U-M Campus Sustainability & Carbon Neutrality Operational Update

FY2025

ASSOCIATE VICE PRESIDENT FOR
CAMPUS SUSTAINABILITY
UNIVERSITY OF MICHIGAN

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A MESSAGE FROM THE ASSOCIATE VICE PRESIDENT FOR CAMPUS SUSTAINABILITY

Colleagues,

Over the past year, the University of Michigan has made significant strides in advancing our response to the global environmental and climate-related challenges that impact communities around the world. This work has been strengthened by the establishment of the Sustainability Leadership Council, composed of three executive-level leaders who guide coordination across the full Planet Blue enterprise — spanning academics, operations, research, medicine, athletics, student life, and networks of partnerships across Michigan and the world. The Council's recent synthesis report brings together the university's history, current commitments, and future direction in one place.

This update continues the university's tradition of reporting annual operational performance against institutional goals, while the new council investigates additional joint communications representing all dimensions going forward.

Across our campuses, we are strengthening stewardship of land, air, and water while expanding Michigan-based renewable power, modernizing energy systems, partnering on energy infrastructure with local communities, improving building efficiency, reducing waste, and advancing sustainable transportation. We do this work always striving to strengthen trust, community and joy while tackling this transformational endeavor together

We are also beginning to plan for the energy, infrastructure, and emissions implications of rapid growth in AI and data-intensive research, which will require new approaches to energy management and long-term infrastructure planning. At the same time, this year also marked important progress toward refreshed waste-reduction and resilient-grounds goals that will guide our stewardship of campus practices moving forward.

Initiatives such as the Maize Rays solar program and our innovative geoexchange test drilling projects exemplify how operational investments also advance U-M's mission of life-changing education. Students, faculty, and staff will increasingly be able to observe system performance, analyze real-time data, and learn directly from the technologies that electrify, heat and cool our campuses. These living-learning opportunities are essential to preparing the next generation of climate, energy, and environmental leaders.

This year we also advanced foundational work toward establishing the university's first set of Scope 3 emissions goals. Understanding and addressing these broader impacts — including purchasing, construction, travel, commuting, and food — is essential for leveraging our considerable purchasing power to support and drive systemic industry innovation.

This update provides a high-level summary of recent operational accomplishments and progress. A more comprehensive update will be released in 2026 through the Sustainability Leadership Council.

Shana S. Weber Ph.D.
Associate Vice President for Campus Sustainability
Office of the Executive Vice President and Chief Financial Officer

CARBON NEUTRALITY GOALS

2050	ACHIEVE A NET-ZERO ENDOWMENT
2040	ELIMINATE DIRECT, ON-CAMPUS GREENHOUSE GAS EMISSIONS (SCOPE 1)
2027	REDUCE EMISSIONS FROM PURCHASED POWER (SCOPE 2) TO NET ZERO **
2025	ESTABLISH GOALS FOR A WIDE RANGE OF INDIRECT EMISSION SOURCES (SCOPE 3)

FY25 BY THE NUMBERS

32%
decrease in greenhouse gas emissions* since 2010

5%
decrease in greenhouse gas emissions* since FY23

13%
increase in total building area since 2010

KEY OPERATIONAL HIGHLIGHTS

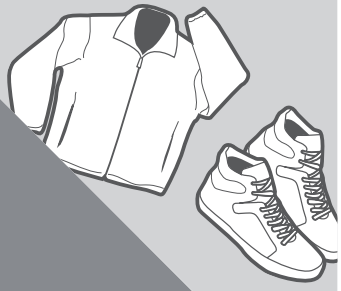
$70 MILLION
Invested in on-campus solar installations, which will total 25 megawatts in capacity once fully installed in 2027.

40%
of purchased electricity sourced from Michigan renewables.

$1.1 MILLION
was dispensed during FY25 from a central revolving energy fund to units across the university pursuing energy-efficiency projects.

12 ELECTRIC BUSES
in service; 230 EV charging stations.

12+
Tons of student move-out donations diverted.

