



TEMPLE UNIVERSITY
2019 CLIMATE ACTION PLAN





CONTENTS

1 Introduction

2 Historical Context

3 Defining Our Future

4 Process & Engagement

5 Framework

6 Academics & Research

7 Culture

8 Design

9 Energy

10 Operations

11 Evaluation & Reporting

12 Plan At A Glance

13 Appendix

┌ - - - - - Planning Process Participants

└ - - - - - Student Input

└ - - - - - Greenhouse Gas Reduction Targets

INTRODUCTION

In fall 2018, the Intergovernmental Panel on Climate Change (IPCC) released [The Special Report on Global Warming of 1.5°C](#), which announced that the global community has only a small window of time to hold climate change to a 1.5°C increase in temperature, the target defined in the Paris Climate Agreement. The IPCC warned that warming beyond a 1.5°C increase could lead to irrevocable change and the destruction of ecosystems. The report stated that greenhouse gas (GHG) emissions need to be reduced by 45% by 2030, and 100% by 2050 in order to limit warming to the critical 1.5°C mark. In its strongest language yet, the IPCC urged members of the global community to take action, challenging individuals and organizations at all levels to prioritize the future of the Earth's climate.

While dire, the IPCC report has galvanized a renewed focus on climate change and the role individuals, organizations, and governments can play in creating a sustainable and resilient future. In January of 2019, Governor Wolf signed [Executive Order 2019-01](#), which acknowledged the impacts of climate change and established a goal for state government to reduce greenhouse gas emissions 80% by 2050. The executive order also encouraged independent agencies, state-affiliated entities and state-related agencies to meet the aforementioned performance standard. Locally, the City of Philadelphia [announced](#) that it will continue with its Greenworks Plan and intends to meet the greenhouse gas reduction levels defined in the Paris Climate Agreement. In late 2018, the City signed a [Power Purchase Agreement](#) to source 22% of its municipal electricity from a new, local solar field.

For its part, Temple embarked on a new chapter in its climate leadership - updating its climate action plan with a clear path to carbon neutrality and strategies for building a more resilient university. This 2019 Climate Action Plan serves as an update to the university's adopted 2010 plan. It is a framework for advancing a holistic approach to sustainability and resilience. It sets forth measurable goals with defined timeframes, university-wide standards, and guiding principles for action. This plan challenges the Temple community to work together, across silos, disciplines and hierarchical levels to take charge in creating a more sustainable future.



02 HISTORICAL CONTEXT

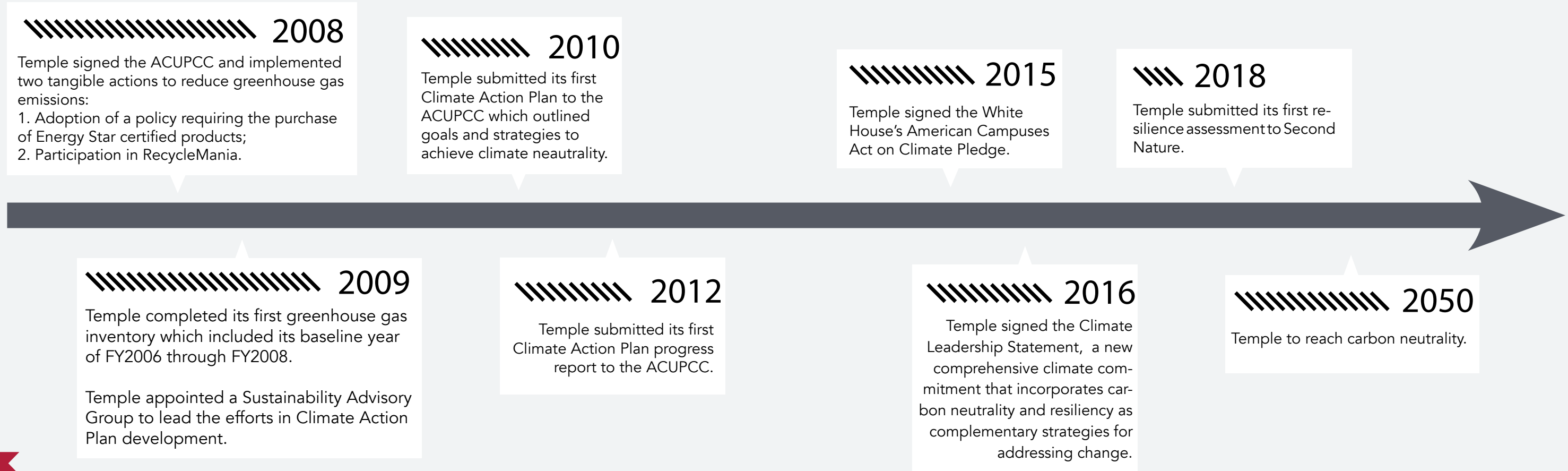
Since its founding in 1884, Temple University has worked to create a campus life that connects individuals, ideas, and resources to envision and actualize a brighter and more promising future for the greater community. For more than a decade, the university has convened campus stakeholders and charged them with creating a future that is sustainable and resilient - a future where Temple holds itself responsible not only to its students, immediate neighbors, and the Philadelphia region, but to the broader global community. In 2008, Temple University assumed a leadership role in mitigating climate change. It pledged to reduce its environmental footprint by reaching carbon neutrality by 2050, but to model the role that large urban universities can play in designing “permanent, affordable, practical, and forward-looking programs for sustainability.”

In 2010, Temple adopted its first Climate Action Plan. The plan provided concrete steps

to achieve the university’s climate commitment. The plan outlined interim greenhouse gas reduction targets, set forth demand based reduction strategies, such as energy conservation and alternative transportation initiatives, and outlined supply based recommendations, such as switching fuel sources. The plan also identified recommendations on integrating sustainability into the curriculum and research efforts of the university, and described the role that Temple should play in creating awareness on campus and within the surrounding communities.

In 2016, the university reaffirmed its climate commitment, signing Second Nature’s Climate Leadership Statement, which reiterated Temple’s 2050 carbon neutrality goal and expanded Temple’s work to include resilience, Temple’s ability to persevere through climate related shifts and plan for, adapt and thrive in light of those changes. Through this public pronouncement, Temple made it clear - the university is part of the climate solution. In 2018, the university submitted its first climate resilience assessment to Second Nature. In it, Temple identified key resilience indicators and metrics for assessing the university’s progress in becoming more climate ready.

Measurement and evaluation have been critical elements of Temple’s Climate Action Plan implementation. To that end, the university completes an annual greenhouse gas (GHG) emissions inventory to track Temple’s reduction progress. At Temple, the sources of emissions include stationary sources (fuel burned on campus), purchased electricity, transportation, solid waste, and other small contributors (refrigerants, fertilizers, purchased steam and



transmission and distribution losses). Between FY2006 and FY2018, greenhouse gas net emissions on campus have decreased by 7%, from 213,560 to 197,554 MTeCO₂. This change occurred while the university added 2,242,837 gross square feet and 9,342 FTE students. Temple also completes the Association for the Advancement of Sustainability in Higher Education (AASHE)'s Sustainability Tracking, Assessment and Rating System (STARS) process, which is a university-wide assessment of its holistic sustainability efforts. STARS evaluates an institution on its efforts to advance sustainability in academics and research, engagement, operations, and planning and administration. In 2015, AASHE awarded Temple bronze certification. In 2018, Temple moved up, earning silver certification.

While Temple has made significant strides in achieving its climate goals, the scientific community's understanding of the threats posed by climate change has deepened and requires the university to redefine its next steps in shaping a sustainable and resilient future. This update to the 2010 Climate Action Plan aims to align the university's approach to sustainability with new research on best practices, proven interventions, and a shared understanding of the interconnected nature of sustainability.



In Fall 2018, Temple Student Government thanked President Englert for his commitment to the Climate Action Plan.

03 DEFINING OUR FUTURE

Sustainability is a broad concept, which results in a delicate balancing act between ensuring that its definition emphasizes its interconnected and interdisciplinary nature, and not diluting its core framework. In 2009, the university formed a teaching and learning circle to develop Temple's definition of sustainability. The group defined sustainability as follows:

The study of sustainability addresses core questions regarding the nature of "the good life" and ways to organize societies that sustain the well-being of the biosphere for now and in the future. Sustainable perspectives weave together disparate ways of thinking, integrate knowledge from different disciplines, and consider both global and local issues and the relationships between them. At Temple University, sustainable curricula, operations, research, and engagement address systemic connections among five interrelated dimensions: the natural environment; the built environment; food and public health, climate and energy; cultural meaning systems.

The 2009 definition guided the university's sustainability efforts, informing the development and implementation of the 2010 Climate Action Plan's recommendations. Nearly a decade later in 2017, the university via its Climate Leadership Working Group revisited its definition of sustainability and reflected on the current understanding of sustainability. The Climate Leadership Working Group defined sustainability as follows:

Sustainability seeks to balance a healthy environment with a just, equitable and economically viable society for present and future generations while living within the limits of our supporting climate and ecosystems. As a large research university, Temple University recognizes its impact both locally and globally and strives for innovation and continual measurement and improvement of sustainability initiatives. Sustainable curricula, research, operations and engagement at Temple address systemic connections among the natural environment, the built environment, food, public health and wellness, climate and energy and sociocultural systems.

The Climate Leadership Working Group also recommended the adoption of Second Nature's definition of resilience, which is as follows:

Resilience: the ability of a system or community to survive disruption and to anticipate, adapt, and flourish in the face of change.

The definitions of sustainability and resilience framed the work of the climate action planning process, and informed the conversations delineated by the scope of the plan.

