

UNIVERSITY OF PENNSYLVANIA

CLIMATE AND SUSTAINABILITY ACTION PLAN 3.0 ANNUAL REPORT FY22





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Combating climate change is a top priority at Penn. Combining research, educational, operational, and investment initiatives, we are bringing every aspect of our enterprise together to help secure a more sustainable future for our community and the world.

—LIZ MAGILL, PENN PRESIDENT



Sustainability and climate change are vital areas of education and research across our Schools. Our interdisciplinary centers and academic programs reaffirm our university-wide commitment: to create the new solutions that advance sustainability around the world.

—BETH A. WINKELSTEIN, PHD, INTERIM PROVOST

2007

JUNE

President Gutmann signs the *American College and University Presidents Climate Commitment* (ACUPCC).

2009

SEPTEMBER

Penn launches its first *Climate Action Plan* defining its University-wide sustainability goals through 2014.

2010

MARCH

Penn issues *Century Bonds*, with \$200 million earmarked for projects that combine deep energy retrofits, deferred maintenance, and sustainability.

2014

OCTOBER

Penn launches its *Climate Action Plan 2.0*, reporting on five years of accomplishments and establishing goals through 2019.

2017

JUNE

Penn joins eleven Ivy Plus universities in reaffirming commitment to climate change mitigation after U.S. withdrawal from the Paris Agreement.

2019

OCTOBER

Penn launches its *Climate and Sustainability Action Plan 3.0 (CSAP 3.0)*, reporting on ten years of accomplishments and establishing goals through 2024.

2020

APRIL

Penn announces the signing of a *Power Purchase Agreement* (PPA) designed to offset approximately 70% of electricity use for the University and Health System.

2021

JUNE

The Environmental Innovations Initiative launches its strategic plan to catalyze Penn's role in creating solutions to real-world environmental challenges.

2022

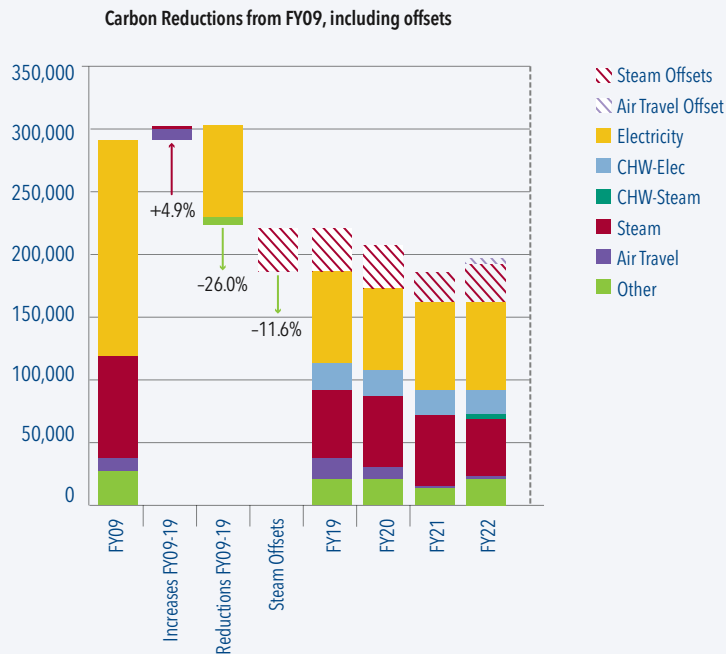
APRIL

Construction began on the solar energy project that is part of Penn's Power Purchase Agreement (PPA). Two new solar energy facilities will be built in central Pennsylvania, from which Penn will purchase all of the electricity produced – an amount equal to approximately 70% of the total electricity demand of the academic campus and the University of Pennsylvania Health System.

PROGRESS SUMMARY

This report highlights fiscal year 2022 progress toward achieving the goals of the *Climate and Sustainability Action Plan 3.0 (CSAP 3.0)*, Penn's guiding document for campus sustainability. This report provides key updates on the status of progress made in each of the seven initiatives of the CSAP 3.0 - designed to transform Penn towards its goals to:

- Expand the scope of sustainability research in Penn's academic centers, and connect students to Penn's abundant resources in this field;
- Continue to reduce carbon emissions and explore expanded use of renewable energy to mitigate the impacts of climate change;
- Embrace circular economy principles to reduce waste and single-use products;
- Make sustainable choices in transportation, purchasing, and business operations; and inform, educate, and empower the Penn community to participate in Penn's climate change and sustainability goals.
- Inform, educate, and empower the Penn community to participate in Penn's climate change and sustainability goals.



The chart shows Penn's progress in reducing the main campus carbon footprint over the past three years as compared to the Fiscal Year 2009 baseline year.

Reduction from FY09

NET

FY19: 32.6%

FY20: 37.2%

FY21: 44.3%

FY22: 45%

As the University looks ahead toward the goals set forth in the CSAP 3.0, this annual report provides an opportunity for Penn to reflect on what has already been achieved over the past year and prioritize what has yet to be accomplished. Three years into CSAP 3.0 implementation, the next two years will be marked by finalizing the goals set forth within CSAP 3.0 and preparing for the next phase of planning.

Please send any comments or questions to the Penn Sustainability Office (PSO) at sustainability@upenn.edu. For more information, please visit sustainability.upenn.edu.

Throughout the report, we use these symbols to denote progress.



We are achieving our goal






We have made some progress






**We are not meeting our goal
and will reevaluate**

HIGHLIGHTS | Seven Initiatives

Academics		<p>Three Civic Sustainability Fellows were hired by Penn Sustainability for the summer of 2022. The fellows worked with partner organizations including the Philadelphia Office of Sustainability, Philadelphia Energy Authority, and the Philadelphia School District to support the City's regional sustainability objectives and provide real-world learning opportunities to Penn students.</p> <p>The Environmental Innovations Initiative (The Initiative) created an Internal Advisory Committee. Faculty Co-Directors Kathleen Morrison, Joseph Francisco, and Senior Director Melissa Brown Goodall designed and launched Penn's first introductory course to climate change - "Humans and the Earth System: How it Works, How We Got Here, and How to Save Our Planet." This is a 100 level course intended to meet student demands for an introductory climate change course.</p> <p>4,695 students enrolled in sustainability related courses in the 2021-2022 academic year. Of these courses, 2,041 students participated in sustainability-focused and 3,742 students participated in sustainability-inclusive courses, as determined by AASHE.</p>
Utilities & Operations		<p>In FY22, Penn reduced overall emissions by 45% and building-related emissions by 45% as compared to the 2009 baseline year.</p> <p>Construction began on the solar energy project that is part of Penn's Power Purchase Agreement (PPA). Two new solar energy facilities will be built in central Pennsylvania, from which Penn will purchase all of the electricity produced – an amount equal to approximately 70% of the total electricity demand of the academic campus and the University of Pennsylvania Health System.</p> <p>Penn avoided using 28,472 MMBTU through its retro-commissioning efforts in FY22, resulting in \$554,101 savings to Penn.</p>
Physical Environment		<p>For the first time, Penn developed a carbon footprint for Penn's Real Estate portfolio with support from the Center for Environmental Building and Design (CEBD).</p> <p>Facilities and Real Estate Services (FRES) Operations and Maintenance (O&M) updated their work order process to integrate preventative maintenance to better maintain stormwater infrastructure on campus.</p> <p>Penn's Landscape Architecture and O&M teams identified a priority list of projects within the Ecological Landscape Stewardship Plan (ELSP) and are implementing it into design and management processes.</p>
Waste Minimization & Recycling		<p>Penn Sustainability, in partnership with Urban Park and Penn Housekeeping, created a waste precinct map to help better understand and disseminate building waste and recycling data to identify strategic opportunities for increased diversion. Trucks with scales have been obtained to start collecting monthly data for open top trash and recycling dumpsters.</p> <p>Penn Sustainability released the "Life of Penn's Waste" infographic to show how all types of Penn's waste are recycled, reused, and disposed.</p> <p>Penn Sustainability participated in the City of Philadelphia Solid Waste and Recycling Advisory Committee (SWRAC) meetings as well as two Waste Workshops.</p>

