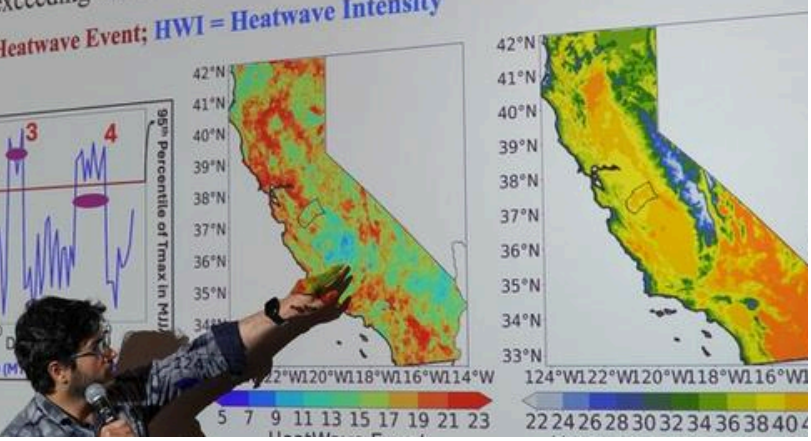




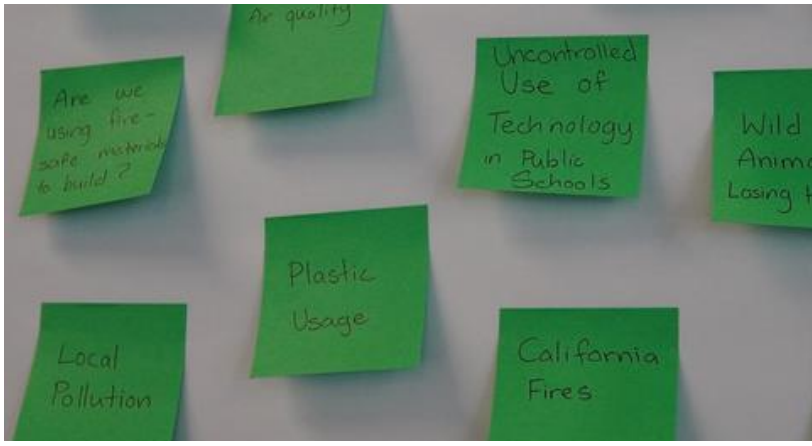




UC MERCED

CLIMATE ACTION PLAN 2026









CHANCELLOR'S LETTER

Dear Bobcat Community,

Our 2026 Climate Action Plan delivers a forward-thinking strategy to address environmental concerns that integrates technical innovation, research findings, and action items that center UC Merced's most valuable asset… its people. This includes our students, faculty, and staff.

Today, I am pleased to share with our community the UC Merced Climate Action Plan (CAP). This document has been developed to guide our climate action efforts through 2035 and, importantly, it is an active plan that allows space for the entire campus community to have ongoing engagement in the important work related to the world's climate. This work is non-negotiable as it is an investment that protects the environment for future generations that will study, live, work, and enjoy the UC Merced campus.

The UC Merced strategy begins with a plan to make the campus fossil free by decarbonizing its energy infrastructure. The 2024 Decarbonization Plan provided a clear pathway toward electrification of UC Merced's energy infrastructure. Campus decarbonization is a catalyst for innovation by accelerating the adoption of technologies that reduce greenhouse gas emissions across campus. Although UC Merced's plan will not be implemented until funding is identified, our Climate Action Plan establishes the way forward to electrify the campus while also presenting strategies that reduce greenhouse gas emissions related to campus life.

We have developed a Climate Action Plan that uses sustainable procurement practices, circular economy initiatives, waste reduction, local and climate-smart food sourcing, low-carbon commuting options, and supplier engagement to have maximum impact toward emissions reduction. These reductions will be measured regularly so that we can track our progress toward achieving carbon neutrality without the need to purchase off-sets. The plan utilizes equity principles throughout as we measure our impact upon the surrounding community. As a regional anchor institution, UC Merced values its responsibility to the community it serves. The 2026 Climate Action Plan clearly demonstrates this responsibility.

Fiat Lux,

Chancellor Juan Sánchez Muñoz



LAND ACKNOWLEDGEMENT

Local Indigenous people, including the Yokuts and Miwuk who understand the earth as a place for everyone, first inhabited the land where UC Merced is located. When we address diversity on this campus, we do so boldly, daring to look forward and backward, imagining diversity's demand for the 21st century and the importance of diversity in addressing past wrongs, reaffirming humanity, and ensuring a reconciliatory path of redress for the future. The most prominent path on our campus is called Scholars Lane. By day, you can see, hear and witness the embodiment of our diversity through campus community members making their way across campus framed by the slopes and peaks of the Sierra Nevada. This land acknowledgement was developed by UC Merced.

The UC Merced land acknowledgement directly connects to the equity framework that guides this Climate Action Plan. The acknowledgement notes the local Indigenous tribes as understanding the earth as a place for everyone. This inclusive recognition of the acknowledgement is consistent with the CAP framework which seeks to minimize climate challenges upon the campus and surrounding community. A series of indicators located throughout this document provide measurable milestones for the advancement and activation of this work while embracing the spirit of this Land Acknowledgement.

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EXECUTIVE SUMMARY

This Climate Action Plan (CAP), provided by the University of California, Merced (UC Merced):

- Celebrates the previous CAP achievement of carbon neutrality in Scope 1 & 2 greenhouse gas emissions through the purchase and use of offsets from 2018 - 2025.
- Presents the strategy for future implementation of the Decarbonization Study and related incremental electrification.
- Provides a summary of goals, progress to date, and planned activities related to decarbonization, saving energy, central plant thermal storage, renewable power, reducing offsetting greenhouse gas emissions, and presents an academic and campus community engagement strategy.
- Builds on a founding commitment to environmental stewardship and articulates a vision of climate justice, phased climate actions, broad engagement across the institution, and sustainability for the campus.
- Provides an equity framework that integrates justice indicators into the CAP.

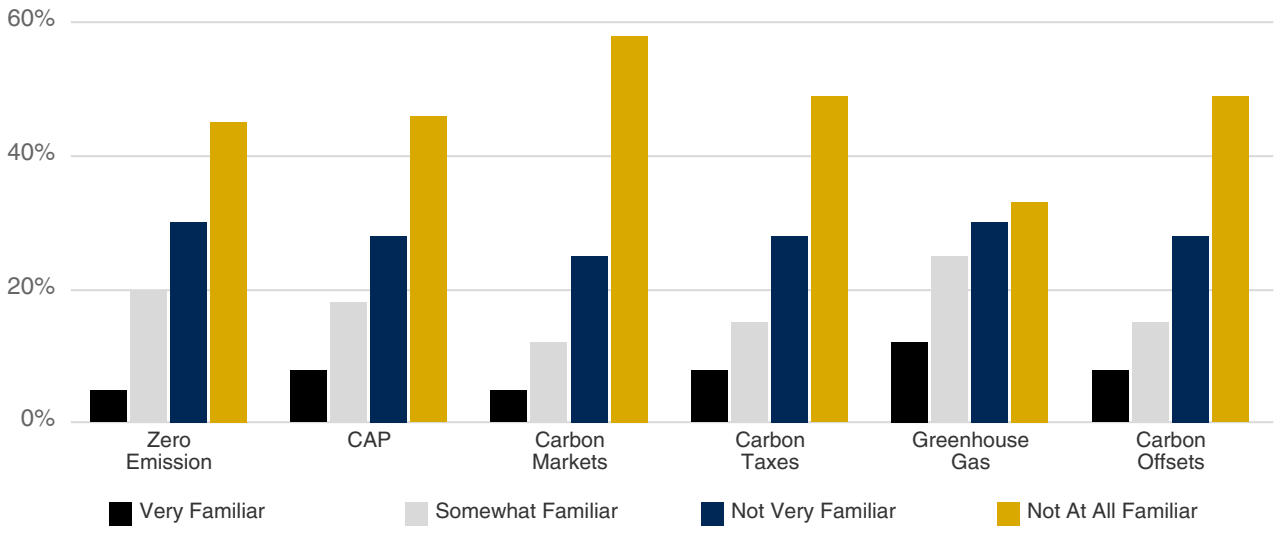


EXECUTIVE SUMMARY

- Presents a 2019 climate baseline for the UC Merced campus.
- Provides a focused presentation of climate-related planning and clarifies policy commitments included in UC Merced's Long Range Development Plan (LRDP),[1]
- Satisfies requirements of the Climate Action section of the University of California (UC) Policy on Sustainable Practices,[2] The Climate Registry, and the Climate Leadership Carbon Commitment.
- Presents the pathway to fully achieve carbon neutrality in Scope 1 & 2 greenhouse gas emissions without the use of offsets.
- Shares an approach that will help attain carbon neutrality by 2045 in Scope 3 greenhouse gas emissions.
- Establishes regular, ongoing engagement on climate action initiatives happening on the UC Merced campus. Engagement activities seek to include a broad representation of diverse voices from the campus community.
- Participation and feedback into this ongoing process is invited.

The engagement regarding initiatives related to the CAP are of particular importance as the results from the decarbonization survey in Chart 1., notes the campus community reports being not at all informed in several areas related to carbon mitigation and regulation mechanisms.

Chart 1: Familiarity with Carbon Mitigation and Regulation Mechanisms

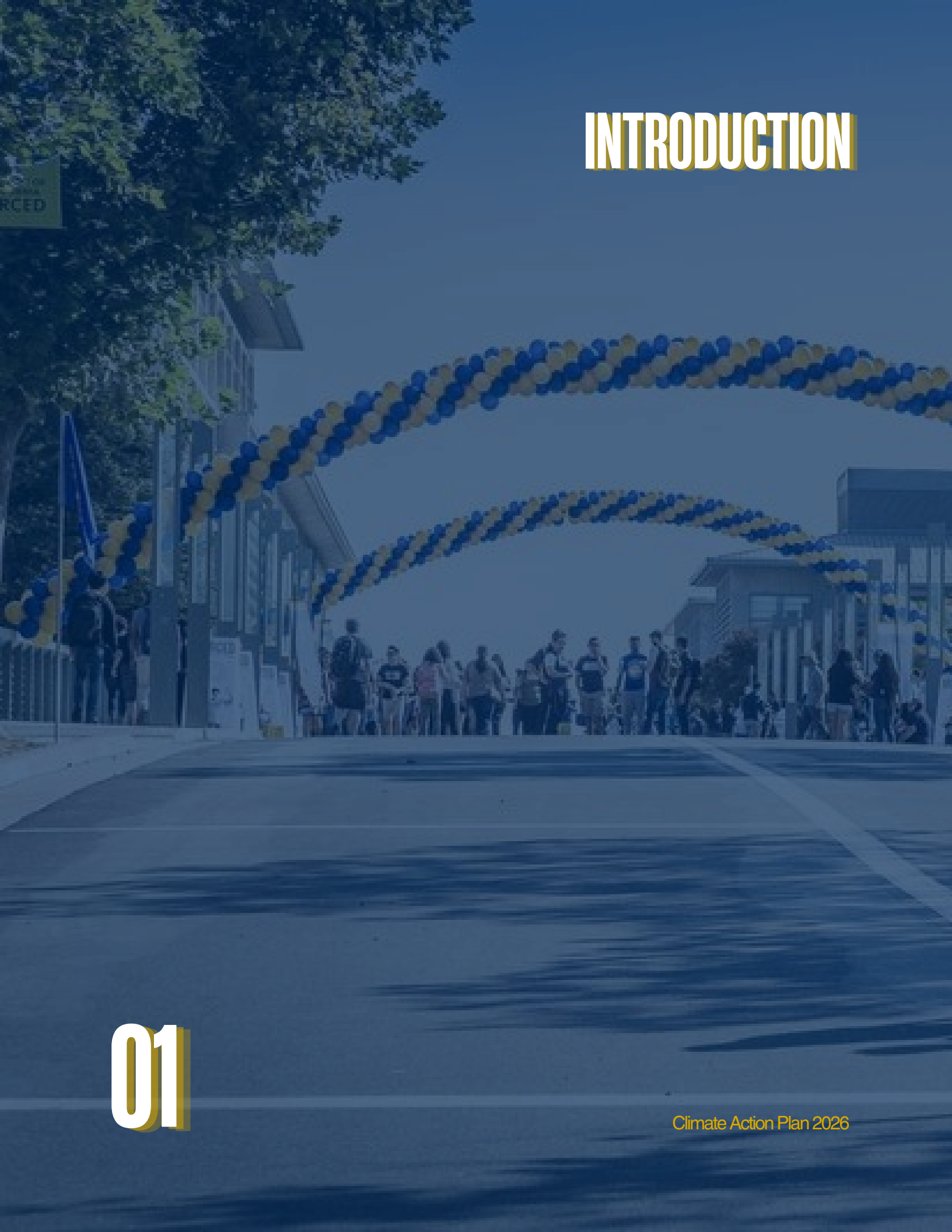


EXECUTIVE SUMMARY

The primary commitments driving this plan include goals for:

- Developing a phased strategy that will integrate all-electric facilities within capital projects until campus-wide decarbonization can be initiated.
- Upgrade the 1 MW ground-mounted 8.5 acre -solar array to a 4.6MW with 2MW battery storage, 33-acre array to increase on-campus generation of renewable energy.
- Introduce a campus engagement structure based upon climate-focused research data that informs this process. This engagement provides on-going opportunities for broad involvement in climate action.
- Offset remaining greenhouse gas emissions, prioritizing on-site and regional offsets (carbon neutrality).

While many of the initiatives included in this plan will save money, the plan does require resources that have not yet been fully identified or sourced. By defining these goals, UC Merced is taking the first step towards initiating development of these resources.



INTRODUCTION

01

The founding vision for the University of California, Merced was rooted in environmental stewardship and land conservation with clear objectives that would lead the institution to become a leader in sustainability and climate action. UC Merced was founded to increase higher education access for students in California's Central Valley, an area with a diverse population of 4.4 million residents.

The university embraces this role within the agricultural region through supportive research, learning, and outreach that is relevant to the area's population. The UC Merced campus community faces environmental and climate challenges through extreme heat, emissions, water management, and air quality issues that present significant hazards within the region.[4-8] These challenges have a major impact in shaping the institution's sustainability priorities, policies, and initiatives.[3]

The UC Merced commitment to sustainability and climate action is deeply embedded in its academics, research, administration, operations, and strategic planning. This commitment is reflected in its efforts to address pressing environmental and societal challenges through innovative solutions that integrate sustainability into institutional policies and practices with an end-goal of realizing positive environmental and equitable outcomes for the campus and region. These solutions are tantamount to our educational mission as the well-being of our students is directly impacted by climate challenges. Reflecting the California Central Valley demographics, UC Merced is a Hispanic-Serving Institution (HSI), Minority Serving Institution (MSI), and Asian American and Native American Pacific Islander-Serving Institution (AANAPISI) which demonstrates its commitment to the diverse region it serves.



UC Merced aligns its sustainability initiatives with the University of California Sustainable Practices Policy,[2] ensuring compliance with operational goals and environmental guidelines that promote responsible resource management and long-term resilience.

Today, as the institution presents its 2026 Climate Action Plan (CAP), there is great enthusiasm from the campus community about the direction this CAP will lead UC Merced. This plan is a guide that shows the way toward a just, engaging, sustainable, and fossil-free future for UC Merced – an eventuality that will have a significantly positive impact and influence on the entire campus community where its occupants live, learn, work, and play.

This CAP meets requirements of the Climate Action section of the 2024 University of California (UC) Policy on Sustainable Practices,[2] The Climate Registry, Climate Leadership Carbon Commitment, and incorporates findings from UC Merced's 2024 Decarbonization Study,[9] and a concurrent Decarbonization Survey of students.[3]

As part of this CAP, UC Merced presents its progress from its 2018 CAP,[10] while looking to attain current targets identified in the UC Policy on Sustainable Practices, including:

- Achieve at least a 90% reduction in total emissions (Scope 1, 2, and 3) by 2045 utilizing 2019 as a baseline
- Identify Scope 1 reduction targets for 2030, 2035, and 2040
- Maintain carbon neutrality for Scope 1 & 2 sources through 2030
- Achieve carbon neutrality for specified Scope 3 sources by 2045





Proudly, UC Merced achieved carbon neutrality for scope 1 & 2 sources in 2018 - a full seven years ahead of the 2025 target. This achievement was accomplished through utilization of an offset strategy.