PROCESS & ENGAGEMENT

In accordance with its 2016 Climate Leadership statement, Temple formed a university-wide working group to develop recommendations for the Climate Action Plan update and resilience assessment. Membership of the Climate Leadership Working Group (CLWG) reflected the diversity in role and staffing of the university, drawing on representatives from academic, administrative, operations, and research portfolios. Most significantly, the CLWG included both graduate and undergraduate students. Upon its formation, the CLWG worked to update the university's sustainability definition, recommend a definition for resilience, and developed a planning engagement process to involve more student voices.

In fall 2017, the CLWG and the Office of Sustainability partnered with Temple Student Government, University Housing and Residential Life, and schools and colleges to host a series of Climate Action Town Halls in each residence hall and school and college building. At the Climate Action Town Halls, attendees were briefed on Temple's current Climate Action Plan, existing initiatives to reduce greenhouse gas emissions, and the university's progress so far. Attendees were then presented with the prompt "What does a sustainable Temple University look like for you?" Attendees were encouraged to engage with members of the Office of Sustainability to ask questions and to offer feedback, suggestions, and critiques about the sustainability initiatives on Temple's campus. In addition, the CLWG also conducted an online survey and launched a social media campaign aimed at garnering feedback from students. The responses from students were vast, covering everything from introducing small incentives for sustainable behavior to macro-level institutional change.

Students on the Climate Leadership Working Group aggregated and analyzed the

responses in order to identify patterns and determine which sustainability issues mattered most to students. Among the top concerns were sustainability in dining halls and on-campus food vendors, accessibility (prevalence of tools and resources for sustainable behavior on campus), outreach and education, sustainable energy use, sustainable design, and academic and research opportunities. The most prominent responses were compiled into a report that was presented to the Climate Leadership Working Group. CLWG members were asked to incorporate the students' feedback into their recommendation development.



Students attending 1 of 15 Climate Action Town Halls.

After the Climate Action Town Halls, the CLWG formed six subcommittees: Academics and Research, Culture, Design, Energy, Operations, and Resilience. Each subcommittee consisted of a CLWG member, field practitioners, academics, subject matter experts, and graduate and undergraduate students. Each subcommittee was tasked with developing a series of topic area recommendations that included measurable goals, policies, and areas of future study. The subcommittees met biweekly for the fall 2017 semester. They submitted and presented their recommendations to the full working group for review and approval. The subcommittees' recommendations were evaluated by the CLWG to ensure that they reflected the concerns raised by students in the outreach sessions.

During 2018, the CLWG vetted the recommendations for financial and operational feasibility. They were reviewed at every level of leadership, including supervisors of the work on the ground, departmental supervisors, unit leadership, and portfolio leaders. At each level, the recommendations were revised to incorporate reviewer comments, and recirculated for approval. The recommendations were provided to the President and his cabinet for review and approval.

Climate Leadership Planning Process



05

FRAMEWORK

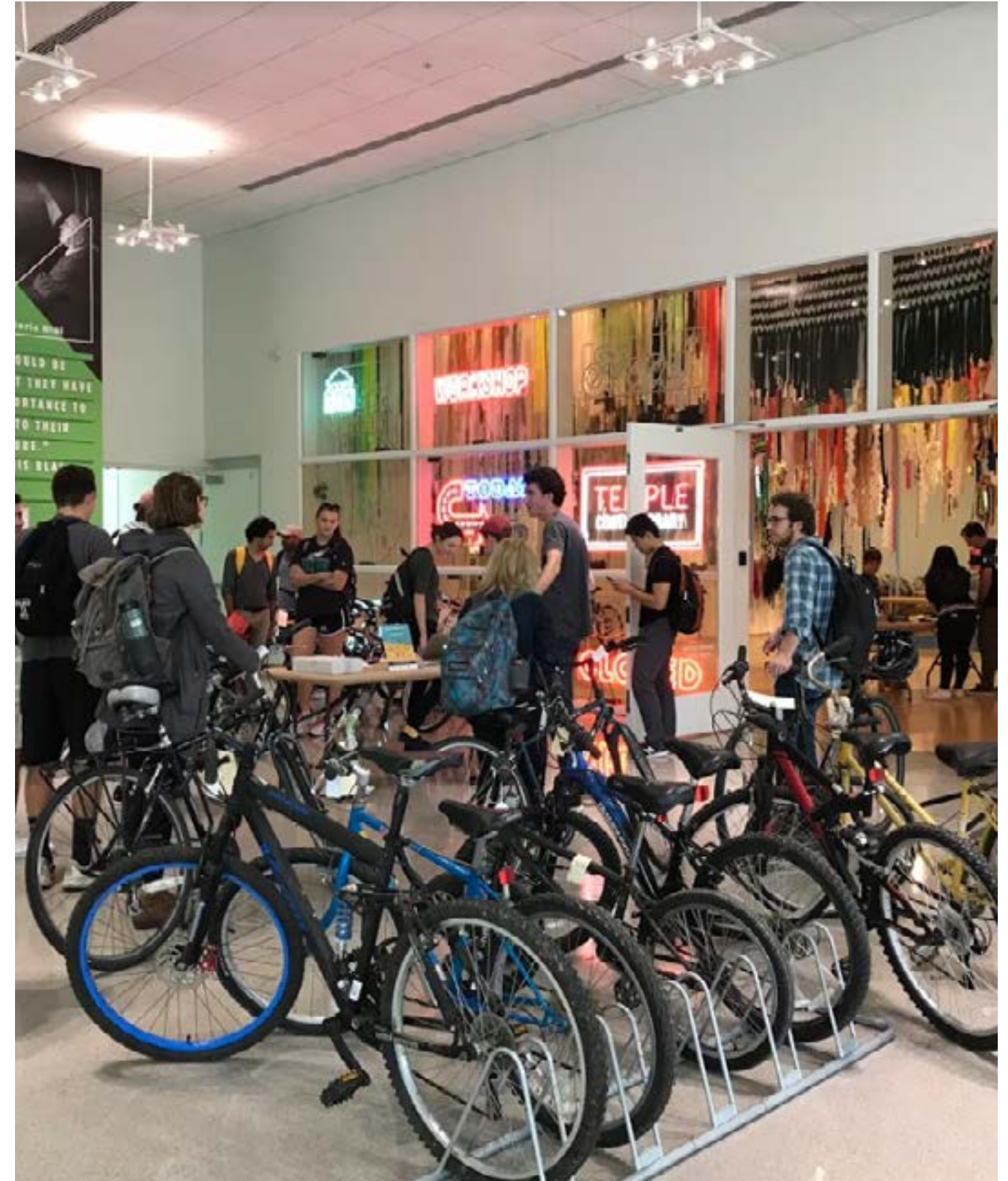
The global understanding of climate science, sustainability best practices, and resilience continues to evolve. With this changing landscape in mind, this revision to Temple's Climate Action Plan is designed to provide the university with the flexibility needed to adapt and pivot in response to new information, while also setting measurable goals and timeframes for proven strategies. This plan is divided into five topics: 1) Academics and Research, 2) Culture, 3) Design, 4) Energy, and 5) Operations. Recommendations to advance sustainability and resilience in each topic area are divided into:

Goals: A goal recommends meeting a measurable sustainability or resilience indicator within a defined timeframe.

Standards/Guiding Principle: A standard or guiding principle sets forth a uniform standard, policy, or guiding principle that will govern campus strategy, operations, and practice with the aim of advancing sustainability and resilience.

Areas of future study: An area of future study identifies ideas, concepts and possible solutions that seem promising, but that the CLWG did not have the time to fully vet or explore in this planning process. The university will explore and research ideas further for implementation potential.

Temple will revisit the plan on an annual basis, assessing progress made and making adjustments as needed.



ACADEMICS & RESEARCH

Institutions of higher education play a critical role in developing solutions for a just and sustainable climate future by preparing future practitioners, entrepreneurs, researchers, and scholars to take on meaningful work, and leading the way in forging innovative approaches to sustainability and resilience. Advances in research by universities expand the global community's understanding of the multiple threats posed by climate change and the many opportunities that exist for a stronger future, whether it takes the form of cutting-edge technologies or changes in cultural norms and behaviors. More broadly, colleges and universities fashion an informed and engaged civic body that can have consequential ripple effects in their communities and workplaces. In its climate commitment, Temple University embraces its responsibility to shape a sustainable and resilient future through its curriculum, co-curricular offerings, and support for climate-related research.

TEMPLE TINY HOUSE

The Temple Tiny House is a student-designed and student-constructed sustainable building located at Temple Community Garden. The 175 SF structure features a high performance thermal envelope, vegetated roof, rainwater harvesting, solar system and a thermal energy collection system.



1940 COMMUNITY GARDEN

Residents of 1940 maintain a community pollinator and vegetable garden. The garden was built by students as part of the Sustainability Living and Learning Community.

Philadelphia is situated along the Atlantic Flyway migration route and to help mitigate bird collisions with buildings, window film has been applied in problem areas. The Tuttleman-Paley connector bridge used the winning design from a Tyler Graphic & Interactive Design student competition.

BIRD COLLISION MITIGATION FILM



RAD DISH CAFÉ

The Rad Dish Café is a student-operated sustainable food café. The café opened in February 2015, and is dedicated to selling exclusively local, organic and delicious food to the Temple community.



