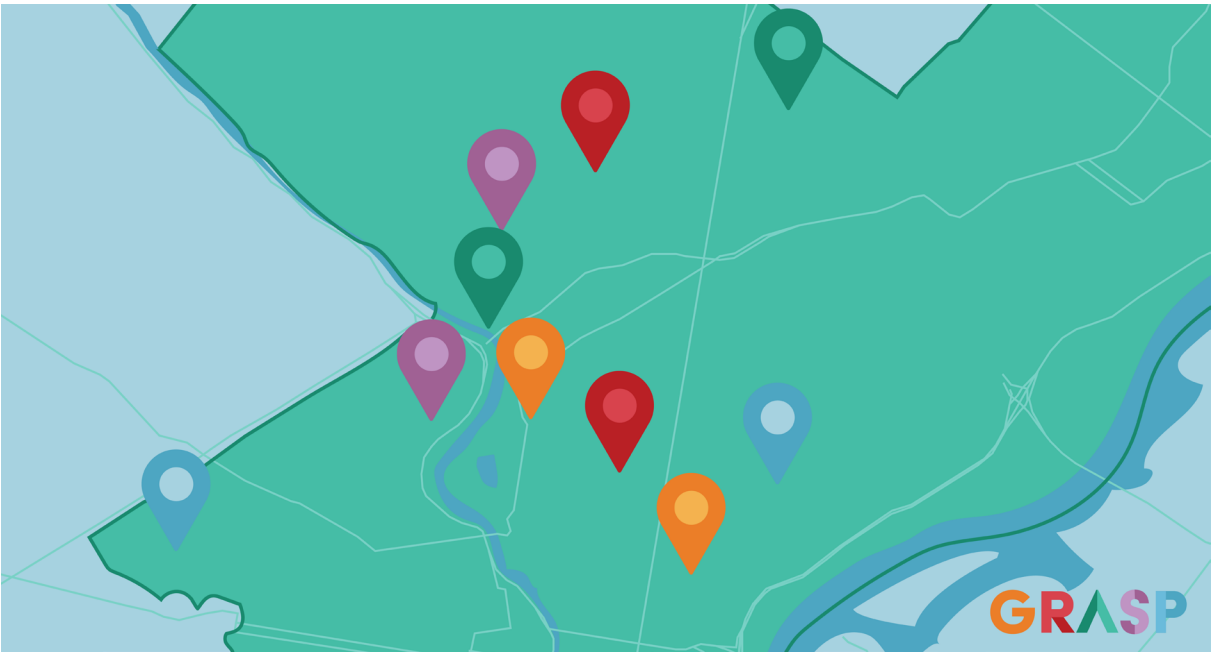
Funding Student Sustainability Research

GRASP awardee Elizabeth Riedman

The Graduate Research Award for Sustainability (GRASP) provides funding to a graduate student research project focused on sustainability. The 2022–2023 GRASP recipient was Elizabeth Riedman, a student researcher and PhD candidate in geography and urban studies. Using oral histories and archival accounts, she centers the spatial stories of how women have long contributed to the development of urban green spaces in Philadelphia.

Her intersectional, feminist approach expands understanding of the gendered dimensions of the labor necessary to maintain these spaces. Riedman created a forward-facing StoryMap, a public education campaign and a unique contribution to traditional archives. This is an important step forward as it adds more diverse and expansive perspectives to geography scholarship.

Explore the **"Spatial Stories of Sustainability: The women building Philadelphia's green spaces"** StoryMap and discover the experiences of 10 women who have worked throughout their lifetime to build and maintain a range of green spaces in the city.

Goal Progress

✓	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.	**ACHIEVED:** Temple Ambler was designated a field station in 2020.
✓	Identify, validate and amplify current sustainability research using the 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.	**ACHIEVED:** Together with the OVPR's eRA team, the Office of Sustainability has developed a data request protocol for identifying and amplifying major awards for sustainability research.

CLIMATE IN THE CLASSROOM

MFA candidate Yuying Chen performs her original choreography, Dust. *Different forms of water are presented in an improvised dance, exemplifying the integration of sustainability in the creative and expressive arts.*

Climate in the Classroom, a strategic academic engagement initiative, was launched in early 2023 by the Office of Sustainability and faculty and student advocates from across the institution. This public outreach campaign seeks to raise awareness of the work Temple students and faculty are doing to integrate sustainability into their degree programs and research activities.

The semester's worth of engagement culminated in the Bell Tower takeover in April, a celebration and exploration of green learning and green jobs. At the Climate in the Classroom event, attendees and representatives from more than 20 different academic programs and university colleges and departments came together to share their experience teaching and learning about the climate crisis.

A packed roster of speakers included Provost Gregory Mandel and a dozen Temple sustainability researchers who reported their latest findings during lightning talks and made a call for more sustainability learning and climate-engaged courses in their discipline. There was even a climate-themed dance performance from graduate students who choreographed the 2023 Temple Water Dances, a collaboration between dance and geography and urban studies faculty to produce an interdisciplinary performance and programming series that links art, science and activism about the importance of water, held annually in celebration of World Water Day.

Theater, Film and Media Arts students and Green Film School Alliance ambassadors advocate for sustainable filmmaking practices within the college, including teaching with green film equipment like the solar-powered camera on display here.
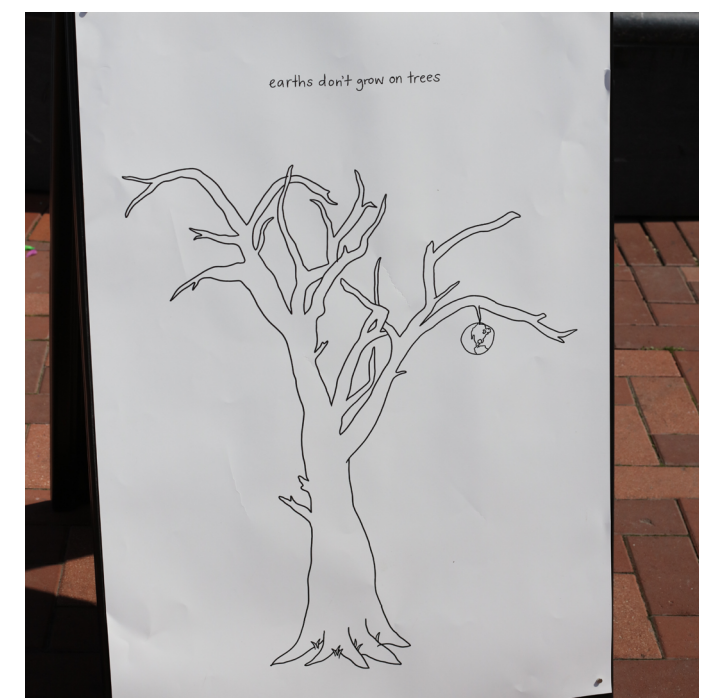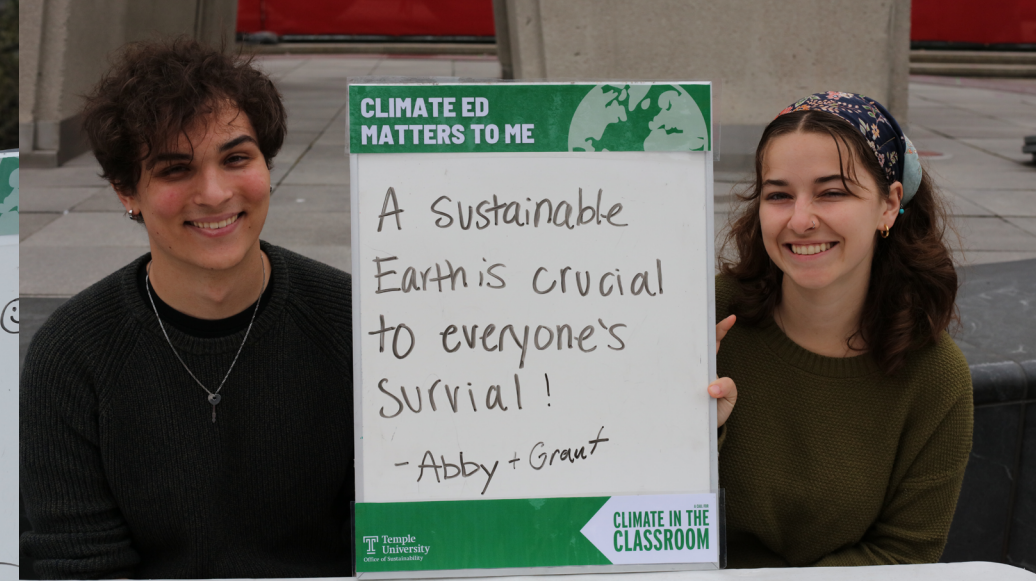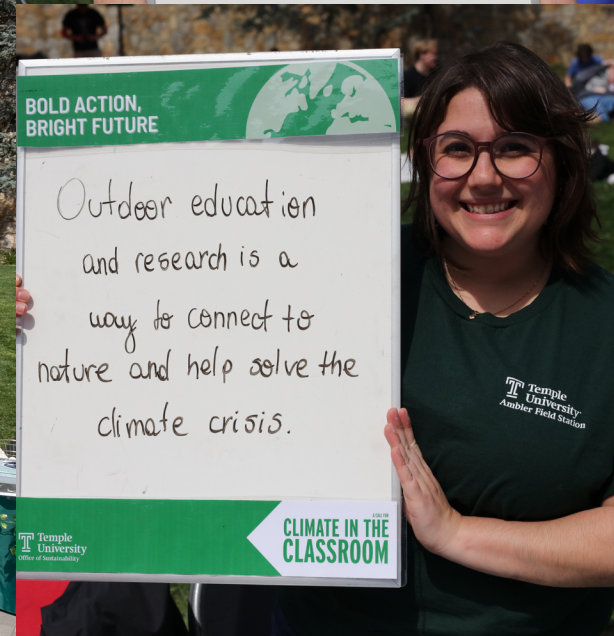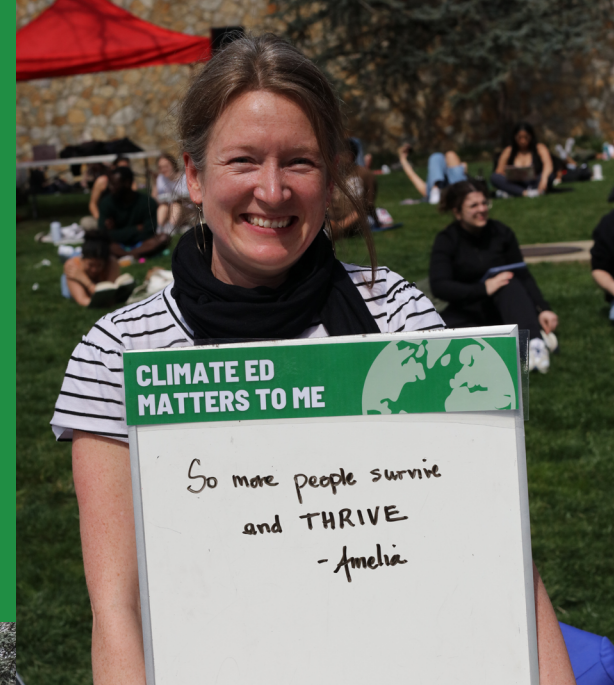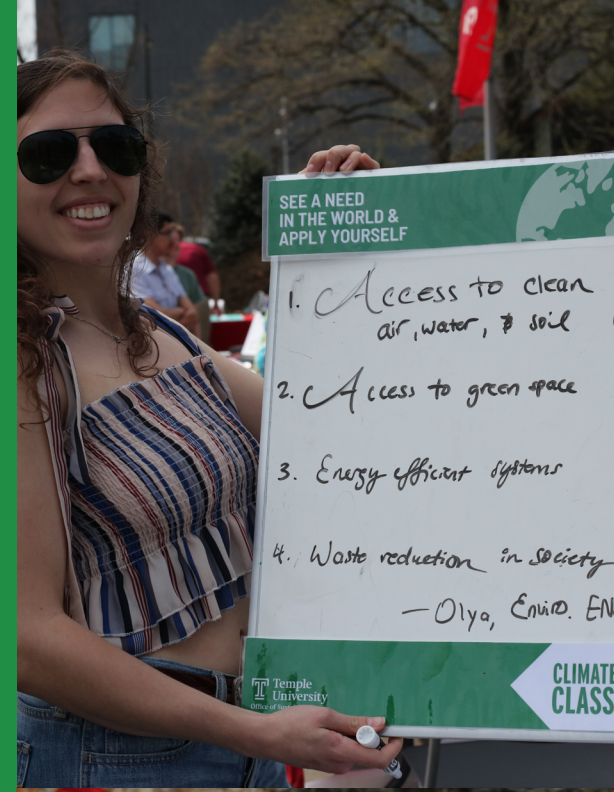

Tyler School of Art and Architecture graphic and interactive design students' original climate change and sustainability-themed posters were displayed at the foot of the Bell Tower.