The content within this document provides the pathway forward for UC Merced's climate action. This plan identifies key strategies to help UC Merced maximize its emission reduction objectives on campus and beyond. To illustrate these strategies, the 2026 UC Merced CAP includes the following:

- Descriptive Terms that provide clarity to the work on climate goals;
- An equity lens that broadly engages the campus community and ensures that climate actions are evaluated not only by their emissions-reduction potential, but also by their effects on affordability, access, health, labor, student and worker wellbeing, and vulnerable communities in the San Joaquin Valley.
- A UC Merced climate baseline that is consistent with its reporting to The Climate Registry (TCR) and Second Nature;
- An approach that builds upon the requirements of the Sustainable Practices Policy by emphasizing the inclusion of equity principles in efforts to save energy, purchase and generate renewable power, an interim approach to decarbonization, engage the campus in climate action, and offset GHG emissions;

- A summary of goals, progress to date, and planned activities initiated through an equity lens to save energy, generate renewable power, decarbonization, and offsetting GHG emissions;
- An engagement strategy that ensures the entire campus community is aware or involved in the implementation of the 2026 UC Merced Climate Action Plan.

UC Merced is pleased to provide the following as its Climate Action Plan.



FUNDAMENTAL TERMS

02

The following terms are provided by UC Merced and 2024 Sustainable Practices Policy definitions.

ASHRAE: American Society of Heating, Refrigerating and Air-Conditioning Engineers is a global society advancing human well-being through sustainable technology for the built environment. The Society and its more than 50,000 members worldwide focus on building systems, energy efficiency, indoor air quality, refrigeration and sustainability.

Association for the Advancement of Sustainability in Higher Education (AASHE): The higher education association that sets sustainability standards for universities and colleges. Its mission is to support sustainability in higher education through empowering faculty, administrators, staff, and students to be effective change agents and drivers of sustainability innovation.

Addressable Spend: Spend that can be impacted through sourcing activities. For the purposes of this Policy, it relates to the spend within a specific product or service category.

Biogas: A mixture of different gases produced by the breakdown of organic matter in the absence of oxygen. It is a renewable energy source that can be produced from raw materials such as agricultural waste, manure, municipal waste, plant material, sewage, green waste or food waste.

California Building Code (CBC): This refers to the California Building Code, Title 24 portion of the California Code of Regulations

Campus: The UC Merced campus at 5200 North Lake Merced, CA.

Campus-Related: Associated with UC Merced but not reflected in campus or off-campus values. As required by UC policy, UC Merced reports campus-related greenhouse gas emissions for commuting (travel to and from campus on a day-to-day basis by students, the faculty, and staff) and air travel paid for by or through the University as part of its pledge to the Climate Leadership Carbon Commitment.

Carbon Mitigation: Efforts to reduce or prevent GHG emissions

Carbon Offset: A reduction or removal of emissions of carbon dioxide or other greenhouse gases made in order to compensate for emissions made elsewhere. A carbon offset credit is a transferrable instrument certified by governments or independent certification bodies to represent an emission reduction that can then be bought or sold.

CAP: Climate Action Plan to achieve the university's emission reduction targets of year 2000 levels by 2014 and 1990 levels by 2020.

Clean Transportation Fuel: A clean transportation fuel is a fuel derived from a net carbon neutral fuel source with a carbon intensity of zero or less. These transportation fuels are typically produced from nonpetroleum renewable sources. Common examples include natural gas or hydrogen derived from the capture of gases from sewage waste, manure collection, or green waste decomposition. A fuel's carbon intensity can vary based on how it is produced.

Carbon Neutral: carbon neutrality means a net zero impact on the earth's climate, achieved by minimizing greenhouse gas emissions as much as possible and using carbon offsets or other measures to mitigate the remaining GHG emissions.

Climate Justice: Climate justice recognizes the disproportionate impacts of climate change on low-income communities and communities of color around the world, the people, and places least responsible for the problem. The systems that create climate change are also responsible for economic inequalities and social and racial injustices. These issues cannot be separated, so, to be effective, solutions must simultaneously address climate change and inequity.

Construction and Demolition Waste: Waste generated by construction projects that do not occur every year or are not a result of regular operations and maintenance (e.g., building renovations or new construction).

Diversion from Landfill: Institutions divert materials from the landfill, combustion, or other non-allowable thermal conversion by recycling, composting, donating, reselling, or reusing.

Electrification: Electrifying building and mechanical systems to receive power from electricity instead of fossil fuels.

Energy: Electricity (MWh), natural gas (therms), propane (gallons), gasoline (gallons), or diesel (gallons) consumed. Energy consumption across different units may be expressed collectively in units of one million BTU (MBTU).

Equity: Creation and assurance of opportunities for equitable access and success for historically marginalized populations, such as racial and ethnic minority and low- income communities, in three main areas:

- Representational equity - proportional participation at all levels of an institution;
- Resource equity - the distribution of resources in order to close equity gaps; and
- Equity-mindedness - the demonstration of an awareness of and willingness to address equity issues among institutional leaders, staff and all community members.

A principle of fairness, with increased awareness of bias. Equity contends that people have different access to resources because of systems of oppression and privilege. Equitable Actions help correct these systems.

GHG Emissions: Emissions of the six greenhouse gases covered under the Kyoto Protocol: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), per- fluorocarbons (PFCs), and sulfur hexafluoride (SF6), expressed as metric tons of CO2 equivalents (CO2e).

Green Events: A program that activates climate action initiatives into events across campus through elimination of single-use plastics, reduction of disposable materials, and other zero waste activities.

Green Lab Assessment Programs: A program that works with individual laboratories and researchers to inform, collect best practices, and assess areas for improvement in research efficiency, including engagement and targeted initiatives around efficiency in natural resources and other environmental issues. This assessment program could be based on the My Green Labs (MGL) Systemwide Checklist or another similar tool. The MGL checklist was developed based on best practices from several UC campuses as well as the expertise of My Green Lab.

Just Transition: The United Nations defines a just transition as ensuring that no one is left behind or pushed behind in the transition to low-carbon and environmentally sustainable economies and societies in the pursuit of climate action.

Off-Campus: Facilities owned or operated by UC Merced that are not located on the main campus. This includes leased facilities.

LEED: Leadership In Energy and Environmental Design certification provides independent verification of a building or neighborhood's green features, allowing for the design, construction, operations and maintenance of resource-efficient, high-performing, healthy, cost-effective buildings. The four levels of LEED certification, from lowest to highest, are Certified, Silver, Gold, and Platinum.

Living Lab: Program provides experiential learning opportunities for students to work on projects that identify solutions to climate change focused challenges.

LRDP: Acronym for "Long-Range Development Plan". A comprehensive land use plan that identifies the policies and physical development needed to achieve the University's academic goals for an established time horizon and a specified enrollment level

MGSF: Acronym for "Maintained Gross Square Feet". Building maintained gross square feet, synonymous with the Revised California Method (RevOGSF50) method for calculating Outside Gross Square Feet, defined as MGSF = BG + CU - NP BG = Basic Gross Area CU = Covered Unenclosed Area NP = Non-assignable Area (i.e., parking, etc.) UC Merced uses MGSF when available for climate planning purposes.

Net Zero Energy: a property or building generates as much renewable energy as it consumes annually.

Net Zero Greenhouse Gas Emissions: aims to reduce the number of greenhouses that the UC emits to zero by 2020. Greenhouse gases such as carbon dioxide and chlorofluorocarbons heat the planet by absorbing infrared radiation emitted by the sun.

Plant-Based Foods: As defined by the Culinary Institute of America's Menus of Change program, these include fruits and vegetables (produce); whole grains; beans; other legumes (pulses), and soy foods; nuts and seeds; plant oils; herbs and spices; simple combinations of these foods and their derivatives, and vegetarian/vegan alternatives to meat and dairy.

Renewable Energy: Energy generated from inexhaustible sources, such as the sun or wind, or from sources that can quickly be replenished, such as biomass.

Renewable Energy Credit (REC): a certificate corresponding to the environmental attributes of energy produced from renewable sources such as wind or solar.

Scope 1: GHG emissions include direct emissions that are emitted on the project site/facility and are associated with on-site combustion of natural gas, fuel use in vehicle fleets, and fugitive emissions of gases used for refrigeration and scientific research. Fugitive gases include hydrofluorocarbon gases, perfluorocarbon gases, and sulfur hexafluoride (SF6).

Scope 2: GHG emissions include indirect emissions associated with the consumption of purchased energy from off-site sources. Scope 2 electricity emissions reflect emissions from all energy used at the electricity-generating power plant, but exclude transmission and distribution losses, which are reported under Scope 3.

Scope 3: GHG emissions include indirect emissions not covered in Scope 2, including GHG emissions from employee commuting, business air and ground travel, electricity transmission and distribution losses, off-site wastewater treatment, and off-site municipal solid waste disposal.

Single-Occupancy Vehicle (SOV): A vehicle driven by a single driver with no passengers. SOV percentages may separate the percentage of vehicle trips occurring in zero- or low emission vehicles from carbon-fuel vehicles (e.g., SOV-standard fuel and SOV-alternative fuel).

Site Energy: The amount of energy consumed at a site as reflected in utility bills.

Source Energy: The amount of raw fuel required at a site, including all transmission, distribution, and production losses. Source energy is useful when analyzing alternative approaches to using energy and reducing energy consumption. Source energy is calculated using site energy national average Source-Site Ratios reported in Energy Star Performance Ratings Methodology for Incorporating Source Energy Use dated December 2007 and available at http://www.energystar.gov/ia/business/evaluate_performance/site_source.pdf.

Stormwater: Water that originates during precipitation events.

Sustainability Tracking, Assessment and Rating System (STARS): A transparent, self-reporting framework for colleges and universities to measure their sustainability performance. STARS provides a framework for understanding sustainability in all sectors of higher education through using a common set of measurements that enables meaningful comparisons over time and across institutions.

Sustainability: the ability to meet present needs without compromising the ability of future generations to meet their needs, while supporting environmental responsibility, social equity, economic viability, and long-term community wellbeing.

TCR: Abbreviation for “The Climate Registry”, a nonprofit greenhouse gas reporting organization that provides standards and tools for emissions measurement and verification.

Transportation Demand Management (TDM): The application of strategies and policies to reduce travel demand (specifically that of single-occupancy private vehicles). TDM programs may include car sharing (car share), carpools (rideshare), vanpools, bus pools, shuttles, transit, bicycle circulation systems, pedestrian circulation systems, emergency rides home, telecommuting, flexible schedules, parking management (amount, access, fees), etc.

UC: Abbreviation for “University of California”

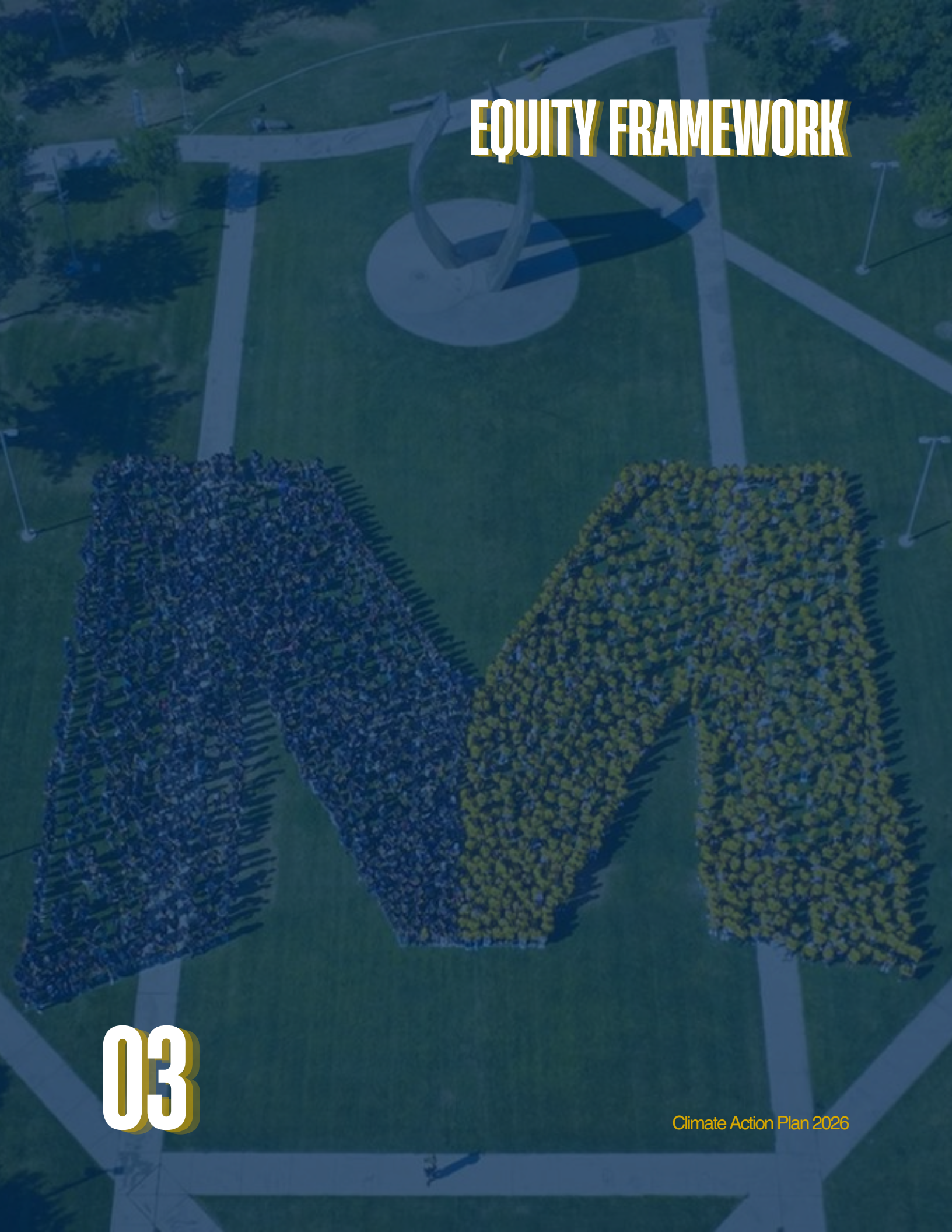
UCOP: Abbreviation for "University of California Office of the President”

USGBC: U.S. Green Building Council. The USGBC is a membership-based non-profit organization dedicated to sustainable building design and construction and is the developer of the LEED building rating system.

Zero-emissions vehicle (ZEV): As defined by the California Air Resources Board (CARB) ZEV program standards, a vehicle that emits no tailpipe pollutants (e.g., criteria air pollutants, precursors, or greenhouse gases) from the onboard source of power under any possible operational modes or conditions. Common examples include battery electric and fuel cell vehicles.

Zero Net Waste: The aim to reduce, reuse, recycling, and composting waste streams to avoid unnecessary resources being sent to landfills. The University recognizes the attainment of reduction goals stated in this Policy and a 90% diversion of municipal solid waste as minimum compliance standard to be defined as zero waste for locations other than health location

EQUITY FRAMEWORK



03

UC Merced's work with equity principles begins with its land acknowledgement recognizing the historical impact upon Native American people and their lands. Today, UC Merced has made stewardship in addressing climate change an environmental imperative and focus of the institution as it aligns with the 2024 UCOP Sustainable Practices Policy.[2] In doing so, UC Merced has integrated equity within its climate action planning to identify the challenges of climate impacts while considering its actions impact upon the campus and surrounding communities. A 2024 student survey on campus decarbonization,[3] was circulated to query students on their knowledge and understanding of climate change. The survey revealed 59% of students were unsure of the connection between CO2 mitigation and social welfare, underscoring the importance of increased engagement and climate literacy across UC Merced.[3]



Centrally located in California's San Joaquin Valley, UC Merced students largely come from this region which has marginalized populations that experience first-hand climate challenges that create economic instability, limited access to healthy food, unsafe housing, inadequate transportation, and various types of pollution.[8,11] UC Merced student respondents overwhelmingly note that climate change impacts vulnerable groups more than other social sectors.[3] This existential challenge makes the integration of equity in UC Merced climate action an important lens through which this work should be advanced.