CURRICULA

Goals

- Restructure the Undergraduate Certificate in Sustainability and the Interdisciplinary Undergraduate Certificate in Sustainability Committee (University College) by June 2019.
- Increase the number of undergraduate/graduate sustainability courses by ten (10) courses from an October 2017 baseline by June 2022.
- Increase the number of undergraduate/graduate courses that include sustainability by twenty (20) courses from an October 2017 baseline by June 2022.
- Increase the number of departments with sustainability course offerings by two (2) departments from an October 2017 baseline by June 2022.
- Partner with the Center for the Advancement of Teaching (CAT) to create professional development opportunities for faculty that promote interdisciplinary, inter-college sustainability courses and teaching methods for undergraduate and graduate degree programs, to be offered by spring 2020.
- Coordinate with the University College Office of Digital Education (ODE) to create an online format for sustainability courses by June 2020.
- Create an online repository for existing and future sustainability exercises and course material to assist faculty in integrating sustainability into their courses by June 2020.

Guiding Principles

- Work with interdisciplinary academic working groups to foster collaboration between colleges and schools in the development of new sustainability curricula, programming, and related cross-disciplinary opportunities.
- Develop sustainability programs/courses so the student's learning experiences will diverge as little as possible regardless of the delivery mode whether it be seated, hybrid or online courses.

Areas of Future Study

- Explore the use of a "sustainability flag" to identify sustainability-focused and sustainability-related courses.

CO-CURRICULAR

Goals

- 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.

Guiding Principles

- Provide students with unique opportunities for experiential learning and applied practice through research and co-curricular activities (i.e., project-based learning initiatives) situated in a context of sustainability and for applying classroom learning to real-world problems and actual research.
- The university campuses will continue to serve as a vibrant learning-laboratory (campus as living laboratory) for sustainability education and research and will offer co-curricular programs that build essential core competencies for sustainability leadership.

Areas of Future Study

- Explore employing existing university systems to provide an official document validating a student's achievement and involvement in defined co-curricular sustainability programming and expand awareness of existing co-curricular sustainability opportunities.





RESEARCH

Goals

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

Guiding Principles

- Create a culture to support sustainability research by recognizing, incentivizing and connecting the faculty community.

Areas of Future Study

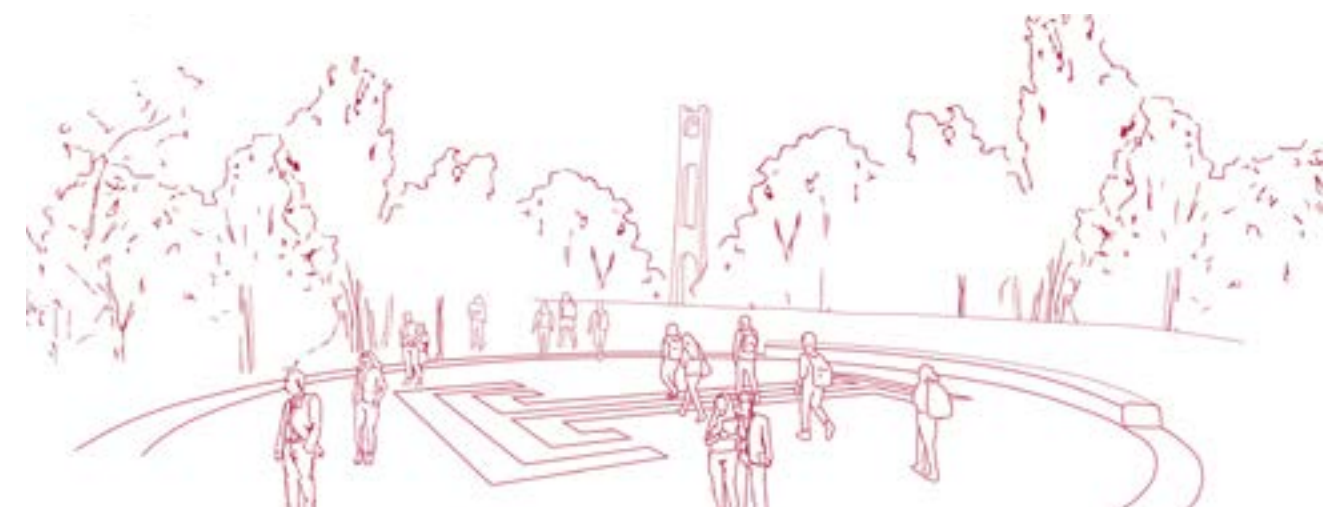
- Explore approaches to increase awareness of sustainability research by tracking and regularly publicizing the work of sustainability researchers.
- Explore the inclusion of a "sustainability flag" in the (eRA) database system to track sustainability research.
- Explore the development of a transdisciplinary sustainability science research agenda that integrates discovery-based research and solutions-based research.



07

CULTURE

For more than a decade, Temple has fostered community around climate action, bringing together students, staff, faculty, and neighbors to imagine and build a more sustainable campus and city. Members of the community performed service, engaged with social media, attended programming, participated in sustainability competitions, and joined green focused organizations on campus. While sustainability champions and leaders from across the university worked to raise awareness of climate change, the depth and breadth of understanding still needs to be expanded. A truly sustainable campus culture exists when the entire campus community is engaged in education, advocacy, and action aimed at fostering sustainable change in the individual, institutional, and public spheres. A sustainable campus culture is one where members have a holistic understanding of sustainability to include the connections between environmental sustainability and public health, environmental justice, food sovereignty, wellness, access, and inclusion. In its next chapter of Climate Action, Temple strives to infuse sustainability in all aspects of campus life and aims to include more voices in this important conversation. Strategic partnerships, leadership development, and interdisciplinary collaboration will be keys in creating a more inclusive and permeating sustainable culture on campus.



CULTURE

Goals

- Create a student educator program to build student awareness on campuses by 2020.
- Increase student sustainability engagement through the development of a student green fund by 2019.
- Create sustainability certificate program through continuing education by 2023.
- Conduct an assessment on sustainability culture by 2021.
- Work with Residential Life to incorporate the responsibility of sustainability engagement with students in the residence halls into an existing staff member's essential duties by 2020.
- Establish a housing and dining services/academic working group to identify opportunities for collaboration and cooperative programs by 2020.
- Begin to address food insecurity at Temple by 2019.

Standards

- Incorporate sustainability into new student and transfer student orientation by 2019.
- Collaborate with university partners to incorporate environmental justice principles into at least a third of the Office of Sustainability's programs by 2019.
- Create professional development sustainability training program for staff and offer 6 times per year, as needed, by 2019.

Areas of Future Study

- Review the recommendations of the Temple University Smoke-Free Campus report and explore their potential environmental impact.
- Work with partners on campus to advance connections between self-sustainability and global sustainability as it relates to wellness.

08

DESIGN

Over 75% of Temple's greenhouse gas emissions are attributed to its built environment. Since signing its climate commitment in 2008, Temple added 2,242,837 gross square feet of new building space. While Temple has made great strides in alleviating the environmental impact of its campus growth, it is clear that the design, construction, and operation of campus buildings are critical to the university's ability to meet its goal of carbon neutrality by 2050. In this plan, Temple renews its pledge to sustainable design. As it grows, Temple will adopt a compact, enduring, and resilient built form that promotes the well-being and health of its occupants, neighbors, and ecosystems. Its design will embrace Temple's educational mission and utilize campuses as teaching tools to demonstrate how to design with environmental conservation and cultural preservation, long-term economic viability, health, and the public good in mind.



DESIGN

Goals

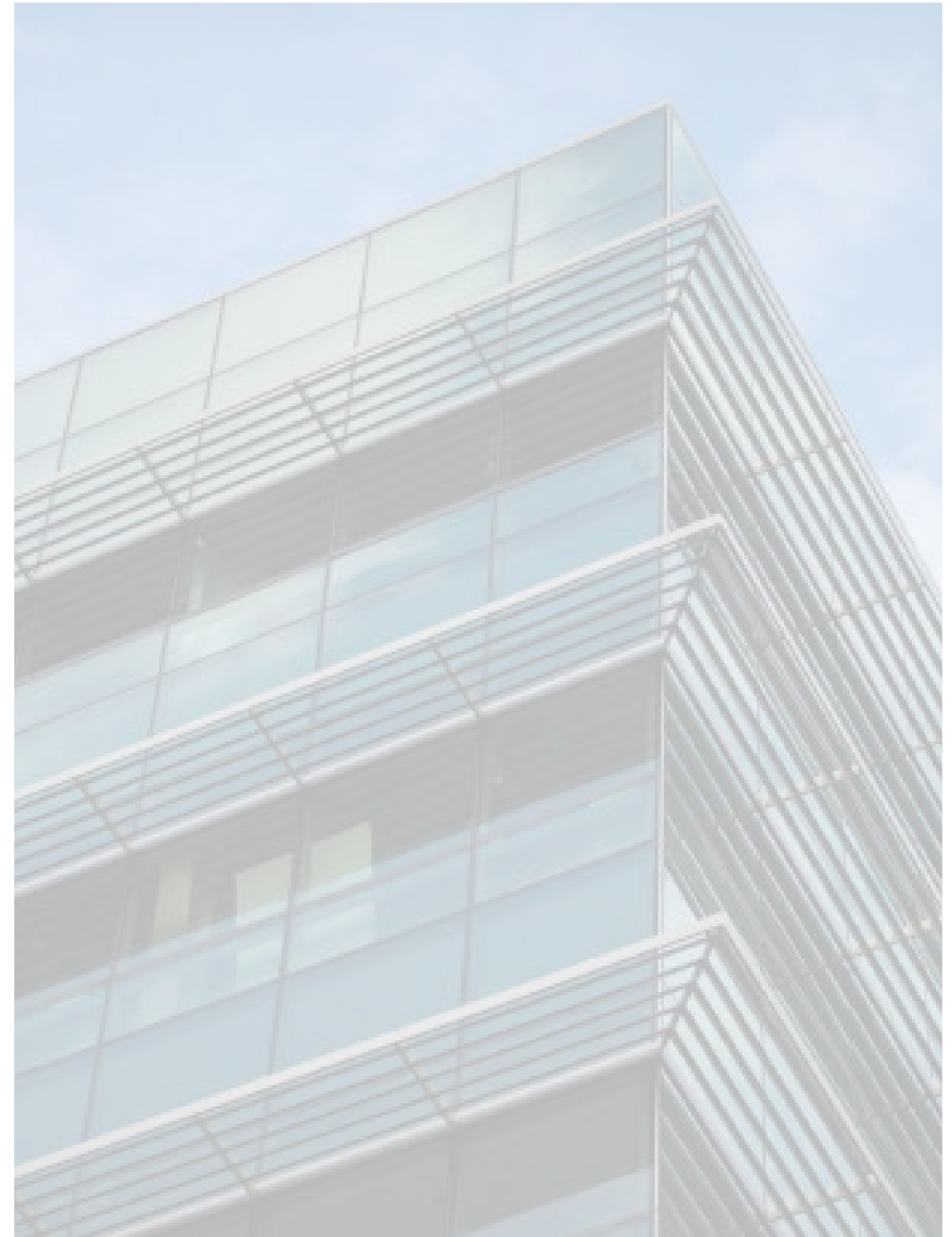
- Incorporate green building standards for renovation, new construction and landscape projects into the university's adopted green building policy by 2019.
- Develop Temple standards for new and existing building design and campus infrastructure that incorporate sustainability and climate resilience by 2020.
- Develop and adopt technical specifications for all projects that incorporate its sustainable design framework by 2021.
- Complete the full implementation of the Verdant Temple Landscape Master Plan by 2030.