HIGHLIGHTS | Seven Initiatives *(continued)*

Procurement		<p>As of July 1, 2022, Penn integrated an additional fee into travel booking costs to generate funding to offset Penn's air travel carbon emissions through purchased offsets. The fees go to the Travel Sustainability Fund that invests in best-fit sustainability projects to fully offset the carbon impacts of the University's air travel. Penn collected \$93,440 through a Climate Impact Offset charge (CLIO), and will offset the 11,872 domestic and international flights taken in FY22.</p> <p>Penn Sustainability released a Scope 3 Emissions report to begin to quantify emissions that are the result of purchased goods and services by the University.</p> <p>Penn Procurement partnered with TerraCycle to support mask and glove recycling. In FY22, more than 31,500 masks and 17,200 gloves were recycled on campus.</p>
Transportation		<p>Penn published a Low-Emissions Vehicle Purchasing Guide. The guide provides vehicle purchasers at Penn clear guidance on vehicle types, available grants, and charging station infrastructure.</p> <p>For the first time ever, Penn Transportation purchased 4 electric vehicles that will be used as passenger vans in the coming year. This purchase will save more than 13 MTCDE reduction per van per year or more than 53 MTCDE for the 4-van electric fleet annually.</p> <p>During FY22, 123,925 Indego bike trips started and ended at the 6 locations on or near Penn's campus, compared to 75,515 trips in FY21 and 55,347 in FY20 when the stations first came online. This is a 64% increase in overall trips started and ended, as well as a 26% increase in average trips originating and a 30% increase in average trips ending at these locations in FY22, compared to FY20. Penn is working with Indego to plan for future expansion of Indego stations in University City.</p>
Outreach & Engagement		<p>Penn Sustainability hosted Earth Week from April 18 – 23, 2022, with nearly 50 in-person, virtual, and hands-on events planned by students, schools and centers, and partner organizations on campus and in the community.</p> <p>In light of hybrid working conditions, Penn Sustainability launched the Green Hybrid Office program, which helps people make their home offices more sustainable.</p> <p>The Green Labs program hosted the second annual Freezer Challenge in conjunction with the International Freezer Challenge, with Vaughan Lab of Penn Vet winning first place.</p> <p>Student Eco-Reps supported Green Living during 2021/2022 Academic Year. 407 students interacted with, and 288 completed, the survey during that academic year, the highest level of participation since 2018. Students identified opportunities for targeted outreach based on results that led to a Composting 101 training for students.</p> <p>Penn hosted its second annual Climate Week led by the Environmental Innovations Initiative with support from Penn Sustainability. The week hosted 45 unique events with 28 organizations and over 1,700 people participating.</p> <p>Penn was also ranked #6 in Diversity and Affordability in the 2021 AASHE Sustainable Campus Index.</p>



ACADEMICS

MISSION

- Make climate change and sustainability part of the curriculum and educational experience available to all students, including classroom instruction, extracurricular experiences, and research and internship opportunities
- Support faculty teaching, learning, research, and scholarship on sustainability
- Inform the entire University community of the principles of sustainability and its three key constituent pillars: environmental protection, economic prosperity, and equitable distribution of resources



PROGRESS SUMMARY

Academic sustainability initiatives over the past year laid the foundation to elevate opportunities for students and faculty to participate in sustainability-related curricula. Faculty members across disciplines worked with students to address sustainability learning more comprehensively for eight courses as they participated in Penn Sustainability's Integrating Sustainability Across the Curriculum (ISAC) program. Penn Sustainability also partnered with the Netter Center for Community Partnerships to include Academically-Based Community Service (ABCS) courses into the ISAC program to improve their impact in the community.

The Environmental Innovations Initiative, housed in the Office of the Provost, has continued to chart a path towards clarifying and improving students' educational experience, catalyzing research collaboration, and elevating Penn's reputation locally, nationally, and globally. This included designing and launching a multidisciplinary introductory course called "Humans and the Earth System: How it Works, How We Got Here, and How to Save Our Planet," which was taught by the faculty co-leads and senior director of the Initiative. The Initiative has embarked on a series of asset mapping projects to identify strengths and gaps in Penn's academic offerings vis-à-vis climate, nature, and resilience.



TOWARDS AN EQUITABLE FUTURE

The Environmental Innovation Initiative launched a new course in an effort to generate scholarship that addresses environmental challenges from an interdisciplinary perspective. Joseph Francisco, President's Distinguished Professor of Earth and Environmental Science and Professor of Chemistry, Kathleen Morrison, Sally and Alvin V. Shoemaker Professor of Anthropology and Department Chair, the Initiative's faculty co-leads, co-designed and co-taught the course with Melissa Brown Goodall, Senior Director of the Initiative. After reviewing Penn Sustainability's list of courses that address sustainability, Morrison, Francisco, and Brown-Goodall realized Penn did not offer any introductory courses on climate change and sought to address the gap. "We heard over and over again that undergraduates wanted some kind of basic climate literacy course," says Morrison to Penn News Today. "Many argue it should be required."

"Humans and the Earth System: How it Works, How We Got Here, and How to Save Our Planet," takes a comprehensive approach to exposing Penn students to climate change topics including science, human interactions, and policy and solutions. Students were able to experience guest speakers from the Penn Water Center, the Penn Institute for Urban Research, Perry World House, Penn Sustainability Office, the Department of Earth and Environmental Science, and the Perelman School of Medicine.

This 100-level course intends to meet student demands for a Climate 101 course and will be offered in future semesters taught by a diverse array of faculty.



GOALS	STRATEGIES	FY22 PROGRESS
Support cross-disciplinary research and coordination of work between Schools and Academic Centers	Work with the Office of the Provost to promote curricular opportunities, coordination of scholarship in Schools and Centers and promotion of majors, minors, and concentrations in sustainability.	<ul style="list-style-type: none"> In its second year, the Initiative's Research Community program awarded more than \$100,000 in funding to four teams of faculty, staff, and students using an interdisciplinary approach to address environmental challenges. These teams include representation from nearly all of Penn's twelve schools. During Earth Week 2022, The Initiative, in partnership with Penn IUR, hosted a "Teach In," featuring nine micro-lectures from Penn faculty based on the United Nations Sustainable Development Goals (SDGs). This interdisciplinary group of scholars and experts showcased the need for all disciplines to address the changing climate and move toward a sustainable future.
Campus as Lab: Support the use of campus-as-lab to promote applied learning	Develop a formal Campus-as-Lab initiative to merge Penn's operational sustainability goals with applied learning and research for faculty and students.	<ul style="list-style-type: none"> The Environmental Innovations Initiative began to develop an inventory of campus-as-lab initiatives to capture the breadth of work done across campus and in the community that makes Penn a living lab.
Help advance the City's regional sustainability objectives and provide professional development and real-world learning opportunities to Penn students	Formalize a Civic Sustainability Fellowship program to place Penn students in internships with City agencies.	<ul style="list-style-type: none"> Three Civic Sustainability Fellows were hired to work with three different organizations across the City of Philadelphia during the summer of 2022. Organizations included the Philadelphia Office of Sustainability, Philadelphia Energy Authority, and the School District of Philadelphia. Six total Civic Sustainability Fellows have been hired since the launch of the CSAP 3.0.
Improve the Climate Literacy of Penn Students	Develop a climate literacy assessment of Penn's undergraduate student body and recommendations to strengthen climate change education across the curriculum.	<ul style="list-style-type: none"> A team of Student Eco-Reps worked with the Netter Center for Community Partnerships and a cross-disciplinary group of faculty advisors to develop and implement a Climate Literacy study. The Initiative and Penn Sustainability are collaborating to expand the survey scope and representation.



GOALS	STRATEGIES	FY21 PROGRESS
Expand tracking and reporting of student enrollment in sustainability-related majors, minors, and concentrations	Document students in sustainability-related majors, minors, and concentrations	<ul style="list-style-type: none"> 4,695 students enrolled in sustainability related courses in the 2021-2022 academic year. Of these courses, 2,041 students participated in sustainability-focused and 3,742 students participated in sustainability-inclusive courses, as determined by AASHE. The Environmental Innovations Initiative took ownership of updating the Sustainability Course Inventory, while Penn Sustainability will continue to track and report students participating in identified courses.
Improve opportunities for a cohesive sustainability education at Penn	Improve opportunities for a cohesive sustainability undergraduate education by identifying course sequencing and essential early-curricular courses	<ul style="list-style-type: none"> To address the need for introductory environmental courses, the three leaders of the Environmental Innovations Initiative co-created a course called "Humans and the Earth System: How it Works, How We Got Here, and How to Save our Planet," which was offered for the first time in the Spring 2022 semester. Twenty-three students participated in the course. The Environmental Innovations Initiative is conducting a thorough assessment of the courses offered in all 12 of Penn's schools to determine where there are gaps and opportunities for enhancement and collaboration. This work also includes the identification of courses with project-based or practicum elements, as there is increasing demand from students for hands-on experience. In tandem with this work, the Initiative is conducting a review that compares the teaching and research of Penn's faculty to the UN Sustainable Development Goals. The outcomes of this will be an understanding of Penn's academic strengths vis-à-vis global environmental and social challenges and a searchable database of faculty.



Senior Kerry Hsu, an economics major from Hong Kong, discusses a project on minimizing emissions in the food sector with professors Kathleen Morrison, an anthropologist, and Joseph Francisco, an atmospheric chemist.