Notably, a majority of students agree that taxpayer resources should be used in a just transition toward green and renewable energy systems.[3] A point which underscores that equity must be foundational to the 2026 CAP as equity principles are integrated into its actions as a result of inclusion of the campus community voice.

Understanding and inclusion of a just climate action strengthens the campus community by ensuring everyone has a voice in helping shape decisions and outcomes. This just transition is accomplished through:

- prioritizing an inclusive economy with fair wages, resilient jobs, and supports small and local businesses.
- further prioritizing accessible food systems that minimize environmental impacts.
- providing safeguards for public health by reducing exposure to toxins and pollutants, improving air and water quality, and supporting a climate-resilient health system.
- preservation and restoration of natural resources, ensuring clean water, healthy soils, biodiversity, and green spaces.
- designing transportation networks to be safe, accessible, low-carbon, and affordable to connect the campus community to work, education, and essential services.
- reimagining waste systems to minimize pollution, promote circularity, and reduce disparities in facility location and worker safety.

The equity principles guiding the 2026 CAP mean that this plan provides a roadmap with indicators toward climate justice, resilience, and sustainability. As UC Merced centers equity in its CAP, the sizeable impact of these actions will reverberate across campus and throughout numerous Central Valley communities.

OUR COMMUNITY



04

UC Merced was established in its current location to expand access to higher education for communities in California's Central Valley. Now, two decades since opening, UC Merced is delivering on that promise to serve the region by addressing issues that directly affect its students while ensuring graduates have the tools to succeed. Across the Central Valley, climate change has had a significant impact derived from extreme weather events, natural disasters, air quality, and water availability.[8,5] As a Hispanic-Serving Institution (HSI), Minority Serving Institution (MSI), and Asian American and Native American Pacific Islander-Serving Institution (AANAPISI), issues related to climate change are examined at UC Merced through research and academics while operations seeks to minimize and eliminate campus contribution to negative environmental factors that contribute to this global challenge.



The backdrop for these regional issues is a largely agricultural base that spans the California Central Valley which places UC Merced in the heart of farm country. With just under 9,000 students, UC Merced has a student demographic that mirrors the regional surroundings. Merced County's population demographics comprise 296,000 residents of which 62.7% are Hispanic or Latino; 24.3% White, 7% Asian, other races fill in the remaining percentage. The median age is 32.2 years and the median household income is $65,044, according to 2024 U.S. Census data. The level of education for residents in Merced County is 72% high school graduates, 15% with a bachelor's degree or higher, and the remainder without a high school degree.[28] This demographic information underscores the importance of UC Merced's work within the region.

UC MERCED CLIMATE BASELINE

05

For the purposes of this plan, UC Merced is defining a climate baseline that reflects current energy usage and GHG emissions, as well as projected building-related campus energy consumption.[12] In order to leverage climate reporting already performed by UC Merced, current usage and emissions are defined using the calendar year 2019 (CY19). UC Merced has reported two years of GHG emissions to The Climate Registry (CY18 and CY19). For UC Merced, 2019 provides a reasonable baseline reference, as this is the first full year in which the campus declared carbon neutrality. The specific, current values reported as the baseline include campus energy consumption for CY19 and campus related GHG emissions for CY19. Refer to Table 2 within this document for data related to the 2019 baseline.

Projected building related campus energy consumption reflects energy consumption associated with the planned build-out of the campus to an eventual footprint of 1,026 acres, as expressed in the LRDP and the UC Merced/University Community Environmental Impact Statement/Environmental Impact Report (EIS/EIR).[13, 1] This project assumes compliance with current Building Energy Performance Targets (see section 5B).

Energy consumption and emission intensities are also presented per square foot and per student. UC Merced will continue to calculate these consumption and emission intensities for planning purposes.

The specific values used to calculate intensities include:
An average of the total student population for the 2018-2019 and 2019-2020 academic years and maintained 2,123,420 (MGSF) of buildings, calculated based on a proration of building MGSF occupied through CY19.

For the climate baseline (tables located at the end of this document):

- Table 1 Building Details, provides details for all campus buildings (including the Downtown Center and excludes all other off campus buildings).
- Table 2 Climate Baseline, provides campus and campus-related energy consumption and emissions for CY19.

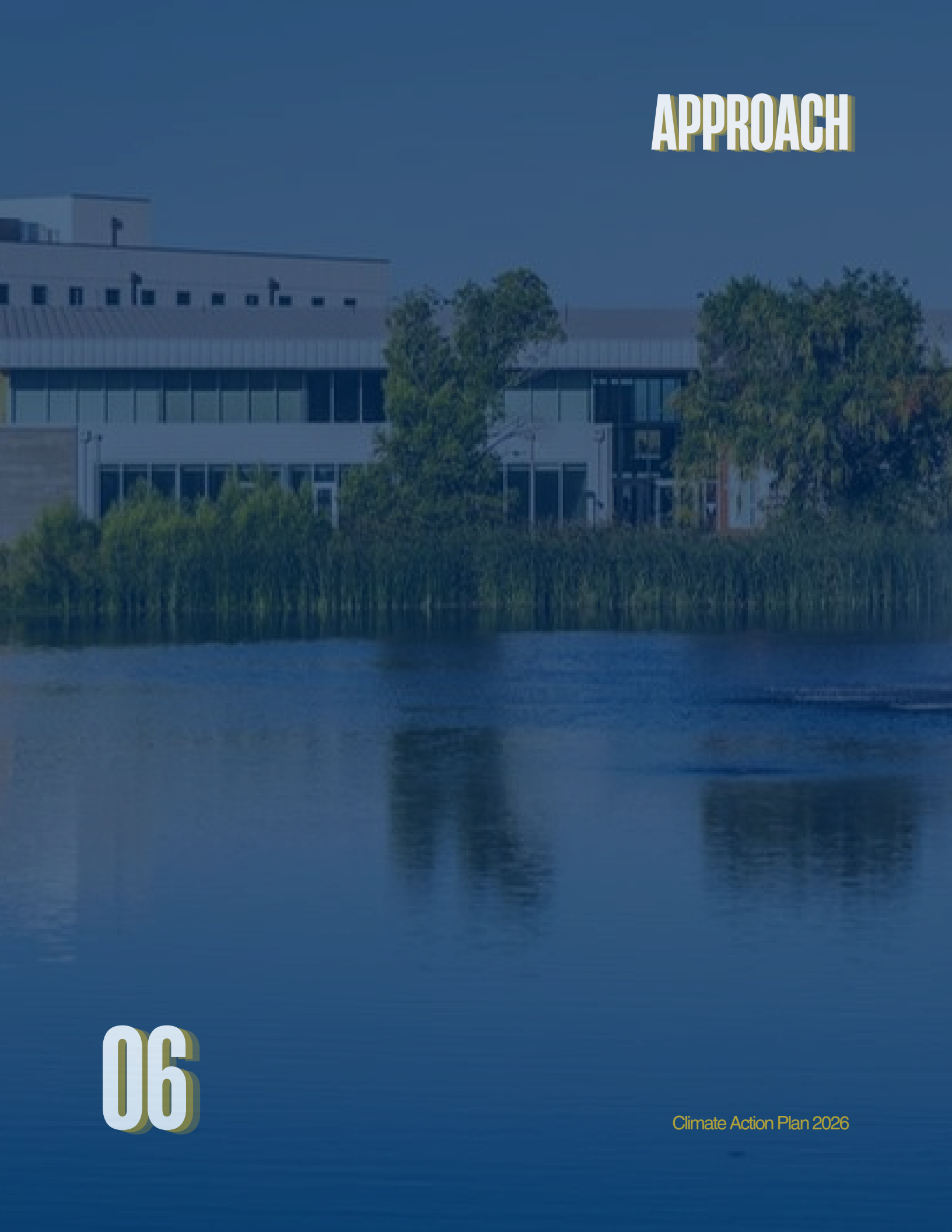
[12] Note that this plan explicitly addresses climate impacts from operations and activities only, not those associated with embedded energy the total energy used to manufacture and supply a product, material, or service at its point of use. Embedded GHG emissions are being reduced through UC Merced's commitment to US Green Building Council certification (through Materials & Resources credits). The LRDP has moved the campus goal for certification from LEED Silver to LEED Gold for all permanent buildings.

[13] The EIS/EIR is available at https://merced2020.ucmerced.edu/sites/merced2020.ucmerced.edu/files/documents/2020_adeir102708web.pdf

For CY19, there is 2,123,420 MGSF of built space on campus, and 346,471 MGSF off campus (79% Campus / 21% Off Campus). The campus is achieving its current building performance targets (annual electricity use, peak electricity demand, and annual natural gas use - see Section 5B). For CY2019, building site energy use intensity was approximately 0.098 MMBtu/MGSF/yr on campus and 0.056 MMBtu/MGSF/yr off campus. Building source energy use intensity was approximately 0.167 MMBtu/MGSF/yr on campus and 0.124 /MGSF/yr off campus. For CY19, total GHG Emissions are 5,525 metric tons CO2e on campus and 568 metric tons CO2e off campus (90% campus / 10% off campus). The UC Merced campus does not have 1990 and 2000 emissions levels as referenced by the UC climate policy. In the spirit of the policy requirement, UC Merced's building energy performance targets imply a consistent reduction in energy use and emissions intensity over the build-out of campus. The campus climate baseline includes a projection of building energy use.



APPROACH



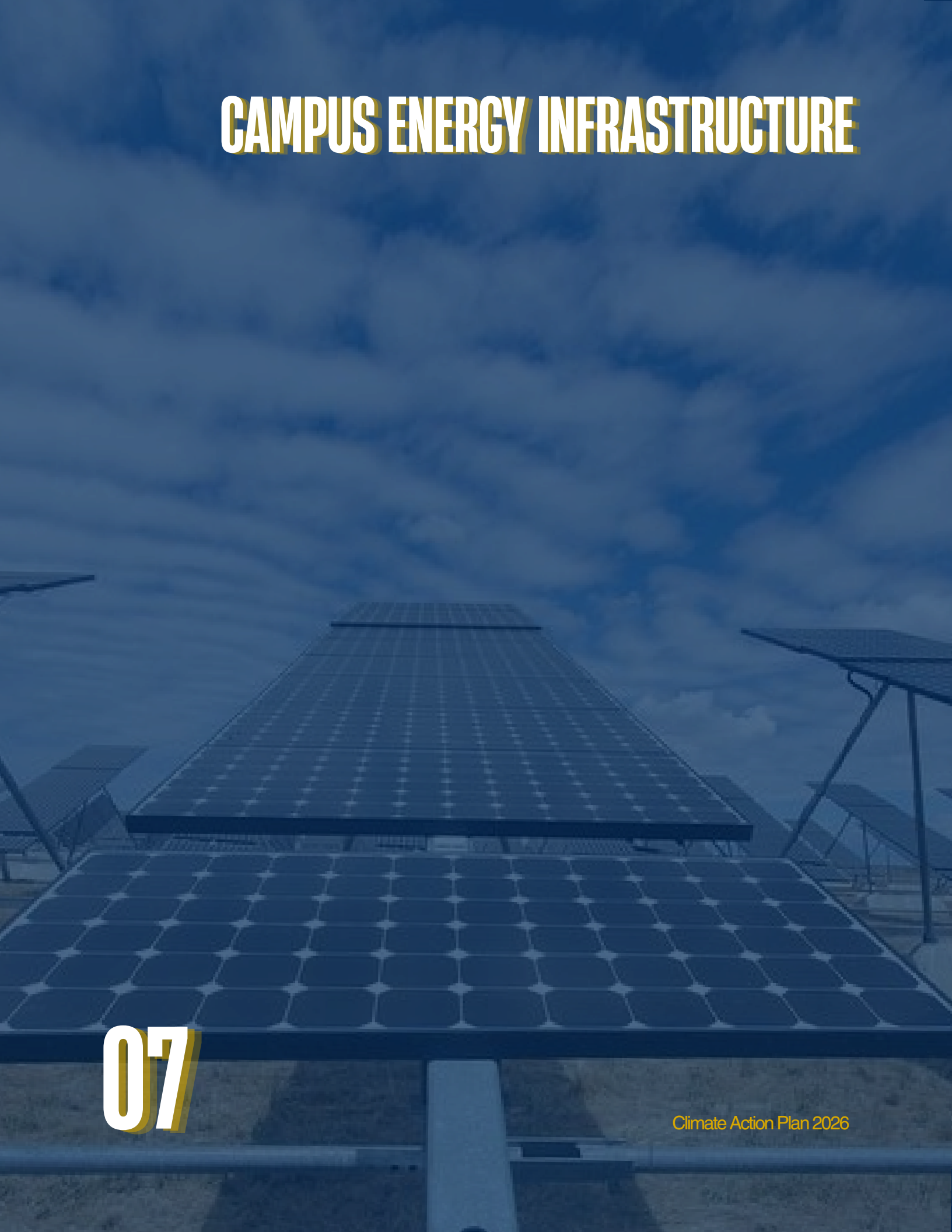
06

UC Merced's basic approach to adaptation and mitigation of its climate effects includes:

- Utilize interim decarbonization strategies with an incremental approach using new capital projects until economic conditions support implementation of the 2024 Decarbonization Plan
- Save as much energy as is economically feasible;
- Use electricity generated from renewable sources (i.e. on-campus renewables and Wholesale Renewable Power Program);
- Offset remaining greenhouse gas emissions through 2030, while pursuing opportunities for decarbonization that will reduce the need to purchase offsets for Scope 1 and Scope 2 emissions;
- Conduct ongoing climate-focused research as well as research-based, engagement on climate action and living laboratory projects throughout campus to identify climate-focused solutions that reduce GHG emissions; and/or projects that adapt to ongoing climate impacts.
- Explore partnerships for research within Native American communities and communities of color by uplifting ways to share outcomes and benefits with the partner communities;
- Develop and implement a Scope 3 strategy that addresses emissions reduction;
- Integrate equity indicators that attach the framework to the actions of this plan.
- This approach recognizes that renewable energy will be the focal point for UC Merced's effort to reduce GHG emissions. For UC Merced, a keystone to these commitments is measuring the related environmental justice impacts to its campus community.



CAMPUS ENERGY INFRASTRUCTURE



07

UC Merced has developed an energy infrastructure for campus that starts with the Central Plant which provides central cooling for all buildings, thermal energy storage for campus cooling, and central heating for primary academic buildings. This centralized infrastructure and 2 million gallon thermal energy storage saves energy, reduces peak period demands, and saves money by:

- Increasing the opportunities to realize savings from system optimization. It is typically easier to produce savings by optimizing a single system, rather than by optimizing several distributed systems.
- Increasing the efficiency of cooling. It is more efficient to operate chillers in the middle of the night when temperatures are lower.
- Reducing the cost of cooling. Electricity is cheaper in the middle of the night than during peak period, summer afternoons.

UC Merced generally intends to continue this basic strategy to future campus infrastructure development, subject to more detailed engineering and cost analysis as the campus integrates its decarbonization plan.

The UC System convened a Task Force under the Global Climate Leadership Council with the focus for each campus to accelerate decarbonizing campus energy infrastructure. To meet this challenge, UC Merced initiated a decarbonization study that establishes a plan for emissions reduction of campus energy infrastructure. The intent of UC Merced's study is to guide the scope and delivery of its pathway to fossil free energy systems.

In meeting its commitment to sustainability, UC Merced brought together a team of staff, faculty, and students to help guide its decarbonization effort including outcomes, timeline, and engagement with the campus. The decarbonization team also sought to document and understand knowledge gaps on climate change by conducting a survey within the campus community with participation from over 3,200 respondents.[14, 3] The responses helped inform the decarbonization study as well as this CAP.

The study strategy focused on a 90% or greater reduction in Scope 1 emissions over the 2019 baseline. An important focus of this strategy is the integration of climate justice and equity principles into the transition of campus energy systems. The largest source of campus GHG emissions is heating and domestic hot water generation equipment.

The current heating and domestic hot water system operates 100% on gas. Emissions from these systems are offset through the use of carbon credits.

The study proposes a centralized hybrid heat recovery/air-to-air heat pump solution that will supply chilled and hot water to the entire campus. To accommodate this proposed expansion in coverage, additional capacity will be required beyond the central plant while adopting a consistent electrified pathway that meets heating and cooling demand. This plan must all be implemented at one time and not in phases. This approach to decarbonization shows a clear strategy toward the future. This scenario has an approximate cost of $177 million.[9]

Although funding to implement this decarbonization plan has not yet been identified, UC Merced will undertake an incremental approach toward electrification, where possible. This approach includes integrating electrification into the mechanical systems of capital projects that are brought to campus. It also allows UC Merced to advance its fossil free work in a phased approach until the decarbonization plan can be fully implemented.