> "Climate change is the existential challenge of our time ... It's going to impact every area of human activity. We as a university know that, as **a thought leader**, as a **knowledge creator**, we have to be at the **forefront of offering educational programming** and **leading in research and scholarship** and **work with the community** in order to address these challenges.

–Provost Gregory Mandel
at the Climate in the Classroom Bell Tower takeover in April 2023

SEE A NEED IN THE WORLD & APPLY YOURSELF

1. Access to clean air, water, & soil
2. Access to green space
3. Energy efficient systems
4. Waste reduction in society
— Olya, Enviro. ENG

CLIMATE ED MATTERS TO ME

A sustainable Earth is crucial to everyone's Survial!
— Abby + Grant

CLIMATE ED MATTERS TO ME

So more people survive and THRIVE
- Amelia

BOLD ACTION, BRIGHT FUTURE

Outdoor education and research is a way to connect to nature and help solve the climate crisis.

Participating centers, departments and the programs included

- the Center for the Advancement of Teaching;
- Tyler School of Art and Architecture's graphic and interactive design and community arts practices programs;
- the Ambler Field Station and arboretum, faculty, students and alumni from the Beasley School of Law;
- Beasley School of Law faculty, students and alumni;
- Boyer College of Music and Dance students and faculty;
- College of Liberal Arts' geography and urban studies faculty and students;
- College of Engineering faculty and students;
- theater, film and media arts students and faculty;
- Fox School of Business faculty;
- College of Public Health faculty and students; and
- College of Science and Technology's earth and environmental science faculty and students.

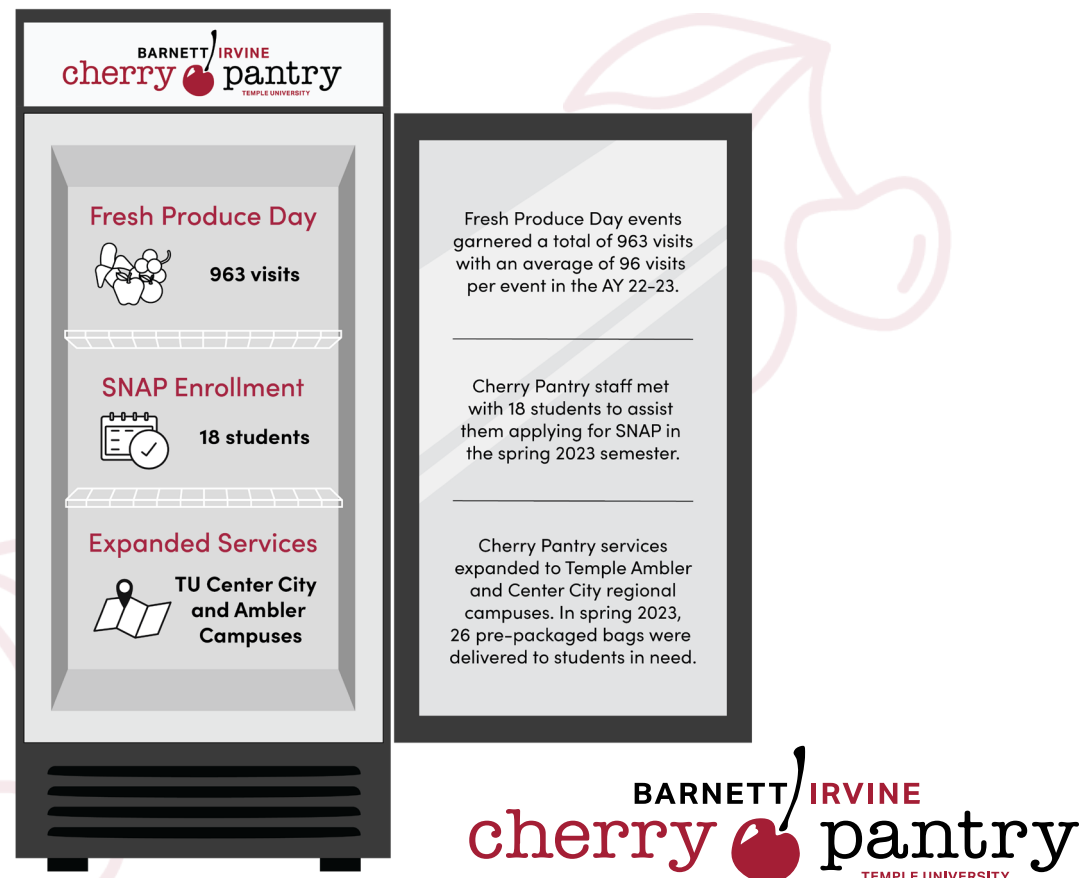A CALL FOR
CLIMATE IN THE CLASSROOM

Culture

Temple strives to integrate sustainability principles in all aspects of campus life. The Office of Sustianability collaborates with campus partners to improve literacy on critical sustainability and environmental justice issues. Innovative outreach campaigns, engaging events and leadership development programs foster dialogue, forge connections and deepen understanding of the climate crisis in the individual, institutional and public spheres.

A cultural lens provides a holistic perspective on sustainability, invites diverse voices and centers equity and inclusion. Education and advocacy initiatives grow a coalition of stakeholders committed to principled climate policy and action. Culture goals look to identify and provide resources and support to the Temple community to build their capacity to embody, promote and lead sustainable change on campus.
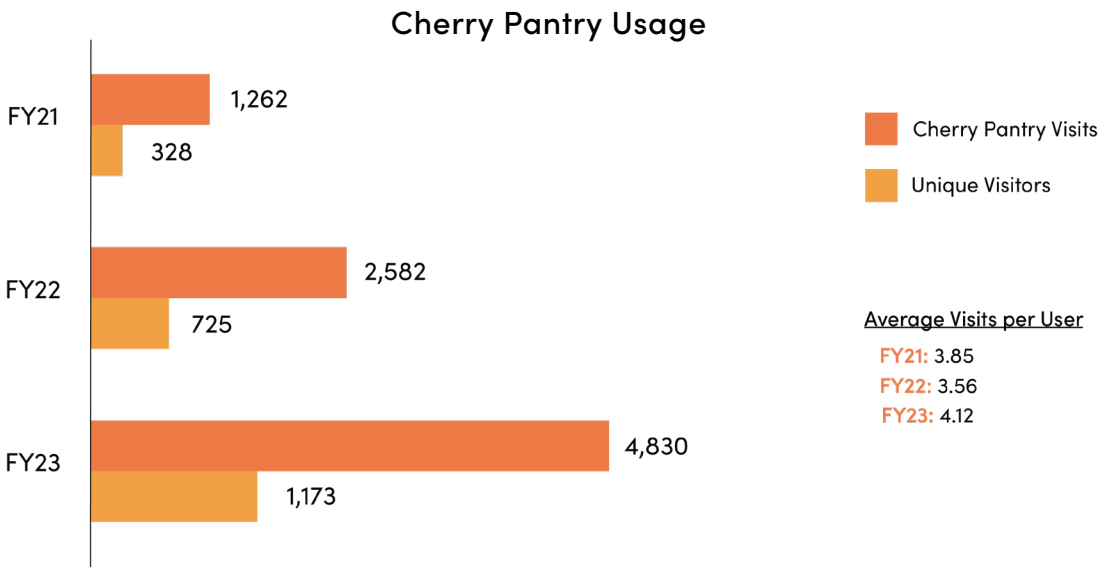
Barnett Irvine Cherry Pantry

The Cherry Pantry opened in 2018 after a survey revealed that 35% of Temple's undergraduate students were food insecure. In spring of 2023, it celebrated its fifth anniversary and became the Barnett and Irvine Cherry Pantry, in honor of a donation from alum Christopher M. Barnett and his business partner Nathan Irvine. Items at the Barnett Irvine Cherry Pantry are available to anyone with an active OWLcard, which includes students, staff and faculty. Recipients can use the pantry once per week and can take home up to 16 points worth of nonperishable food and an unlimited amount of perishable food, as well as two personal hygiene items during the first full week of the month.

BARNETT IRVINE
cherry pantry
TEMPLE UNIVERSITY

Fresh Produce Day
963 visits

Fresh Produce Day events garnered a total of 963 visits with an average of 96 visits per event in the AY 22–23.

SNAP Enrollment
18 students

Cherry Pantry staff met with 18 students to assist them applying for SNAP in the spring 2023 semester.

Expanded Services
TU Center City and Ambler Campuses

Cherry Pantry services expanded to Temple Ambler and Center City regional campuses. In spring 2023, 26 pre-packaged bags were delivered to students in need.

BARNETT IRVINE
cherry pantry
TEMPLE UNIVERSITY

Featured Goal:

Begin to address food insecurity at Temple by 2019.

Cherry Pantry Usage

FY21	1,262
	328
FY22	2,582
	725
FY23	4,830
	1,173

■ Cherry Pantry Visits
■ Unique Visitors

Average Visits per User
FY21: 3.85
FY22: 3.56
FY23: 4.12

Growing the Reach and Impact of Student Hunger Alleviation Initiatives

Barnett Irvine Cherry Pantry adds full-time staff person and refrigeration

From March 2020 to January 2021, the Barnett Irvine Cherry Pantry moved from a shopping model to a pre-packed bag model to accommodate students during COVID-19 and pantry usage was lower than average because students were not on campus due to the pandemic. Unique user visits increased by 105% from AY20–21 to AY21–22 and total number of visits increased by 73%. Usage of the Barnett Irvine Cherry Pantry surpassed pre-COVID numbers with the return to campus and addition of a full-time staff member.

In February 2023, pantry staff secured refrigeration that allowed the Barnett Irvin Cherry Pantry to offer perishables consistently for the first time since the doors opened. Prior to the refrigeration, the Barnett Irvine Cherry Pantry hosted Fresh Produce Days that designated certain days for distribution of fresh produce and veggies by staff and volunteers. Fresh Produce Day events garnered a total of 963 visits with an average of 96 visits per event in the AY22–23. In May 2023, pantry staff created a Food Security Coalition to facilitate the development of ideas, exchange resources, create new opportunities, and answer questions about food insecurity and sustainable food systems on campus.

Championing food justice, access through a circular economy

Temple sustainability student and community coalition hosts share fair

As part of Campus Sustainability Month in April, the Office of Sustainability and Temple's chapter of Sharing Excess hosted the Share Fair. Feeding hundreds and connecting students and community members to key resources to address basic needs, both on and off campus, the Share Fair was both a mass produce giveaway and opportunity to engage with organizations and individuals championing sustainable, responsible consumption and circularity on Temple's campus.

Sharing Excess is a nonprofit organization in Philadelphia that works with retailers, wholesalers and farmers to bridge the gap between excess food and the community. Their organization combats food insecurity by reallocating produce that would otherwise end up in the landfill. At the Share Fair, Sharing Excess and student volunteers together coordinated the delivery and distribution of rescued produce, including jalapenos, mixed greens, cucumbers, peaches and much more.

Along with the produce giveaway, the Share Fair also featured other university departments and student organizations committed to growing the circular economy on Temple's campus. The Cherry Pantry held a nonperishable food donation drive along with information on how to support their efforts in combatting hunger on campus. Temple Student Government held a business-casual clothing giveaway, all donated from students and other university partners throughout the semester, to support underresourced students in growing their professional closets. The Office of Sustainability exhibited their Secondhand Cycle Program by raffling off a recovered, refurbished bicycle.

Green Grant

Temple University's Student Green Grant builds upon Temple University's commitment to sustainability by funding projects led by students that focus on advancing Temple University's sustainability mission and have a positive impact on our local environment and community. There were two winners in the Green Grant 2022 award cycle: Glass Collab and Sci-Design.

Sci-Design highlights native Pennsylvania plants with public art project

Sci-Design is a student organization dedicated to scientific education through creative projects. The Green Grant funds enabled Sci-Design to achieve a long-term organization goal: the creation of an educational piece of public art displayed on campus, designed and completed entirely by students.