Standards

- Extend the recommendations and strategies outlined by the Verdant Temple Landscape Master Plan in order to strive for continued improvement of sustainable landscape at all campuses.
- Incorporate interpretive signage about the project's sustainability and resiliency features into new construction, major renovations and landscape projects.
- Utilize best available operating practices and technology in maintaining the university's existing buildings to advance energy efficiency, water conservation, indoor air quality, sustainable materials management and occupant wellness.
- Incorporate a plan for measurement and verification, such as the installation of metering and monitoring technologies, into major renovation, new construction, and landscape projects.
- Continue to improve the efficient use of Temple's existing building, including adaptive reuse, space utilization and flexible interiors.
- Adopt an integrative design process that includes stakeholders from operations, energy, emergency management, and sustainability in the project decision-making for all new construction and major renovations.
- Design construction projects as living learning laboratories, so students can learn about new technologies and practices by interacting with the built environment.

Areas of Future Study

- In all stages of project design, create a paradigm shift in the evaluation of project budgets to focus on life cycle costs rather than first cost return on investment (ROI).
- Explore incorporating life cycle assessment and the cost of carbon as criteria in the project decision making process.
- Strive to reflect Temple's core values and goals in all new building projects and major renovations.



ENERGY

The need for a new approach to energy use and sources is inherent in Temple's climate commitment. In its 2010 Climate Action Plan, the university acknowledged that it would need to reduce energy demand, while also exploring clean energy sources. The university launched an aggressive energy conservation campaign, installed on-site solar, and developed a renewable energy credit (REC) purchasing strategy. As it enters its next chapter of climate action, Temple is committed to implementing a balanced approach to reducing greenhouse gas (GHG) emissions. This plan delineates a clear path to carbon neutrality through investment in energy efficiency projects, a renewable energy purchasing strategy, and offsets. While Temple continues to grow its building footprint, advances in sustainable design, smart building technology, efficient operations, and clean energy sources enable the university to achieve its mission and strategic goals while still meeting its climate commitment. This plan establishes annual GHG reduction targets that will be met each year, resulting in the university reaching carbon neutrality in 2050. This plan is clear - no single approach will lead to carbon neutrality. Reaching carbon neutrality requires the university to rethink each stage of its operations from design and construction to operation and procurement.

ENERGY CONSUMPTION

SINCE FY2006:

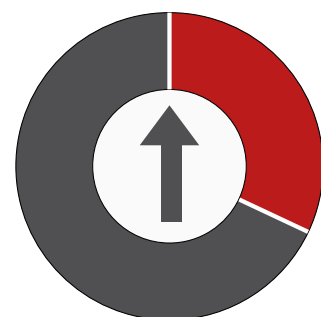
While Temple grew, energy use/sqft decreased by 8% between FY2006 and FY2018.



17% Increase in Energy Use



27% Increase in Gross SF



35% Increase in Student FTE

ENERGY

Goals

- Reduce energy use in existing building stock by 18% in a typical climatic year by 2033.
- 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.
- With the initial seed funds, create a Green Revolving Fund by 2020 to direct the actual energy cost savings into additional energy projects.
- 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.
- 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 2019.
- Sign another Power Purchase Agreement (PPA) by end of 2021.
- Develop at least 100+ kW of renewable energy systems at Temple's facilities by 2022.

Guiding Principles

- Review the performance of all energy conservation measures that have been implemented to determine their applicability at all locations. Create a catalog of proven energy conservation measures that are scalable and have them rolled out more widely to other campuses/buildings as standard.
- Utilize CO2e quantities, ROI, and NPV as evaluation criteria for energy projects.
- Identify and achieve appropriate Energy Utilization Index targets for each building typology on campus and from this impose achievable reduction target dates in line with meeting an overall energy reduction of 18% (of 2017 energy usage baseline) by 2033.
- Update the energy procurement policy to include the purchase of RECs to fill the annual gap between emission targets and actual emissions.
- Train building operators on how to properly operate and maintain the new equipment to achieve projected savings.

Areas of Future Study

- Create a focus list of high energy use buildings & central plants, produce energy management strategies and provide annual progress reviews.
- Explore expanding the living learning lab through energy saving projects, campus renewable projects and storage.
- Explore dedicating fund for developing on-site renewable energy.
- Continue to explore the feasibility of renewable and self-generation technologies, such as Combined Heat and Power (CHP), fuel cells, geothermal.
- Complete a feasibility study of replacing the Health Sciences Center boilers with a CHP facility by 2019.

10

OPERATIONS

Temple is comprised of over 40,000 individuals, making personal choices that affect how the university operates on a daily basis. Each person will decide how they travel to campus, what they will consume, how they will connect with technology, and how they manage their waste. Individual departments will choose how they spend their budget, which messages they will prioritize, and how they will comply with university policy. To fully meet Temple's climate commitment, the university will need to transform how we operate as an institution and as individual community members. While our institutional structure is decentralized, we will need to act as one Temple, rethinking our individual and departmental choices and incorporating sustainability into our decision making process. Temple has a strong history of integrating sustainability and resilience into its campus operations, winning awards and recognition for its electronic recycling center, surplus programs, and bicycle friendly culture. This plan defines Temple's next steps in advancing sustainable and resilient operations, and calls for leadership at the individual, departmental, school and college, and institutional levels.



WASTE MINIMIZATION & RECYCLING

Goals

- Develop a comprehensive Materials Management plan and implementation schedule to achieve City of Philadelphia's Zero Waste partner status by 2020.
- Achieve a 50% diversion rate by 2020.
- Increase the core recycling rate to 30% by 2020.
- Dedicate a staff person in university housing to achieve compliance with the university's waste minimization and recycling initiatives by fall 2019.

Standards

- Ensure that all construction jobs including minor renovations achieve a minimum of 80% construction waste recycling.
- Ensure university-wide compliance with Temple's existing recycling and waste minimization policies and procedures. This will include all campuses and business units.
- Work with event planning staff across the university to develop a standard for reducing waste and incorporating recycling at all events on campus.

Areas of Future Study

- Create a zero-waste culture at Temple that embraces the four R's: Rethink, Reduce, Reuse and Recycle.
- Explore opportunities to expand food waste diversion, including food recovery, compost, and anaerobic digestion.



GROUNDS

Goals

- 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.
- Reduce the amount of water required for landscape management by 25% by 2025 from the 2006 baseline.
- Reduce the use of inorganic fertilizers and chemical pesticides, fungicides and herbicides by 75% by 2025 from the 2010 baseline.

Standards

- Ensure that the standards and recommendations set forth in Verdant Temple for landscape materials, plant species and maintenance are utilized for projects on all Temple owned campuses, including the use of permeable pavers for all paths and walkways.
- Prioritize the use of native, drought resistant, and pollinator species for all campus plantings.

Areas of Future Study

- Partner with academic departments to utilize the campus grounds and operations as a living learning laboratory to pilot sustainable demonstration projects.
- Temple will evaluate the university's potential to become a Tree USA campus.

TRANSPORTATION

Goals

- Increase the number of commuters who utilize a sustainable form of transportation to the campus to 75% by 2025.
- Reduce fleet-based emissions from 2006 baseline by 20% by 2030.
- Reduce the number of single occupancy vehicles on campus by 10% by 2025.
- Increase the percentage the university's fleet that is alternatively fueled to 50% by 2030.

Standards

- Temple University will commit to purchasing used vehicles with the best EPA fuel economy ratings in the vehicle class.
- Achieve compliance with the bike parking rates outlined in the Verdant Temple plan for all new construction, major renovations and landscape projects.

Areas of Future Study

- Temple will work with SEPTA to explore programs aimed at providing students with affordable access to public transportation.
- Temple will explore programs to reduce emissions associated with air travel associated with university sponsored travel.
- Temple will work with the City of Philadelphia to promote bicycle and pedestrian friendly streets in and around university campuses.
- Temple will explore ways to incentivize staff and faculty sustainable commuting.
- Create a pedestrian friendly campus by implementing recommendations set forth in Verdant Temple, such as expanding the walking zone, easing street crossings, and improving the walking environment.
- Design campus transportation systems to facilitate multi-mode commuting.
- Partner with SEPTA to improve the public transportation experience at Temple stations.