As part of this work, consideration will be given to understand any impacts upon various communities within the campus, including those with disabilities.

Moving into the immediate future, the campus energy infrastructure will:

- Install a new 21 kV substation that will increase electrical capacity to accommodate future campus growth
- Continue to minimize grid-connected peak electricity loads by shifting electricity for cooling away from peak electricity demand periods. (Sustainability Policy SUST-6, excerpt) [15, 1]
- To connect infrastructure resilience with everyday campus wellbeing, UC Merced will track not only system efficiency and capacity, but also whether energy infrastructure protects people during heat, smoke, outages, and other disruptions, especially students, workers, residents, visitors, and individuals with disabilities using indicators in Table B.

[15] The LRDP energy efficiency goal is complemented by a goal to achieve LEED Gold certification for all new permanent facilities

Actions	Indicators/Targets
Ensure energy infrastructure planning considers campus users with disabilities and other access needs	• Target: 100% of major energy infrastructure projects reviewed for accessibility and continuity-of-access impacts • Indicator: Number of infrastructure projects reviewed for accessibility impacts; documented accessibility improvements related to cooling, lighting, mobility, elevators, accessible routes, and safe indoor spaces
Use energy infrastructure planning to avoid cost burdens on students, workers, and campus services	• Target: Annual review of energy cost impacts before major infrastructure decisions • Indicator: Utility cost per student and per square foot; documented review of impacts on housing, dining, transportation, student services, and worker support functions
Use dashboards and monitoring systems to make infrastructure performance visible	• Target: Maintain public or internal energy performance dashboards for major campus systems and buildings • Indicators: Dashboard tracking peak load, cooling demand, energy use, and building performance; number of planning or operations decisions informed by monitoring data
Improve communication during energy or climate-related disruptions	• Target: Timely alerts issued during outages, heat events, wildfire smoke events, building closures, or air quality disruptions • Target: Percentage of students, staff, and faculty reached by alerts; number of alerts sharing cooling spaces, clean-air spaces, outages, closures, and available support services
Establish "Community Climate Sanctuaries" during disasters	• Target: Identify and maintain designated campus spaces that can provide emergency cooling, device charging, potable water, and basic refuge when feasible • Indicator: Number and capacity of designated refuge spaces; number of people served during regional utility failures, heat emergencies, or smoke events; availability of water, charging, restrooms, and accessible routes
Deploy responsive clean-air common spaces during wildfire season[34]	• Target: Maintain designated clean-air spaces during poor outdoor air quality events• Indicator: Number of student health center visits due to poor indoor air quality.

34 https://www.ucop.edu/enterprise-risk-and-resilience/_files/uc_aqi_based_decision_matrix.pdf

Protect outdoor campus workers during infrastructure maintenance	• Target: Zero heat-related illnesses among campus utility, dining, maintenance, and landscaping staff. • Indicator: Number of heat-related incidents; documented access to shade, hydration, rest breaks, training, and modified schedules during high-heat days
Prioritize energy resilience for essential daily campus functions	• Target: Maintain continuity plans for critical spaces and services during grid stress, outages, extreme heat, or smoke events • Indicator: Number of priority facilities with resilience plans, such as residence halls, dining, student health, libraries, classrooms, communications, restrooms, and worker support spaces

Table B: Human-centric Actions, Target and Indicators for a Sustainable Campus Energy Infrastructure at UC Merced

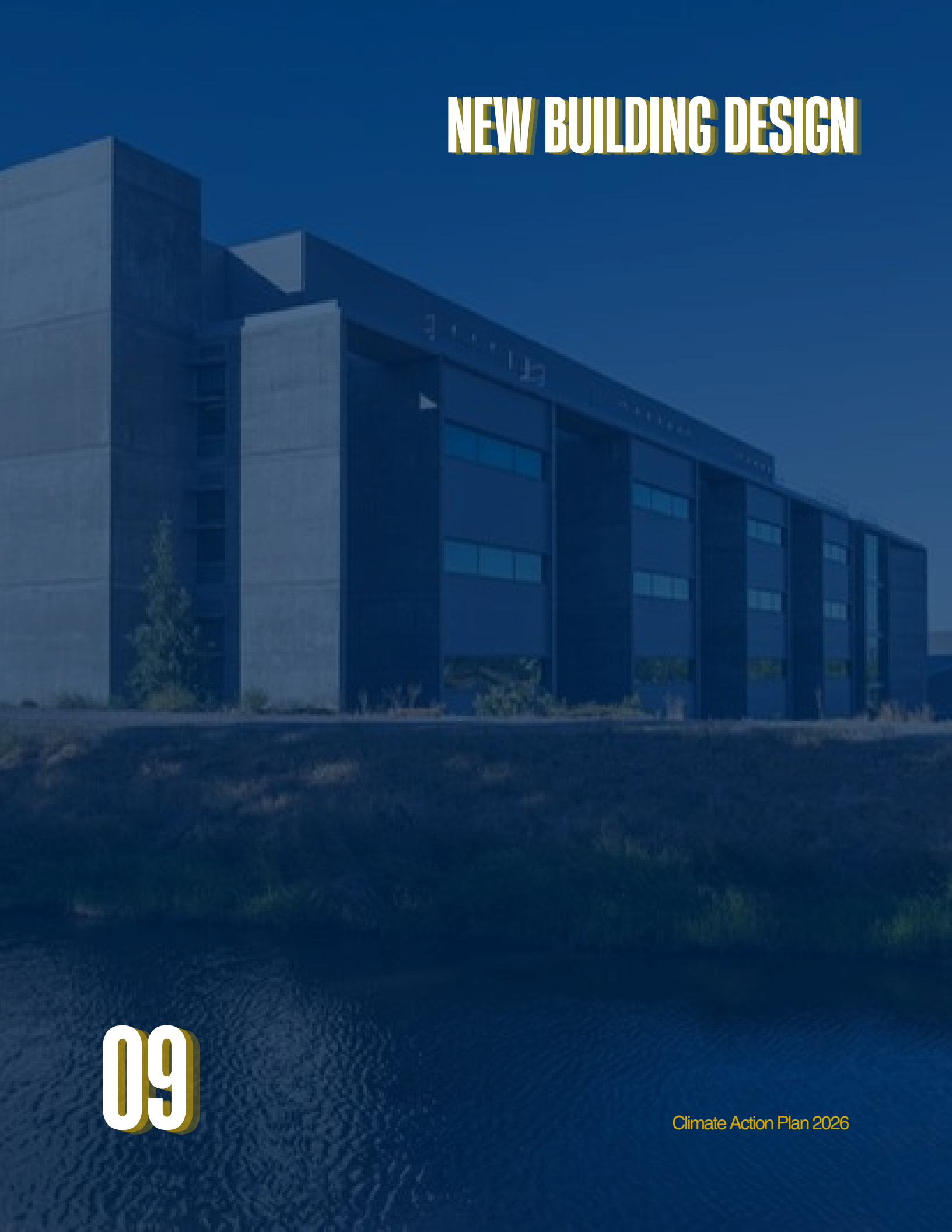
UC Merced receives all of its electricity from renewable energy, combining power supplied through the University of California Wholesale Renewable Power Program, which supplies clean power consisting of solar energy, wind and biogas to the campus combined with generation from on-site solar installations.[26, 25] This diversified clean energy portfolio ensures that campus operations are supported by carbon-free electricity, eliminating Scope 2 greenhouse gas emissions and advancing institutional climate action goals. By exclusively utilizing renewable electricity, UC Merced demonstrates leadership in sustainability while providing students, faculty, and staff with a living example of large-scale clean energy adoption in practice.

The first step in implementing this goal was the development of a 1 MW solar photovoltaic array on campus through a Power Purchase Agreement (PPA).[27] Under a PPA, a third party designs, installs, owns and operates the system and the University purchases the delivered electricity. For this project, UC Merced retains all Renewable Energy Credits for the project. This array generates and produces approximately 2,367 MWh annually (approximately 12% of the total campus energy and .97MW (22%) of the campus peak load) and offsets a portion of campus electricity demand. Since then, UC Merced's renewable electricity portfolio has expanded to include additional on-site solar generation, battery storage, and power supplied through the UC Wholesale Power Program.

UC Merced adopted the use of solar photovoltaics early as part of its plans for campus development. A 1MW solar PV ground-mounted array began operations in November 2009 but due to expected panel degradation is currently operating at less than 80% performance. Another 5.1MW of solar (11,350 panels) with a 500kW energy storage system was added through a power purchase agreement (PPA) in the North Bowl Parking Lot which also provides cover as a carport. UC Merced also generates power through a 198.8kW roof-top mounted solar plant comprising of 608 panels on the Half Dome building. The system also includes a 483kW energy storage system on site.

UC Merced will expand its current ground-mounted solar array to an agrisolar array that will generate 4.6 MW of on-campus electricity, as the original 1MW will be decommissioned as part of this project which is projected to be on line in mid 2028. This system is unique as it will allow space under the array for agricultural uses such as grazing livestock. This innovative system brings a resilient strategy of land-use efficiency that supports sustainable agriculture while generating renewable electricity. This integrated system brings a resilient strategy of land-use efficiency that supports sustainable agriculture while generating renewable electricity.

NEW BUILDING DESIGN



09

New building design at UC Merced is guided by the UC Sustainable Practices Policy,[2] and applicable LEED rating systems. As the campus transitions from LEED v4/v4.1 to LEED v5, new projects will increasingly incorporate the updated rating system's stronger emphasis on decarbonization, quality of life, and ecological conservation and restoration.[16] LEED v5 launched in 2025 and will become the required version for new commercial LEED registrations beginning July 1, 2027. The updated rating system places greater emphasis on reducing greenhouse gas emissions throughout the building lifecycle, including energy efficiency, electrification, renewable energy, operational carbon, and embodied carbon.

UC Merced has committed to high-performance, energy-efficient design for new permanent buildings. Under the UC Sustainable Practices Policy,[2] new building projects are required to outperform California Building Code energy-efficiency standards by at least 20%,[17] or meet applicable UC whole-building energy performance targets. UC Merced has established a more ambitious campus goal of outperforming Title 24 energy-efficiency standards by 30%. The 2020 LRDP Subsequent Environmental Impact Report notes that existing campus buildings have historically performed approximately 50% better than Title 24 standards, reflecting UC Merced's longstanding emphasis on high-performance building design.[1]



In practice, this commitment requires creation of an energy model for each new building in the design phase so that the building can be modeled against the performance requirements and the design can be modified if required.

The requirement to consume half of the energy and demand of other University buildings in California is being implemented through a benchmarking process. Benchmarks were developed to characterize energy use and peak demand intensities by MGSF for three different types of space (laboratory/complex, classroom/office, and housing/service). These benchmarks were developed using regression analysis of 1999 campus-level data from six UC campuses and two CSU campuses, normalized to account for different energy strategies (for example, gas cooling, thermal energy storage, or cogeneration) and climate. This benchmarking effort is reported in University of California, Merced Campus, Energy Planning Module 1, Preliminary Load Calculations by HMH Resources, Inc. dated May 2000. The 1999 UC/CSU benchmarks, which characterize baseline energy use and demand for University buildings in California, are presented in Table 3 (see appendix).

The campus target is set at 50% of the 1999 UC/CSU benchmarks. This target is being phased in such that the first 600,000 gross square feet of buildings were designed to consume no more than 80% of the benchmarks, the next 600,000 gross square feet of buildings were designed to consume no more than 65% of the benchmarks, and all buildings thereafter have been and will be designed to consume no more than 50% of the benchmarks.

This system is working well for the UC Merced campus and in all cases it is performing better than targets. UC Merced uses data collected through the campus-wide building energy management system to calculate actual building performance in relation to the targets on an annual basis. UC Merced has operationalized the performance benchmarking process on a real-time basis through an online dashboard that shows real time energy consumption of each building.



UC Merced uses Title 24,[17] and American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) for determining energy performance for the LEED Green Buildings rating systems and is based on a percentage of energy savings beyond the code maximum energy allowance. The UC Sustainable Practices Policy states that all new building projects, other than acute care facilities, are to outperform CBC energy efficiency standards by 20%.[2] The campus has been able to max out all the LEED Optimize Energy Performance credits, but percent savings can become confusing as energy codes become more stringent. A percentage savings beyond code is relative to a moving baseline, as the code is regularly updated per statute and the more stringent standards are enabled by technological advances.

California updated its energy efficiency standards in 2001, 2005, and 2008 which reduced maximum energy use from between 5% to 8%. The 2013 update reduced an additional 20% energy use and the 2016 will add another 5% reduction. The 2019 standards marked a major pivot, requiring solar photovoltaic systems for new homes, resulting in 7% greater efficiency in building envelopes and 53% less energy use overall compared to the 2016 code.[19] The 2022 update focused on electrification and battery storage, achieving first-year savings of 1,034 GWh of electricity and 17.8 million therms of gas.[20] The 2025 standards (effective January 1, 2026) shift the metric to Long-Term System Cost (LSC), encouraging heat pumps and electric-readiness, with projected savings of $4.8 billion and a reduction of 4 million metric tons of GHG emissions.[21]

Whole-building energy performance targets can be based on a static baseline, in this case, the UC benchmarks developed from the 1999 UC/California State University building stock. As new energy efficiency technologies and approaches become available, the target for new buildings can be moved as appropriate to continue making progress toward zero-net energy buildings.The baseline will stay the same, however, allowing for easy evaluation of energy efficiency across buildings and over time.[22]

Historically, measuring a building's efficiency based on "percent savings beyond code" was a limited metric because a significant portion of energy use fell outside the California Building Code (CBC) framework. In early code cycles, regulated energy was strictly limited to heating, cooling, hot water, and interior lighting, leaving an estimated 30% of total building energy such as plug loads, process energy, and commercial refrigeration entirely unregulated.[23] While the 2013 code cycle began expanding these boundaries by regulating fan, pump, and select process loads, subsequent updates have largely closed this regulatory gap.



By the 2022 and 2025 CBC cycles,[20] California aggressively expanded Title 24 to cover extensive "unregulated" loads, implementing strict efficiency baselines for commercial refrigeration, commercial computer servers, large-scale medical imaging equipment, and electric vehicle charging infrastructure. Furthermore, the state has shifted away from simple "percent savings" metrics altogether, transitioning to Long-Term System Cost (LSC) and hourly source energy metrics.[21] This modern approach regulates and incentivizes efficiency across the entire building energy profile, eliminating the historic uncertainty surrounding unregulated plug and process loads.

In addition, whole-building energy performance targets are easier to verify in operations because they are not dependent on the modeling assumptions of a baseline case. Measured verification enables campuses to gain a better understanding of which energy efficiency measures are most effective. It also provides measured evidence for the fact that energy efficiency in new construction projects is oftentimes more cost-effective than later retrofits. Furthermore, whole-building energy performance targets can be carried through to operations and they are much more integrated with UC's climate action policy, as they provide a method of predicting and verifying greenhouse gas emissions of new buildings.[22]

As UC Merced advances from LEED v4 to LEED v5, new building design provides an opportunity to measure sustainability through lived experience. The actions and indicators below in Table C focus on whether new buildings improve everyday conditions for the campus community by supporting health, comfort, accessibility, waste reduction, clean indoor environments, shaded movement, reuse, and student and worker wellbeing.