UTILITIES AND OPERATIONS

MISSION

To reduce campus carbon emissions and the costs associated with maintaining campus operations by:

- Adopting best practices in energy conservation through design, operation, and maintenance of both building infrastructure and district energy systems
- Exploring and adopting best practices for campus energy procurement



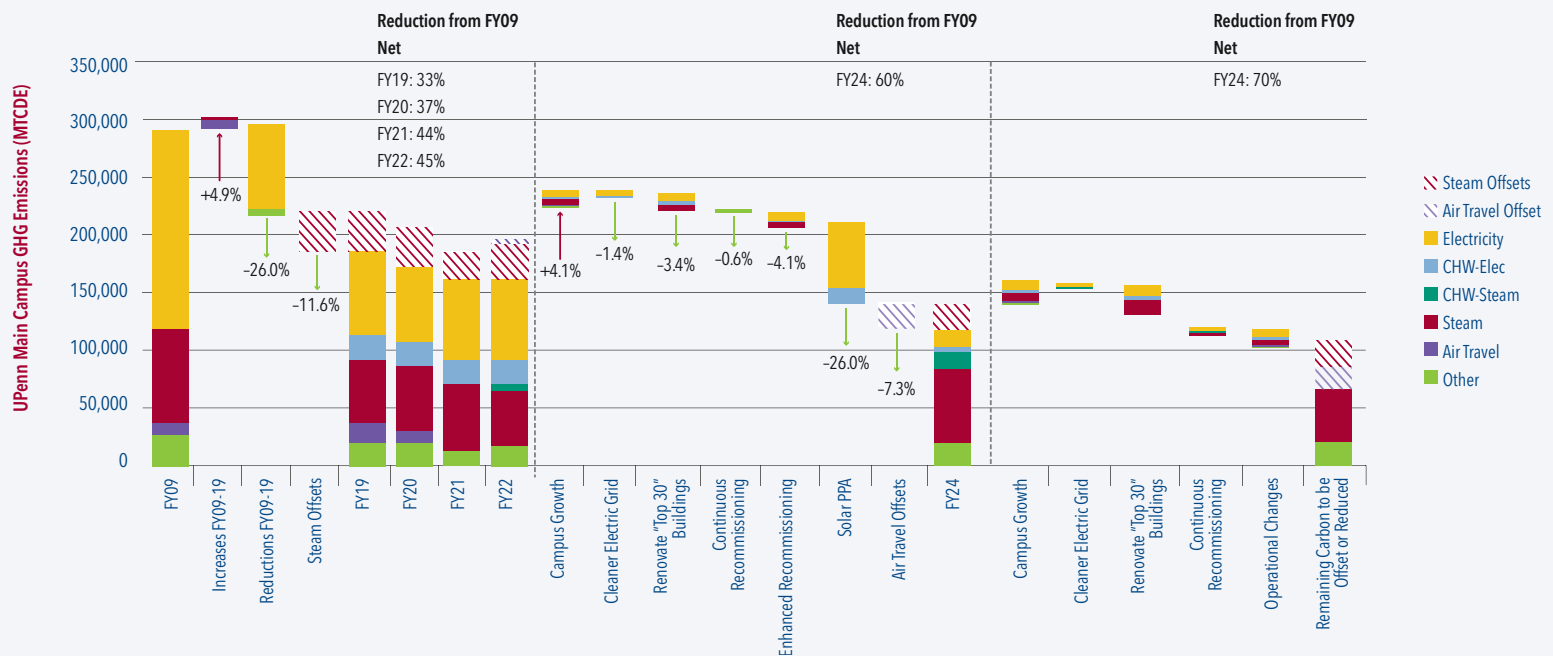
PROGRESS SUMMARY

Through energy efficiency, recommissioning, carbon offsets, and a cleaner electricity grid, Penn has made immense progress towards achieving the 100 x 42 goal of carbon neutrality by 2042.

Overall emissions have been reduced by 45% and building-related emissions have been reduced by 45% compared to the FY09 baseline. In order to achieve our carbon neutrality goal, significant action must be taken by the Penn community.

The waterfall chart below shows Penn's path to carbon neutrality. Breaking ground on two facilities under a solar Power Purchasing Agreement (PPA), with construction estimated to be complete by the end of 2023 and the first year of carbon neutral air travel from Penn's Climate Impact Offset (CLIO) charge, represent significant progress moving Penn closer to climate neutrality.

CARBON REDUCTIONS & NEUTRALITY PROJECTIONS 2009-2042



The waterfall chart above shows Penn's path to carbon neutrality. At the end of FY22, we achieved a 33% reduction in our carbon footprint as compared to FY09 when offsets are not considered, and a 45% reduction in our carbon footprint when including steam and air travel offsets.

While we have made significant progress, our roadmap calls for action from all Penn community members to promote sustainable and responsible use of resources both on and off campus. We have broken ground on the development of Penn's PPA, which will account for an estimated 70% of electricity for Penn's main campus and the University's Health System (UPHS). These actions combined with continuous recommissioning, operational changes, and renovation of the top 30 energy-consuming buildings are important steps on our trajectory to neutrality by 2042.



TOWARDS AN EQUITABLE FUTURE

The University of Pennsylvania has adopted [Carbon Markets and Offsets Guidance](#), that were developed by Second Nature's Offset Technical Advisory Group and will be included in all purchasing decisions for carbon offsets going forward. As a Signatory School of the Second Nature Presidents' Climate Leadership Commitment, Penn utilizes the guidelines set by Second Nature to ensure that investments in carbon offsets result in real greenhouse gas (GHG) reductions and that carbon offset projects add value to their education, research, and service missions while helping to create a healthy, just, and sustainable society. Starting July 2022, these guidelines will be incorporated into all requests for proposals for carbon offsets and will be used to select carbon offset projects. Penn will seek to prioritize or give preference to projects that are regional to the University of Pennsylvania. All projects must also address its environmental justice impacts and where relevant must follow the [UN Declaration on the Rights of Indigenous Peoples](#).



Matthew Bender Photography

A Facilities and Real Estate Services technician calibrates a pressure sensor that is part of the control system of an air handler.



GOALS	STRATEGIES	FY22 PROGRESS
Reduce Penn's overall carbon footprint towards 2042 carbon neutrality goal	Investigate a renewable Power Purchase Agreement to reduce Penn's emissions from electricity.	<ul style="list-style-type: none"> Penn has signed a Power Purchase Agreement (PPA) for the supply of electricity, capacity, and renewable energy credits, which is expected to offset 70% of the electricity used by Penn's main campus and the Hospital of the University of Pennsylvania (HUP). Construction of the two solar energy facilities began in Spring 2022 with anticipated completion by the end of 2023.
	Study options to mitigate emission from campus steam consumption, including low-carbon steam, alternative heating solutions, and viable offsets.	<ul style="list-style-type: none"> Vicinity, Penn's steam provider, has a carbon neutrality by 2050 goal and will be phasing in the use of waste vegetable oil in fuel mix. Penn is in discussion with Vicinity to identify opportunities for bringing their carbon neutrality date to align more closely with Penn. Vicinity and Penn will meet to explore next steps in Fall 2022.
	Expand School and Center awareness and training sessions through energy data awareness programs and the expansion of Energy Dashboards for Facilities and Real Estate Services (FRES) O&M and School and Centers.	<ul style="list-style-type: none"> A new online interface has been developed for utility information using Qlikview to enable Schools and Centers to see their current and historic utility usage in a simple format. Qlickview allows Schools and Centers to access energy usage on a monthly basis, an improvement from annual data reports.
	Identify and implement approved energy and carbon reducing measures as part of the Enhanced Recommissioning Program.	<ul style="list-style-type: none"> Thirteen enhanced recommissioning energy investigations have been completed. All feasible energy savings opportunities (ESO's) implemented in FY22 resulted in 28,472 MMBTU of energy savings, equivalent to \$554,101 in savings to Penn.
	Leverage SCADA capabilities to transition towards a continuous recommissioning O&M process.	<ul style="list-style-type: none"> Controls engineers are updating building controls, one building at a time, with the goal of standardizing the nomenclature and graphics for building equipment. By standardizing these elements, it will open the opportunity to employing standardized algorithms in the future, which are the basis for continuous commissioning and improve efficiency and building function.
	Optimize maintenance activities to improve energy efficiency through proactive maintenance.	<ul style="list-style-type: none"> Operations & Maintenance continues its three-pronged approach of identifying and addressing deferred maintenance, reducing backlogged maintenance service calls, and optimizing practice of proactive maintenance. Initial efforts focused on Perelman School of Medicine with plans to expand the program campus wide.
	Work with academic Centers to determine an internal cost of carbon and incorporate into capital planning.	<ul style="list-style-type: none"> Angela Pachon with Penn's Kleinman Center for Energy Policy, in collaboration with a Penn Sustainability Graduate Intern, is working with the ESAC Utilities and Operations Subcommittee to explore the feasibility of carbon pricing at Penn.



PHYSICAL ENVIRONMENT

MISSION

- Create and maintain a sustainable campus by increasing ecologically managed green space, reducing building energy consumption, and expanding awareness of sustainable design



PROGRESS SUMMARY

Penn's commitment to a sustainable built environment and ecologically managed landscape continues. LEED Silver continues to be the minimum standard for new construction and major renovations, though many projects achieve LEED Gold certification. Over the past year, seven buildings have received LEED certification, with University Meeting and Guest House and Wharton's Academic Research Building receiving LEED Gold for New Construction,

Penn Medicine Pavilion receiving LEED Gold for Healthcare, Harrison Auditorium and Penn Museum's Harrison and Coxe Wing Renovations receiving LEED Silver for Commercial Interiors, as well as Gutmann College House and Penn Squash Center, receiving LEED Silver for New Construction, totaling 43 LEED projects at Penn.



TOWARDS AN EQUITABLE FUTURE

In January 2022, Penn Sustainability hosted the annual Martin Luther King Jr. Day Environmental Justice event, partnering with the Office of Social Equity & Community and University City (UC) Green. Kiasha Huling, Director of UC Green; Lori Hayes, Director of Urban Forestry at the City of Philadelphia's Department of Parks & Recreation; and John MacDonald, Professor of Criminology at the University of Pennsylvania engaged in a virtual panel discussion moderated by Scott Filkin, Director of Penn's Office of Social Equity and Community, where they discussed the important relationship between urban greening and community safety and well-being, the inequities in access to urban greenspace for communities of color, and local lessons from West Philadelphia. This event launched a broader conversation of an ongoing partnership between Penn Sustainability and the Office of Social Equity and Community to further action toward reducing gun violence and improving the physical environment in West Philadelphia. To view the recording of the 2022 Martin Luther King Jr. Event, visit Penn Sustainability's [YouTube](#) channel.