INDOOR AIR QUALITY

Goals

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

Areas of Future Study

- Temple University commits to ensuring that its existing buildings are maintained to meet high standards of indoor air quality.

SUSTAINABLE IT

Goals

- 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.

DINING

Goals

- Temple University will require its dining services provider to submit annual procurement reporting consistent with the STARS assessment program by 2018.
- 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.
- Temple University will reach a 50% food waste diversion target by 2022 in its four largest dining facilities (J&H, Morgan Hall Food Court, Morgan Hall Dining Center, and Student Center).

Standards

- Temple dining services vendor would ensure that every dining facility hosts meatless Monday promotions throughout the year.

Areas of Future Study

- Temple will work with its dining services vendor to incorporate sustainable procurement practices for on-campus dining.










EVALUATION & REPORTING


Measurement is key to ensuring that Temple fulfills its climate commitment. Consistent with its Climate Leadership Statement, Temple will submit an annual progress report and greenhouse gas inventory to Second Nature. The progress report will provide the university with an opportunity to assess its impact and adjust its implementation strategies if needed. In addition to its Second Nature reporting, the university will continue to complete AASHE's Sustainability Tracking, Assessment and Reporting System (STARS), which is an internationally recognized third party assessment tool. The STARS platform provides a comprehensive look at Temple's sustainability and resilience efforts, including the areas of curriculum, research, campus and public engagement, air and climate, energy, buildings, water, purchasing, grounds, food and dining, transportation, waste, planning and administration, diversity and affordability, well-being, and investment and finance. Finally, the university will also track the indicators outlined in the resilience assessment submitted to Second Nature in May of 2018.










CLIMATE ACTION GOALS AT-A-GLANCE

ACADEMICS & RESEARCH

-  Restructure the Undergraduate Certificate in Sustainability and the Interdisciplinary Undergraduate Certificate in Sustainability Committee (University College) by June 2019.
-  Increase the number of undergraduate/graduate sustainability courses by ten (10) courses from an October 2017 baseline by June 2022.
-  Increase the number of undergraduate/graduate courses that include sustainability by twenty (20) courses from an October 2017 baseline by June 2022.
-  Increase the number of departments with sustainability course offerings by two (2) departments from an October 2017 baseline by June 2022.
-  Partner with the Center for the Advancement of Teaching (CAT) to create professional development opportunities for faculty that promote interdisciplinary, inter-college sustainability courses and teaching methods for undergraduate and graduate degree programs, to be offered by spring 2020.
-  Coordinate with the University College Office of Digital Education (ODE) to create an online format for sustainability courses by June 2020.
-  Create an online repository for existing and future sustainability exercises and course material to assist faculty in integrating sustainability into their courses by June 2020.
-  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.
-  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.


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

CULTURE








-  Create a student educator program to build student awareness on campuses by 2020.
-  Increase student sustainability engagement through the development of a student green fund by 2019.
-  Create sustainability certificate program through continuing education by 2023.
-  Conduct an assessment on sustainability culture by 2021.
-  Work with Residential Life to incorporate the responsibility of sustainability engagement with students in the residence halls into an existing staff member's essential duties by 2020.
-  Establish a housing and dining services/academic work group to identify opportunities for collaboration and cooperative programs by 2020.
-  Begin to address food insecurity at Temple by 2019.

DESIGN





-  Incorporate green building standards for renovation, new construction and landscape projects into the university's adopted green building policy by 2019.
-  Develop Temple standards for new and existing building design and campus infrastructure that incorporate sustainability and climate resilience by 2020.
-  Develop and adopt technical specifications for all projects that incorporate its sustainable design framework by 2021.


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


ENERGY


-  Reduce energy use in existing building stock by 18% in a typical climatic year by 2033.
-  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.
-  With the initial seed funds, create a Green Revolving Fund by 2020 to direct the actual energy cost savings into additional energy projects.
-  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.
-  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 2019.
-  Sign another Power Purchase Agreement (PPA) by end of 2021.
-  Develop at least 100+ kW of renewable energy systems at Temple's facilities by 2022.


OPERATIONS


-  Develop a comprehensive Materials Management plan and implementation schedule to achieve City of Philadelphia's Zero Waste partner status by 2020.
-  Achieve a 50% diversion rate by 2020.
-  Increase the core recycling rate to 30% by 2020.
-  Dedicate a staff person in university housing to achieve compliance with the university's waste minimization and recycling initiatives by fall 2019.


-  Develop and implement a plan for sustainable landscape management that builds on recommendations in the Verdant Temple Plan and incorporates plantings, soil management, water conservation, and integrated pest management by 2022.


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


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


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


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


-  Reduce the number of single occupancy vehicles on campus by 10% by 2025.


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

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

-  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.

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

-  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.

-  Temple University will reach a 50% food waste diversion target by 2022 in its four largest dining facilities.

APPENDIX

APPENDIX A: PLANNING PROCESS PARTICIPANTS

CLIMATE LEADERSHIP WORKING GROUP MEMBERS

Tiffenia Archie, Institutional Diversity, Equity, Advocacy and Leadership (IDEAL)
Kurt Bresser, Office of Facilities Management
Dr. Marissa Cloutier, College of Public Health
Jacek Ghosh, Sustainability Education, University College
Kathleen Grady, Office of Sustainability
Joy De Jesús, Office of the Executive Vice President & Chief Operating Officer
John Johnson, Service Operations
Emily Logan, Graduate Student, Fox School of Business
T.J. Logan, Housing and Residential Life
Greg Lupinski, Environmental Health and Radiation Safety
Sarah Powell, Office of Emergency Management
Jonathan Reiter, Office of the Executive Vice President & Chief Operating Officer
Andy Riccardi, Health Sciences Center
Dr. Christina Rosan, College of Liberal Arts
Dr. Rominder Suri, College of Engineering
James Templeton, Project Delivery Group
Dr. Laura Toran, College of Science and Technology
Sarah Kuchan, Temple Student Government
Kate Wingert Playdon, Tyler School of Art

ACADEMIC AND RESEARCH SUBCOMMITTEE MEMBERS

Dr. Jamie Maatkare Bracey, College of Engineering
Dr. Marissa Cloutier, College of Public Health
Dr. Jennifer Ibrahim, College of Public Health
Sarah Kuchan, Temple Student Government
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Dr. Christina Rosan, College of Liberal Arts
Dr. Robert Ryan, College of Engineering
Dr. Rominder Suri, College of Engineering
Dr. Katherine Switala-Elmhurst, Office of Sustainability
Dr. Laura Toran, College of Science and Technology
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Kate Wingert-Playdon, Division of Architecture and Environmental Design

CULTURE SUBCOMMITTEE MEMBERS

Dr. Tiffenia Archie, IDEAL
Endri Baduni, Aramark
Dr. Marissa Cloutier, College of Public Health
Beverly Coleman, Community Relations
Bridget Fischer, Students for Environmental Action (SEA)
Sarah Kuchan, Temple Student Government
Kathleen Salisbury, Ambler College
James Van Blunk, Admissions

DESIGN SUBCOMMITTEE MEMBERS

Nicole Dorrego, Project Delivery Group
Robert Kuper, Division of Architecture and Environmental Design
Julia Mullin, Project Delivery Group
Dr. Katherine Switala-Elmhurst, Office of Sustainability
James Templeton, Project Delivery Group
Dr. Laura Toran, College of Science and Technology
Kate Wingert-Playdon, Division of Architecture and Environmental Design

ENERGY SUBCOMMITTEE MEMBERS

Nicholas Beale, Energy Office
Kurt Bresser, Energy Office
Andrew Holden, Energy Office
T.J. Logan, University Housing and Residential Life
Jonathan Reiter, Office of the Executive Vice President & Chief Operating Officer
Andy Riccardi, Health Science Center
Dr. Katherine Switala-Elmhurst, Office of Sustainability
Olivia Webb, Undergraduate Student, College of Engineering

OPERATIONS SUBCOMMITTEE MEMBERS

Mark Gottlieb, Operations and Logistics
Richard Hoover, Grounds
John Johnson, Service Operations
Michael Juhas, Housekeeping
Jonathan Latko, Technology Services
Emily Logan, Graduate Student, Fox School of Business
T.J. Logan, Office of Housing and Residential Life
Sarah Kuchan, Temple Student Government

OPERATIONS SUBCOMMITTEE MEMBERS (CONTINUED)

Andy Riccardi, Health Science Center
Delwana Simpson, Office of Housing and Residential Life
Nicholas Ventrola, Aramark
Collin Wood, Ambler Campus

RESILIENCE SUBCOMMITTEE MEMBERS

Daniel Astran, Space Management
Nicholas Beale, Energy Office
Dr. Marissa Cloutier, College of Public Health
Danielle Colon, Risk Management
Joy De Jesús, Office of the Executive Vice President & Chief Operating Officer
Andrew Feick, Facilities Management
Linda Frazer, Real Estate
Anthony Higgins, Office of the Fire Marshall
Charles Leone, Campus Safety
Clay Lloyd, Office of Emergency Management
Greg Lupinski, Environmental Health and Radiation Safety
Tom McCreesh, Project Delivery Group
Dr. Ariane Middel, College of Liberal Arts
Margaret Owens, Undergraduate Student, Office of Emergency Management
Dr. Hamil Pearsall, College of Liberal Arts
Sarah Powell, Office of Emergency Management, Co-Chair
Dr. Katherine Switala-Elmhurst, Office of Sustainability
Stephen Witherspoon, Housekeeping