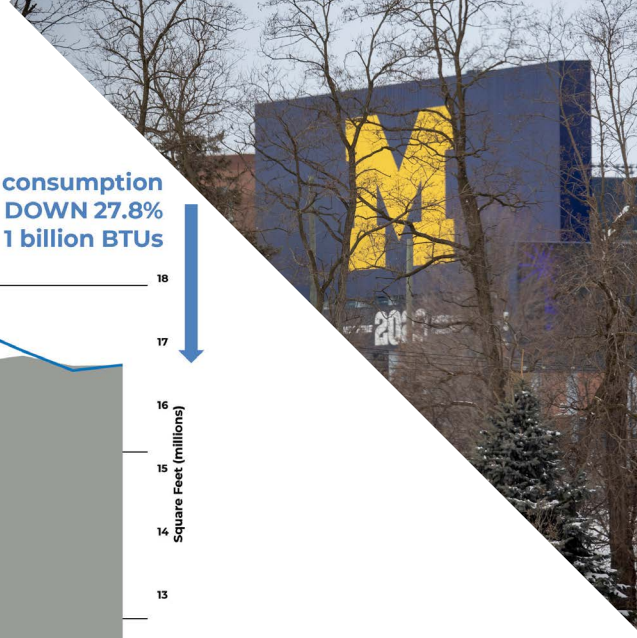


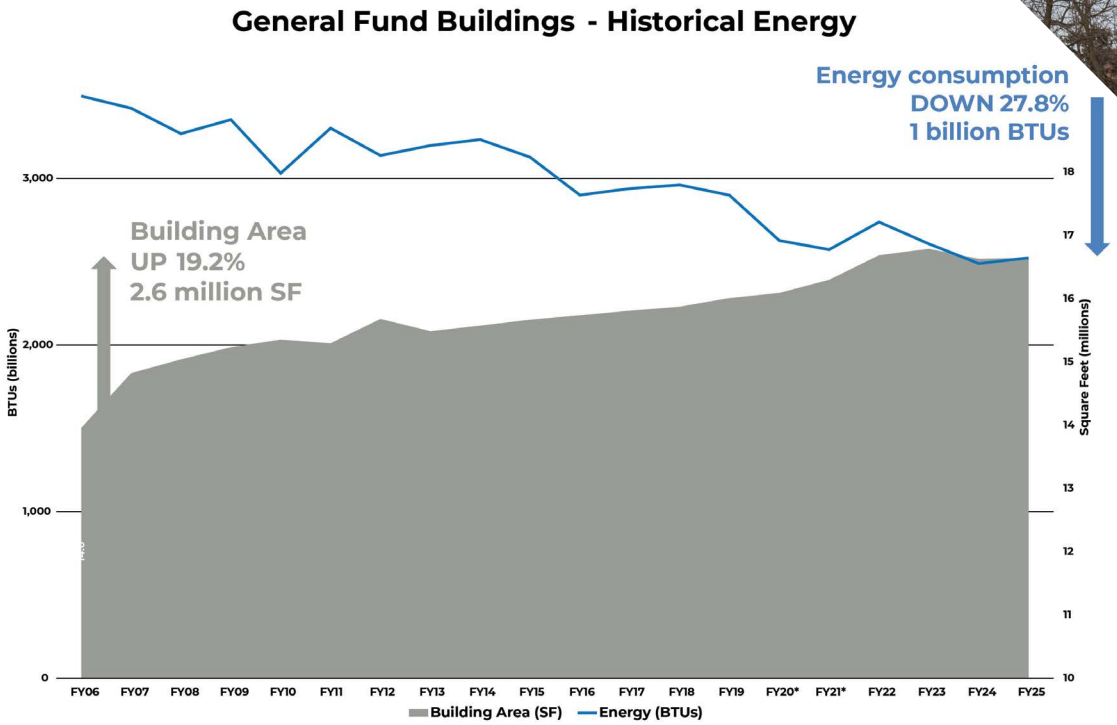
$780,000
in saved equipment costs and 17,500 pounds of lab materials diverted from landfills through the Lab Reuse program.

1,300+
compost bins campuswide.

*Quantified emissions include those from direct, on-campus sources (Scope 1) and purchased electricity (Scope 2)

** Adjusted to 2027 due to state permitting delays for Michigan-based renewable projects.





UNDERSTANDING U-M'S EMISSIONS SCOPES

Meeting U-M's carbon neutrality goals is grounded in a clear understanding of where emissions come from and how they are measured. To support transparency and guide decision-making, the university tracks greenhouse gas emissions using three categories that align with global reporting standards and with the structure of U-M's climate and carbon neutrality goals.