A scale version of Robert Indiana's iconic Love statue sits in Blanche Levy Park in College Green.



GOALS	STRATEGIES	FY21 PROGRESS
Update Campus Design Standards	Review and revise as needed Penn's engineering and design guidelines	<ul style="list-style-type: none"> A working group, comprised of staff from the Office of the University Architect (OUA), Design and Construction (D&C), and Operations & Maintenance (O&M), will be convened in FY23 to review and revise the current green guidelines and improve how they are applied to projects at Penn.
	Review and revise Penn's non-LEED project Sustainable Building and Renovation Guidelines.	<ul style="list-style-type: none"> Penn continued to review the Green Guidelines for Renovation as part of their work renovating the Quad. The consultant proposed revised renovation guidelines for non-LEED projects as prototype that will be explored in Fall 2022. The Physical Environment subcommittee plans to explore how to integrate the guidelines into instructions for design professionals.
Improve Penn's Landscape Ecology Practices	Identify priority areas within the Ecological Landscape Stewardship Plan (ELSP).	<ul style="list-style-type: none"> Penn's Landscape Architecture and Operations & Maintenance teams developed ELSP recommendations to guide the design and management process. 21% of recommended actions are complete and 52% are partially complete or in progress. 28% of recommendations are slated for future focus.
	Reduce the number of bird strikes on campus.	<ul style="list-style-type: none"> Student Eco-Reps worked with departments and schools across campus to track bird strikes on campus and spread awareness about bird-friendly measures, including Penn's Bird-Friendly Guidelines, published in Spring of 2021, the creation of the Bird-Friendly Penn group, and the Lights Out Philly campaign. Monitoring by student Eco-Reps showed that bird strikes were less in the area of Gutmann College House that had bird-friendly glazing.
Continue to Improve the Sustainability of Penn's Real Estate Holdings	Emphasize Penn's commitment to sustainability and work with landlords to integrate sustainability-related policies.	<ul style="list-style-type: none"> Penn Sustainability has worked with the Center for Environmental Building & Design (CEBD) and Real Estate to quantify emissions for the Real Estate footprint. Penn Sustainability also created a flow chart for utility data to begin to identify where the carbon emissions from real estate can be quantified. Real Estate will use this information to continue promoting sustainable practices in its buildings.
	Integrate green leasing policies for Penn-owned retail and commercial tenants and encourage sustainability-related policies.	<ul style="list-style-type: none"> Penn's Real Estate team has a tenant handbook which includes sustainability practices that promote sustainability in leases. It was sent to all retail tenants. Moving forward, the handbook will be sent to all new tenants.
	Continue to track energy use and develop metrics to quantify the impact across the Penn Real Estate portfolio.	<ul style="list-style-type: none"> Real Estate has a draft carbon footprint developed with support from the Center for Environmental Building & Design (CEBD). Next steps include determining how best to share this data, to identify short-term opportunities for improvement, and to determine strategies that align with CSAP 3.0.



GOALS	STRATEGIES	FY21 PROGRESS
Expand Penn's carbon footprint geography to include Morris Arboretum and New Bolton Center (NBC)	Document the carbon footprint of Morris Arboretum and New Bolton Center.	<ul style="list-style-type: none"> Penn Sustainability and CEBD completed carbon footprints for FY21 for the New Bolton Center (NBC) and will update carbon emissions annually. The carbon footprint for Morris Arboretum is also being developed.
Integrate best practices in occupant health and wellness to Penn's building standards	Assess opportunities for implementation of wellness criteria in new construction and major renovations.	<ul style="list-style-type: none"> A working group of 20 people comprised of building experts at Penn reviewed and developed suggestions to embed WELL building standard practices in Penn's building design. All concepts have been reviewed and areas of opportunities are under review by the Physical Environment Subcommittee.
Improve water use and management on campus	Minimize Potable Water Use.	<ul style="list-style-type: none"> Penn's campus water footprint, calculated by Student Eco-Reps, in collaboration with The Water Center at Penn, was shared with the ESAC Physical Environment Subcommittee and next steps for conservation efforts are under discussion.
	Improve stormwater management.	<ul style="list-style-type: none"> A stormwater working group was developed to assess Penn's current stormwater management assets and processes, and to develop recommendations for improving stormwater management at Penn. The group summarized and presented their findings to FRES leadership and recommendations are currently underway. Operations & Maintenance released an RFP for stormwater maintenance to track, monitor, and maintain existing stormwater assets. Stormwater Solutions LLC (a Minority & Women Owned Business Enterprise) was selected and began work in July 2022. The work order process was also modified to integrate preventative maintenance to better maintain stormwater infrastructure on campus.
Improve Penn's Preparedness, Resiliency, and Adaptation to Climate Change	Aggregate information to combine resiliency, adaptation, and mission continuity.	<ul style="list-style-type: none"> PSO hired a graduate intern to assess current data resources and gaps, research related efforts and best practices, and identify stakeholders to engage as an initial step toward climate resiliency planning. Penn Sustainability began a collaboration with Mission Continuity to incorporate climate change-related emergency preparedness into table top exercises for all schools and centers for FY23.

WASTE MINIMIZATION AND RECYCLING



MISSION

- Increase diversion and minimize solid waste through community education, strategic purchasing, appropriate infrastructure, and proper disposal, strengthened by relevant and accurate metrics



PROGRESS SUMMARY

As the pandemic subsides and Penn students, faculty, and staff returned to campus, Penn's ESAC Waste and Recycling Subcommittee continued to explore innovative solutions for improving waste diversion while continuing to follow COVID-safety protocols. More disposable items continued to be used on campus to help minimize exposure to COVID-19, but programs like the **Green2Go** program, which allowed students to take food home from the dining halls in reusable containers, and the launch of rFlex plastic recycling, allowing all flexible plastics to be recycled in single stream recycling, helped to limit the number of disposable items going into the landfill or waste-to-energy. Penn Sustainability worked closely with Bon Appetit and Penn's single stream recycling vendor to ensure that disposable containers could be recycled.

Penn Procurement Services worked with a mask and glove provider to make mask and glove recycling available to interested Schools and Centers, Penn became the **number one university for mask and glove recycling in the country** with more than 31,500 masks and 17,200 recycled in FY22. A regular waste and recycling audit process continued to identify waste trends and find new ways to reduce waste. The total volume of waste decreased by 22.8% in FY22 as compared to FY09. Recycling rates decreased due to the lingering impacts of COVID-19 and the shift in makeup of the recycling stream, which now includes lighter weight plastics.