RECOMMENDATION REVIEWERS

ACADEMICS AND RESEARCH

Dr. Chris Carey, Dean of Students Office
Dr. Kevin Delaney, Office of Faculty Affairs
Dr. Stephanie Lassini Fiore, Center for the Advancement of Teaching
Michael Henderson, Office of the Vice President for Research
Dr. Michele Masucci, Vice President for Research
Dr. Vicki McGarvey, Office of the Provost
Dr. Daniel L. White, Associate Vice Provost

APPENDIX B: STUDENT INPUT

CULTURE

Joy De Jesús, Office of the Executive Vice President & Chief Operating Officer
Dr. Theresa Powell, Student Affairs
Michael Scales, Business Services

DESIGN

Dozie Ibeh, Project Delivery Group
Jaison Kurichi, Budget Office

ENERGY

Peter Cautilli, Office of the Executive Vice President & Chief Operating Officer
Kevin Clark, Executive Vice President & Chief Operating Officer
Joy De Jesús, Office of the Executive Vice President & Chief Operating Officer
Jerry Leva, Planning and Capital Projects
Ken Kaiser, Chief Financial Officer
Jaison Kurichi, Budget Office
Eileen McShea, Facilities Finance
Joe Monahan, Office of Facilities Management
Jonathan Reiter, Office of the Executive Vice President & Chief Operating Officer

OPERATIONS

Alvin Cooley, Purchasing
John Johnson, Service Operations
Cindy Leavitt, Information Technology Services
T.J. Logan, University Housing and Residential Life
Michael Scales, Business Services



Student Perspectives on Temple's Climate Action Plan

Data Collection Sources

1

Climate Action Town
Halls

2

Tabling in Residence
Halls

3

Social Media
Marketing

4

Online Survey

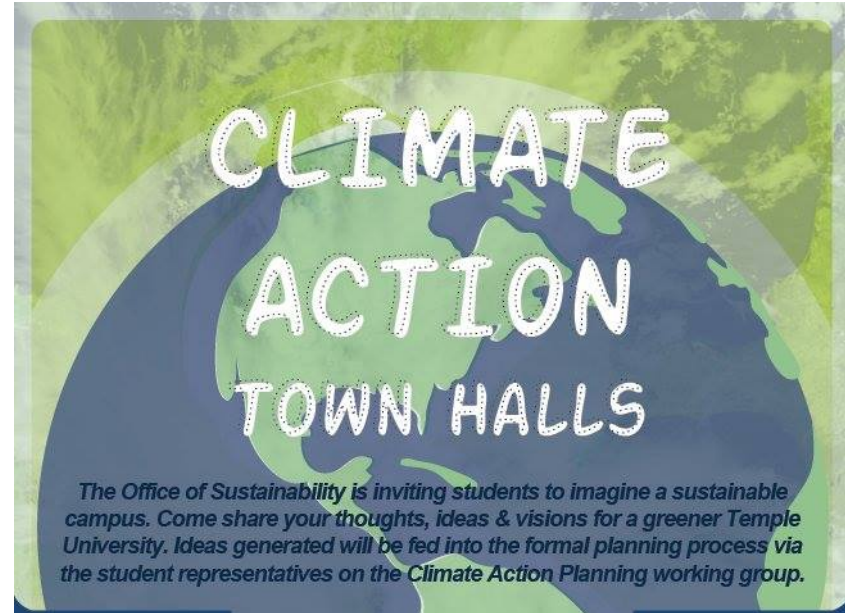
Town Halls



Tabling in Residence Halls

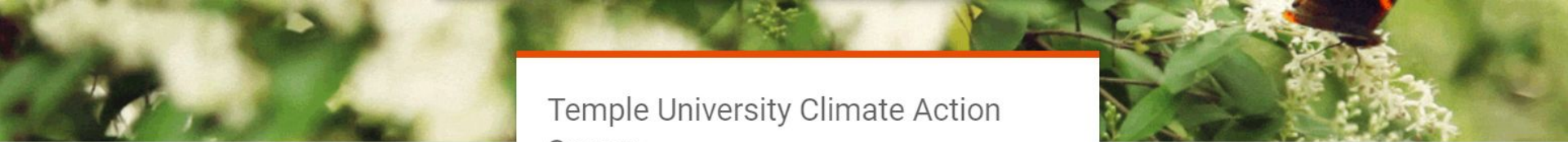


Social Media Marketing





Online Survey



Temple University Climate Action Survey

Temple University, in our ongoing commitment to sustainability, is updating our Climate Action Plan to reflect our goals of just sustainability, carbon neutrality, and climate resiliency. In this crucial time, The Office of Sustainability wants your voice to be heard! Help us out, by filling out this quick survey.

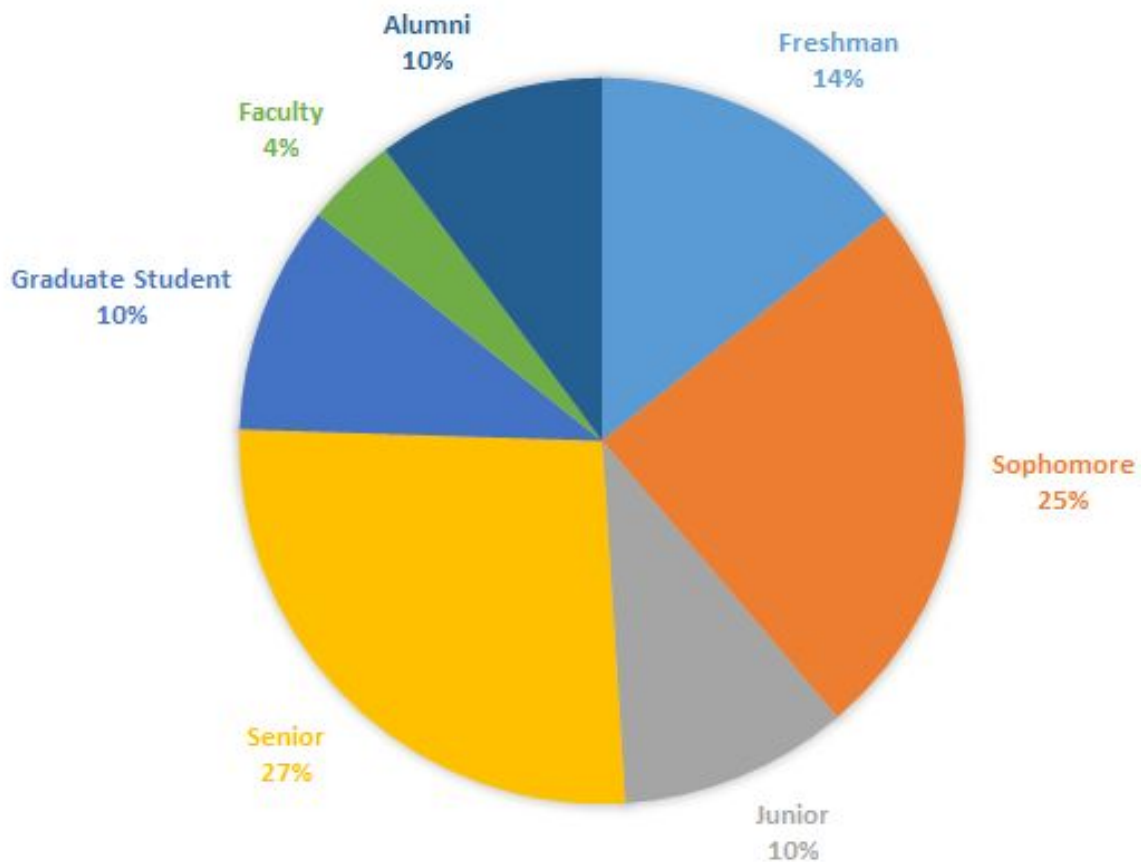
To learn more about the climate action planning process or how you can get more involved in sustainability on campus reach out to us on social media or at sustainability@temple.edu.