Scope 1:

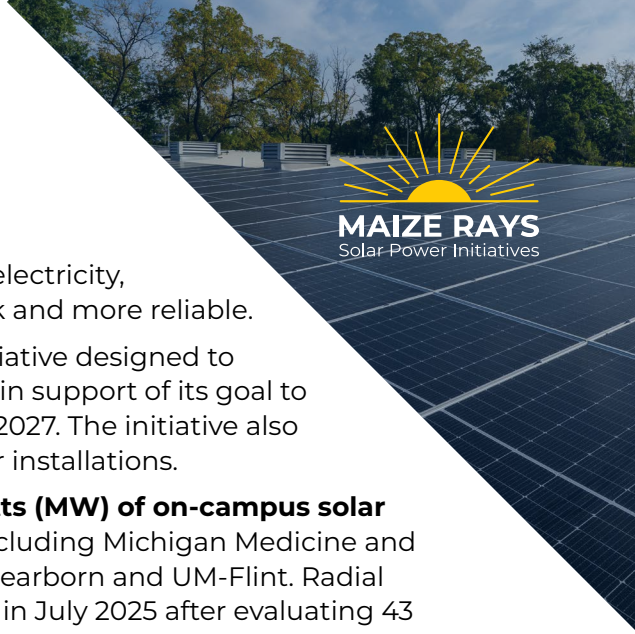
These are emissions from sources the university operates directly such as the natural gas used to heat and cool buildings, and fuel used in U-M-owned vehicles and equipment. Reducing Scope 1 emissions requires transitioning to cleaner, more efficient energy systems, including geoexchange, electrified heating and cooling and low-carbon transportation.

Scope 2:

Scope 2 emissions come from the electricity U-M purchases. These emissions decrease as the university brings more renewable electricity online, both through on- and off-campus solar through Maize Rays, and through large-scale Michigan-based renewable energy purchases. U-M is committed to reducing these emissions to net zero by 2027, On completion of these installations, anticipated in 2027, U-M will achieve net-zero emissions from purchased electricity.

Scope 3:

These emissions result from activities that support U-M's mission but occur outside its direct control. This includes purchased goods and services, business travel, commuting, construction materials, and food. These emissions make up the largest portion of the university's footprint and are the most complex to measure. Establishing a universitywide Scope 3 framework by identifying key emissions categories and building baseline data is an important step toward defining future goals in support of U-M's long-term leadership strategy.



CAMPUS ENERGY SYSTEMS & CLIMATE RESILIENCE

Maize Rays Solar Initiative

U-M is transforming how we power our campuses by modernizing electricity, heating, and cooling systems to be cleaner, more resilient, lower risk and more reliable.

This year marked the launch of Maize Rays, the university's solar initiative designed to expand renewable electricity both on campus and across Michigan in support of its goal to achieve net-zero emissions from purchased electricity (Scope 2) by 2027. The initiative also includes a community benefit that supports local and regional solar installations.

As part of Maize Rays, **U-M is pursuing approximately 25 megawatts (MW) of on-campus solar capacity across the Ann Arbor, Dearborn, and Flint campuses,** including Michigan Medicine and Athletics — with about 20 MW in Ann Arbor and 5 MW across UM-Dearborn and UM-Flint. Radial Power, selected through the FY23 RFP process, began construction in July 2025 after evaluating 43 potential campus sites.

The first two arrays at the North Campus Facilities Services Building are now commissioned and generating renewable electricity. In addition to on-campus installations, **Planning is now underway in partnership with local communities to install solar panels on community-serving buildings, the equivalent of 10% of the campus-wide project**. Maize Rays also includes a large off-campus power purchase agreement with DTE to construct 80MW of new solar capacity in nearby Lenawee County.

Geoexchange Innovation

The university continued its **transition to efficient, all-electric heating and cooling systems.** Activity in 2025 included drilling an approximately 1,200-foot deep closed-loop geoexchange test bore on Central Campus – almost twice as deep as conventional systems – using advanced drilling methods adapted from the energy industry. The sealed, underground piping transfers heat through surrounding rock using the earth's stable temperatures, without interacting with groundwater. Data collection and analysis are underway, with results expected later in early 2026.