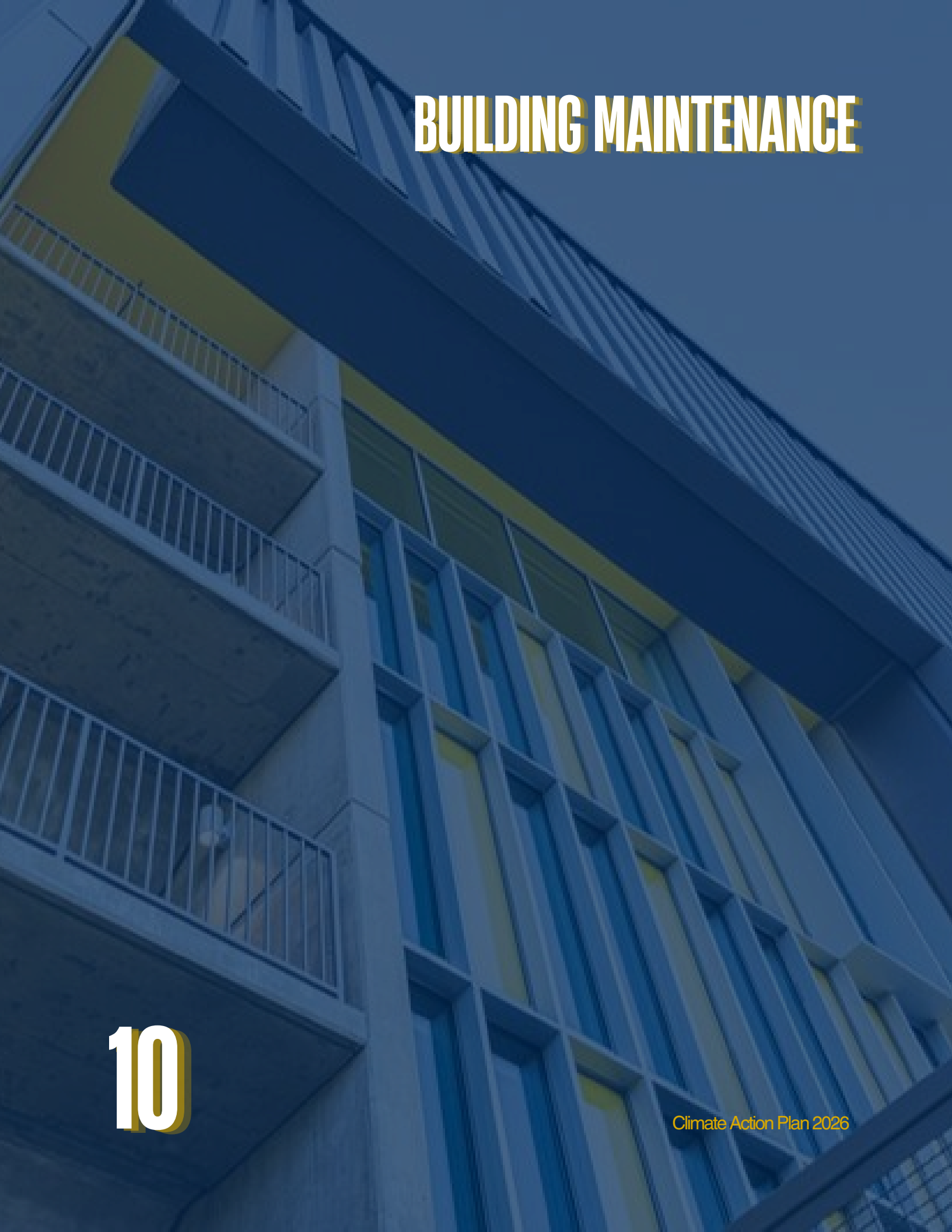
Actions	Indicators/Targets
Maximize dynamic natural daylighting during the day and smart lighting controls for nighttime. (Scope 2: Designing classrooms and study lounges that prioritize sunlight over harsh overhead fluorescent bulbs)	• Target: At least 90% of occupied learning and study areas meet daylight quality standards without excessive glare or heat gain. • Indicator: Drop in student-reported eye strain and headaches, alongside higher daytime alertness scores.
Smart, intuitive, and accessible, Waste sorting screens and positive community feedback loops (Installing interactive digital screens directly above waste hubs that use AI scanning or simple visual guides to tell you exactly where an item goes, removing confusion and decision anxiety)	• Target: 100% of waste stations equipped with clear, responsive guidance screens that transition into building-wide achievement displays (e.g., "Great job! This screen helped SRE Building save 1,200 bowls from the landfill this week!"). • Indicator: A measured drop in "wish-cycling", lower contamination rates in compost bins, and higher student confidence scores in daily sorting habits.
Design and build Zero Landfill Waste buildings (Scope 3: Actively guiding the campus community toward conscious spending and preventing waste accumulation through smart architecture)	• Target: New buildings are designed with infrastructure to support 90% landfill diversion • Indicator: A measurable decrease in the amount of single-use plastics brought into the building, alongside a high student awareness of their own consumer footprint.

Actions	Indicators/Targets
Introduce accessible reusable container collection bins on every floor (Scope 3: Supporting campus-wide reuse programs by making drop-offs as convenient as throwing away trash)	• Target: A designated, clean, and odor-free reusable container return station located on every single floor next to the recycle bins. • Indicator: A 90% or higher daily return rate of campus-issued reusable dining containers, eliminating single-use takeout box waste completely from the building.
Source non-toxic, locally manufactured building materials (Scope 3: Selecting carpets, paints, and furniture that do not "off-gas" chemical smells or release pollutants into the Central Valley during manufacturing)	• Target: 100% of interior building finishes certified as low-emitting or zero-VOC (volatile organic compounds) and sustainably sourced. • Indicator: Zero "new building" chemical smells on opening day, protecting students and staff with asthma or chemical sensitivities.
Create shaded, safe, and comfortable outdoor connections around new buildings	• Target: All new building projects include shaded routes, rest points, and safe pedestrian connections/pathways between buildingswhere feasible • Indicator: Linear feet of shaded walkways; number of hydration stations; shaded seating areas; average distance between shade/rest points;
Create indoor connections between buildings	• Target: All new building projects include indoor routes, connections/pathways between buildings where feasible • Indicator: Number of buildings with interconnected tunnels, and breezeways accessible to students.

Actions	Indicators/Targets
Prioritize electrified building systems and reduce reliance on fossil fuel equipment	• Target: Zero open-flame gas emissions in daily uses such as food preparation areas, creating healthier kitchens for campus chefs and student workers. • Indicator: A 0% rate of indoor gas-related smoke or combustion odors in student dining halls.
Establish home for Bobcat Swap and Shop (Steering campus community investments away from buying new items by providing a space to fix, share, or borrow everyday items)	• Target: A dedicated room equipped with basic tools, sewing machines, a printer, and a "free-cycle" shelf for textbooks and academic resources. • Indicator: Number of students utilizing the lounge to repair personal items or swap goods instead of purchasing new items online.
Design buildings that support student, staff, and worker wellness	• Target: New buildings include spaces that support rest, study, recovery, and privacy/private rest areas, • Indicator: Number of students utilizing the private rest and study areas.

Table C - Human-centric Actions, Target and Indicators for Sustainable New Building Design at UC Merced

BUILDING MAINTENANCE



10

Building maintenance can also significantly affect building performance. To date, UC Merced Facilities Management activities have emphasized routine work order requests, emergency response, and preventative maintenance. Facilities Management also uses extensive monitoring data from its campus-wide building energy management system to troubleshoot systems and verify energy performance. Because building operations affect both fuel-related heating emissions and electricity use, this work has implications for both Scope 1 and Scope 2 emissions. Continued optimization of HVAC systems, controls, scheduling, heating, cooling, and other building systems can help reduce energy consumption and improve performance relative to campus benchmarks. UC Merced's Campus Energy Management dashboard now provides real-time and historical campus energy data, creating a stronger foundation for ongoing monitoring, analysis, and operational improvements.

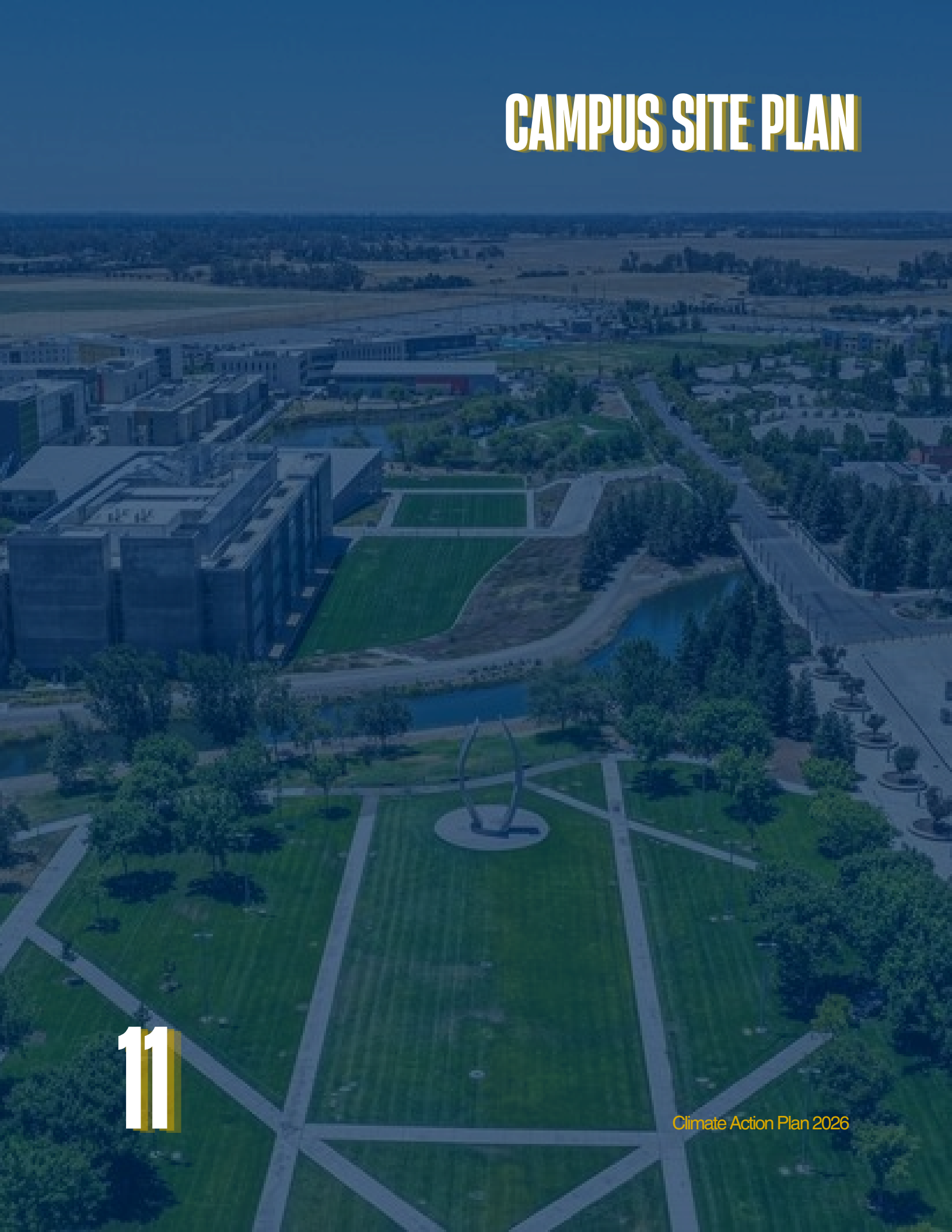
To ensure building upkeep directly improves daily health, comfort, and dignity for everyone who lives, learns, and works on campus, UC Merced will track the following human-centered maintenance actions, targets, and indicators as shown in Table D:

Actions	Indicators/Targets
Transition entirely to certified green, bio-based, and toxin-free cleaning products (Eliminating petroleum-based chemicals that damage worker lungs and trigger student allergies)	• Target: 100% of daily sanitizing and cleaning solutions certified as Green Seal or EcoLogo compliant. • Indicator: Zero reported skin or respiratory irritations among custodial staff, and an immediate drop in asthma triggers for students in dorms.
Establish student-custodial collaborative feedback circles (Moving away from a cold, digital "FMHelp ticket system" toward regular, brief monthly conversations between floor residents and the building's maintenance team)	• Target: Host casual, catered "Coffee & Maintenance" huddles once a semester in residence halls to discuss how building users can make the staff's jobs easier. • Indicator: A 50% drop in messy dorm trash overspills, clogged recycling bins, or ignored plumbing issues, driven by mutual respect rather than rules.
Transition grounds maintenance toward quieter, ergonomic, lower-emission equipment and sustainable land-care practices in support of UC Merced's Green Grounds Certification effort	•Target: Achieve Green Grounds Certification in 2026–2027 and prioritize electric, lower-noise landscaping equipment when replacing grounds equipment. • Indicators: Green Grounds certification level achieved; percentage of landscaping equipment transitioned to electric or lower-emission alternatives; reduction in worker exposure to equipment noise, exhaust, and harmful landscape chemicals; reduction in noise-related concerns from campus users.

Prioritize locally sourced, lower-impact maintenance supplies where feasible	•Target: Increase use of low-toxicity, and regionally sourced maintenance materials • Indicators: Increase percentage of social impact and green supplies purchases
Phase-out remaining fluorescent fixtures in advance of the 2024 / 2025 Title 20 sales ban (replace with high-efficiency, low-glare LED lamps and drivers)	•Target: All screw-base fluorescents and linear fluorescents retired by Dec 2027; • Indicators: Number of fixtures replaced vs. baseline stock; Annual kWh saved and maintenance hours avoided; reduced eye-strain reports and increased visual comfort after retrofit.

Table D – Human-centric Actions, Target and Indicators for Sustainable Building Maintenance at UC Merced

CAMPUS SITE PLAN



11

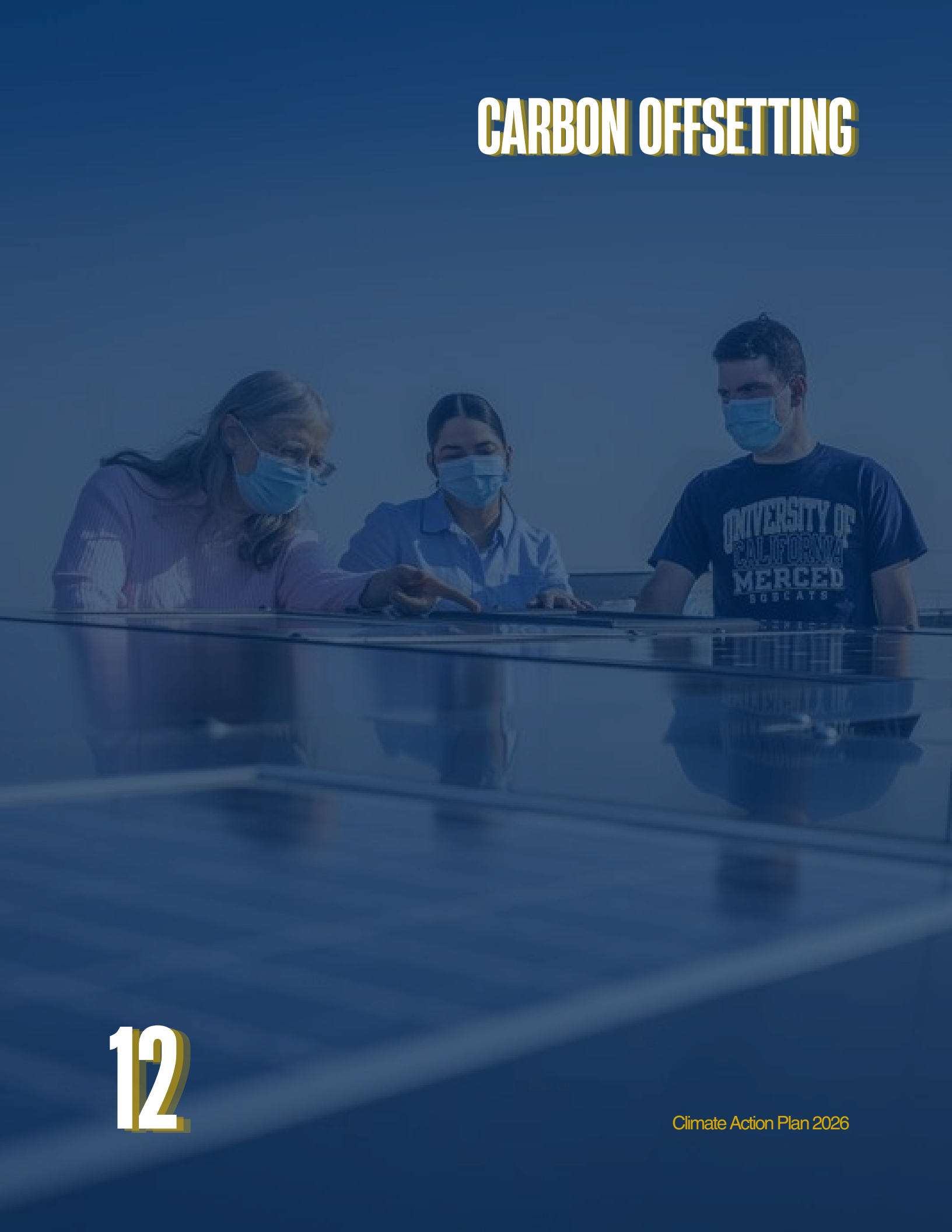
The land where the University of California Merced resides was first inhabited by the Yokuts and Miwuk indigenous people. Situated in California's Central Valley, UC Merced was established in this area to serve the residents of the region, including those indigenous descendants who reside in the region. It is with this focus that UC Merced provides institutional leadership to advance sustainability while connecting its campus and surrounding community to solutions that address climate change. These challenges include extreme weather conditions, air pollution, water scarcity, and wildfires which have an impact on UC Merced's 1,026-acre campus and its surroundings. UC Merced will measure its justice impact upon the campus and its affiliated communities, as identified with this CAP.