The organization collaboratively created a design showcasing plants native to the local region. Student leadership conducted extensive research on sustainable materials, such as low-VOC (volatile organic compounds) soy-based paint to ensure their work did not emit toxic chemicals and brushes made from natural fibers, instead of those containing plastic or other synthetic materials, to lessen negative environmental impacts of the products' eventual disposal. Students volunteered during two weekend painting sessions facilitated by club officers to complete the 5-by-8-foot banner. Both through the banner's creation and its exhibition with an accompanying educational plaque in the Temple Community Garden, the Green Grant has enabled the Temple community to engage with public art to learn about sustainability initiatives and encourage environmental conservation advocacy on campus and beyond.

Innovative sustainable waste practices in Tyler School of Art and Architecture's Glass Department

The Tyler Glass Collaborative is a student-run organization for glass artists that seeks to enhance the educational opportunities of its members through their own active participation in community-building efforts. Glass Collab won Green Grant funds to initiate more sustainable waste practices in the glass studio to better understand their waste impact and develop interventions to reduce the ecological footprint of the Tyler glass facilities. Their project provided educational opportunities and economical savings for students and instigated critical dialogue about the importance of integrating sustainability principles within the discipline, setting an example for other universities. The award went towards the purchase of a scale to measure overall waste trends and a machine that grinds larger chunks of glass into sand, which can then be remelted and reused, extending the life of the material.

The glass program at Tyler School of Art and Architecture is one of the largest and top-rated university glass studios in the world. It serves over 150 students a week and uses close to five tons of glass a semester. The initial investment of the Green Grant has set in motion research and development inquiry and experimentation in glass recycling innovation, demonstrating the growing potential for more widespread glass recycling and integration of reuse practices within the department's operations.

Student Leaders Bring Issues of Menstrual Health Equity to the Forefront

PERIOD. and sustainability collaborate for advocacy and education campaign

The student organization PERIOD. is dedicated to eliminating period poverty, or widespread inequities in access to quality menstrual care. PERIOD. at Temple University is committed to empowering those disproportionately affected and driving local efforts for menstrual equity by distributing menstrual products, nurturing youth leadership and advocating for just policy. PERIOD. student leadership worked with the Office of Sustainability staff to develop a strategic plan for a semesterlong impact campaign. The support enabled a series of pop-ups and a formal student-led educational workshop as a part of Campus Race to Zero Waste. PERIOD. was also represented at Share Fair, where members provided free and sustainable menstrual products and engaged students in education and organizing efforts to address these critical issues of health equity, wellness and gender justice on Temple's campus and in Philadelphia.

Goal Progress

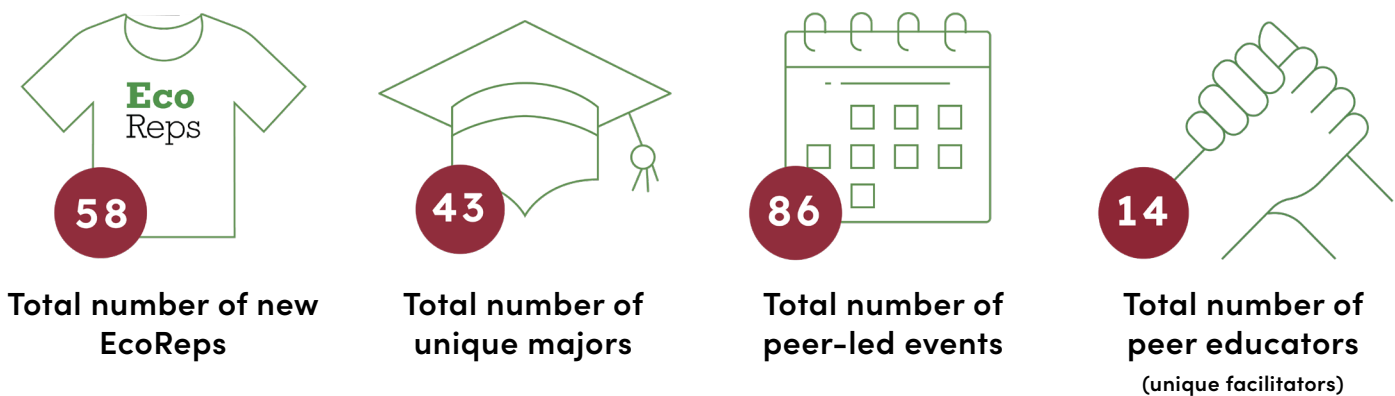| Goal	Progress
✓ Create a student educator program to build student awareness on campuses by 2020.	**ACHIEVED:** Temple University's EcoReps program was launched in fall 2020.
✓ Increase student sustainability engagement through the development of a student green fund by 2019.	**ACHIEVED:** The Green Grant was first awarded in 2019.
✓ Conduct an assessment on sustainability culture by 2021.	**ACHIEVED:** The Transportation and Sustainability survey was issued to students, faculty and staff in spring 2022. The survey included questions relating to sustainability culture.
✓ Establish a housing and dining services/academic working group to identify opportunities for collaboration and cooperative programs by 2020.	**ACHIEVED:** The Sustainable Food Services Committee was launched spring 2022. Student, staff and faculty representatives comprise the committee.
✓ Begin to address food insecurity at Temple by 2019.	**ACHIEVED:** Since opening in 2018, Cherry Pantry has been committed to fighting food insecurity for Temple students. Food donations from Give+Go Green moveout and monetary donations from Temple Thrift sales go directly to the Cherry Pantry.
Create sustainability certificate program through Temple's continuing education program by 2023.	**IN PROGRESS:** The Office of Sustainability began to author a case study to summarize best institutional practices and existing programs. This information will inform recommendations for the structure of the sustainability certificate.
Work with University Housing and 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.	**IN PROGRESS:** University Housing has committed paid staff capacity to executing collaborative Sustainability programs such as Green Living and Give+Go Green. UHRL leadership has initiated a strategic plan to integrate sustainability curricula and sustainable operations campaigns into academic initiatives and student engagement activities led by both student and professional staff.

Eco Reps

Temple recognizes the important role that students play in building a sustainable campus from the ground up. The best way to initiate change is to become a part of it, and the EcoReps program connects and empowers student changemakers to create a better tomorrow.

EcoReps is a peer education program that trains and develops to embody, promote and lead sustainable change and climate action on campus.

The EcoReps program is for all students from every college and major, who are concerned about our climate future and passionate about positive, sustainable change. EcoReps is gateway to sustainability programming, volunteer opportunities and leadership development.

58 — **Total number of new EcoReps**

43 — **Total number of unique majors**

86 — **Total number of peer-led events**

14 — **Total number of peer educators** (unique facilitators)

Eco-friendly faces: Meet Temple's EcoReps

Students in Temple's EcoRep peer education program lead sustainability and climate action initiatives across the university. Here are some of their stories.

Juliana Alderfer

Environmental engineering, College of Engineering '23

As a student of environmental engineering and a minor in public policy, Juliana channeled her dedication to sustainability into leading Green Living, an eight-week interactive challenge to live more sustainably, focused on topics such as conscious consumption, energy, food and water. As president of the Temple chapter of Engineers Without Borders, Juliana helped conduct a waste audit of trash and recycling from Temple students to learn their waste patterns and determine how to mitigate single-use plastic overconsumption through an Office of Sustainability Green Grant. She's created a dataset from this audit to present to individuals who design much of the outdoor infrastructure on campus. Her research afforded her the opportunity to apply environmental advocacy skills and translate this data to make a case for institutional policy change.

Mason Dofflemyer

Environmental studies, College of Liberal Arts '23

Mason is an environmental studies major in the College of Liberal Arts and dedicates his time to serving the community by focusing on urban agriculture and environmental justice. A student researcher in the Liberal Arts Undergraduate Research Award program, he worked with Associate Professor of Geography and Urban Studies Christina Rosan on a white paper and map outlining places inside and outside of the city where EcoReps have worked on sustainability projects. This research encourages learning outside of the classroom across the student body and bolsters students' desire to collaborate with the community. Additionally, Mason helped manage the Temple Community Garden, as part of a broader effort to combat food insecurity and waste by providing produce and composting services to the community free of charge.

Kelley Simon

Geography and urban studies, College of Liberal Arts '23

Kelley majored in geography and urban studies in the College of Liberal Arts, with a specific focus on sustainable transportation and environmental planning. From restoring and reselling gently used bikes for the secondhand bike sale to developing geographic information systems (GIS) surveys to measure the availability, accessibility, location and capacity of bike parking on campus, Kelley demonstrated a commitment to making campus transportation more sustainable. Further applying his GIS skills, he conducted a tree inventory of Main Campus to estimate Temple's contribution to Philadelphia's tree canopy and the ecological benefits such as storm water capture, carbon capture and pollution removal.

Dayja Burton

Supply chain management, Fox School of Business '24

As a supply chain management major, Dayja has made an immense impact on the office with her focus on corporate social responsibility and sustainable business. She serves as a student advocate working collaboratively with Temple Culinary Services to improve the sustainability of their operations by offering more vegan and locally sourced options and allowing students to use their own reusable mugs at Temple eateries. She also led EcoRep excursions to sustainable businesses in the Philadelphia area, with a specific focus on green purchasing tips, teaching students where to go for refillable toiletries and thrifted and upcycled clothing and housewares.

Riya Shah

Health professions, College of Public Health '24

Riya has applied her public health education to take action to reduce food waste and make our Philadelphia food systems more sustainable. During the COVID-19 pandemic, she demonstrated her dedication through supporting virtual events and then increased her involvement by organizing and developing low-carbon eating workshops, a cooking demonstration series to teach fellow students how to make easy, affordable and eco-friendly meals. She educated participants about how our food choices affect the climate, emphasizing the need to increase access to nutritious and organic plant-based food. She has also arranged and led EcoReps excursions to various co-ops and farmers' markets and serves on the board of the student organization Sharing Excess, which collects food from local organizations to donate to shelters and soup kitchens.

EcoRep Excursions

EcoRep excursions are student-led trips hosted by EcoReps to and from local sustainable businesses, and cultural hot spots around Philadelphia's green scene.

The excursions build upon existing curricular and co-curricular service and experiential learning initiatives to expose student leaders to local innovators in the food, textile, and low-waste and creative reuse spaces. Students explore new parts of the city and get a behind-the-scenes look at Philly sustainability, in some cases, perform direct service and volunteer on-site.

Wissahickon Valley Park

Forty students traveled via regional rail to Wissahickon Valley Park for a nature walk along the Wissahickon Creek, completely immersing themselves in nature. On their hike through the national landmark, they enjoyed fellowship and learned about local ecology and geology like the unique schist bedrock, old growth trees and dozens of bird species.

FABSCRAP

EcoReps traveled to FABSCRAP, a textile recycling nonprofit. Students toured their facility in South Philly to learn about the impacts of textile waste and think critically about the fabric lifecycle. Since there is not a mechanized system for sorting textiles by fiber or to remove stickers, staples and fabric headers from pre-consumer products, the students volunteered their time to do this work and advance FABSCRAP's mission to end commercial textile "waste" and maximize the value of unused fabric.

Sanctuary Farms

EcoReps rolled up their sleeves in 2023 in support of Sanctuary Farm Philadelphia, a non-profit urban farm located just a few blocks from campus. The team flexed their green thumbs and learned about the urban farm's mission to promote safety, hospitality, nutrition, and growth within the North Philadelphia community. Students joined in their efforts to connect people with the natural world through direct service and garden maintenance and by helping facilitate hands-on activities, and immersive experiences for area youth.

Excursions encourage the Temple student body to learn about local sustainable businesses and nonprofits, urban parks and gardens, and more while gaining familiarity riding public transit.

Engagement by the numbers

104 events

24 student orgs engaged

833 volunteers

41 campus collaborators

12 community collaborators

Design

More than 70% of Temple's greenhouse gas emissions are a result of the operations of its built environment. Since 2006, Temple has added more than 3,000,000 square feet of new building space but has reduced greenhouse gas emissions in part through energy-efficient design. 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.

Featured Goal

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

Plan Recommendation

Increase short-term parking equivalent to 120% of commuting rates.