Ongoing system expansion includes:

- **Hayward Street Facility:** 99 completed bores supporting the all-electric Leinweber Computer Science and Information Building
- **Wolverine Village** Central Campus Residential Development (Phase 1): 85 wells that will serve 2,300 students (LEED Gold target)
- **Edward and Rosalie Ginsberg Building:** eight 535-foot bores

All new building and renovation projects are designed to be compatible with renewable-energy-driven heating and cooling systems, supporting long-term modernization and resilience of campus energy systems.

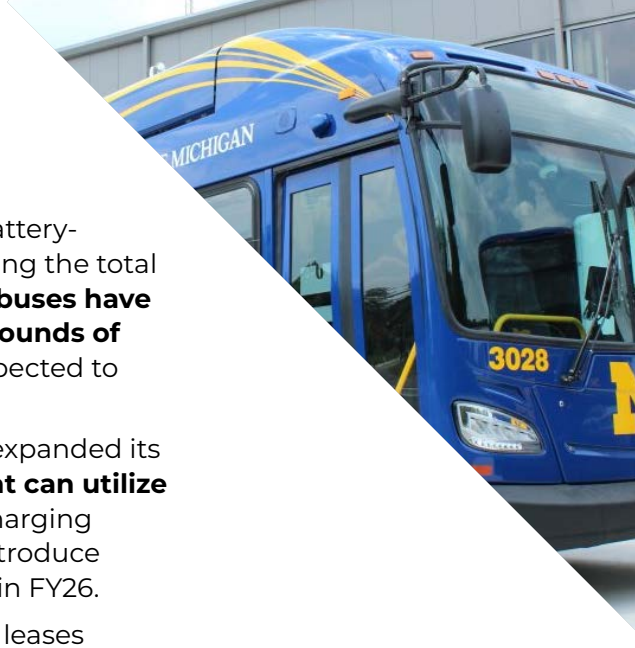
Energy Conservation

U-M allocated $1.1 million from a central revolving energy fund to units throughout the university pursuing energy efficiency projects during 2025. The revolving fund launched in 2022 with $25 million to be used over 5 years to fund energy efficiency projects.

Projects consisted primarily of lighting upgrades and heating, ventilation, and air conditioning (HVAC) system upgrades. This work followed an initial set of projects that covered **LED lighting upgrades across approximately 115 buildings and 13 million square feet of building space.**

Together, the 13 energy-efficiency projects launched in FY25 are estimated to generate approximately $130,000 in annual cost savings, resulting in an average simple payback of 8.5 years.

$25 MILLION
to be used over 5 years to fund energy efficiency projects.



TRANSPORTATION & ELECTRIC VEHICLES

Transporation

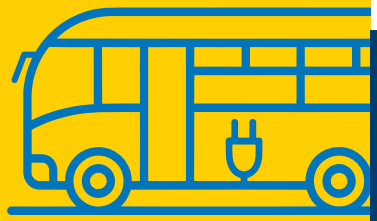
As U-M works to decarbonize its vehicle fleet, a second set of four battery-electric buses arrived on the Ann Arbor campus in June 2025, bringing the total number of e-buses in service to 12. **As of September 2025, electric buses have logged more than 52,000 miles, avoiding an estimated 159,000 pounds of CO_2 compared to conventional buses.** This relative reduction is expected to accelerate as additional electric buses go into service.

During 2025, Logistics, Transportation & Parking (LTP) significantly expanded its broader **electric vehicle (EV) fleet, which now includes 56 EVs that can utilize a total of 169 charging stations across campus.** 120 new Level-2 charging spaces were installed in 2025. In addition, U-M began a project to introduce Level-3 fast-charging spaces to campus, with completion expected in FY26.

LTP is helping various units transition to EVs as their current vehicle leases expire; provided that suitable options are available.

Campuswide charging capacity now includes 230 total EV charging stations.