Although climate challenges are significant, UC Merced's CAP seeks to mitigate and adapt to this reality. For example, the 6,500-acre Vernal Pool conservation land serves as a valuable natural carbon sink. These lands capture and store carbon in its soils with seasonal vegetation that supports ecological processes that reduce greenhouse gas emissions. During the winter rainy season, aquatic plants, grasses, and native wildflowers absorb atmospheric carbon that is stored in the soil. As conservation land for UC Merced, protecting the vernal pool ecosystem prevents the release of this stored carbon that can occur when these habitats are disturbed or converted to other land uses.

The UC Merced CAP recognizes the benefits of the vernal pools beyond carbon sequestration. The land conservation also enhances biodiversity, supports groundwater recharge, moderates localized temperatures, and increases the landscape's resilience to drought and extreme weather. To activate the CAP, the UC Merced Living Lab will advance climate-focused projects that engage students and faculty in monitoring the health of this ecosystem while demonstrating nature-based climate solutions.

The University has a 40-acre Experimental Smart Farm (ESF) where agricultural research explores innovations in the field that are often sustainable and climate-centered. The ESF provides hands-on opportunities for students to learn about climate-focused solutions within the industry that is the economic center of California's Central Valley. Students will also have experiential opportunities at the ESF through living lab projects. The knowledge that students gain from these living lab experiences will help increase their social mobility. This outcome aligns with UC Merced's mission to prepare its students with new ways of connecting students and connecting them with new knowledge.

CARBON OFFSETTING



12

UC Merced will prioritize direct greenhouse gas emissions reductions consistent with the current UC Sustainable Practices Policy. Using 2019 as the baseline, UC locations are required to reduce total Scope 1, Scope 2, and Scope 3 emissions by at least 90% by 2045 without relying on carbon offsets. Any residual emissions remaining in 2045, limited to no more than 10% of 2019 emissions levels, are to be negated through carbon removal. UC Merced's decarbonization study identifies a pathway toward a 90% reduction in Scope 1 emissions by 2045, supported by campus electrification, renewable energy, energy efficiency, and other direct emissions-reduction strategies.[35]

UC Merced will continue to prioritize onsite and other direct measures to reduce its remaining greenhouse gas emissions while the campus decarbonization strategy is implemented. The campus purchases and generates clean electricity through renewable and other clean energy sources, substantially addressing Scope 2 emissions. Remaining Scope 1 emissions are primarily associated with onsite fossil fuel combustion, particularly natural gas used for heating and domestic hot water. Consistent with current UC policy, from 2025 through 2030 UC Merced will allocate funds equal to $25 per metric ton of CO_2e for remaining Scope 1 and Scope 2 emissions toward projects that achieve direct emissions reductions or support climate justice or community benefit programs.

To evaluate the transition to a fossil-free UC Merced through a human-centric lens, UC Merced will track progress not only by emissions reductions, but also by measurable improvements in daily campus living and working conditions as shown in Table A

Actions	Indicators/Targets
Prioritize fossil-free upgrades in high-use and high-need spaces (e.g. residence halls, classrooms, dining, student services, and worker spaces)	• Target: 100% of priority spaces transition to zero-emission thermal energy. • Indicator: Percentage of priority spaces with reliable heating, cooling, and hot water powered entirely by electricity.
Monitor energy cost impacts of electrification to avoid shifting burdens to students, workers, or campus services	• Target: Zero dollars ($0) of student housing or tuition fee increases tied to the 100% electrification transition. • Indicator: Annual tracking and public reporting of energy costs per student, per square foot, and per occupied building.
Electrification of heating and domestic hot water systems where capital projects allow	• Target: Year-over-year reduction in natural gas consumption per gross square foot. • Indicator: Percentage of total campus heating and domestic hot water load served by fossil-free or electrified systems.

35 https://www.ucop.edu/sustainability/policy-areas/climate-change/index.html?

Electrify or use clean energy for Campus Shuttles and Delivery Fleets	• Target: 100% Zero-Emission Vehicles (ZEVs) across all university-owned transit and service fleets. • Indicator: Percentage of ZEVs in Campus Fleet and campus transit vehicles
Install Shaded Solar Canopy Walkways	• Target: Measured drop in pavement surface temperatures, a higher percentage of student daytime walking comfort and renewable energy generation • Indicator: Percentage of pavement/pathways with Shaded Solar Canopy coverage
Ensure Adequacy of Charging port for vehicles, e-bikes and micro-mobility devices	• Target: Reduced Wait time at charging hubs • Indicator: EV-Charger ratio/Utilization rate/ Queueing/Wait Time Analysis
Reduce water use for regional drought resilience	• Target: Reduction in campus water intensity. • Indicator: Annual water use associated with heating, cooling, and central plant operation

Table A – Human-centric Actions, Target and Indicators for Sustainable fossil-free UC Merced

PROCUREMENT



13

The UC system uses procurement as a strategic tool to advance sustainability, fiscal responsibility, and social impact across all its campuses. Procurement Services is central to UC Merced's Scope 3 strategy which has some of the purchasing tools at its disposal to effectively reduce greenhouse gas emissions. These reductions will be measured with respect to a 2019 baseline year using targets for business travel, commuting, and waste. The State of California has established 2045 or sooner as the target for Scope 3 carbon neutrality.[29] The proposed strategy will expand beyond the baseline categories. Procurement instruments implemented into the purchasing process are used to align decisions with environmental responsibility, social equity, and economic opportunity.[2]

UC Merced's Procurement strategy to Scope 3 includes the following:

- Develop an inventory of indirect emissions that include suppliers, products, product declarations, certifications, and services with any associated metrics related to emissions and life cycle costs Implement a regional purchasing strategy, where appropriate, focused upon increasing UC Merced's community impact that reduces the distance of related products and services from campus
- UC Merced will identify opportunities to meet the 25% Preferred Level Green Spend within a product category
- UC Merced will explore integration of opportunities to meet the 25% Economically and Socially Responsible Spend as a total of addressable category spend.
- Build out a product circularity plan (SPP, G2) focused on reducing resource consumption that lowers greenhouse gas emissions, decreases waste, and establishes an approach to resilience.
- Advance procurement tools through Dining Services by striving to purchase 25% sustainable food products by the year 2030

The application of this procurement method will influence purchased goods and services for UC Merced. The above procurement objectives will combine with goals identified in the Transportation, Zero Waste, and other related Scope 3 sections of this document.

ZERO WASTE

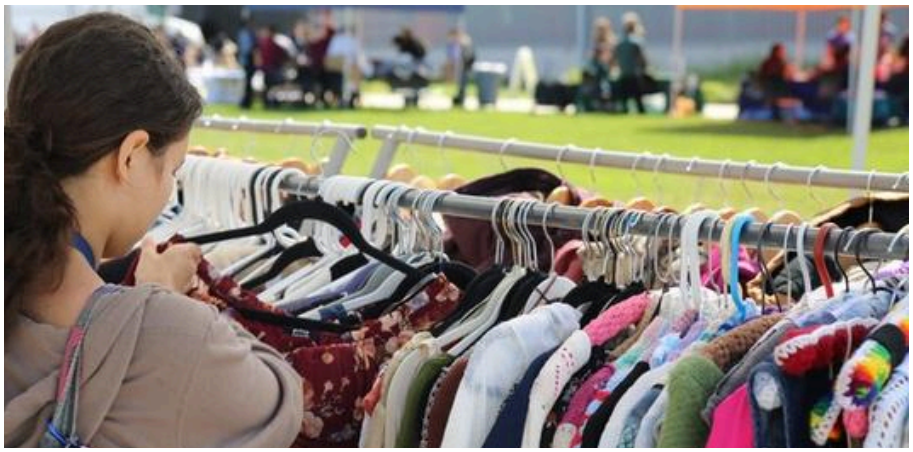


UC Merced's approach to zero waste advances the understanding that materials management is one of its greatest opportunities to reduce Scope 3 emissions. This happens through education that influences behavior to conserve natural resources. As part of this effort, the Bobcat Community learns to adjust its consumption practices to rethink, reduce, reuse, regenerate, and recycle. This framework shows UC Merced's climate leadership as its engagement strategy becomes a model for activating climate action planning. It also connects with the CAP's equity framework by integrating a system that creates shared social, economic, and health benefits.

To meet this objective, UC Merced integrated principles related to local circularity, establishing composting hubs to manage organics, and working with procurement to address the waste stream within the supply chain. UC Merced also maximizes the value of on-campus materials by creating reuse opportunities to facilitate circular systems that minimize waste disposal. This systems-based approach directly supports reductions in Scope 3 emissions while advancing institutional sustainability goals. Rather than measuring success solely by diversion rates, the program evaluates the entire lifecycle of campus materials, recognizing that the greatest climate benefits are achieved by reducing consumption and avoiding the extraction, manufacturing, transportation, and disposal of new products. The CAP integrates a zero waste strategy across every university function through the following actions:

- Materials management is a shared responsibility rather than a facilities initiative
- Procurement policies prioritize durable, reusable, repairable, recyclable, and low-carbon products
- Expanding purchases from local, diverse, and environmentally responsible suppliers
- Dining services utilizes reusable foodware systems to reduce waste disposal





- Food waste prevention strategies include surplus food recovery, food pantry, composting, and local food procurement to reduce emissions associated with food production and disposal
- Water refill stations deployed during campus events reduce the use of single-use plastics
- Campus move-out programs capture clothing, small appliances, and other household items which keep them from landfill
- The campus community can donate and select thrift items from the Bobcat Swap and Shop and the clothing closet provides professional interview attire for those in need
- A surplus warehouse provides items to the public for reuse
- Capital construction projects divert project waste to reuse and recycle operations

Through this systematic action toward the embrace of an equity framework, UC Merced will examine its purchasing decisions, access to resources, and circularity within the institution. Equity is embedded into the above strategic objectives by advancing the following actions:

- Improved access to essential resources through food recovery programs, campus food pantry, surplus furniture, clothing closets, technology reuse programs, reusable materials for those experiencing financial hardship, and reducing waste while addressing basic needs.
- Inclusive procurement policies that prioritize local, minority-owned, women-owned, veteran-owned, and small businesses distribute economic opportunities more equitably while reducing transportation emissions and strengthening regional economies.
- Community partnerships ensure surplus materials remain valuable community assets instead of becoming landfill waste, benefiting historically underserved populations.
- Student workforce development creates paid student employment, internships, and living laboratory projects that provide practical skills in circular economy, materials management, data analysis, and sustainability leadership.

- Health and environmental justice reduces landfill waste that disproportionately affects lower-income communities and communities of color by improving regional air quality and public health.
- Universal participation in zero waste activities through clear signage, accessible collection bins, multilingual education, and consistent recycling and composting systems that allow all campus users to participate regardless of language, physical ability, or familiarity with waste systems.
- Affordability through circularity by initiating reuse programs that lower costs for students by making clothing, office supplies, small appliances, household goods, and residence hall furnishings available at no cost while extending the product's life.

These initiatives transform UC Merced's waste into valuable institutional assets while integrating equity considerations within each action. To measure institutional progress, key performance indicators have been assigned to each action to analyze progress toward Scope 3 emission reductions.

Key performance indicators include:

- Total waste generation per capita
- Source reduction
- Recycling diversion
- Reuse rates
- Contamination rates
- Food recovery
- Compost production
- Construction material diversion
- Supplier sustainability performance
- and, waste-related Scope 3 greenhouse gas reductions.

LIVING LAB



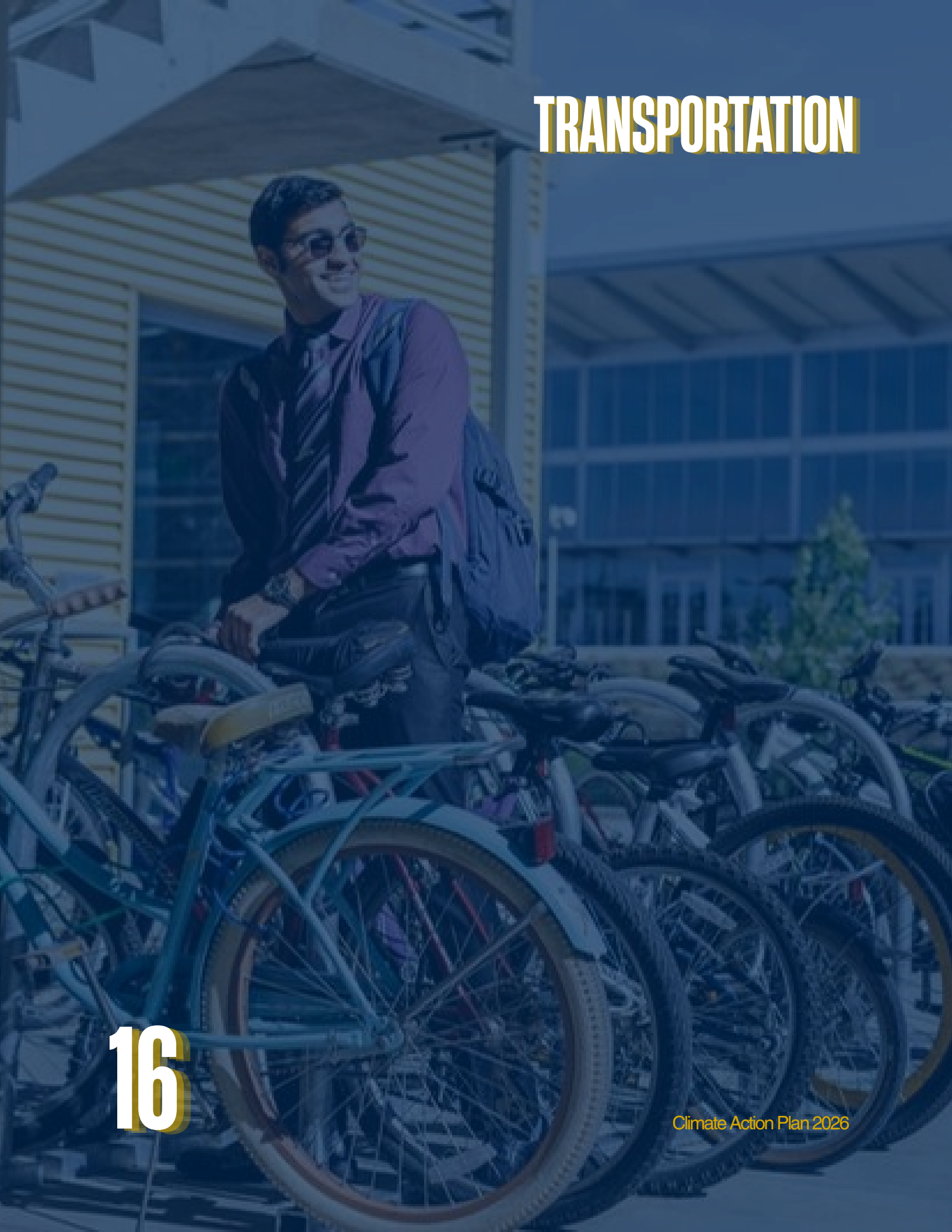
The UC Merced demographics and surrounding region highlight the importance of a just transition toward inclusive climate action. To support this key equity principle, the 2026 Climate Action Plan embraces the embodiment of UC Merced's work to deliver on its promise to serve the Central Valley by embedding its living laboratory (living lab) program into the heart of its climate action initiatives. UC Merced's living lab focuses on providing solutions that reduce any negative contributions by the institution to the global climate challenge. To achieve this outcome, students work on climate-focused projects on and around campus to help identify and realize opportunities to reduce and eliminate emissions. The living lab provides experiential learning opportunities for students to engage in a real-world capacity by working on projects that help prepare them for the professional workplace.