Progress Towards Plan Recommendation

From 2015 to 2022, Temple increased short-term parking supply by 118 spaces. Short-term parking spaces in 2022 were the equivalent of 79% of the number of bicycle commuters.
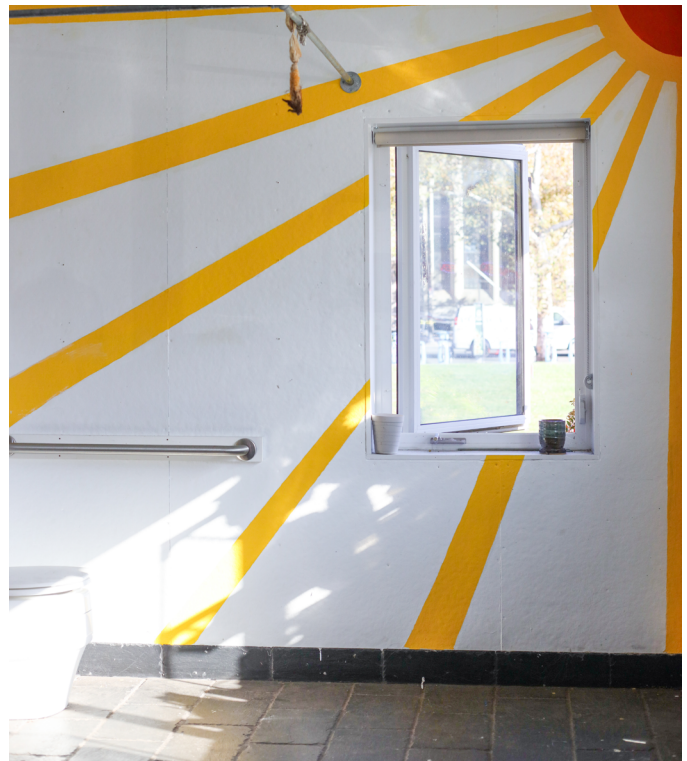
118

1,725

= 115 bicycle spaces

2015 baseline

Added since 2015

Public Education Campaign Increases Visibility of Sustainable Design on Campus

Tiny house murals

Completed in the spring of 2017, the Temple Tiny House was designed and constructed by students as a project-based learning collaboration between the Office of Sustainability and the construction engineering and architecture programs. It has since been used to support the needs of the Temple Community Garden and as a community-facing demonstration tool to model regenerative design on campus. In 2023, student artists and leaders of the student organization, Sci-Design, were commissioned to design and create hand-painted murals in the Tiny House's interior that educate visitors about its various sustainable design features.

Featured illustrations include rainwater harvesting, the green roof, the solar array and high-performance thermal envelope construction elements. An exhaustive written narrative of the building's passive solar closet system is accompanied by a visualization which also explains its key passive thermal design function and how it facilitates seed germination. Accessibility was prioritized throughout the design process such that audiences of all ages and literacy levels could gain insight into sustainable design with a simple tour of the 175 square-foot structure. The new murals increase the visibility and understanding of sustainable design on campus and the expanded public programming it enables further affirms Temple's commitment to sustainable design and education.

Seed Germination

Germination is when a seed exits a dormant state and grows into a mature plant. A portion of the Tiny House is used as a greenhouse to speed up this process. Seed germination allows an early start to the growing season.

Iconic Temple Building Reimagined

Samual L. Paley Hall transformation

The completion of the Charles Library has provided Temple University with the opportunity to reimagine the former Paley Library, now called Samual L. Paley Hall, for its new residents, the College of Public Health. Taking a building that once functioned as a library with limited interior walls and windows and turning it into a space for learning, collaboration and research is no easy task. However, adaptive reuse, the process of taking an existing structure and updating or adapting it for a new use or purpose is more sustainable than building from scratch. The new design maintains the majority of the existing structure of the building, but modifies and expands it to meet the new programmatic needs of the College of Public Health. Adaptive reuse is one strategy that Temple employs to demonstrate its commitment to sustainable building practices.

Paley was built in 1966 and was in operation as a library until 2019. The iconic Brutalist design made popular in the 1950s and 1960s emphasized and celebrated raw building materials and structural elements. Like most architectural trends, they evolve and change to reflect societal priorities influenced by a number of factors. One such shift is moving away from Brutalist design in favor of biophilic architecture, which not only uses nature as inspiration for aesthetics, but incorporates construction principles found in natural environments and species.

The dramatic transformation of the interior of Paley Hall began in 2019 when multiple partners worked to minimize the environmental impact of the project, by repurposing, donating or recycling most of the furniture and materials in the building. The most challenging and striking transformation will be to Paley's exterior which will be executed in the coming years. Temple University's adaptive reuse strategy is an example of our commitment to sustainability and climate action, emphasizing the importance of evolving to meet future needs while not forgetting our collective history.

Incorporating Wellness Into Master Planning Efforts

New College of Public Health building seeks WELL Building certification

As the new home of the College of Public Health, Samual L. Paley Hall will seek WELL Building certification. The WELL Building Standard was launched in 2014 by the International WELL Building Institute as a performance-based rating system for measuring, certifying and monitoring features of buildings and communities that impact health. The purpose of the WELL Building Standard is to provide evidence-based design and operations guidelines and metrics to enable the built environment to support increased positive health outcomes. WELL addresses 10 topic areas or concepts of the built environment: air, water, nourishment, light, movement, sound, thermal comfort, materials, mind and community. It outlines 105 criteria related to wellness and 11 body systems: cardiovascular, digestive, endocrine, immune, integumentary, muscular, nervous, reproductive, respiratory, skeletal and urinary.

This certification focuses on developing healthier buildings, fundamentally prioritizing the occupant's health. The integration of wellness into building design and consideration of Temple's physical plant (the built environment) for its impact on human health is an important step forward for the institution. Samual L. Paley Hall's WELL certification signifies the adoption of a more holistic lens of sustainability in master planning efforts and further commitment to the university's mission of cultivating a campus culture of physical, mental and social wellness.

Goal Progress

	Goal	Status
✓	Incorporate green building standards for renovation, new construction, and landscape projects into the university's adopted green building policy by 2019.	**ACHIEVED:** Many green building standards are being incorporated into Temple design standards. New construction and major renovation projects have set a minimum goal of LEED Silver.
✓	Develop Temple standards for new and existing building design and campus infrastructure that incorporate sustainability and climate resilience by 2020.	**ACHIEVED:** All new 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.
✓	Develop and adopt technical specifications for all projects that incorporate a sustainable design framework by 2021.	**ACHIEVED:** Technical specifications for plumbing, mechanical and electrical systems have been developed and made publicly available on Temple's Campus Operations website.
	Complete the full implementation of the Verdant Temple Landscape Master Plan by 2030.	**IN PROGRESS:** Temple University has completed many iconic projects including the transformation of significant portions of Polett and Liacouras walks. Both projects integrated sustainable stormwater management.

Environmental Wellness

In the 2019 Climate Action Plan, Temple University identified areas of future study for goals related to interdisciplinary collaboration to create a more inclusive and permeating sustainable culture on campus. One such recommendation was for the Office of Sustainability to work with partners on campus to advance connections between self-sustainability and global sustainability as it relates to wellness. The office and key partners, such as Student Activities, the Wellness Resource Center and Temple Ambler, have made significant progress in advancing environmental wellness on campus with several student-focused programs, academic and community engagement initiatives, and more strategic campus planning efforts.

What is environmental wellness?

According to the Substance Abuse and Mental Health Services Administration (SAMHSA), environmental wellness dimension involves being able to be safe and feel safe. This can include accessing clean air, food, and water; preserving the areas where we live, learn and work; occupying pleasant, stimulating environments that support our well-being; and promoting learning, contemplation and relaxation in natural places and spaces.

Strategic Planning for Wellness

In early 2023, Temple University announced the creation of a new Health and Well-being Division, as well as expanded wellness programming and strategic initiatives including hiring additional counselors, growing service delivery options, supporting and retaining current counselors, and an additional satellite office at the Health Sciences Center campus. Temple was also selected to be a member of the latest JED Foundation cohort, wherein the university receives special institutional research on student health and well-being to be strategically leveraged for new programming and initiatives to better serve the specific needs of students.

For the first time, representatives from the Office of Sustainability, both students and staff, were brought into the JED leadership bodies and focus groups as subject matter experts to inform decision-makers about the student experience of climate anxiety and eco-grief as well as perspectives on how integrating sustainability principles into the design of the built and natural environment and increasing green space on campus can facilitate improved mental health outcomes for all members of the Temple community.

Climate Cafes: Peer-facilitated Environmental Wellness Programming

Climate Cafés are unique therapeutic models for individuals experiencing climate grief or eco-anxiety that create an informal, open, respectful and confidential space to safely share emotional responses and reactions to the climate emergency.

Climate Cafes prioritize an exploration of thoughts, feelings and experiences rather than planning action. Instead, participants support each other with a haven from usual busyness and activity via a reflective practice that helps relieve the burden of anxiety and grief. In the spring of 2023, EcoReps were trained to facilitate climate cafes by the North American Climate Psychology Alliance.

Over 50 students of all different majors came together to share intimate feelings of grief, anxiety, guilt and helplessness. The Climate Cafes enabled deep connection and dialogue amongst like-minded peer facilitators and participants with similar struggles. Furthermore, they helped develop coping skills and strategies to promote and protect student wellness and engender resiliency. Students themselves create an interdisciplinary and holistic experience where peers learn from each other, sharing their diverse perspectives and approaches to interacting with climate and the environment, coming together to work through and process shared climate grief intellectually, cognitively and emotionally.

Ambler Campus Nature-based Wellness Initiatives

The Ambler Campus is seeking ways to provide opportunities for members of the Temple and greater community to develop a healthy relationship with nature through various educational programs and activities. Temple Ambler is one of the 70 members of the Campus Nature Rx Network. The growing network seeks to provide research-driven initiatives that leverage nature-based wellness activities for college students. These programs are often delivered as a way to complement the work of university counseling centers and provide greater access to students to gain coping tools and build community.

Temple Wellness Day

In 2022, the Ambler Recreation Services Department expanded its scope to better leverage the unique resources at the Ambler Campus and focus on holistic health and well-being. Being rebranded as Recreation, Outdoor Education and Wellness (ROW), the department seeks to focus on the growing body of research that suggests a connection between outdoor activity and increased positive health outcomes. Over the past academic year, the ROW Department has developed relationships with experiential therapy faculty including expressive arts, music, horticulture and recreation to develop opportunities for students to gain clinical hours through the delivery of nature-based wellness programs for students.

On Oct. 14, 2022, Temple University offered its first university-wide Wellness Day, recognizing the need of students to have a break from classes and other commitments prior to the Fall Break taking place later in the semester. Ambler Campus recognized the opportunity to deliver a diverse range of programming. Students had the opportunity to self-select activities that included yoga in the gardens, guided mindfulness activities, self-guided nature scavenger hunts and coloring, a succulent planting workshop, and a facilitated experience on the challenge course. Ambler staff worked directly with the Office of Sustainability to organize free transportation between campuses and the EcoReps helped guide students who may have not had prior experience utilizing the intercampus bus. Additionally, the Cecil B. Moore Scholars recognized the benefits of this program and integrated the day with some additional outdoor experiential curriculum to enhance overall wellness and develop leadership skills. Eighty-seven total students participated in the first Wellness Day event. Forty-five students completed a post-event survey noting that they would like to have the opportunity for future events.

Multicampus initiative aims to address disparities in access to outdoor recreational opportunities

Healing Ourselves Outside Together (HOOT) is a multidepartment and campus program led by Temple University Harrisburg in collaboration with Let's Go Outdoors and other community organizations. Recognizing the well-documented benefits of outdoor activities for mental, physical and spiritual well-being, HOOT aims to address the disparities in access to outdoor recreational opportunities, particularly people of color living near Temple University's campuses: the Harrisburg, Ambler and Center City campuses and Main Campus.

The program seeks to alleviate barriers such as historical inequities, lack of transportation and limited community familiarity with outdoor activities. By leveraging an $85,000 grant from the Pennsylvania Department of Conservation and Natural Resources, Community Conservation Partnerships Program, HOOT is developing innovative programs in partnership with community organizations like Let's Go Outdoors.

The HOOT Big Adventure took place at Temple Ambler on Nov. 5 2022. Visitors took part in a plant identification walk with the Ambler Arboretum staff; explored the weird and wild plants of Tyler School of Art and Architecture's Greenhouse Education and Research Complex; learned about citizen science with the Temple Ambler Field Station; and practiced outdoor skills with Ambler Campus Recreation, Outdoor Education and Wellness.

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 the efficiency of systems, second on sourcing less carbon-intensive forms of energy and, as a last resort, purchasing carbons offsets or renewable energy credits. This strategy has been successful and has helped Temple achieve progress towards carbon neutrality year after year.

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

1. **Efficiency:** using equipment or technology that requires less energy to perform the same function.

2. **Renewable Energy:** energy from a source that is not depleted when used, such as wind or solar.