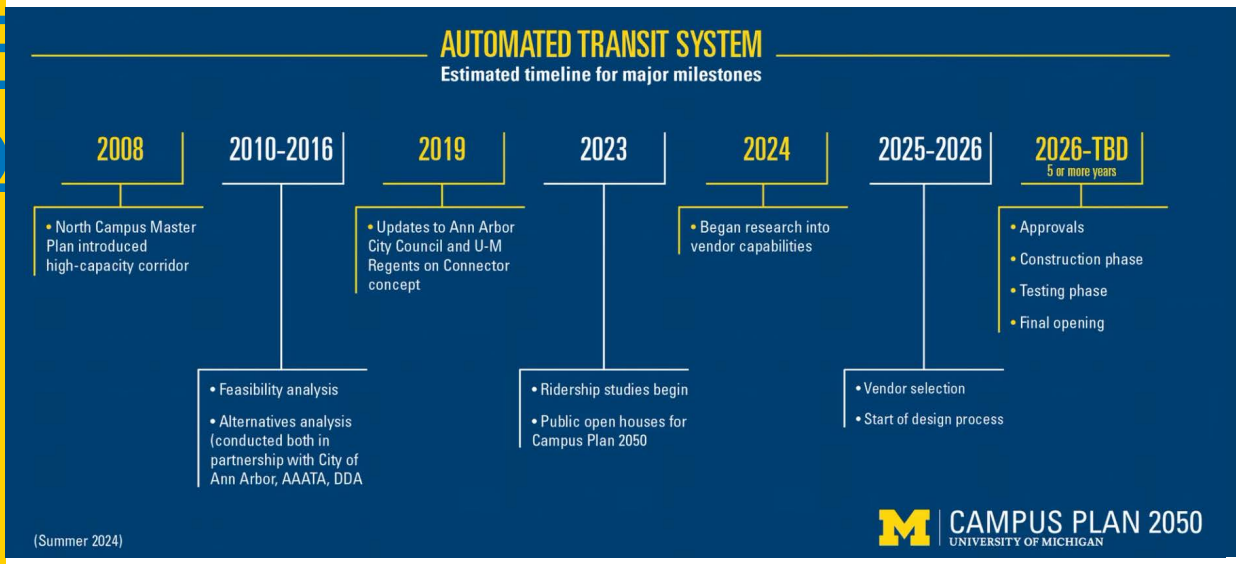
Electric buses emissions reduction equal to 159,000 LBS of CO_2-equivalent.

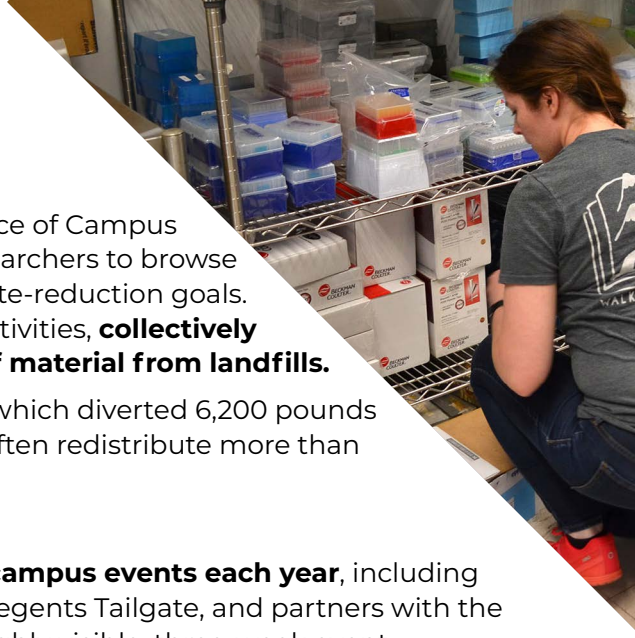


Automated Transit System (ATS)

U-M announced in June 2024 that it is revisiting the Automated Transit System (ATS) project, which would (if approved) move users between Central, Medical and North campuses in minutes. The university has reviewed proposals from multiple bidders to select a development partner for the ATS project.

As exploratory planning continues, the ATS is being considered alongside broader Campus Plan 2050 goals to expand multimodal transportation options, including improved connections for walking, biking, and other non-motorized travel across campus.





WASTE REDUCTION

Lab Reuse

In June, the College of Literature, Science, and the Arts and the Office of Campus Sustainability (OCS) opened a Lab Swap Shop, enabling all U-M researchers to browse (at no cost) pre-owned laboratory equipment while supporting waste-reduction goals. More than 100 campus community members attended opening festivities, **collectively saving $51,270 in equipment costs and diverting 563.4 pounds of material from landfills.**

The shop is an expansion of the longstanding Lab Reuse Program, which diverted 6,200 pounds of supplies from landfills in 2025. One-day "Swapapalooza" events often redistribute more than 1,000 pounds of lab equipment.