* Required

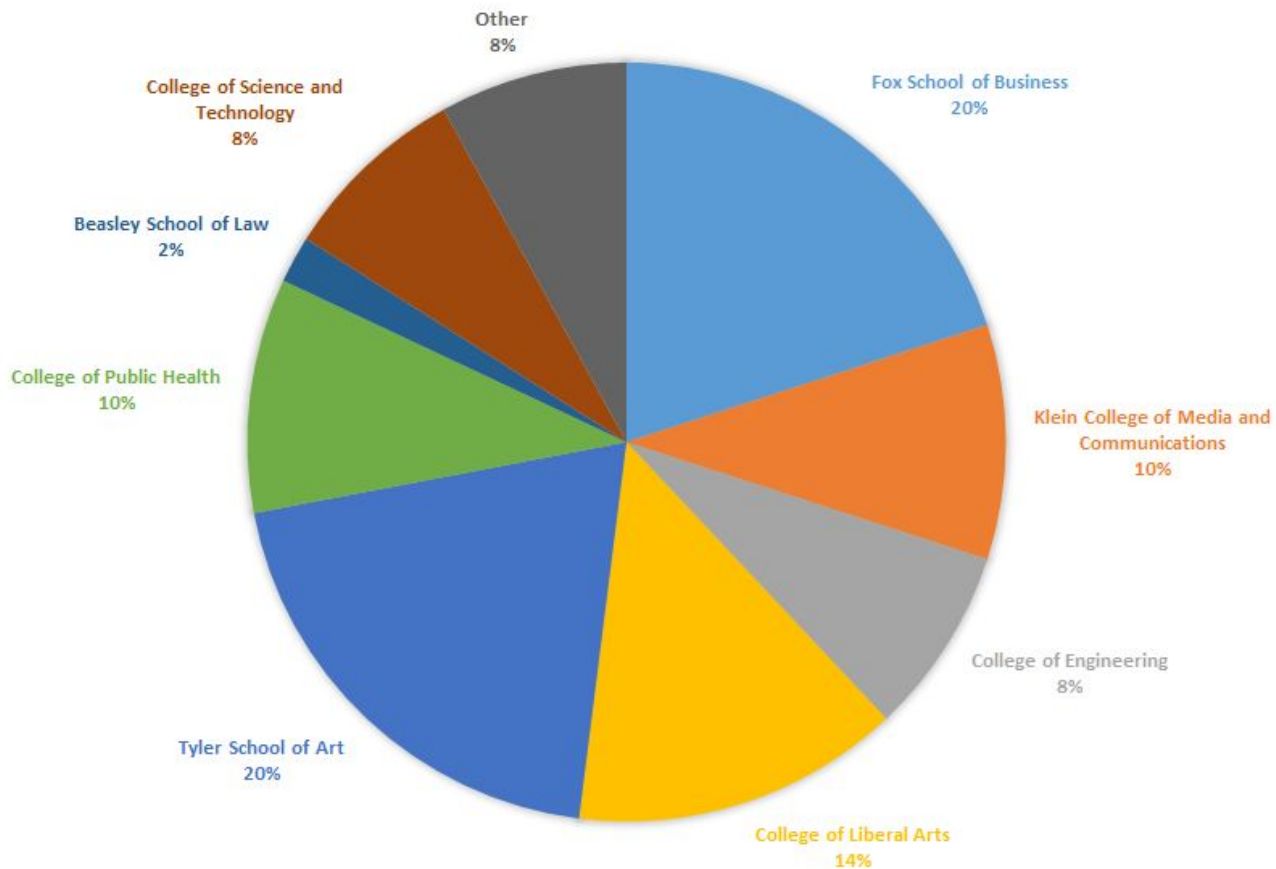
Major/Degree Program *

Student Demographics & Majors

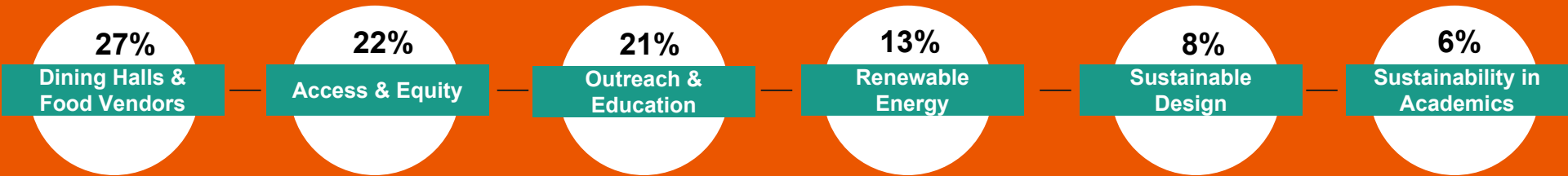
DEMOGRAPHICS OF STUDENTS, ALUMNI AND FACULTY SURVEYED



SCHOOL AND COLLEGE REPRESENTATION

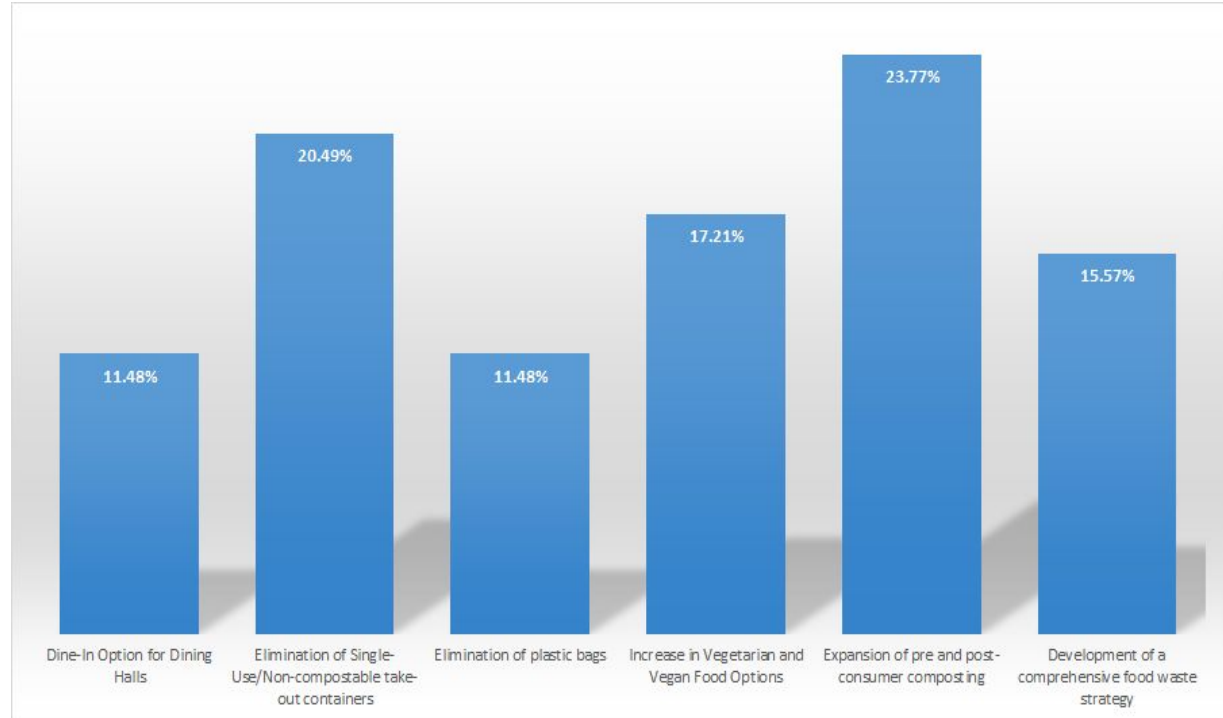


Student Feedback

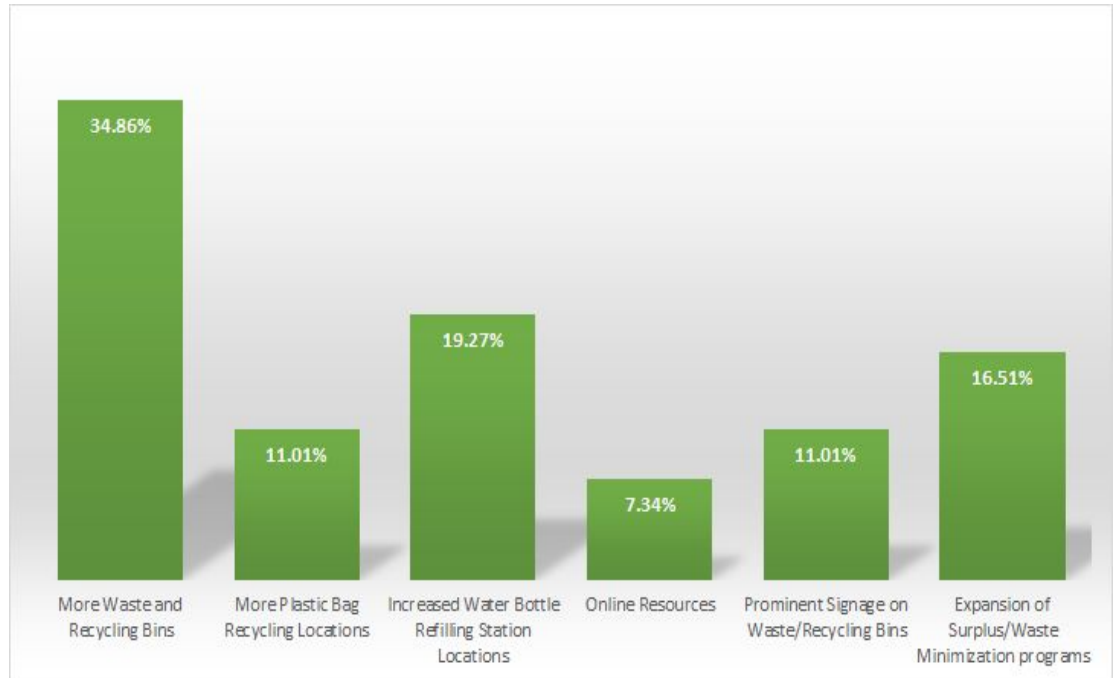


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Sustainability in Dining Halls and Food Vendors