3. **Offsets:** are a form of trade. When you buy an offset, you fund projects that reduce greenhouse gas emissions.

Efficiency

Renewable Energy

Offsets
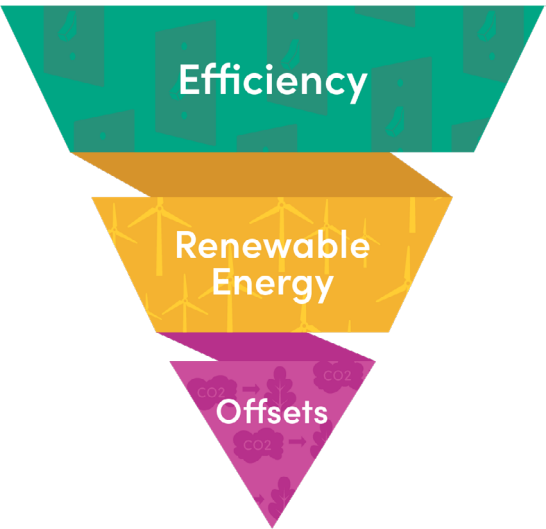
Leveraging Building Tune-up to Identify Energy Efficiency Projects

Building Energy Performance Program uncovers opportunities

The Building Energy Performance Program (BEPP) requires Temple University to audit building energy systems and controls to identify opportunities to improve operational efficiency. BEPP, which was enacted as part of the city of Philadelphia's Building Energy Performance Policy, requires building owners to submit a corrective action plan to resolve issues uncovered during mechanical and lighting system audits.

The policy only mandates that building owners address issues that do not require permits from the Department of Licenses and Inspections. However, the Office of Sustainability and Energy and Utilities Department will leverage the audit to identify voluntary energy efficiency opportunities that are not required to be addressed as part of BEPP. Addressing voluntary energy efficiency projects will further reduce Scope 1 and 2 emissions.

Featured Goal

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

Since FY17, energy use in existing buildings has decreased by 7%.

	Energy Use Actual (MMBtu)
FY17	1,693,120
FY18	1,750,332
FY19	1,718,569
FY20	1,596,650
FY21	1,673,832
FY22	1,615,827
FY23	1,576,187

Energy Use Actual (MMBtu) — Energy Use Reduction Goal (MMBtu)

Energy by the numbers

building square footage increased by 36% since 2006.

total net GHG emissions from energy sources decreased by 33% since 2006.

total energy use in buildings per square foot decreased by 20% since 2006.
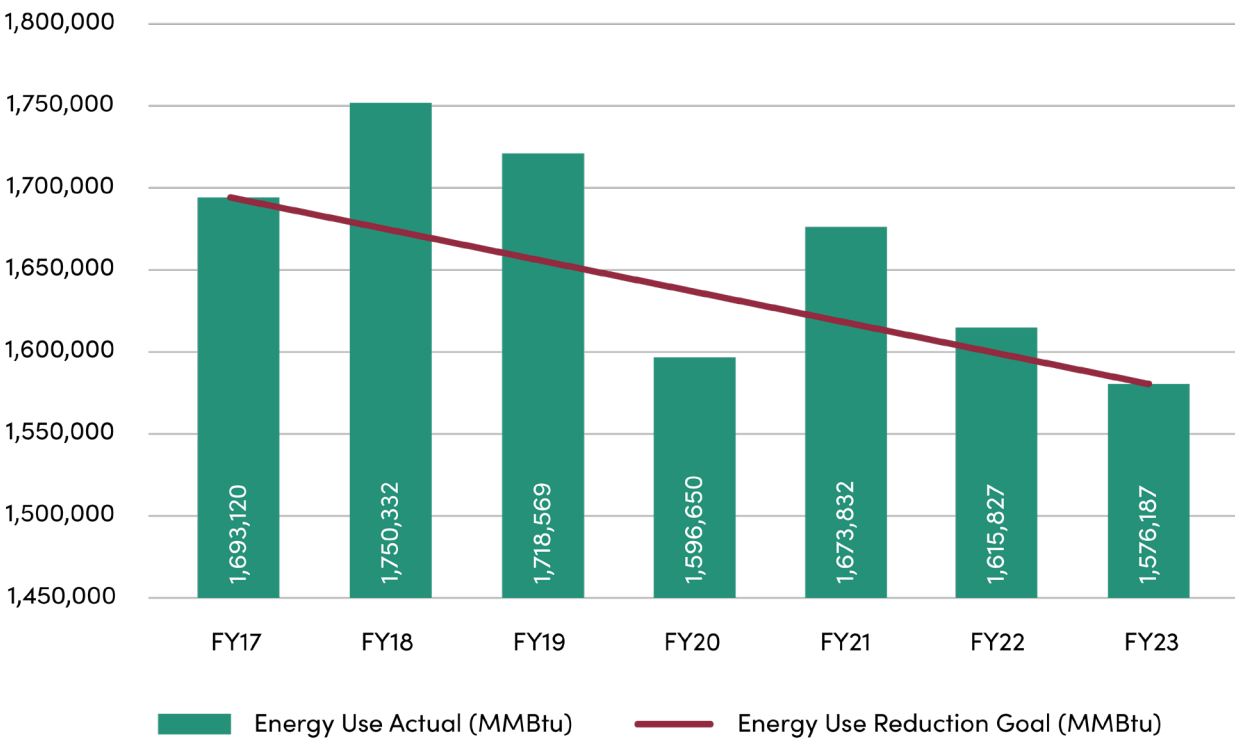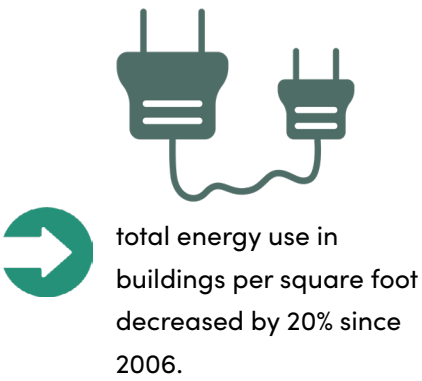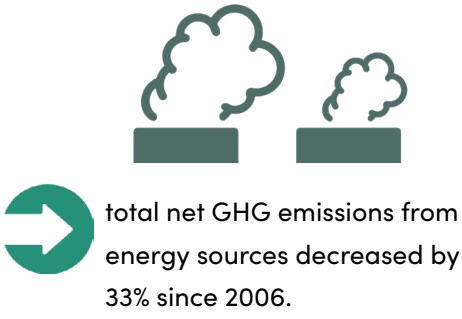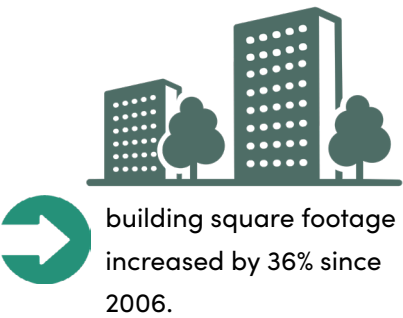
Driving Down Emmissions Through Equipment Optimization

Green Revolving Fund project identification

The Green Revolving Fund was established in 2019 with an initial investment of $300,000. Since then, the Energy and Utilities and Sustainability departments have continued to grow the fund. At the close of FY23, the Carlisle Chiller Plant Optimization Project was selected to receive funding through the Green Revolving Fund.

The chilled water plant, located on the Health Sciences Center Campus, will be upgraded with equipment and controls that will optimize the performance of the existing plant. The upgrades will enable the chiller plant to operate as efficiently as possible and ultimately consume the least amount of energy, while still meeting the building needs.

Once the new equipment and controls are installed, energy savings will be measured and verified. Information related to the verified energy savings will be made available on the Office of Sustainability's website.

Goal 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.

ACHIEVED: Temple follows ASHRAE 90.1-2019 and LEED Silver guidelines. Both ASHRAE and LEED promote established sustainable practices which limit dependency on fossil fuels.

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.

ACHIEVED: All major construction and renovation projects require input and approval from the energy team.

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

ACHIEVED: The Green Revolving Fund has been created and rebates from energy efficiency projects have been deposited to the fund. Once projects have been completed and energy savings have been verified, utility savings will be deposited to the Green Revolving Fund.

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.

IN PROGRESS: Energy efficiency projects have been identified and will be funded by the Green Revolving Fund.

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

IN PROGRESS: Existing building stock energy use decreased by 7% from an FY17 baseline.

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

IN PROGRESS: 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 COVID-19 pandemic.

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

IN PROGRESS: Temple University is investigating opportunities to develop small-scale renewable energy systems on campus.

Temple Sustainability and the Urban Mission

Temple University was founded on principles of service. Across the university, we strive to honor the spirit of founder Russell Conwell, whose well-known "Acres of Diamonds" speech asserted that we all have a duty to improve our shared communities.

As an urban institution that is deeply engaged in the community, Temple University's commitment to sustainability can have a profound impact on the health and quality of life of a large and diverse population within Temple and its surrounding community. The university is committed to demonstrating the value of those principles through its own example and through the activities it sponsors in the community. Temple aims to serve as a model for similar urban institutions and to uphold its national reputation for excellence and commitment to principled policy and action.

Engineers Without Borders Offers Opportunity for Meaningful Experiential Learning
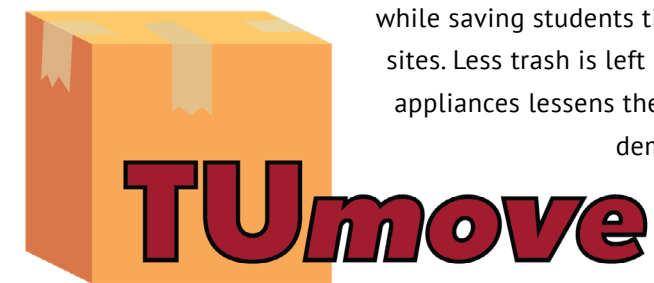
Temple's chapter of Engineers Without Borders (EWB) is a student organization that provides an invaluable opportunity for students to work with underserved communities locally, nationally and internationally to design and implement sustainable engineering projects. In collaboration with the Philadelphia professional chapter of Engineers Without Borders and grassroots community organization VietLead, Temple's EWB chapter has partnered with Horace Furness High School in South Philadelphia to construct a community garden with a greenhouse, a compost system and an irrigation system. The group designed these structures and oversaw its implementation. The organization will continue the relationship with school leadership to maintain the new infrastructure and explore potential to expand what they've already built and learning opportunities for students. This includes the publication of a maintenance and operations document for the teachers and students explaining how to properly care for these facilities to make sure they're safe and sustainable for years to come. Engineers Without Borders will periodically return to the site to ensure upkeep of the new structures. Engineers Without Borders will periodically return to the site to ensure upkeep of the new structures.

Temple University Launches TUmove

In spring of 2023, Temple University launched a pilot of TUmove, a free trash collection program designed to help students moving out of off-campus residences. The goal is to prevent trash and unwanted furniture from accumulating on the streets and sidewalks in the summer months when students' leases typically end. The TUmove program allows students moving out of their off-campus housing to schedule the pickup of their large trash items conveniently in advance online. Examples of eligible items include appliances like refrigerators and in-window air conditioning units, electronics, and furniture as well as general household trash in bags. As in earlier years, dumpsters were also placed at a few locations in the neighborhood, allowing students to drop off items themselves. With over 200 student requests, TUmove successfully disposed of more than 300 tons of trash.

The brainchild of Mark Gottlieb, senior associate director of operations and logistics, and Farrah Al-Mansoor, senior director of finance and administration, TUmove keeps the neighborhood's streets cleaner while saving students time and money by transporting bulk items directly to disposal sites. Less trash is left on the curb for long periods of time and quickly recovering appliances lessens the environmental damage caused by freon leakage. The program demonstrates a proactive, environmentally conscious institutional response to long-standing and significant student need. The message of TUmove is the same core mission of the Good Neighbor Initiative: Temple University has pride in the neighborhood and cares about keeping it clean.

Students and Staff Come Together to Clean North Philadelphia Neighborhoods

This spring Temple continued a longstanding tradition of joining a citywide cleanup to maintain and beautify the local environment. The Office of Sustainability, Office of Community Affairs and Engagement, and Temple Athletics teamed up to cover 5 different areas immediately surrounding campus including around the Edberg-Olson Hall and Temple Sports Complex, as well as Carver High and Duckery Elementary schools. Philly Spring Cleanup is the largest citywide cleanup of the year sponsored by the city of Philadelphia's Department of Streets.