The living lab is a key pillar of the implementation of the CAP by delivering these important outcomes, which include :

- climate action engagement across the campus enterprise;
- working with academic, administrative, and operational stakeholders and non-stakeholders across campus to identify potential projects;
- students gain professional experience working on real world projects advancing workforce development outcomes;
- developing a quantifiable method that measures student impact within the CAP;
- celebrate and promote the contributions of UC Merced students on climate action;
- and, increase institutional capacity to effectively address Scope 1, 2, & 3 emissions across campus.
- While the living lab engages students in professional-level projects to assist in campus climate action, another notable outcome is its positive impact on UC Merced students' social mobility aligning with a just transition toward climate action that reduces economic instability. UC Merced places a priority on social mobility of its student as it was ranked #1 in the nation in 2024 and 2026. The integration of the living lab into the CAP provides an outstanding engagement initiative to engage the campus community in climate action work while enhancing the potential for favorable student outcomes.

This Climate Action Plan provides steps towards clarifying UC Merced's commitments and plans to mitigate climate effects. This plan will be updated and made available to the public on an annual basis. Three areas are anticipated to be of critical importance as climate protection activities proceed.

TRANSPORTATION



16

Transportation remains a significant source of greenhouse gas (GHG) emissions both within the University of California, Merced campus operations and in the commuting activity of students, faculty, and staff. To meet evolving campus, UC systemwide, and California climate goals, including net-zero emissions from core operations and significant reductions in commuting emissions, our campus must both reduce direct transportation emissions and shift travel behavior toward low-carbon modes.

Through a campus-wide 2024 survey[3] and planned TAPS commuter surveys, we can assess the campus sentiment on electrified transit and promoting environmentally friendly transit options. A goal of this updated CAP is to incorporate Scope 3 emissions from campus commuter behavior and identify mitigation techniques. With current survey responses on commuter style and distance, we can begin to estimate scope 3 emissions from transit and develop action items to reduce these emissions.

UC Merced's Transportation, Parking and Fleet Services (TAPS) supports a range of sustainable transportation programs,[24]including:

- CatTracks shuttle services connecting campus with local residential and commercial destinations.
- Bike infrastructure, such as bike racks and storage at residential and academic facilities.
- Zipcar program bringing on demand reduce individual car usage among students, faculty, and staff.
- Access to Merced's "The Bus" and Route UC, which expands public transit options for students, staff, and faculty traveling to and from campus.
- Amtrak partnership and train access, which encourages lower-emission regional travel and connects campus transportation planning to broader transit networks.

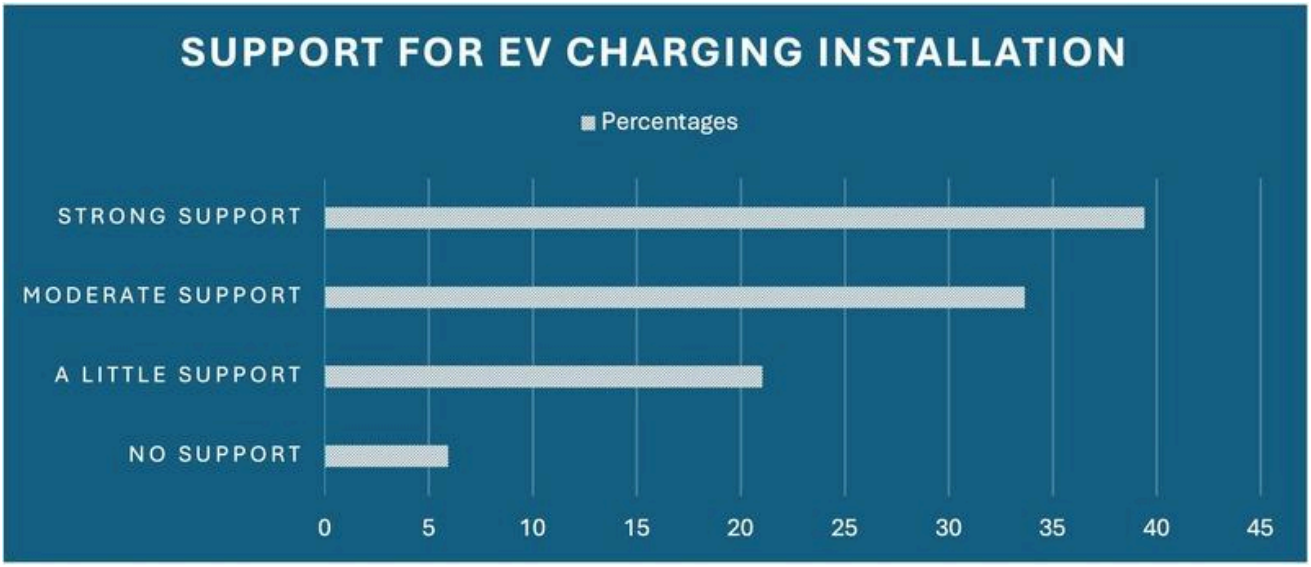
24 https://taps.ucmerced.edu/transportation

Table 1. From Campus-Wide 2024 Survey[3] - Responses to commute style across campus population.

Commute Style	Percentages (Total)
I live on campus	42.76% (1328)
Drive a car alone	32.74% (1017)
Drive a car with others (carpool/ride share)	9.2% (285)
Bus	9.05% (281)
Bicycle (non-electric)	1.16% (36)
Electric bicycle/scooter/skateboard	1.16% (36)
Walk	0.71% (22)
Train (plus additional transportation from downtown Merced)	1.13% (35)
Other	2.12% (66)
Total	3106

With over 30% of the campus population commuting to school through single-occupant vehicles, there is plenty of opportunity to reduce related emissions. Utilizing these numbers as a baseline for year 2024, one goal can be to increase percentage of commuters utilizing sustainable transit methods of walking, biking, or busing, as well as increasing carpooling. Establishing an annual TAPS survey to monitor these behaviors will allow for proper tracking and monitoring of progress.

Table 2. Varying support for UC Merced investing resources to add low-cost electric vehicle charging infrastructure/stations on campus to increase availability.



Goals to reduce emissions from transport-related activities and promote sustainable transit options:

- Reduce campus fleet emissions
- Increase the proportion of zero-emission vehicles (ZEVs) in the campus fleet through prioritized acquisition of electric or other low-emission vehicles. In 2025, the UCM fleet report comprised of 46% ZEV, PHEV, or clean transportation fuel vehicle types (71 out of 154)
- Set interim targets for ZEV fleet share (e.g., 50 % of new light-duty vehicle acquisitions by a near-term date).
- Promote electrification of inter-campus transit including golf cart transit. Assess feasibility of solar-powered golf carts.
- Promote electrification of campus bus system aka CatTracks.
- Reduce commuting emissions
- Implement aggressive TDM measures,[1] including facilitating ridesharing and carpooling programs, promoting emergency ride home programs, maintaining dedicated pedestrian and bicycle circulation systems, paired with bicycle incentives and safe storage options, and partnering with local transit operators to coordinate and enhance public routes to lower commute-related scope 3 emissions, given that single-occupant vehicle commuting is a primary emissions source.
- Establish mode-shift targets (e.g., increase public transit, cycling, walking, and carpool rides).
- Expand infrastructure to support low-carbon travel
- Increase bicycle and micromobility infrastructure (e.g., secure bike parking, lighting, and wayfinding).



- Explore expanding electric vehicle charging infrastructure both on campus and at partner residential locations. With over 40% (and over 72% combined with moderate) exhibiting strong support for installation of accessible and affordable charging infrastructure on campus, plans for increasing charging stations fulfill campus community expectations and reduce charging anxiety to promote ZEV acquisition. (See Table 2).
- Improve real-time transit information and connectivity with local transit systems including CatTracks.
- Promote equitable access to low-carbon options
- Ensure transit services and alternative transportation options serve the diverse needs of campus commuters, including students living both on and off campus.
- Monitor usage data and conduct annual commuter surveys to understand barriers to environmentally friendly commuting and inform future interventions.
- Use UC Merced Living Lab and campus EV equity research to evaluate priority-based EV charger access and siting, considering need, income, accessibility, commute distance, and whether users have reliable home charging.[31,32,33]



Table 3. Campus sentiment on effectiveness of pro-environmental policies related to transit.

Policy	Don't Know/ Unsure	Not at all effective	Slightly effective	Moderately effective	Very effective	Total Responses
Provide environmentally friendly transportation options (e.g. car shares, electric buses, free electric charging of scooters, skateboards, and cars)	7.45% (230)	4.05% (125)	22.31% (689)	30.02% (927)	36.17% (1117)	3088
Encourage people to reduce their personal energy use (e.g. turn off lights, bike to work, reduce use of heating and cooling, buy energy efficient appliances)	6.47% (199)	12.55% (386)	34.07% (1048)	25.42% (782)	21.49% (661)	3076
Limit air travel for UCM work-related events to no more than two trips per year	14.00% (430)	17.81% (547)	28.13% (864)	22.79% (700)	17.29% (531)	3072
UC Merced should provide special incentives to students, faculty, and staff who bike, bus, or walk to campus	7.87% (241)	4.83% (148)	21.25% (651)	28.98% (888)	37.08% (1136)	3064

In Table 3, student, faculty, and staff responses to sustainable transportation policies indicate that policies providing environmentally-friendly transit options and providing incentives to use those options are most effective and can be implemented immediately. Feasibility of reducing personal energy use through further behavioral changes as well as limiting air-travel for work-related purposes should be further assessed.

To achieve the goals outlined above, specific actions and indicators have been identified as shown in Table E below:

Actions	Indicators/Targets
Accelerate the transition to ZEVs for campus fleet and campus-leased vehicles	• Target: Fleet electrification: 50 % ZEV by 2030 and 100 % by 2035. • Indicator: Percentage of campus fleet that are ZEV, reported annually
Identify funding and options for electrifying the campus Cattracks bus system	• Target: Bus electrification roadmap: Secure capital or grant funding and place first electric buses in service by 2028. • Indicators: Dollars secured; annual vehicle-miles traveled (VMT) by electric buses.
Increased Transit Service: Bus availability and Times	• Target: Service frequency, Increase peak-hour frequency on core routes to every 15 minutes or better by 2027. • Indicators: Number of CatTracks routes; average daily ridership; on-time-performance.
Car Sharing: Promote the use of vehicles and transportation options other than single occupant vehicles.	• Target: Mode-shift - 10 % year-over-year reduction in commuter VMT per capita. • Indicators: Annual decrease in VMT for increased density
Establish Community Car Share Program	• Target: Membership - 500 active community members by 2027. • Indicator: Number of car share program members
Renew and revamp the on-campus bicycle repair and Micro-Mobility Repair Stands" campus program	• Target: 100% of tools (such as tire levers and hex keys) attached via tamper-proof, high-strength stainless steel cables to an isolated, outdoor metal stand away from building facades. • Indicator: Increase in number of students using Bicycles as mode of transportation to school; high student satisfaction scores for commuter transit support, Number of bicycles repaired
Increasing the average daily time walking or biking per person for transportation	• Target: Active mobility - Reach an average of 15 minutes walking or biking per person per day (≈ 60 % increase from baseline) by 2030. • Indicators: Mode-share survey results; minutes of active travel reported in annual commuter survey.

Actions	Indicators/Targets
Participate in regional planning to expand bike lanes around Merced to create safer pathways	• Target: Infrastructure - Add two new protected or buffered bike routes to campus by 2028. • Indicators: Number of safe bike routes to Campus; Miles (or km) of new protected lanes
Calculate Scope 3 transit emissions	• Target: Inventory - Publish a verified Scope 3 transportation baseline by 2025 and set a 25 % reduction goal for 2030. • Indicator: Target reduction in emissions
Perform annual TAPS survey to identify further policies and incentives to reduce single commuter vehicles	• Target: Engagement: Achieve ≥ 20 % response rate each year. • Indicators: Number of surveys produced, and number of respondents; number of new policies or incentives adopted from survey insights.
Develop incentives for those that choose environmentally friendly transit options	• Target: Program launch - Implement incentive package (e.g., transit subsidies, bike-to-work rewards) by 2026. • Indicators: Number of participants; reduction in single-occupant vehicle (SOV) trips; uptake of incentives over time.
Assess feasibility of promoting reduction in air travel for academic purposes	• Target: Guidelines - Complete feasibility study and draft voluntary air-travel reduction guidelines by 2026. • Indicator: Annual academic air-travel emissions; faculty/staff survey data on virtual-meeting substitution.
Continue installation of campus electric vehicle charging infrastructure	• Target: Growth - Increase total chargers by at least 15 % per year through 2030. • Indicators: Number of EV charging stations on campus; utilization rate; peak-time access statistics.
Create charging prioritization for those with most need according to high-priority users with accessibility and affordability issues	• Target: Pilot program - Launch priority-user charging pilot by 2026. • Indicators: Number of EV charging station users; number of high-priority users

Table E - Human-centric Actions, Target and Indicators for Sustainable Transportation and Commuting at UC Merced

In order to ensure successful implementation of all CAP transportation actions, performance indicators should be tracked through vehicle miles traveled (VMT), mode share percentages, fleet emissions, bike/transit usage and should be updated annually. Methods to measure these indicators will be developed as a part of the CAP implementation. Annual surveys will be completed to measure several actions' progress as well.



EDUCATION AND OUTREACH



17

Programs, Education and Outreach form a foundation for climate-related activities on campus. This work will take place through collaborative efforts between the Office of Sustainability, Chancellor's Advisory Committee on Sustainability, and Faculty Advisory Committee on Sustainability, with a focus toward reducing Scope 3 emissions.

These initiatives integrate equity principles to ensure broad representation while continuously assessing impact to ensure effective delivery of programs, education, and outreach. This approach includes development of sustainability content that enhances student life and campus activity; integrates climate change and climate justice topics into the campus core curriculum with availability to all students; and provides informal climate-focused education opportunities and activities that leverage campus and community partnerships.

Green Events feature bulk water stations, reusable service ware, food recovery, and messaging that highlights the environmental benefits of these actions. As a result, participants begin to embrace these expectations as they become regular practices. By modeling zero-waste, low-impact practices at campus events, UC Merced reinforces a culture of sustainability. This outcome will help occupants associate responsible choices as a source of pride, shared values, and an improved campus experience.