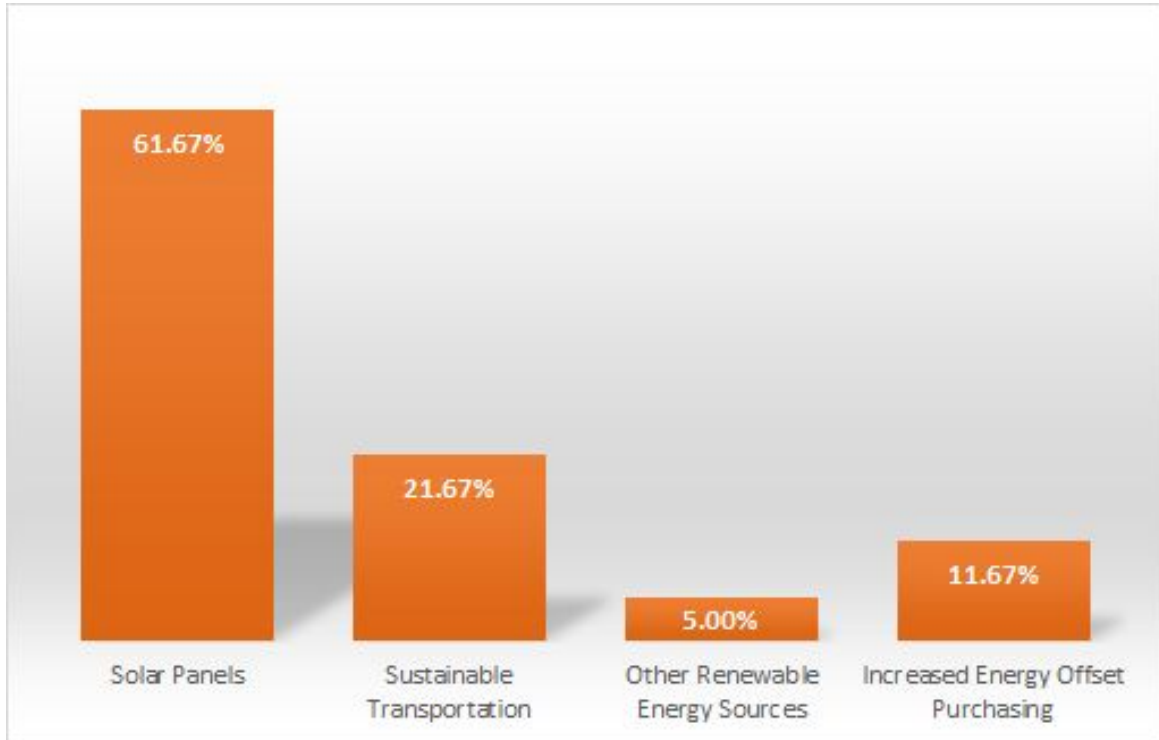
Accessibility



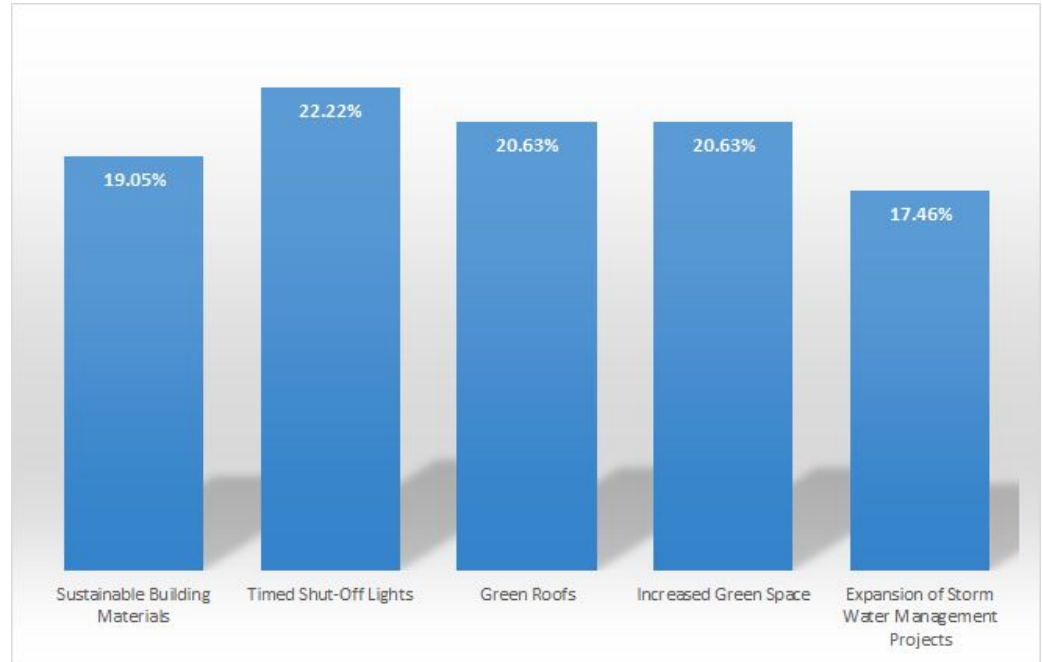
Outreach and Education



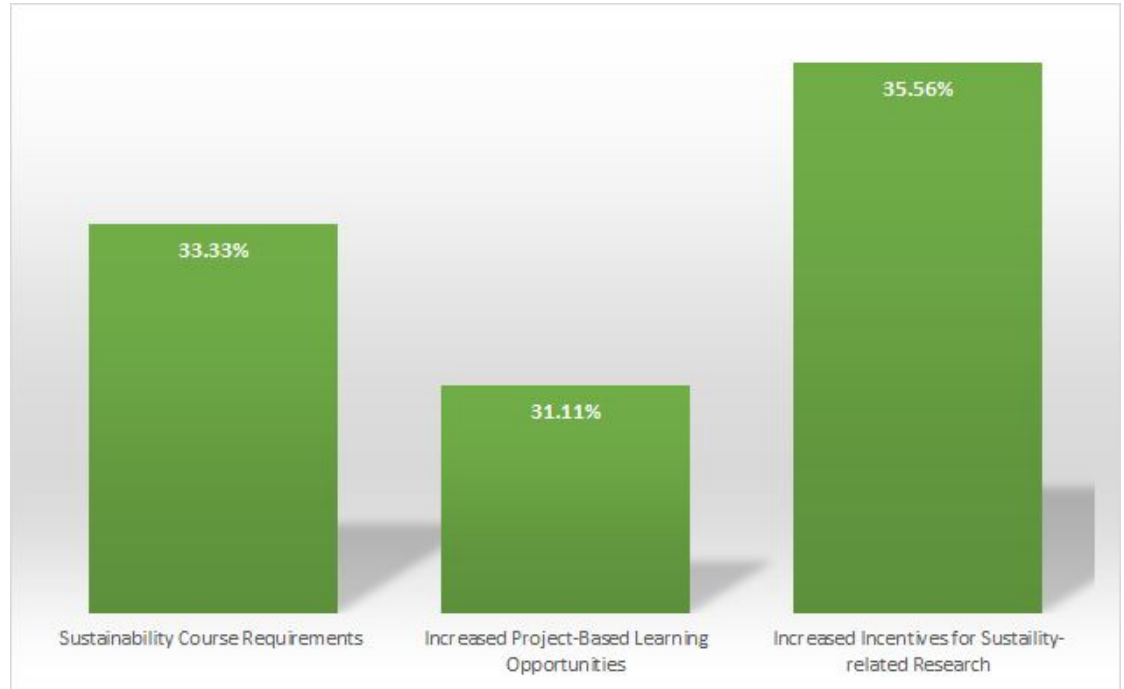
Renewable Energy



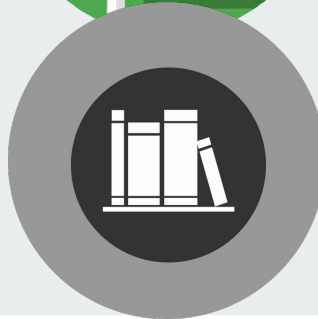
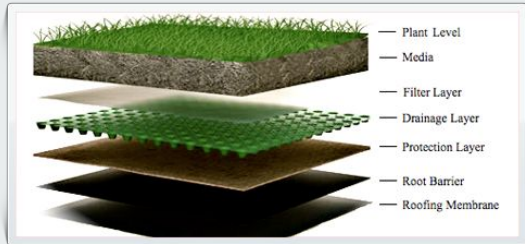
Sustainable Design



Sustainability in Academics



Summary of Student Feedback





QUESTIONS & COMMENTS



APPENDIX C: GREENHOUSE GAS REDUCTION TARGETS

	GSF	Actual Net Emissions (MTCO2E)	2010 CAP Targets (MTCO2E)	2019 CAP Targets (MTCO2E)
2006	8,266,175	168,597	168,597	168,597
2007	8,271,765	161,883	167,661	161,883
2008	8,271,765	157,015	166,724	157,015
2009	9,171,147	157,840	165,787	157,840
2010	9,055,532	155,596	164,851	155,596
2011	9,055,532	151,007	163,914	151,007
2012	9,245,532	146,866	162,977	146,866
2013	9,320,791	152,796	162,041	152,796
2014	10,468,357	151,161	161,104	151,161
2015	10,564,903	159,645	160,168	159,645
2016	10,212,488	160,433	156,796	160,433
2017	9,665,936	157,053	153,424	157,053
2018	9,722,258		150,052	152,294
2019	9,778,909		146,680	147,535
2020	9,835,890		143,308	142,775
2021	9,893,203		141,622	138,016
2022	9,950,849		139,936	133,257
2023	10,008,832		138,250	128,498
2024	10,067,153		136,564	123,739
2025	10,125,813		134,878	118,980
2026	10,184,815		131,506	114,220
2027	10,244,161		128,134	109,461
2028	10,303,853		124,762	104,702
2029	10,363,892		121,390	99,943
2030	10,424,282		118,018	95,184
2031	10,485,023		112,117	90,424
2032	10,546,118		106,216	85,665
2033	10,607,570		100,315	80,906
2034	10,669,379		94,415	76,147
2035	10,731,548		88,514	71,388
2036	10,794,080		82,613	66,629
2037	10,856,976		76,712	61,869
2038	10,920,239		70,811	57,110
2039	10,983,870		64,910	52,351
2040	11,047,872		59,009	47,592
2041	11,112,247		53,108	42,833
2042	11,176,997		47,207	38,073
2043	11,242,124		41,306	33,314
2044	11,307,631		35,405	28,555
2045	11,373,519		29,505	23,796
2046	11,439,792		23,604	19,037
2047	11,506,450		17,703	14,278
2048	11,573,497		11,802	9,518
2049	11,640,935		5,901	4,759
2050	11,708,766		0	(0)

2019 CAP Targets based on annual linear reduction

2019 GSF based on annual linear increase of known growth

ENERGY GHG EMISSION TARGET