Temple Hosts Local Students for Carver Science Fair

One of America's longest-standing urban science fairs returned to Temple's campus. In March 2023, 41 teachers and 291 middle and high school students representing 36 schools from across the Philadelphia region gathered on Temple University's campus for the annual George Washington Carver Science Fair. A 40+ year collaboration between Temple University and the Philadelphia community, middle, high school, and fourth- and fifth-grade students showcased their projects ranging from traditional sciences such as chemistry and biology to computer science and psychology. Students tested windmill efficiency, crafted their own bath bombs, measured the effects of anxiety on lung capacity, designed roller coasters and more. This program is a collaboration between the College of Science and Technology and the Office of Community Affairs and Engagement.

Love Your Park

The Office of Sustainability hosts several stewardship events each academic year to give students opportunities to foster relationships; model sustainable leadership, and make our neighborhoods, public spaces and natural lands cleaner, healthier and happier places.

The Office of Sustainability coordinates groups of students to participate in Love Your Park every November. Love Your Park, a collaboration between Fairmount Park Conservancy, Philadelphia Parks and Recreation, and Philadelphia's Park Friends Network, works to support communities in activating Philadelphia's parks and other natural areas. In November 2022, Temple students led an excursion to South Philadelphia's FDR Park to clean, green and celebrate this iconic Philly park by collecting leaves for compost, planting trees and flower bulbs, and cleaning up after a very busy summer.

$1.5 million NSF award powers scholarships and support for high-achieving, low-income engineering students

Sustainable Temple Energy and Power Scholars (STEPS) will benefit high-achieving, low-income students through scholarships, mentorships and other opportunities while simultaneously employing a study on factors that influence academic performance. The project will employ a longitudinal, qualitative, phenomenological study to explore the lived experiences of low-income, high-achieving STEPS scholars to gain a better understanding of factors that influence their academic and career interests and persistence within these fields. Sixty percent of the $1.5 million grant funding will go towards scholarships for 34 students in electrical engineering interested in sustainable energy and power. The rest will go towards various activities aimed at supporting students and research on which activities are the most beneficial.

The STEPS program will utilize a robust mentoring program to serve as a support for the students in the program, especially during their first year. This source of support, known as engineering environmental support, has been shown to help strengthen students' self-efficacy, interest and sense of belonging in engineering. Additional programming including industry-sponsored breakfasts, industry site visits and scholar social events is meant to build the students as a cohort, which can help students persist in their engineering studies and their future careers.

Urban Bike Team Grows Community Safety Through Youth Cycling

Temple University's Urban Bike Team is an organization led by Temple police officers that teaches leadership skills to urban youth that live in North Philadelphia through bike safety training, community bike rides and mentorship to help reduce violence in the community.

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. To advance sustainable and resilient operations, Temple must not only develop sustainable best practices and operational policies, 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 play an important role in achieving a sustainable campus environment for students, faculty, staff and the community. They are organized into six subcategories.

| Dining | Air quality | Waste minimization and recycling | Grounds | Sustainable IT | Transportation |

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.

During the 2021–2022 academic year, Aramark's total annual food and beverage expenditures included the following.

16% Plant-based foods

2% Products that are sustainably/ethically produced

Expanded Organic Waste Diversion Brings Food Waste to the Forefront

Weigh the Waste 2023 student engagement campaign

As part of the annual national Campus Race to Zero Waste competition, the Temple Office of Sustainability teamed up with Culinary Services to host a two-week long educational campaign about food waste in Morgan Dining Hall. Over 40 student volunteers worked with dining staff to demonstrate diners' collective impact on post-consumer food waste and the need for its diversion on campus. EcoReps staged a behavioral intervention where they redirected individuals with leftover food from dumping the waste into the standard trash can to an organic waste bucket. The waste was then collected, weighed and put in larger compost bins for pickup.

Building on the success of last year's campaign, the program was expanded to include dinner service. This expansion of data provided a more complete picture of post-consumer waste production and increased the significance of the reporting and analysis. It also created greater visibility of the importance of diversion by reaching a larger and different student population. The two weeks provided learning opportunities to improve food waste literacy on Temple's campus. The volunteers periodically weighed the waste and shared the data right there in the dining hall, providing real-time feedback through visual marketing displayed in front of the dish return. The highly visible and interactive program raised awareness of the diversion program and taught new habits, gesturing towards a larger movement to tackle Temple's food waste through critical engagement with people's consumption habits. Through the two-week campaign, EcoReps effectively diverted 649 pounds of organic post-consumer food waste from the landfill to compost.

Goal Progress

Temple University will require its dining services provider to submit annual procurement reporting consistent with the STARS assessment program by 2018.	**ACHIEVED:** Aramark, Temple University's dining service provider, has submitted annual procurement reporting consistent with STARS assessment program.
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.	**IN PROGRESS:** Less than 2% of dining services procurement spend was used on food that meets STARS definition of locally sourced.
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 the Student Center).	**IN PROGRESS:** Aramark generates food waste from production, service and storage.

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.

GOAL	50%
PROGRESS	55%

Achieve a 30% core recycling rate.

GOAL	30%
PROGRESS	54%

Give + Go Green & Temple Thrift

Anchor sustainability programs develop circular systems on campus

Give + Go Green and Temple Thrift are two annual programs that establish circular systems to minimize waste impact and retain economic value through redistribution and reuse of commodities on campus, while also supporting the university's social justice mission.

Circular diagram:
- **Fall Semester**
- 169 Volunteers — Temple Thrift is possible with the help of volunteers.
- 3 Temple Thrift Events — Temple Thrift runs annually to upcycle clothes and donate their profits to the Cherry Pantry.
- $6,746 in Thrift Sales — Sales from Temple Thrift are donated to the Cherry pantry.
- **Spring Semester**
- 69 unique volunteers — Give & Go Green is possible with the help of volunteers.
- 4,579 lbs of clothes collected — Clothing is sorted and organized for sale and donation.
- 1,326 pounds of food collected — Food is collected for the Cherry Pantry.

Give + Go Green

Give + Go Green Gets Operational Overhaul

Give + Go Green is an annual event produced in partnership with University Housing and Residential Life and the Dean of Students, where students donate unwanted food and clothing when they move out of the residence halls in May. Each year, collection boxes are placed in the lobbies of residence halls so that students can easily donate items they would otherwise throw in the trash. These clothes are then sold at pop-up thrift sales, an affordable source of clothing for students and a fundraiser for the Barnett Irvine Cherry Pantry. Since 2008, these complimentary programs have continued to grow and serve as an example of both the behavioral and operational change necessary to achieve Temple's waste minimization and recycling goals.

This year the Office of Sustainability decreased the waste footprint of the donation and sorting processes by investing in permanent bins for the residence halls. Additionally, new reusable donation bags and bins for storing the clothing between move-out in May and sales in the fall semester enabled more efficient and effective food storage processes prolonging the shelf life of donated dry goods. Utilizing reusable laundry bags and industrial packaging for palletization eliminated significant cardboard waste from the boxes previously used to package food and clothing donations. The transition from single-use cardboard boxes to reusable bags and bins yielded savings of over $1,100.

The Office of Sustainability recruits volunteers every May to help sort the donated items. In May 2023, over 70 student and staff volunteers helped sort through a combined total of 5,905 total pounds of donations. Of this, 1,326 pounds were nonperishable food items that were boxed and brought directly to the Cherry Pantry. The remaining 4,579 pounds of donations consisted of textiles and clothing that was packaged for sale at Temple Thrift.

Temple Thrift Gains New Platform, Embodies Inclusivity and Affordability

In the fall of 2022, the Office of Sustainability hosted three Temple Thrift pop-up sales in three unique locations: Mazur Terrace, the Ritter Quad and the Bell Tower. For one sale, the office and several EcoReps took over Temple's Instagram (@templeuniv) to educate the Temple community about the programs and advertise the sales. The partnership with Strategic Marketing and Communications resulted in a collaborative Instagram reel. The short video profiled some trendy looks and key program outcomes and garnered nearly 42,000 views and just over 3,200 interactions.

Temple Thrift embodies the university's core value of affordability. The goal of the program is to put the circular economy into practice, not to generate revenue, but to increase access to quality apparel that might otherwise end up in the landfill and raise funds for the on-campus food pantry. The prices and sizes are inclusive. The clothing is not broken up into gender categories and nothing is above $5.

Temple Thrift prices Fall 2022

$5 $1 $3 $2

Goal Progress

✓ Achieve a 50% diversion rate by 2020.	**ACHIEVED:** In 2022–2023 academic year, Temple recycled 55% of its total waste.
✓ Increase the core recycling rate to 30% by 2020.	**ACHIEVED:** In 2022–2023 academic year, Temple recycled 54% of core recycling.
✓ Dedicate a staff person in University Housing to achieve compliance with the university's waste minimization and recycling initiatives by fall 2019.	**ACHIEVED:** The Office of Sustainability continues to work 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 the city of Philadelphia's Zero Waste partner status by 2020.	**IN PROGRESS:** The Office of Sustainability is revising a comprehensive materials management plan to include additional opportunities.

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.

During the 2021–2022 academic year, inorganic fertilizers and chemical pesticides, fungicides and herbicides were reduced by 56%.

Progress towards 75% reduction goal

Year	Total lbs of inorganic fertilizer
2010	4,510
2011	6,176
2012	5,123
2013	7,663
2014	7,125
2015	4,325
2016	4,425
2017	4,475
2018	4,625
2019	3,775
2020	1,906
2021	1,007
2022	3,008
2023	2,005

Total lbs of inorganic fertilizer — Goal benchmark
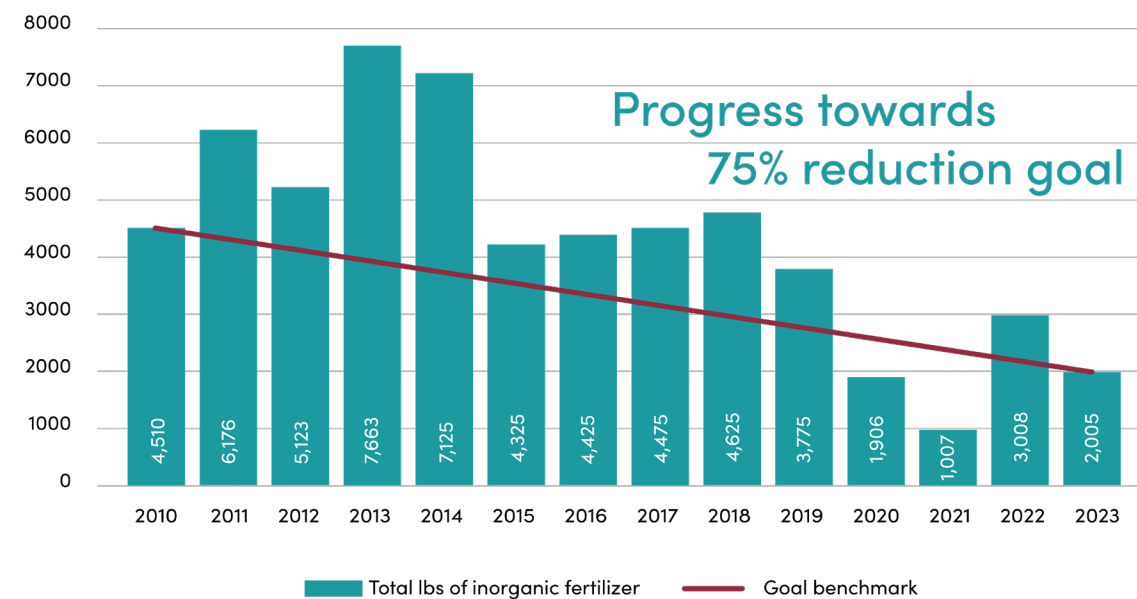
Goal Progress

✓ 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.

ACHIEVED: The Office of Sustainability finalized a sustainable landscape management document. Temple University's Sustainable Landscape Practices will be published on the Office of Sustainability's website.

Reduce the amount of water required for landscape management by 25% by 2025 from the 2006 baseline.

IN PROGRESS: Irrigation meters were installed to provide more accurate data regarding water use on campus. Temple will use this data to baseline and reevaluate our water use goal.

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

IN PROGRESS: In FY22, Temple University reduced inorganic fertilizers and chemical pesticides, fungicides and herbicides by 33% from the 2010 baseline.

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.

IN PROGRESS: Temple University paint standard specifies that all paint is third-party verified as VOC free.

Goal Progress

Sustainable IT

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

Featured Goal

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.