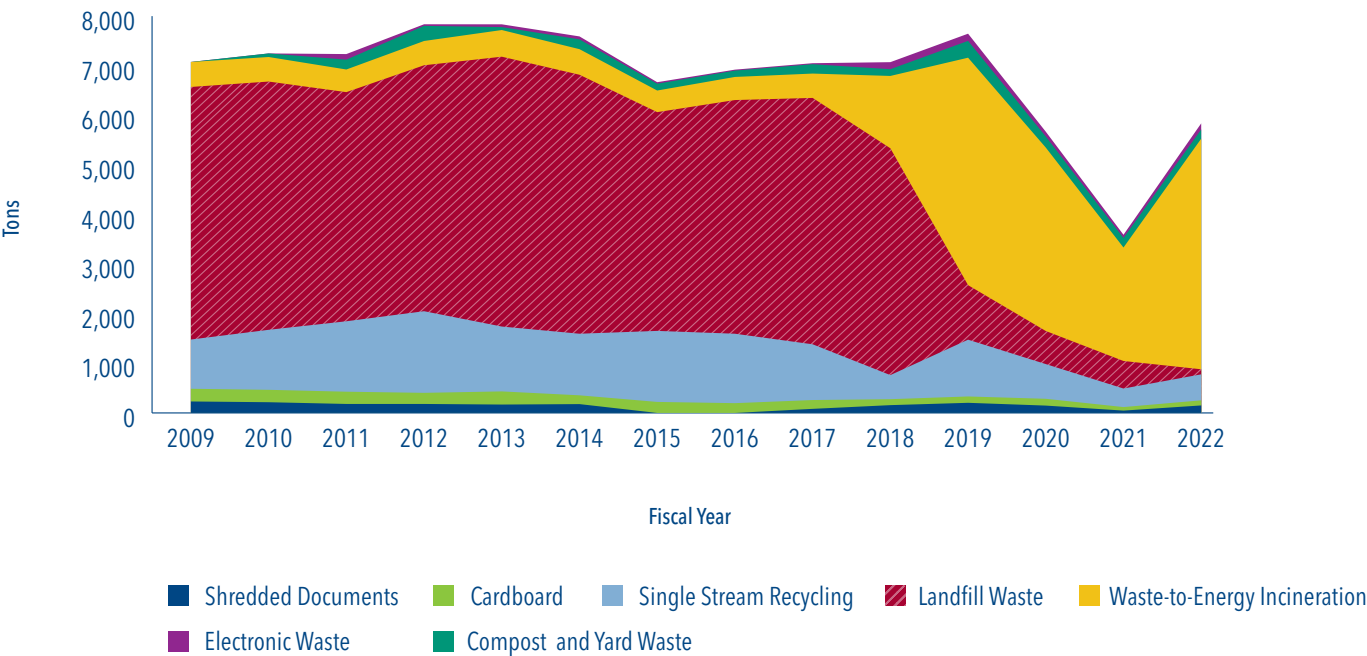


TOWARDS AN EQUITABLE FUTURE

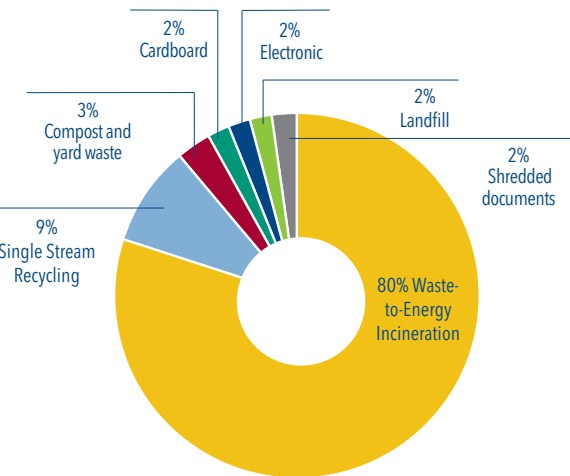
Flexible plastics can now be recycled at Penn! In Fall 2021, Penn Sustainability worked with a waste hauler to incorporate rFlex plastics into all campus single stream recycling bins. As long as they are empty, clean, and dry, rFlex, or flexible plastics, like grocery bags, case wrapping, snack packaging, chip bags, bubble wrap, and zip lock bags can be recycled across campus. The waste hauler gives these commonly unrecyclable plastics a new life, as they are used to create roofing material and park benches. The ability to recycle these flexible plastics is unique to the University of Pennsylvania – a type of recycling not available in the City of Philadelphia or in most recycling streams – and provides Penn the opportunity to continue to reduce campus contributions to landfills and incinerators and take steps toward making Penn a waste and litter-free campus. To find out more information about rFlex recycling, visit [Penn Sustainability's FAQ page](#).



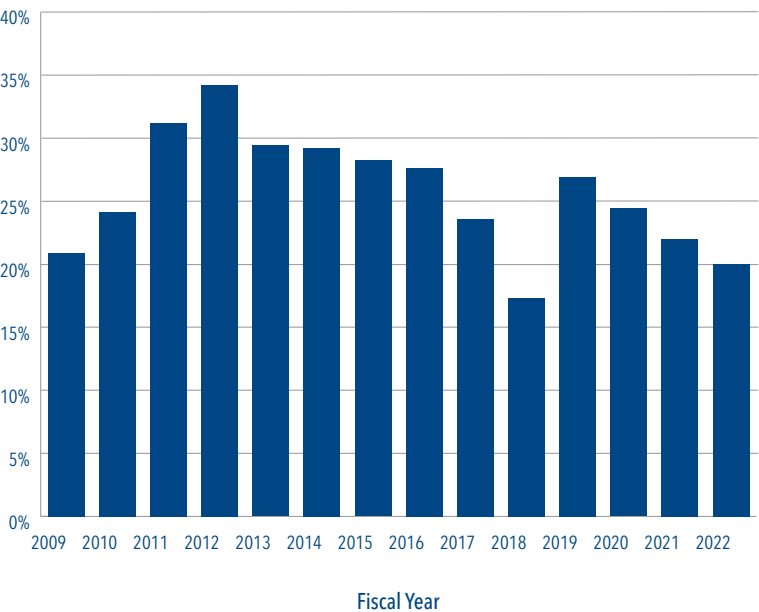
2009-2022 | Municipal Solid Waste and Recycling



FY22 | Waste Breakdown



Annual Percentage of Waste Diverted from Landfills or Waste-to-Energy Incineration





GOALS	STRATEGIES	FY21 PROGRESS
Increase Penn's Overall Waste Diversion and Minimize Waste Sent to Landfill	Improve waste data tracking and reporting.	<ul style="list-style-type: none"> Penn Sustainability, in partnership with Urban Park and Penn Housekeeping, created a waste precinct map to identify buildings that dispose of their waste in the same location. The waste precinct map will be used to provide waste disposal data at the building or multi-building scale so that Building Administrators can better understand their waste footprint.
	Evaluate and improve campus waste practices, recycling, and all diversion streams.	<ul style="list-style-type: none"> A truck with a scale has been purchased and Urban Park staff have been trained on data collection. This will allow Penn to have more precise data for open top trash and recycling dumpsters that are currently collected on a route and only measured as a whole.
		<ul style="list-style-type: none"> Penn Sustainability worked with its waste hauler to incorporate rFlex plastic recycling into campus practice. RFlex, or flexible plastics, include zip lock bags, saran wrap, and other common non-recyclable plastics. The flexible plastics collected from Penn's campus are turned into roofing materials and park benches.
		<ul style="list-style-type: none"> The Strategic Waste Subcommittee developed a process for regularly auditing select trash and recycling waste across campus. One full year of audits have been completed, and audit findings have been communicated to relevant stakeholders associated with each building. The Hill College House audit revealed significant opportunity for improved recycling practices that have been incorporated, increasing their diversion rate.
		<ul style="list-style-type: none"> A working group concluded its work to address bottled water use on campus and inventoried water bottle fillers to identify opportunities for improvement. A map of all water bottle filler stations in Penn buildings was created and will be updated annually.
	Strengthen education, training, and transparency.	<ul style="list-style-type: none"> In collaboration with a Masters of Environmental Studies (MES) student at Penn, Penn Sustainability and the ESAC Waste and Recycling Subcommittee released an infographic called, "The Life of Penn's Waste," detailing where Penn's various waste streams go and how they are recycled, reused, or disposed.
	Expand the University's Surplus Property Program.	<ul style="list-style-type: none"> Penn Sustainability is drafting a proposal for a more robust surplus property program. In collaboration with Penn Procurement, negotiations for a pan-university effort will be explored.
Support Regional Waste Goals	Support the City's 2035 Zero Waste Goal.	<ul style="list-style-type: none"> As a member of the City of Philadelphia's Zero Waste Partnership Program, Penn is committing to work closely with the City of Philadelphia to reach its goal of zero waste and litter by 2035 and participated in city-wide strategic planning efforts to develop a city-waste strategic waste plan. Representatives from Penn Sustainability participated in the City of Philadelphia Solid Waste and Recycling Advisory Committee (SWRAC) meetings as well as two Waste Workshops.



PROCUREMENT

MISSION

- Increase awareness and enable the procurement of environmentally responsible products and options
- Engage with suppliers and campus partners to reduce waste; and to identify and promote sustainable supply chains

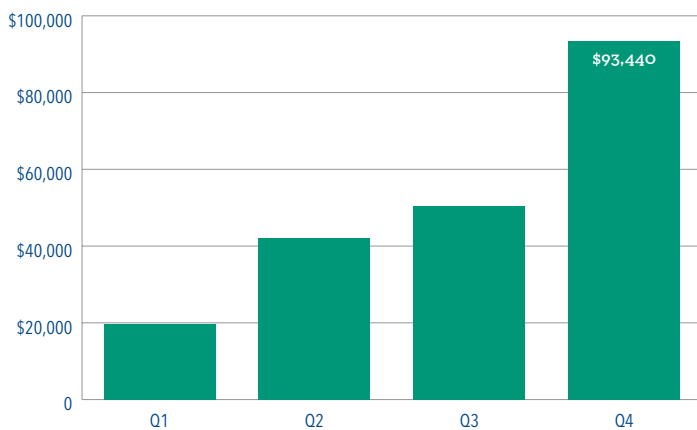


PROGRESS SUMMARY

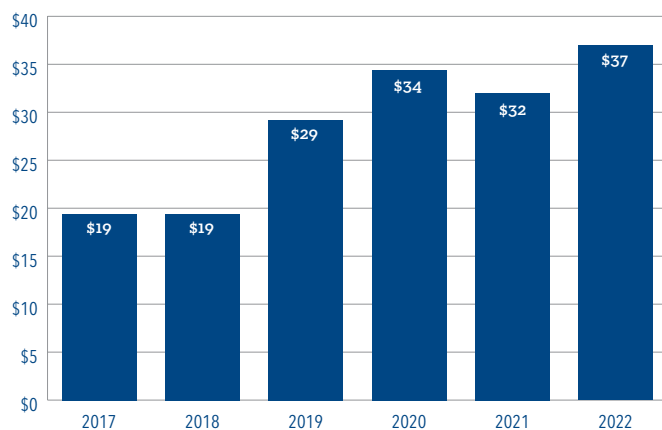
Penn Procurement Services continues to lead a number of efforts to improve sustainability and equity on Penn's campus. Penn's air travel **Climate Impact Offset Charge** (CLIO) celebrated its first full year and allocated its first payment to offset air travel emissions for all staff, faculty, and students traveling on behalf of Penn. Penn collected \$93,440 in CLIO fees and offset the estimated 11,872 domestic and international flights taken in FY22. A nitrous oxide (N₂O) abatement project is the first investment from Penn's Travel Sustainability Fund. The Travel Sustainability Working Group continued to progress on localizing benefits of carbon offsets, developing a process and methodology for verifying local carbon offset projects. Such a program offers Penn the ability to help shape the initiative while providing an enterprising opportunity to a partner organization. Penn was recognized as a finalist for the **International Green Gown's Social Impact Award** for CLIO and the University's carbon offset efforts.