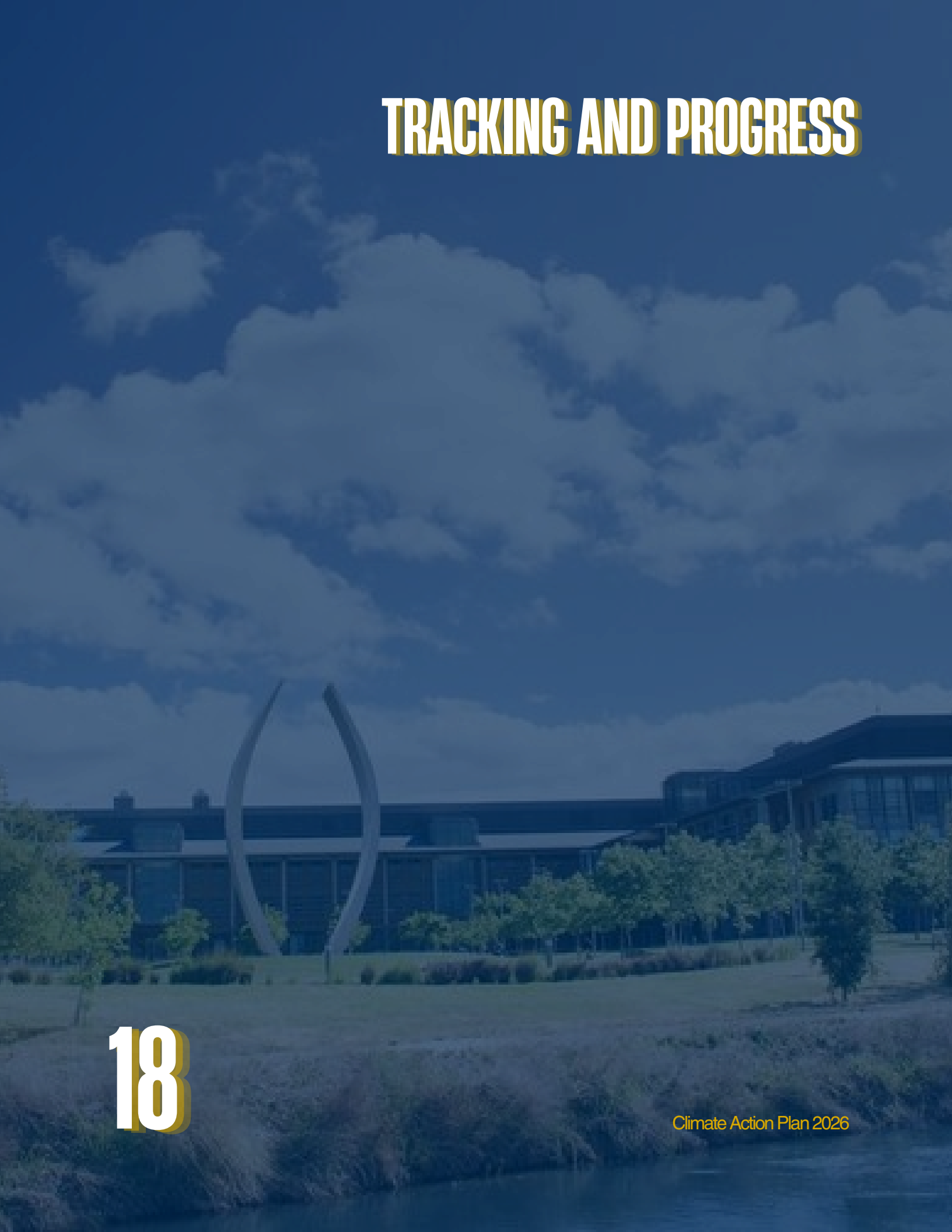
Bobcat Move-out program diverts reusable materials from the landfill by providing convenient collection points for students to donate unwanted clothing, bedding, small appliances, school supplies, furniture, and household items as they leave campus for the summer. All items collected are sorted for reuse through campus thrift stores. The program supports campus zero waste goals with diversion from landfill, reduces greenhouse gas emissions associated with manufacturing new products, and promotes product circularity.

UC Merced’s bulk food dispensers in its retail locations will help reduce Scope 3 greenhouse gas emissions by minimizing packaging, transportation, and waste associated with food products. In alignment with Zero Waste goals, these dispensers will allow customers to purchase only the quantity needed, while decreasing demand for single-use packaging as well as reducing the embodied carbon associated with producing, transporting, and disposing of packaging materials.



The Earth Day Festival provided an atmosphere of informal learning related to the environment. The Office of Sustainability organized the 2026 Earth Day Festival creating a fun-filled celebration of sustainability, drawing more than 600 attendees who swiped a Cat Card. Participants enjoyed a farmers market supported by Dining Services and the Office of Sustainability, explored educational exhibits hosted by 26 campus departments and community partners, shopped at a thrifting booth, and engaged in interactive games and activities focused on environmental awareness

TRACKING AND PROGRESS



UC Merced currently intends to communicate progress towards achieving climate goals through the Sustainalytics Dashboard located on the Office of Sustainability website.[30] updates to the Chancellor's Advisory Committee on Sustainability and this climate action plan. This regular communication provides a structure for tracking progress and data to evaluate changes against the campus climate baseline (see Table 2 at the end of this document). Over time, UC Merced anticipates developing a formalized list of performance indicators to track progress in achieving goals. The event fostered campus engagement on climate-related issues, highlighted campus sustainability efforts, and inspired participant awareness of sustainable practices related to reducing Scope 3 emissions that could be included in their daily lives.

30 https://sustainability.ucmerced.edu/sustainability-dashboard

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APPENDIX

19

TABLE 1: BUILDING DETAILS

Building Name	OGSF	ASF	BGSF	GSF/MGSF	Constructed	Occupied	Applicable Design Target % of Benchmark	Applicable Space Category for Target
Science and Engineering 1	211,891	111,677	187,385	199,638	1/1/2006	12/1/2006	60%	Lab/Complex
Leo & Dottie Kolligian Library	215,961	134,087	176,312	196,137	1/1/2005	8/1/2005	80%	Class/Office
Classroom and Office Building	105,435	60,995	102,710	104,073	2/12/2005	2/12/2005	80%	Class/Office
Central Plant	31,683	2,047	26,111	28,898	1/1/2005	8/1/2005	60%	Lab/Complex
Telecomm Building	4,783	1,071	3,950	4,367	1/1/2005	8/1/2005	80%	Lab/Complex
Police Trailer	4,260	3,963	4,260	4,260	7/2/2005	9/2/2005	NA	NA
Valley Terraces - Calaveras Hall	15,760	13,377	15,122	15,441	12/2005	9/2/2005	80%	Housing/Serv
Terrace Center	19,463	9,940	14,793	17,128	1/2/2005	9/2/2005	80%	Housing/Serv
Valley Terraces - Tulare Hall	15,760	13,235	15,122	15,441	12/2005	9/2/2005	80%	Housing/Serv
Valley Terraces - Madera Hall	15,760	13,414	15,122	15,441	12/2005	9/2/2005	80%	Housing/Serv
Valley Terraces - Stanislaus Hall	15,760	13,420	15,122	15,441	12/2005	9/2/2005	80%	Housing/Serv
Valley Terraces - Kern Hall	15,760	13,418	15,122	15,441	12/2005	9/2/2005	80%	Housing/Serv
Valley Terraces - Kings Hall	15,760	13,416	15,122	15,441	12/2005	9/2/2005	80%	Housing/Serv
Valley Terraces - Fresno Hall	7,822	6,548	7,567	7,695	12/2005	9/2/2005	80%	Housing/Serv
Valley Terraces - San Joaquin Hall	7,822	6,719	7,567	7,695	12/2005	9/2/2005	80%	Housing/Serv
Valley Terraces - Merced Hall	15,760	13,414	15,122	15,441	12/2005	9/2/2005	80%	Housing/Serv
Pump House	1,417	0	1,417	1,417	1/1/2004	8/1/2004	80%	Lab/Complex
Yablokoff-Wallace Dining Center	32,461	19,715	22,492	27,477	12/2005	9/2/2005	80%	Lab/Complex
Joseph Edward Gallo Recreation and Wellness Center	37,098	27,689	34,070	35,584	2/12/2005	2/11/2006	65%	Class/Office
Sierra Terraces - Mariposa	41,270	29,863	41,238	41,254	9/1/2007	9/2/2008	65%	Housing/Serv
Sierra Terraces - Tuolumne	42,402	29,982	42,402	42,402	9/1/2007	9/2/2008	65%	Housing/Serv
Inspection Trailer 1	1,440	1,256	1,440	1,440	12//2006	1/4/1/2017	N/A	Class/Office
Facilities Support Building	28,231	18,406	25,626	26,929	2/10/2008	2/10/2008	65%	Class/Office
Early Childhood Education Center	9,657	6,128	7,387	8,522	6/15/2009	6/15/2009	65%	Class/Office
Summits - Tenaya Hall	47,531	27,878	46,026	46,779	1/2/2005	9/2/2005	80%	Housing/Serv
Summits - Cathedral Hall	49,079	28,635	48,406	48,743	1/2/2005	9/2/2005	80%	Housing/Serv
Social Science and Management	110,972	61,333	100,589	105,781	8/1/2011	8/15/2011	65%	Class/Office
Student Services Building	36,026	20,144	34,185	35,106	1/1/2014	1/15/2014	50%	Class/Office
Student Activities & Athletics Center	25,802	15,337	24,427	25,115	8/1/2013	9/1/2013	50%	Class/Office
The Summits - Half Dome	114,468	66,285	112,434	113,451	8/1/2013	9/1/2013	65%	Housing/Serv
Science & Engineering 2	131,279	58,467	123,179	127,230	8/1/2014	8/4/2014	65%	Lab/Complex
Classroom and Academic Office 2	88,505	50,153	79,783	84,144	5/1/2016	8/1/2016	50%	Class/Office
PDCM Trailer	4290	3090	4290	4290	12/2016	1/5/2017	NA	Class/Office
Environmental Health & Safety Trailer	3,681	3,306	3,681	3681	1/2017	4/2017	N/A	Class/Office
Glacier Point	162,821	105,352	157,450	160,136	7/20/2018	8/16/2018	50%	Housing/Serv
Granite Pass	163,486	78,424	127,126	145,306	8/1/2018	2020	50%	Housing/Serv
The Pavilion	42,080	27,156	33,894	37,987	7/1/2018	8/16/2018	50%	Lab/Complex
Bellevue Loading Dock	15,971	768	15,971	15,971	7/1/2019	NA	50%	Housing/Serv

Sustainability Research and Engineering	185,101	101,784	179,937	182,519	6/1/2019	8/14/2019	50%	Lab/Complex
Arts and Computational Sciences	125,823	58,710	112,632	119,228	8/1/2019	8/14/2019	50%	Lab/Complex
Research Server	1,500	0	1,500	1,500	6/1/2019	9/2019	50%	Lab/Complex
Hazmat Facility	3,450	2,972	3,450	3,450	9/2019	NA	50%	Lab/Complex

NOTES: (a) Gallo Rec and Wellness classifies as Housing/Serv as an interim classification for a recreation/wellness facility.

TABLE 2: CLIMATE BASELINE (CY19)

	On-Campus	Off-Campus	Campus-Related	Total
Square footage (MGSF)	2,123,420	346,471	n/a	2,469,891
Student Population (FTE)	8832	n/a	n/a	8832
Building Electricity Use (MWh/yr)	33,847.78	3,784	n/a	37,631.78
Building Electricity Use (kWh/yr/MGSF)	15.94	10.92	n/a	15.24
Building Electricity Use (% of target)	132.40%	n/a	n/a	n/a
Building Electricity Use (% of benchmark)	100%	n/a	n/a	n/a
Building Electricity Peak Period Demand (MW)	4.17	n/a	n/a	n/a
Building Electricity Peak Period Demand (W/MGSF)	1.96	n/a	n/a	n/a
Building Electricity Peak Period Demand (% of target)	84.5%	n/a	n/a	n/a
Building Electricity Peak Period Demand (% of benchmark)	100%	n/a	n/a	n/a
Building Natural Gas Use (therms/yr)	928,801	62,399	n/a	991,200
Building Natural Gas Use (therms/yr/MGSF)	0.437	0.18	n/a	0.401
Building Natural Gas Use (% of target)	132.40%	n/a	n/a	n/a
Building Natural Gas Use (% of baseline)	100%	n/a	n/a	n/a
Building Propane Use (gallons/yr)	0	1,247	n/a	1,247
Building Backup Diesel Use (gallons/yr)	0	0	n/a	0
Transportation Natural Gas Use (therms/yr)	380	0	n/a	380
Transportation and Grounds Gasoline Use (gallons/yr)	62,744	0	n/a	62,744
Transportation and Grounds Diesel Use (gallons/yr)	82,031	0	n/a	82,031
Building Site Energy Use (MMBTU/yr)	208,374	19,265	n/a	227,639
Building Site Energy Intensity (MMBTU/yr/MGSF)	0.0981	0.0556	n/a	0.0922
Building Site Energy Intensity (% of target)	132.40%	n/a	n/a	n/a
Building Site Energy Intensity (% of benchmark)	100%	n/a	n/a	n/a
Total Site Energy Use (MMBTU/yr)	227,223	19,265	n/a	246,489
Total Site Energy Intensity (MBTU/yr/student)	25.73	n/a	n/a	27.91

Building Source Energy Use (MMBTU/yr)	354,759	42,819	n/a	397,579
Building Source Energy Intensity (MMBTU/yr/MGSF)	0.1671	0.1236	n/a	0.1610
Total Source Energy Use (MMBTU/yr)	373,799	42,819	n/a	416,619
Total Source Energy Intensity (MBTU/yr/student)	42.32	n/a	n/a	47.17
Building GHG Emissions (metric tons/yr)	5,525	568	n/a	6,093
Building GHG Emissions (metric tons/yr/1000 MGSF)	2.6	1.64	n/a	2.47
Total GHG Emissions (metric tons/yr)	6,854	568	5,584	13,006
Total GHG Emissions Distribution (%)	52.70%	4.40%	42.90%	100%
Total GHG Emission Intensity (metric tons/yr/student)	0.776	0.064	0.632	1.473

1) 1 MWh = 3.412 MMBtu; 1 therm = 0.100 MMBtu; 1 gallon of propane = 0.09145 MMBtu; 1 gallon of motor gasoline = 0.12021 MMBtu; and 1 gallon of diesel fuel = 0.13738 MMBtu.
2) Source-site ratios used for the 2019 benchmark are based on the U.S. EPA ENERGY STAR Portfolio Manager Source Energy Technical Reference: 2.80 for grid-purchased electricity, 1.00 for on-site solar or wind electricity used on-site, 1.05 for natural gas, and 1.01 for propane and diesel or fuel oil. Gasoline is not separately identified as a Portfolio Manager building-energy type; where included, a ratio of 1.01 is retained as an assumption equivalent to diesel and should be identified as such.
3) The 2019 electricity-use target was estimated by applying the ratio of the target site EUI of 74.1 kBtu/ft²/year to the calculated actual site EUI of 117.2 kBtu/ft²/year to total on-campus electricity consumption of 33,847.781 MWh. Total electricity consumption includes 23,078 MWh of purchased electricity and 10,769.781 MWh of onsite solar electricity consumed by the campus. Onsite solar is included in building energy-use and EUI calculations but is treated separately from purchased electricity in the greenhouse-gas inventory. This calculation assumes that electricity and other energy sources are reduced proportionally and that the campus building area and reporting boundary remain unchanged.
4) The 2019 Building Electricity Peak Period Demand (MW) value represents the highest utility-metered demand recorded during the part-peak period.
5) The percentage of target was calculated using the historical campus-average peak-demand target intensity of approximately 2.324 W per gross square foot, normalized to the actual 2019 campus footprint. The resulting 2019 target was approximately 4.131 MW. This is a reconstructed target and should be replaced if an officially adopted 2019 peak-demand target becomes available.
6) Building and total GHG emissions are reported on a gross basis, before the application of offsets, to show the campus's actual emissions profile and the relative contribution of each source. UC Merced applied eligible offsets to its 2019 Scope 1 and Scope 2 emissions, reducing net Scope 1 and Scope 2 emissions to zero. Scope 3 emissions were not offset and remained 5,584 metric tons CO_2e.

TABLE 3: BUILDING PERFORMANCE TARGETS

Target	Units	Laboratory/Complex	Classroom/Office	Housing and Services
			100% of Benchmarks	
Max Demand	watts/gsf	6.4	3.5	2.4
Annual kWh	kWh/yr/gsf	39	14.3	10
Max CHW	tons/kgsf	4.8	2.6	1.82
Max Therms	th/hr/kgsf	0.43	0.12	0.18
Annual Therms	th/yr/gsf	1.82	0.20	0.28
			80% of Benchmarks	
Max Demand	watts/gsf	5.38	2.92	2.04
Annual kWh	kWh/yr/gsf	32.56	12.08	8.48
Max CHW	tons/kgsf	2.99	1.62	1.14
Max Therms	th/hr/kgsf	0.34	0.10	0.14
Annual Therms	th/yr/gsf	1.46	0.16	0.22
			65% of Benchmarks	
Max Demand	watts/gsf	4.2	2.3	1.58
Annual kWh	kWh/yr/gsf	25	9.3	6.5
Max CHW	tons/kgsf	3.1	1.69	1.19
Max Therms	th/hr/kgsf	0.34	0.10	0.14
Annual Therms	th/yr/gsf	1.18	0.13	0.18
			50% of Benchmarks	
Max Demand	watts/gsf	3.2	1.73	1.21
Annual kWh	kWh/yr/gsf	19.3	7.2	5.0
Max CHW	tons/kgsf	2.4	1.30	0.91
Max Therms	th/hr/kgsf	0.34	0.10	0.14
Annual Therms	th/yr/gsf	0.91	0.10	0.14