600+
refurbished equipment fulfilments internally via OwlTech

300+
refurbished computers for local workforce development and community use via the Digital Equity Center

60+
units diverted from the landfill and resold to small and independent business via public auction

The Computer Recycling Center (CRC) has several avenues to foster the reuse of electronic assets that the university no longer needs. In FY23, internally, the CRC had fulfilled over 600 requests for refurbished equipment for students and staff through OWLtech, our the official on-campus retail sales and service center. With our theTemple Tech for Philly Initiative, over 300 refurbished computers have passed through Temple's Digital Equity Center, which focuses on IT workforce development and digital equity for local residents. Finally, to reach the broader community, the CRC has run over 65 auctions to extract value and extend the life of equipment that is still viable outside our internal channels, supporting small and independent businesses nationwide.

Information Technology Collaboration Delivers Skill Development and Resources to Local Teens

Temple's Digital Equity Center and STARS Computing Corps teamed up with Comcast

Laptops were provided to area youth courtesy of Comcast and the result of its partnership with the Digital Equity Center, a workforce development center for the North Philadelphia community that bridges the digital divide in North Philadelphia. Temple University Information Technology Services partners with local organizations that offer computer science education programs to support Philadelphia residents without the necessary degrees and experience to secure careers in technology. The students gifted the laptops participate in Powerful Mindz Inc., a nonprofit founded by Tya Barnes, the managing director of programs and impact of STARS Computing Corps, a grant-funded organization headquartered at Temple and executive directed by Jamie Payton, chair of the Department of Computer and Information Sciences at Temple.

Students participating in Powerful Mindz are learning about website development; business inventory; and computer languages such as CSS, HTML and jQuery, so it is important that each student have their own personal laptop. Most of the students do not have consistent Wi-Fi access to the internet at home, and Temple's Digital Equity Center has not only increased access to resources but the opportunity to apply their newly gained skills in practice.

Photography courtesy of Comcast by Sabina Louise Pierce

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.

ACHIEVED: The steering committee made up of individuals in ITS and the Office of Sustainability identified priority initiatives and has determined an implementation strategy.

Transportation

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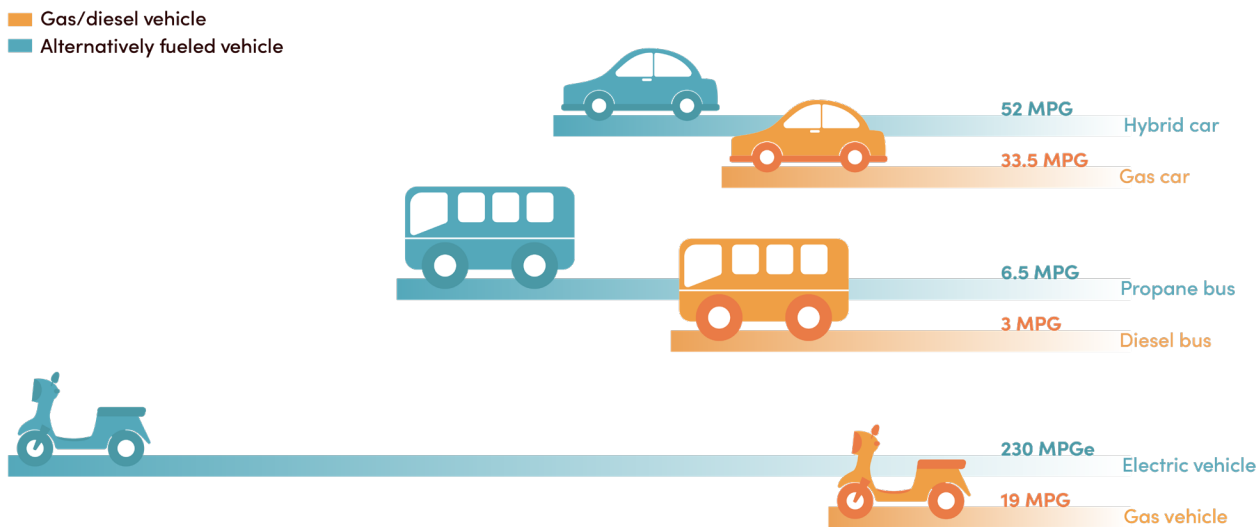
Featured Goal

Increase the percentage of the university's fleet that is alternatively fueled to 50% by 2030.

■ Gas/diesel vehicle
■ Alternatively fueled vehicle

74%

26%

Purchasing and leasing low-emission or no-emission alternatively fueled vehicles will enable Temple to reach its carbon neutrality goals.

As the infographic below shows, alternatively fueled vehicles are more efficient on a mile per gallon equivalent basis compared to a gas or diesel vehicle. Alternatively fueled vehicles result in reduced fuel costs and improved air quality.

■ Gas/diesel vehicle
■ Alternatively fueled vehicle

52 MPG	Hybrid car
33.5 MPG	Gas car
6.5 MPG	Propane bus
3 MPG	Diesel bus
230 MPGe	Electric vehicle
19 MPG	Gas vehicle

Mile per gallon equivalent based on average manufacture electric vehicle information.

Greening Temple Commutes With Policy and Resources

New avenues for student and staff mobility alternative programs

As of this year, full-time Temple University students may now purchase a discounted student SEPTA Keycard for semesterlong travel via TUportal. The Office of Sustainability collaborated with the Bursar's Office to streamline the enrollment process for the SEPTA University Pass, a semester-based transit pass sponsored by (SEPTA) the Southeastern Pennsylvania Transportation Authority offering discounted transit passes to full time Temple students at almost a 10% discount. The SEPTA University Pass Program is designed to save students' money if you regularly commute to campus or have other reasons to use SEPTA frequently.

The Office of Sustainability reinvigorated sustainable transportation outreach efforts by developing a new one-page **Green Your Commute** resource guide promoted on the Temple Sustainability and Campus Operations webpages. The information campaign reviewed major resources, infrastructure and employee benefits programs and assists Temple employees in their transition to sustainable commuting methods. Mobility alternative programs like Share-a-Ride, local bike-shares, ample and secure bicycle parking and transit commuter benefits save money, lower carbon emissions, protect local air quality and reduce traffic congestion.

Temple University supports low carbon commuting in accordance with new local legislation, the Philadelphia Commuter Benefit Law, which took effect on Dec. 31, 2022. The WageWorks program enables full-time employees of Temple University to pay for public transportation and vanpool with pre-tax money. The Office of Sustainability now hosts **a step-by-step how-to guide** to take advantage of staff transit commuter benefit via WageWorks' Health Equity Flexible Spending Account.

Goal Progress

Increase the number of commuters who utilize a sustainable form of transportation to the campus to 75% by 2025.	**IN PROGRESS:** According to the results of the 2022 transportation survey, 67% of Temple students, faculty and staff utilize a sustainable form of transportation when traveling to campus.
Reduce fleet-based emissions from 2006 baseline by 20% by 2030.	**IN PROGRESS:** In FY22, fleet-based emissions from Temple's vehicles have increased by 14% from a 2006 baseline.
Reduce the number of single-occupancy vehicles on campus by 10% by 2025.	**IN PROGRESS:** In FY22, single-occupancy vehicle parking was reduced by 7% from a FY19 baseline.
Increase the percentage of the university's fleet that is alternatively fueled to 50% by 2030.	**IN PROGRESS:** In FY22, 20% of Temple's fleet was alternatively fueled.

Temple University Greenhouse Gas Inventory
Greenhouse Gas Emissions Summary FY 2006–2022
Prepared by the Office of Sustainability

	Emissions Source	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Scope 1 Emissions (MT CO$_2$E)	Stationary (oil, natural gas, propane)	57,183	55,541	47,012	62,000	57,005	52,457	47,684	55,570	54,984	57,777	52,532	49,305	55,623	54,761	51,759	55,073	52,525	50,749
	Mobile (university fleet)	624	644	618	885	847	895	856	923	888	845	835	838	988	877	702	622	715	725
	Refrigerants & Chemicals	1,764	1,702	1,682	2,301	2,295	2,288	2,284	2,283	2,283	2,294	114	150	123	763	432	1,205	93	82
	Fertilizer	8.58	6.65	7.48	3.75	2.21	3.88	2.73	3.62	2.95	2.14	1.86	1.94	1.99	1.55	2.83	1.72	2.57	2.18
	Total Gross Emmions Scope 1	59,579	57,894	49,320	65,189	60,148	55,644	50,827	58,780	58,158	60,918	53,483	50,295	56,737	56,402	52,895	56,901	53,336	51,558
Scope 2 Emissions (MT CO$_2$E)	Green-e RECs	(1,253)	(2,312)	(2,196)	–	–	–	–	–	(7,962)	(379)	(22,834)	(15,216)	(18,567)	(17,775)	(12,864)	(4,222)	(13,841)	(7,844)
	Purchased Electricity	104,678	100,225	103,657	90,265	98,216	98,173	84,661	82,839	97,345	83,481	76,369	76,295	86,442	77,455	65,680	70,554	67,403	54,141
	Purchased Steam	278	318	330	360	353	349	294	435	366	1,029	1,126	1,074	699	694	748	628	1,021	455
	Total Gross Emmions Scope 2	103,703	98,231	101,791	90,625	98,568	98,523	84,955	83,274	89,749	84,131	54,661	62,153	68,573	60,374	53,564	66,960	54,584	46,752
Scope 3 Emissions (MT CO$_2$E)	Faculty Commuting	2,159	2,097	2,104	2,200	2,274	2,259	2,257	2,158	2,239	2,297	3,703	2,600	2,569	5,437	1,840	628	7,455	6,524
	Staff Commuting	3,743	3,738	3,698	3,721	3,559	3,407	3,402	5,028	4,816	5,863	7,980	6,600	7,000	11,266	8,104	2,226	6,436	6,405
	Student Commuting	11,354	11,371	11,554	12,068	12,799	13,111	12,701	11,992	12,733	12,752	16,775	16,960	16,892	20,529	15,482	1,951	10,938	8,214
	University Financed Travel	5,578	6,029	5,883	6,017	6,697	7,436	386	7,661	8,507	6,335	6,556	9,579	9,237	805	12,271	341	3,845	7,347
	Solid Waste	15,411	14,682	13,675	11,770	12,408	11,485	3,636	3,222	4,321	2,918	3,018	3,658	0.81	0.64	0.55	0.24	0.13	1318,809
	FERA	18,809	19,004	18,879	23,009	22,891	21,080	19,167	22,350	21,974	23,314	21,233	19,920	22,443	22,141	20,954	22,238	21,262	20,544
	Transmission & Distribution Losses	10,353	9,912	10,252	8,927	6,070	6,068	8,548	8,364	5,041	4,366	3,588	3,586	4,431	4,159	3,672	3,949	3,772	3,030
	Total Gross Emmions Scope 3	67,407	66,833	66,044	67,711	66,699	64,845	50,097	60,775	59,845	57,845	62,854	62,903	62,572	64,336	62,323	31,332	53,709	52,076
	Total Gross Emissions	230,689	222,958	21,155	223,525	225,415	219,011	185,880	202,830	207,587	202,894	170,997	175,350	187,882	181,112	168,782	155,193	161,629	150,386
Scope 1-3 Gross Emissions (MT CO$_2$E)	Gross Square Footage (GSF)1	8,266,175	8,271,765	8,271,765	9,171,147	9,353,107	9,353,107	9,245,532	9,644,403	10,821,557	10,495,580	10,466,730	10,093,702	10,696,566	10,934,911	11,190,980	11,223,027	11,246,433	11,241,293
	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	34,069	32,761	30,683
	Total Gross Emission Intensity/1000 GSF	27.91	26.95	26.25	24.37	24.10	23.42	20.10	21.03	19.18	19.33	16.34	17.37	17.56	16.56	15.08	13.83	14.37	12.66
	Total Gross Emission Intensity/FTE	8.53	8.09	7.61	7.48	7.19	6.79	5.82	6.38	6.19	5.98	4.96	4.90	5.16	4.97	4.74	4.56	4.93	4.35
	Offsets (On-site compost)	-3.4	-5.5	-15.96	-15.1	-15.5	-10.1	-11.9	-11.9	-19.4	-13.5	-13.5	-13.5	–	–	–	–	–	–
Scope 1-3 Net Emissions (MT CO$_2$E)	**Total Net Emissions**	230,686	222,952	217,140	223,510	225,400	219,001	185,868	202,818	207,568	202,880	170,983	175,337	187,882	181,112	168,782	155,193	161,629	150,386
	Total Net Emission Intensity/1000 GSF	27.91	26.95	26.25	24.37	24.10	23.41	20.10	21.03	19.18	19.33	16.34	17.37	17.56	16.56	15.08	13.83	14.37	13.69
	Total net Emission Intensity/FTE	8.53	8.09	7.61	7.48	7.19	6.79	5.82	6.38	6.18	5.97	4.96	4.90	5.16	4.97	4.74	4.56	4.93	5.02