Penn Procurement continues to drive tremendous impact with respect to diverse spend. **This year Penn exceeded its diversity goals, spending more than \$135 million with diverse firms, including \$37 million with Black-owned business.** This level of spend with Black-owned businesses is a new record level for the University, and more than double the levels at which Penn spent just five years ago. Penn Sustainability has partnered with Procurement Services to start to quantify Penn's Scope 3 emissions from purchased goods and services. A brief was published on Penn Sustainability's website with initial findings. In addition, Procurement Services partnered with TerraCycle to support mask and glove recycling. **In FY22, more than 31,500 masks and 17,200 gloves were recycled on campus.**

FY22 | CLIO Expenditures



Spend with Black-Owned Business (millions)





TOWARDS AN EQUITABLE FUTURE

The University of Pennsylvania was awarded the **INSIGHT Into Diversity Jesse L. Moore Supplier Diversity Award for Penn's Supplier Diversity & Inclusion Program**. This program dates back to over 35 years ago when the University launched its Buy West Philadelphia campaign, an initiative that promoted the value of supporting local, diverse businesses in the Philadelphia community adjacent to campus. Since those early days, Penn has increasingly expanded its programming to target diverse suppliers across the greater Philadelphia region. The Supplier Diversity & Inclusion Program is the procurement component of Penn's three-part economic inclusion strategy which includes procurement, construction, and workforce. This strategy, which is part of the University's Community and Economic Development Plan, focuses on diversifying the University spend with Minority Business Enterprises / Women Business Enterprises (MBE/WBE), and other diverse classifications.

Additionally, Penn hosts forums, programs, and events that elevate the level of public dialogue on the importance of supplier diversity and inclusion both locally and globally as a service to the University and the larger business community, including their annual event - the Penn Supplier Diversity Forum & Expo. Hosted in June 2022, the forum was moderated by Mark Mills, Penn's Chief Procurement Officer and featured three dynamic leaders who offered their unique perspectives as to how the pandemic impacted Philadelphia's business community and the ways they intend to propel their respective organizations forward based on the insights they have gained over the past two years. Speakers included Ken Anderson, Vice President of Civic Affairs, Chamber of Commerce for Greater Philadelphia; Joy De Jesús, Senior Associate Athletic Director, Finance and Internal Operations/CFO Division of Recreation and Intercollegiate Athletics, University of Pennsylvania; and Donna Allie, Founder, President & CEO, Team Clean, Inc. The Forum also featured important impact updates from University leadership, along with the honoring of the 2022 Supplier Diversity Impact Award. Following the forum, the supplier expo brought together local and diverse suppliers showcasing their services to Penn's community of buyers.

To read more about the Jesse L. Moore Supplier Diversity Award, visit the [Insight website](#) and to learn more about Penn's Supplier Diversity efforts, visit Penn Procurement's [website](#).



GOALS	STRATEGIES	FY22 PROGRESS
Increase Procurement of Sustainable Food Products	Increase procurement of sustainable food in Penn Dining cafes.	<ul style="list-style-type: none"> A Dining Working Group was established to increase tracking and reporting of sustainable food purchases. Chefs from Bon Appetit worked with two Student Eco-Reps during the 2021/2022 Academic Year to develop a staff training program around best practices in sustainability that will be shared with Bon Appetit and other dining staff at the beginning of the next school year. Sustainable food procurement metrics will be a priority for next year.
	Improve catering practices on campus.	<ul style="list-style-type: none"> Penn Procurement Services' catering website "Catering@Penn," which includes sustainability criteria in vendor ranking, was available to students, faculty, and staff for its first full school year. Efforts to promote website use were supported by the Dining Sustainability Subcommittee. In response to indoor dining restrictions due to COVID-19, the Green2Go program was expanded to provide reusable to-go containers for all to-go foods takeout from residential dining establishments.
Encourage purchasing of low- or zero-emissions vehicles	Encourage purchasing of low- or zero-emissions vehicles.	<ul style="list-style-type: none"> A Low Emissions Vehicle Purchasing Guide was created and published on Penn Sustainability's website.
	Expand campus fleet tracking.	<ul style="list-style-type: none"> PSO has been able to expand fleet tracking through strategic outreach to asset managers and information provided by the Office of Risk Management. Penn currently has 23 electric vehicles and 5 gasoline-electric hybrid vehicles.
	Establish a plan to reduce Penn's carbon emissions from air travel.	<ul style="list-style-type: none"> The Climate Impact Offset (Clio) fee charged to support offsetting air travel emissions has been deployed for a full year. More than \$93,000 was collected to be invested in verified carbon offsets.



GOALS	STRATEGIES	FY21 PROGRESS
Expand Sustainable Office Equipment Purchases, Options, Standards, and Technology	Expand use of auto-replacements.	<ul style="list-style-type: none"> Penn's Business Services Division is currently exploring options for expanding auto-replacements for lab supplies in the Penn Marketplace. Penn Sustainability is developing a resource for lab researchers to support in prioritizing more sustainable products.
	Expand use of Managed Print Services to all Schools.	<ul style="list-style-type: none"> Penn Procurement Services finalized new contracts for Managed Print Services (MPS) and has campaigned the program with the Penn community as faculty and staff return to campus. These programs include diverse suppliers, as well as diverse supplier partnerships. Further program campaigning will commence in fiscal year 2023.
	Establish Sustainable Furniture Standards for Healthy Interiors.	<ul style="list-style-type: none"> The Furniture Working Group developed the Sustainable Furniture Purchasing Guide which was published in Fall 2022.
	Quantify and Communicate Penn's Supply Chain Impact.	<ul style="list-style-type: none"> A Penn Sustainability intern completed Penn's initial Scope 3 analysis. The study uncovered the top 5 categories of Penn's scope 3 emissions and the paper is published on Penn Sustainability's website.



Eric Sucar, University Communications

The 2022 Penn Supplier Diversity Forum & Expo brought together more than 30 local and diverse suppliers showcasing their services among Penn's community of buyers in the lobby of the Annenberg Center.



TRANSPORTATION

MISSION

- Continue to prioritize a pedestrian and bike-friendly campus
- Encourage the use of local, alternative, and low-carbon transportation options
- Promote pedestrian and cyclist safety on campus

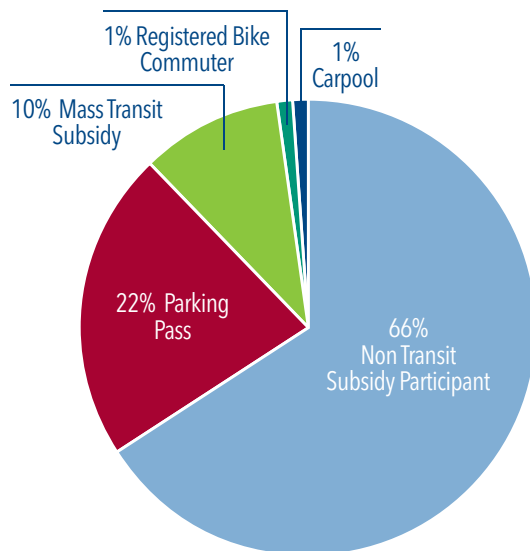


PROGRESS SUMMARY

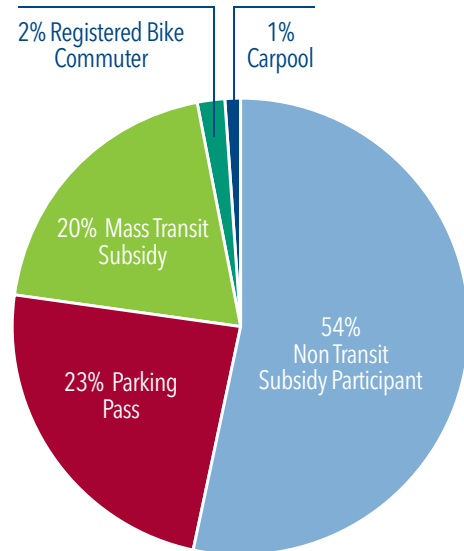
Penn continues to seek opportunities to champion more sustainable transportation in and around campus. This path was further illuminated as Penn's success in the effort was recognized by the **Association of Advancement of Sustainability in Higher Education (AASHE) as a top performer in the 2021 Sustainable Campus Index, ranked 7th overall.** Commuter practices were impacted by COVID-19 as many staff and faculty shifted from using mass transit to driving their own single occupancy vehicles.

Many staff maintain their hybrid work schedule. During this same time, the demand for Penn's on-demand and fixed route transportation services has hit record highs. The largest percentage of documented commuters are "non transit subsidy participants," or commuters who either work remotely or commute outside of any parking or subsidized transit program. **To better understand commuting practices and preferences, a commuter survey to all staff and faculty will be distributed in FY23.**

Penn Staff and Faculty Commuting FY22



Penn Staff and Faculty Commuting Prior to March 2020





TOWARDS AN EQUITABLE FUTURE

To reduce Penn's carbon and other emissions that impact human health, CSAP 3.0 aims to encourage the purchase of low- or zero-emissions vehicles at Penn. With this in mind, Penn Sustainability collaborated with Penn Transit & Penn Procurement to create and publish a **Low Emissions Vehicle Guide** for campus fleet purchasing. This easy-to-use document provides purchasers with a general understanding of the concepts and benefits of purchasing low- or zero-emissions vehicles; recommends vehicle options (including alternatives for vehicle classes for which low- or zero-emissions vehicles do not yet exist); an overview of the purchasing process at Penn, and resources for funding.