Zero Waste and Campus Farm

The OCS Zero Waste Event program supports more than **1,000 on-campus events each year**, including the annual Zero Waste Convocation Picnic and the President and Regents Tailgate, and partners with the Ann Arbor Summer Festival to reduce and divert waste from this highly visible, three-week event.

Campuswide waste-reduction activities also diverted more than 12 tons of materials during student move-out, reflecting continued progress across events, residence halls, and campus operations.

U-M refreshed its waste-reduction goals in 2025, adopting new campuswide targets and metrics to better reflect the full scope of waste prevention, reuse, composting, and diversion efforts underway.

Campuswide waste-reduction activities diverted more than 12 tons of materials during student move-out.

In addition, OCS expanded its partnership with the Campus Farm and Athletics to accommodate a new composting program for Michigan Stadium's compostable waste at the Campus Farm, opening opportunities for more campus-as-lab projects connecting waste operations to student learning.

Healthy Environments

The Ann Arbor campus previously achieved a 61% reduction in landscape chemical applications relative to the 2006 baseline. To build on this success and expand our commitment to resilient landscape management, a Resilient Grounds Steering Committee has drafted recommendations for next steps, including more comprehensive campus goals for chemical reduction, biodiversity, stormwater management and land use. These expanded goals were officially adopted in 2025.

Additional initiatives with campus partners include:

- As a certified Bee Campus, U-M expanded pollinator awareness through tours and podcasts. These were coordinated through the Bee Steering Committee, which includes students and faculty.
- Matthaei Botanical Gardens and Nichols Arboretum advanced native plant preservation and oak regeneration.
- Led by the College of Literature, Science, and the Arts and Grounds Services, new native gardens were installed, including a 1,500 square-foot urban prairie near the Life Sciences Institute, as the first in a series of native plantings replacing turfgrass to enhance biodiversity and stormwater infiltration, with coordination from OCS.

Indirect impacts (Scope 3)

The Office of Campus Sustainability continued foundational work in 2025 to establish the university's first framework for addressing Scope 3 emissions. Scope 3 emissions, which include indirect emissions impacts related to activities such as purchased goods and services, business travel, commuting and construction materials represent the largest and most complex portion of U-M's greenhouse gas footprint.

As part of this work, U-M is advancing efforts to reduce emissions associated with air travel through a renewed partnership with Delta Airlines focused on increasing the use of sustainable aviation fuel. The three-year collaboration supports broader adoption of SAF, a certified alternative fuel that can reduce lifecycle carbon emissions by up to 80% compared to conventional jet fuel, and aligns with the university's goals for reducing Scope 3 emissions from business and athletic travel.

During the year, OCS worked with external experts and campus partners to strengthen data quality, develop consistent tracking approaches, and engage more than **350 community members.** In collaboration with the SEAS Center for Sustainable Systems, the university advanced targeted analysis in four priority areas:

Business travel	Food	Capital goods (construction)	Purchased goods and services

This phased work established a strong and analytical foundation for future goal setting. Following recent senior leadership transitions, the university plans to complete goal setting in 2026, building on the robust analysis, data development, and campus engagement conducted in 2025.

Campus as a Living-Learning Lab

As U-M advances major energy, infrastructure, and resource-management projects, the university is strengthening how operational systems support learning, research, and discovery across campus. This work is being advanced as a joint effort between the Associate Vice President for Campus Sustainability, the Vice Provost for Sustainability and Climate Action, and the Office of the Vice President for Research.

In 2025, these offices established cross-functional working groups to better align operational sustainability goals with research priorities and educational opportunities. These groups are focused on identifying where campus energy systems, buildings, transportation, and other operational assets can serve as platforms for applied research, data access, and experiential learning.

Through this coordinated approach, **U-M is reinforcing its long-standing vision of the U-M system as a global demonstration site for investigations and solutions in action.**One where operational investments are intentionally designed to support life-changing education, interdisciplinary research, and real-world problem solving.

Looking ahead

Taken together, the work outlined in this update reflects steady, coordinated progress across U-M's campuses to modernize core infrastructure, reduce emissions, and strengthen long-term resilience.

Through strengthened governance, cross-campus collaboration, and a continued focus on implementation, the university is advancing practical solutions while adapting to evolving academic, research, and infrastructure needs.

This annual operational update documents that progress and provides a clear foundation for continued work, as the Sustainability Leadership Council advances more integrated, universitywide communications and reporting in the year ahead.