Academics & Research
Progress to Goals

Curricular

Sustainability Focused Courses

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

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

Sustainability Inclusive Courses

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

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

Departments Offering Sustainability Courses

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

2022–2023 Departments:

Africology + African Ameican Studies	Dance	Horticulture	Political Science
Advertising	Disability Studies	Health Policy and Management	Public Relations
American Studies	Economics	Human Resource Management	Psychology
Anthropology	Educational Administration	Health Related Professions	School of Pharmacy - Regulatory Affairs and Quality Assurance
Adult & Organizational Development	Education	Intellectual Heritage	Religion
Architecture	Earth & Environmental Science	Italian	Social & Behavioral Sciences
Art	English	Journalism	Strategic Management
Art History	Environmental Studies	Jewish Studies	Sociology
Asian Studies	Environmental Health (College of Public Health)	Juris Doctor	Spanish
Business Administration	Environmental Science (College of Science and Technology)	Landscape Architecture	Special Education
Biology		Law–Undergraduate Courses	Social Work–Graduate
Botany	Environmental Engineering Tech	Lesbian, Gay, Bi and Transgender Studies	Social Work–Undergraduate
Community Development	Epidemiology and Biostatistics	Legal Studies	Sport Tourism and Hospitality Management
Civil Engineering	Finance	Mechanical Engineering	Tourism Hospitality Management
Chemistry	Film and Media Arts	Marketing	Urban Bioethics
Criminal Justice	Graphic Arts and Design	Media Studies & Production	University College
Construction Management Technology	Gender, Sexuality and Women's Studies	Nursing	University Seminar
Counseling Psychology	Geography and Urban Studies	Nutrition	Urban Education
Communication Sciences and Disorders	Higher Education	Community Health and Aging	
Communication Social Influence	Health Information Management	Philosophy	
City and Regional Planning	History	Physics	

Co-curricular

Sustainability Co-curricula

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.

The Office of Sustainability will provide a summary of the project descriptions and their learning objectives upon request.

Research

Sustainability Research

Identify, validate and amplify current sustainability research using the Electronic Research Administration (eRA) database to document sustainability research.

The Office of Sustainability will provide a complete inventory of sustainability research upon request.

United Nations Sustainable Developement Goals

United Nations Sustainable Developement Goals	Number of Relevant Proposal Titles Based on Keyword Search
Goal 3: Good health and well-being	254
Goal 4: Quality education	210
Goal 11: Sustainable cities and communities	151
Goal 8: Decent work and economic growth	139
Goal 5: Gender equality	123
Goal 16: Peace, justice and strong institutions	119
Goal 2: Zero hunger	62
Goal 17: Partnerships for the goals	62
Goal 15: Life on land	51
Goal 1: No Poverty	49
Goal 9: Industry, Innovation, and Infrastructure	48
Goal 6: Clean Water and Sanitation	46
Goal 14: Life Below Water	35
Goal 7: Affordable and Clean Energy	33
Goal 10: Reduced Inequalities	30
Goal 12: Responsible Consumption and Production	26
Goal 13: Climate Action	13

Culture

Progress to Goals

Office of Sustainability Green Grant

Increase student sustainability engagement through the development of a student green fund by 2019.

Academic Year	Green Grant Recipient	Outcomes	Award Amount
2018–2019	Temple Student Government	Started and off-campus compost collection service	$1,500
2019–2020	Net Impact	Received funds to set up research and development space for their startup, Buchas Leather	$1,000
2019–2020	Thrift and Flop	Received funds to purchase materials for Thrift and Flop workshops focused on reuse	$350
2019–2020	Temple Student Government	Received funds for seeds to plant a pollinator and edible garden.	$215
2020–2021	Adventure Bound	Received funds for Leave No Trace (LNT) certification and equipment to support LNT and sustainable camping	$1,215
2021–2022	Engineers Without Borders	Received funds to audit and clean plastic waste and for parts and equipment to grind and extrude plastic filament for 3D printer	$224
2022–2023	Glass Collab	Received funds for equipment to grind glass waste for reuse in glass studio	$1289.49
2022–2023	SciDesign	Received funds for materials and equipment to paint banner of endangered species to be displayed during Campus Sustainability Month and Earth Month.	$936.55

Sustainability Culture Survey Goal

A sustainability culture survey was conducted in spring 2022. The full 2022 Transportation and Sustainability Culture Survey report can be found of the Office of Sustainability website.

Temple University Campus Food Insecurity

Begin to address food insecurity at Temple by 2019.

Barnett Irvine Cherry Pantry Usage

Academic Year	Total Visits	Unique User Visits	Average Visits Per User
2020–2021	1,262	328	3.85
2021–2022	2,582	725	3.56
2022–2023	4,830	1,173	4.12

Student Educator Program

EcoReps is a peer education program for all students passionate about sustainability. Temple University's EcoReps program was launched in fall 2020 and continued through the 2021–2022 academic year. It includes a diverse student population as evidenced by the number of unique majors amongst the new EcoRep cohort. The 2020–2021 EcoRep cohort were active participants in Temple's climate action movement and coalition building activities as evidenced by the total number of student organizations engaged by the Office of Sustainability. This diverse group of students gain career competencies and transferable professional skills.

A complete list of EcoReps is available upon request.

Unique Majors of EcoReps

- Accounting
- Adult and Organizational Development
- Architecture
- Biochemistry
- Biology
- Business and Management
- Chemistry
- Civil Engineering
- Communication and Social Influence
- Communications Studies
- Community Development
- Computer Science
- Diversity and Inclusion
- Economics
- Entrepreneurship and Innovation Management
- Environmental Engineering
- Environmental Science
- Environmental Studies
- Film and Media Arts
- Gender, Sexuality and Womens Studies
- Genomic Medicine
- Geography and Urban Studies
- Health Professions
- Human Development and Community Engagement
- Incoming Exchange Program
- International Business
- Journalism
- Management Information Systems
- Marketing
- Mechanical Engineering
- Natural Sciences
- Neuroscience
- Painting
- Political Science
- Printmaking
- Psychology
- Public Relations
- Social Work
- Sociology
- Spanish
- Supply Chain Management
- Visual Studies

Student Organizations Engaged

- Adventure Bound
- Alpha Phi Omega
- American Society of Landscape Architects
- Association for Information Systems
- Cherry Pantry
- Climate Action Coalition
- Defend Our Future
- Delta Sigma Theta Sorority
- Engineering Without Borders
- Entrepreneurial Student Association
- Glass Collab
- Hillel @ Temple
- PERIOD.
- SciDesign
- Sharing Excess
- Society of Minority in Sports
- Strategies for Ecology Education, Diversity and Sustainability
- Temple Athletics
- Temple Climate Action
- Temple College Democrats
- Temple Community Garden
- Temple Dance Team
- Temple Student Government
- TU Clean Up Club

Design

Progress to Goals

Verdant Temple Landscape Master Plan

Complete the full implementation of the Verdant Temple Landscape Master Plan by 2030. In 2022, Temple University exceeded the tree planting goal outlined in the Verdant Temple Landscape Master Plan.

To view a complete tree map of Temple University Main Campus, visit the Sustainable Campus page on the Office of Sustainability website.

Energy

Progress to Goals

Building Stock

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

Energy Type	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Electricity (MMBtu)	752,390	698,685	678,602	611,041	614,376	612,699	612,854
Natural Gas/ Steam/ Oil (MMBtu)	940,730	1,051,647	1,039,967	963,207	1,042,875	986,788	948,751
Energy Use Total (MMBtu)	1,693,120	1,750,332	1,718,569	1,596,650	1,673,832	1,615,827	1,576,187
% Change from FY17	—	3%	2%	–6%	–1%	–5%	–7%

Operations

Progress to Goals

Waste Minimization

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

Fiscal Year	2019	2020	2021	2022	2023
Basic Materials	Tons	Tons	Tons	Tons	Tons
Mixed Office Paper	408	258	131	133	148
Corrugated Cardboard	85	66	36	73	43
Single Stream Recycling	1,587	1,043	265	1,329	1,319
Municipal Solid Waste	3,934	2,758	721	2,423	1,448
Subtotal- Basic Materials (Recycling)	**2,080**	**1,367**	**432**	**1,535**	**1,511**
Subtotal- Basic Materials (Trash)	**3,934**	**2,758**	**721**	**2,423**	**1,448**
Secondary Materials					
Biodeigesters	80	45	18	23	9
Fryer Oil	24	4	4	4	37
Vegetation Compost	9	3	—	414	—
Construction and Demolition (Recycling)	135	176	34	15	2,137
Construction and Demolition (Trash)	40	97	32	14	61
Subtotal- Secondary Materials (Recycling)	**113**	**52**	**22**	**442**	**46**
Subtotal- Secondary Materials (Trash)	**40**	**97**	**32**	**14**	**61**
Special Materials					
Computer Equipment- Reused/Recycled	5	3	52	6	4
Universal & Chemical Waste (Recycled)	—	9	32	28	41
Incinerated Chemical Waste	—	55	24	13	24
Scrap Metals	118	57	63	—	—
Surplus Sales	—	93	—	—	—
Residential Give & Go Green	—	1	1	1	1
Subtotal- Special Materials (Recycling)	**123**	**162**	**148**	**35**	**71**
Subtotal- Special Materials (Waste)	**—**	**55**	**24**	**13**	**24**
RECYCLING Campus Totals	**2,316**	**1,581**	**602**	**2,011**	**1,628**
WASTE Campus Totals	**3,911**	**2,910**	**753**	**2,437**	**1,509**
Total Recycling %	**37%**	**35%**	**44%**	**45%**	**52%**
Core Recycling %	**35%**	**33%**	**37%**	**39%**	**51%**
Total Municipal Solid Waste and Recycling Reduction	**7%**	**-27%**	**-80%**	**-30%**	**-48%**

Grounds

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

Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total lbs Inorganic Fertilizer	4,510	6,176	5,123	7,663	7,125	4,325	4,425	4,475	4,625	3,775	1,906	1,007	3,008	2,005
% Reduction	—	-37%	-14%	-70%	-58%	4%	2%	1%	-3%	16%	58%	78%	33%	56%

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 & Beverage

Purchases met one of the following sustainability standards.

Rainforest Alliance Certified (SAN Standard for Sustainable Agriculture)
USDA Transitional Organic
Fair Trade Certified (Fair Trade USA)
MSC Certified Fisheries
American Humane Certified (Cage Free & Enriched Colony Eggs)

Total Spent: $131,392

Plant-based Food & Beverage

Purchases includes food meeting one or more of the following categories.

Fruits	Soy foods
Vegetables	Nuts and seeds
Whole grains	Plant Oils
Beans	Herbs and spices
Other legumes	Vegetarian/vegan alternatives

Total Spent: $953,073

Transportation

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

Fiscal Year	Fleet-based Emissions (MTCDE)	% Increase
2006	624.88	—
2007	644.97	3%
2008	621.33	-1%
2009	886.39	42%
2010	849.40	36%
2011	898.15	44%
2012	859.80	38%
2013	930.22	49%
2014	895.34	43%
2015	851.67	36%
2016	841.20	35%
2017	843.64	35%
2018	1041.21	67%
2019	875.04	40%
2020	649.55	4%
2021	635.71	2%
2022	714.94	14%
2023	724.53	16%

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

Transportation	2016	2019	2022
Bus	7%	8%	6%
Car	28%	23%	31%
Taxi/Rideshare	1%	2%	1%
Subway	17%	18%	16%
Regional Rail	14%	14%	12%
Bicycle	5%	5%	3%
Walk	25%	25%	29%
Carpool	3%	1%	2%

Increase percentage of the university's fleet that is alternatively fueled to 50% by 2030.

Fuel Source	2020	2021	2022	2023
Gas	130	135	135	132
Diesel	42	41	33	21
CNG	11	11	10	4
Electric	32	27	20	10
Propane	8	8	8	8
Hybrid	—	4	3	33
Total Vehicles	223	226	207	208
Total Alt. Vehicles	51	50	41	55
% Alt. Vehicles	23%	22%	20%	26%

Credits

COPY

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Caroline Burkholder

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Sustainability Annual Report Temple University 2022–2023

Temple University

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