These vehicles are not only beneficial to the environment and reducing Penn's carbon footprint, but they also reduce the negative impact on human health, particularly in terms of air pollution, which leads to health conditions such as asthma and even lung cancer. In 2019, a report by the American Lung Association identified Philadelphia as the 18th most air-polluted city in the United States. Contributing to Philadelphia's polluted air are local vehicle emissions. Penn recognizes its impact on campus and the surrounding community's air quality and seeks to aggressively reduce its carbon footprint.

Continuing the effort to transition to more environmentally responsible vehicles, Penn's Transportation Department purchased **four electric Ford transit vans**, with chargers, for delivery and operation before the start of the Fall 2022 semester. Additional vehicles and charging stations are under consideration in conjunction with efforts to capture Commonwealth and Federal sustainable infrastructure grant funding. The Penn Transportation department's planning, procurement, and capturing of grant funding leads all University schools and centers in this critical initiative. Operating these 100% electric vehicles will also reduce fuel and maintenance costs thereby freeing University financial resources for other important uses.

To support personal electric and hybrid-electric vehicle ownership, Penn has installed **twelve level two charging stations at three campus locations**. An additional four stations are being planned for purchase and installation in FY23. As with fleet vehicle purchases, Commonwealth grant funding will be sought to defray equipment and installation costs.



GOALS	STRATEGIES	FY21 PROGRESS
A campus supported by an accessible, integrated multi-modal transportation system	Promote incentive programs for alternative transportation, integrate services with other transit providers, and influence local transportation systems.	<ul style="list-style-type: none"> Penn Transportation and Parking staff conducted a review and update of all transit-related websites in an effort to improve communication about incentive programs and sustainable transportation. As students, staff, and faculty returned to campus in FY22, Penn Transit promoted sustainable transportation options, like biking, walking and public transportation. Penn supports 12 EV charging stations at 3 campus locations and is planning to add an additional 4 stations in FY23.
Have an accessible and safe campus for bicyclists and pedestrians	Promote a pedestrian-friendly and safe campus in support of the City's Vision Zero efforts.	<ul style="list-style-type: none"> Penn Praxis has been engaged to create, release (FY23), and evaluate responses to a Commuter Survey. Pedestrian and Bicycle Traffic Awareness Training has been incorporated into online training for Penn Transit's bus and van driver staff.
	Enhance the University's bicycle policies and coordinate initiatives with the greater Philadelphia bike community.	<ul style="list-style-type: none"> The Penn Community now has access to 6 Indego stations near campus. During FY22, 123,925 Indego trips started and ended at these 6 locations, compared to 75,515 trips in FY21 and 55,347 in FY20 when the stations first came online. This is a 64% increase in overall trips started and ended, as well as a 26% increase in average trips originating and a 30% increase in average trips ending at these locations in FY22, compared to FY21. Penn is working with Indego to plan for future expansion of Indego stations in University City. Penn's Bike Commuter Reimbursement Program completed its 5th year of subsidizing Penn faculty and staff who commute by bike. This program continued to be useful and well utilized, despite impacts from COVID-19.
Improved energy efficiency of parking and transportation facilities and fleet composition.	Improve energy efficiency in parking facilities operations.	<ul style="list-style-type: none"> 50% of Penn's parking garages have transitioned to LED lighting with a goal of fully transitioning to LED lighting by FY28. LED lighting upgrades have been completed for two parking garages, while remaining LED upgrades are planned for FY26-28 as current bulb use is exhausted.
	Transition Penn vehicles from high carbon to low carbon or renewable fuels.	<ul style="list-style-type: none"> The Low-emission Vehicle Purchasing Guide is now published on Penn Sustainability's website. Penn Transit has signed a contract for 4 electric cargo vans that will be converted to passenger vans. Depending on grant funds obtained, 2 additional vans may be considered.



OUTREACH AND ENGAGEMENT

MISSION

- Continue to highlight the urgency of global environmental concerns, while building a holistic on-campus culture of sustainability



PROGRESS SUMMARY

Sustainability programs and outreach remain strong as the Penn community transitioned back to campus. Students, faculty, and staff collaborated to host the **second annual Climate Week at Penn**; Penn Sustainability and The Office of Social Equity & Community hosted a [panel on environmental justice and urban greening](#) as part of the Martin Luther King Jr. Day, and Penn hosted its **first pan-university Earth Week** featuring both in person and virtual events.

On the communications front, a **series of short videos** highlighting sustainability initiatives supporting CSAP 3.0 were released and are available on Penn Sustainability's [YouTube channel](#). Topics included CLIO, Carbon-Cutting Efforts, Penn Park Farm & Orchard, and Biking at Penn. A longer video was also created highlighting CSAP progress to date.

Kylie Cooper



Green Fest hosted by the Student Sustainability Association at Penn (SSAP).

Despite the return to campus, the Penn Sustainability Office (PSO) continued to offer many events and initiatives in a hybrid format to be more inclusive. **Fifteen Student Eco-Reps** completed and presented on [five year-long projects](#), PSO and the Office for Social Equity and Community co-hosted a [hybrid Martin Luther King Jr. Day event](#) around gun violence and urban greening, and the **Green Fund Review Board reviewed and funded two projects**. A student Eco-Rep group also supported the Green Living during 2021/2022 Academic Year.

More than 400 students interacted with and 288 completed the Green Living survey during that academic year, the highest level of participation since 2018. Students identified opportunities for targeted outreach based on results which resulted in a Composting 101 training for students.

In light of hybrid working conditions, Penn Sustainability launched the **Green Hybrid Office program**, which helps people make their home office more sustainable. The Green Labs program hosted the second annual [Freezer Challenge](#) in conjunction with the International Freezer Challenge, with Vaughan Lab of Penn Vet winning first place.

Also, Penn was **ranked #6 in Diversity and Affordability in the 2021 AASHE Sustainable Campus Index**.



TOWARDS AN EQUITABLE FUTURE

In April of 2022, Penn Sustainability supported the first Pan-University Earth Week at Penn guided by an Earth Week Organizing Committee. Nearly 50 events were hosted by 27 different schools, centers, student groups, community organizations, and green teams ranging from native tree and fruit planting to litter clean-ups, e-waste drives, and teach-ins. We've highlighted some of the most successful Earth Week 2022 events on the following pages.

Kylie Cooper



SEAS Clean Up

The School of Engineering and Applied Sciences (SEAS) Green Team partnered with the Philadelphia Canoe Club and Philadelphia Water Department (PWD) to host a very successful stream clean up event. **Over 50 volunteers cleaned 10,000-15,000 pounds of trash from Venice Island in Manayunk.**

Earth Week Teach-In

Kicking off Earth Week hosted by the Environmental Innovations Initiative and Penn IUR, the Earth Week Teach-In featured nine micro-lectures from Penn faculty based on the United Nations Sustainable Development Goals (SDGs). This interdisciplinary group of scholars and experts showcased the need for all disciplines to address the changing climate and move toward a sustainable future. This event was hosted in person and was also recorded.



Kylie Cooper



Kylie Cooper



GreenFest

The Student Sustainability Association at Penn (SSAP) hosted their annual Green Fest on Earth Day. This event highlighted environmentally friendly activities and organizations on campus and in the city through a tabling festival on College Green. There were 20 groups in this event, including the Penn Beekeeping Club, Defenders of Wildlife @ Penn, Penn Food and Wellness Collaborative, Penn Closet, and more. The School of Arts and Sciences hosted a table featuring an Instagram wall with a mural of the first Earth Day logo made of found objects.

Kylie Cooper



Governing to Net Zero

Visiting Scholar Thomas Hale discussed the next phase of net zero and the governance required to achieve the goals at an event hosted by the Kleinman Energy Center titled Governing to Net Zero. This event took place in person at the Fisher Fine Arts Library and was also recorded.

Penn Park Farm Orchard Workday

Philadelphia Orchard Project and Penn Park Farm hosted a work day at the Penn Orchard located behind the tennis courts in Penn Park. Volunteers planted 100 strawberries and supported with maintenance of other existing fruiting trees and plants.

Kylie Cooper



E-Waste Drives

[Sustainability Coordinators](#) in the Penn Dental School, Perelman School of Medicine, and School of Engineering and Applied Sciences hosted electronic waste drives throughout the week encouraging staff, faculty, and students to properly recycle their e-waste.

Penn Sustainability Office





Kylie Cooper



Dining

Q'ulinary Sessions with Quaker Kitchen and Plant Forward

Chef Dan Stern of Quaker Kitchen hosted a private Q'ulinary Session for 25 people in collaboration with Penn Park Farm. Using tatsoi from the farm and sustainably sourced Salmon, the menu for this session was featured for dinner each night the following week from the 18th-21st where students were able to enjoy the locally inspired dish. During Earth Week, Penn Dining also hosted a Plant-Forward Challenge. Each day during lunch and dinner, they focused on different cooking techniques that put the spotlight on plants.

Kylie Cooper



Wellness at Penn Events

This year Penn Athletics partnered with Penn Park Farm to host several events during Earth Week as part of Wellness at Penn. Events included a Wellness Walk, Yoga at Penn Park Farm, and a Farm Volunteer day where students supported with planting, weeding, harvesting, and learning more about low-till farming.

Green Stormwater Infrastructure Tour

The Water Center at Penn hosted a walking tour of the University of Pennsylvania's Green Stormwater Infrastructure. This immersive tour highlighted nature-based solutions to urban stormwater runoff on Penn's campus.

Kylie Cooper



EARTH WEEK

Earth Week at Penn 2022 provided an opportunity for everyone in the Penn Community to take sustained action around themes of connecting with nature, resilience, and environmental justice. Visit Penn Sustainability's website in the spring of 2023 for opportunities to engage with Earth Week at Penn 2023.



GOALS	STRATEGIES	FY21 PROGRESS
Expand and Strengthen Existing Outreach Programs	Incorporate sustainability as a formal component of the Wellness at Penn Initiative.	<ul style="list-style-type: none"> Environmental wellness has been incorporated as a formal component of the Wellness at Penn Initiative. Penn Sustainability partnered with Penn Wellness to host the 30x30 Challenge, encouraging more than 1,000 participants to get outside for at least 30 minutes every day in April. Nature Rx continues to gain traction in promoting environmental wellness.
	Strengthen the Green Labs Working Group, Green Living, and Green Office programs.	<ul style="list-style-type: none"> The Green Labs program has continued to expand sustainable lab practices through the launch of a Freezer Inventory Pilot with EHRS and PSOM, in order to better target energy efficiency opportunities through energy-intensive lab equipment. The Green Labs Executive Committee hosted the second annual Penn Labs Freezer Challenge, designed to promote best practices in cold storage management. Penn Sustainability hired the first Green Labs intern to support the expansion of the Green Labs program on campus. Student Eco-Reps supported with Green Living during 2021/2022 Academic Year. More than 400 students interacted with and 288 completed the survey during that academic year, the highest level of participation since 2018. Students identified opportunities for targeted outreach based on results. The Green Office+ pilot was launched in SEAS and FRES buildings to do in-depth monitoring of energy practices for improved understanding of efficiency opportunities. The Hybrid Green Office program was also created to support sustainable behavior in hybrid work environments.
	Develop a comprehensive strategic communication plan for sustainability.	<ul style="list-style-type: none"> The Sustainability Marketing and Communications Plan that encompasses media relations, social media, partner promotions and events, website, advertising and collateral materials, photography, and videos was approved and initial actions began during the Summer of 2021. The CSAP Video Series was launched, releasing 7 short educational videos about Penn's efforts in reducing emissions, the launch of CLIO, university biking opportunities, Penn Park Farm, and one longer comprehensive video highlighting CSAP progress.
	Create a Green IT Working Group.	<ul style="list-style-type: none"> A Green IT Working Group is in development. Progress toward this goal has been slowed due to remote work during COVID-19. Key members have been identified and the group aims to resume work in the Fall of 2022.
	Launch a new sustainability website.	<ul style="list-style-type: none"> The Penn Sustainability Website will be updated in FY23, with a request for proposals for a new website developer was sent out in July 2022.



GOALS	STRATEGIES	FY21 PROGRESS
	Elevate visibility of sustainability as core priority for employee onboarding and training.	<ul style="list-style-type: none"> Penn Sustainability provided recycling bins and Penn Dining provided Green2Go containers for all college house rooms in Fall 2021. The Green Living Survey, provided to students, was used to assess interest and capacity for adopting waste minimization behaviors on campus, which resulted in the creation of a Compost 101 training. AY21/22 Student Eco-Reps conducted compost trainings to incoming students. This training will be used to track improved behavior over time. Magnets with recycling information were also created and will be included in welcome materials for all incoming freshmen and sophomores for the upcoming New Student Orientation. Student Eco-Reps supported dining waste diversion initiatives through dining staff training in AY21/22. This training will be conducted at the beginning of AY22/23.
Engage Penn's Leadership to Serve as Sustainability Change Agents	Develop a Senior Facilities Subcommittee to improve communication/collaboration for best practices across Schools & Centers.	<ul style="list-style-type: none"> The Building Administrator (BA) Forum has served as a place for communication and collaboration among Schools and Centers throughout the COVID-19 pandemic. Over the past fiscal year, Penn Sustainability presented to Schools and Centers through the Building Administrators Forum on topics including recycling of flexible plastic packaging, the Green Labs Commitment, the Penn Labs Freezer Challenge, and the Lights Out Philly campaign to minimize bird strikes.

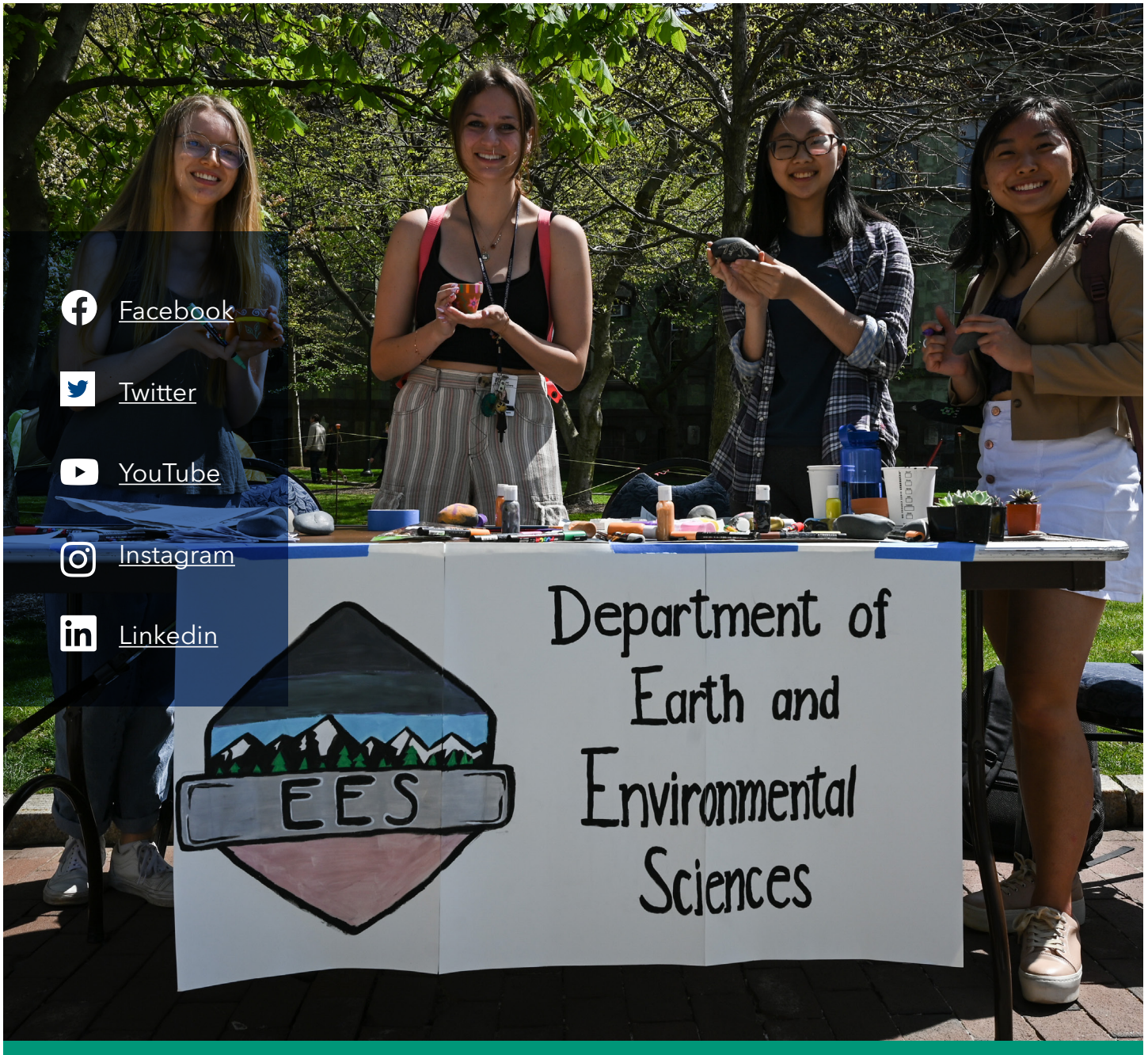


LOOKING FORWARD: COMMUNITY BUILDING

Across all areas of Penn's Climate and Sustainability Action Plan 3.0, Penn continues to make steady steps towards completing the goals and strategies identified in 2019. From increased undergraduate classes focused on climate change to carbon neutral air travel, Penn prioritizes the transformational actions needed to create a more sustainable community.

These actions represent the contributions of many, including faculty, students, staff and community organizations all sharing their talents to co-create solutions that benefit us all. While the challenges we face are often novel, the methods to addressing them are well known and require many voices and many hands.

It is the privilege of the Penn Sustainability Office to help guide and represent these efforts through our reporting and planning processes and we look to each other to continually refine and embrace new ideas and wider perspectives to advance Penn's contributions to a sustainable community.



Green Fest hosted by the Student Sustainability Association at Penn (SSAP).