



# University of Colorado Sustainability Report 2023



University of Colorado

Boulder | Colorado Springs | Denver | Anschutz Medical Campus

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## Letter from the President



I feel incredibly lucky to live in Colorado. Born and raised in this great state, I have a deep appreciation for all it has to offer, including wonderful seasons and breathtaking landscapes from the mountains to the plains. My family and I spend as much time enjoying Colorado's great outdoors as our schedules allow (which never seems to be enough), hiking or skiing or simply enjoying the spectacular views that surround us.

Doing our part to help protect Colorado's splendor for future generations is a priority for me and my family. Demonstrating a commitment to preserving our limited natural resources and reducing our impact on the environment are among our top priorities at the University of Colorado.

CU should be a leader in advancing sustainability by making real progress toward our long-term goal of carbon neutrality. This report helps demonstrate our progress and highlights how sustainability drives our efforts, including:

- CU's continued emphasis systemwide on renovation and repair over new construction.
- Building upgrades paid from utility cost savings.
- CU's development of more sustainable purchasing practices.
- Academic offerings on all our campuses that promote sustainability.

I am proud of the work we are doing at CU, and yet, I recognize that we can and must do more. To this end, I am forming a systemwide sustainability working group in 2024 to determine additional ways to advance sustainability at CU, and inform our strategic planning for the future. This will complement the important work our campuses are already doing on this critical priority.

I encourage you to read on for a comprehensive look at our ongoing work to reduce our greenhouse gas emissions as well as our energy and water consumption, and advances we are making in the areas of waste diversion and transportation. We are firmly committed to leading as a university system in limiting our footprint on the environment as we work toward a sustainable future for CU, our state, our nation and the world.

A handwritten signature in blue ink that reads 'Lori Salvi'.

## Introduction

The University of Colorado is committed to the long-term goal of carbon neutrality. This report focuses on sustainability in the built environment. The four campuses of the University of Colorado are united in their passion to create opportunities to reduce campus energy use and greenhouse gas (GHG) emissions. The University recognizes that it has an important part to play in combating climate change. The University further recognizes that the path to net-zero energy is one of continuous improvement.

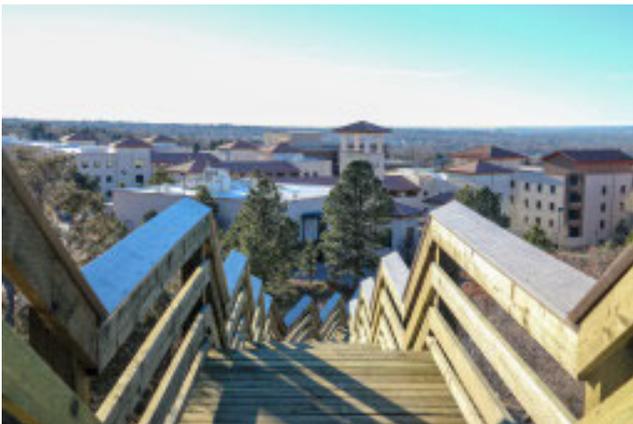
Recognizing the importance of reducing their carbon footprint, all four campuses began tracking energy use intensity, greenhouse gas emissions, and water consumption in the mid-2000s. Additionally, the Boulder and Colorado Springs campuses began voluntarily tracking various sustainability measures through the Sustainability Tracking, Assessment & Rating System (STARS) in 2010 and have current gold ratings. STARS is a comprehensive self-reporting tool used to measure sustainability in higher education. There are 352 institutions with current STARS ratings. Participating institutions receive reporter, bronze, silver, gold or platinum ratings.



## 2009 Sustainability Resolution

In 2009, the CU Board of Regents passed a resolution encouraging sustainability efforts system-wide. The resolution recognized a number of sustainability efforts that commenced in 2007 at the state and national levels. Specifically, the resolution directed the president and chancellors to:

- Incorporate Leadership in Energy and Environmental Design (LEED) standards in campus construction projects wherever possible (Senate Bill 07-051);
- Develop comprehensive plans to reduce GHG emissions 80% below 2005 levels (as outlined in the American College and University Presidents' Climate Commitment, which was signed by each campus chancellor in 2007); and
- Incorporate the Governor's Colorado Climate Action Plan which required an 80% reduction in GHG emissions below 2005 levels and the Greening of State Government Executive Orders into campus comprehensive plans to achieve climate neutrality.



### UCCS Inter-Campus Trail System

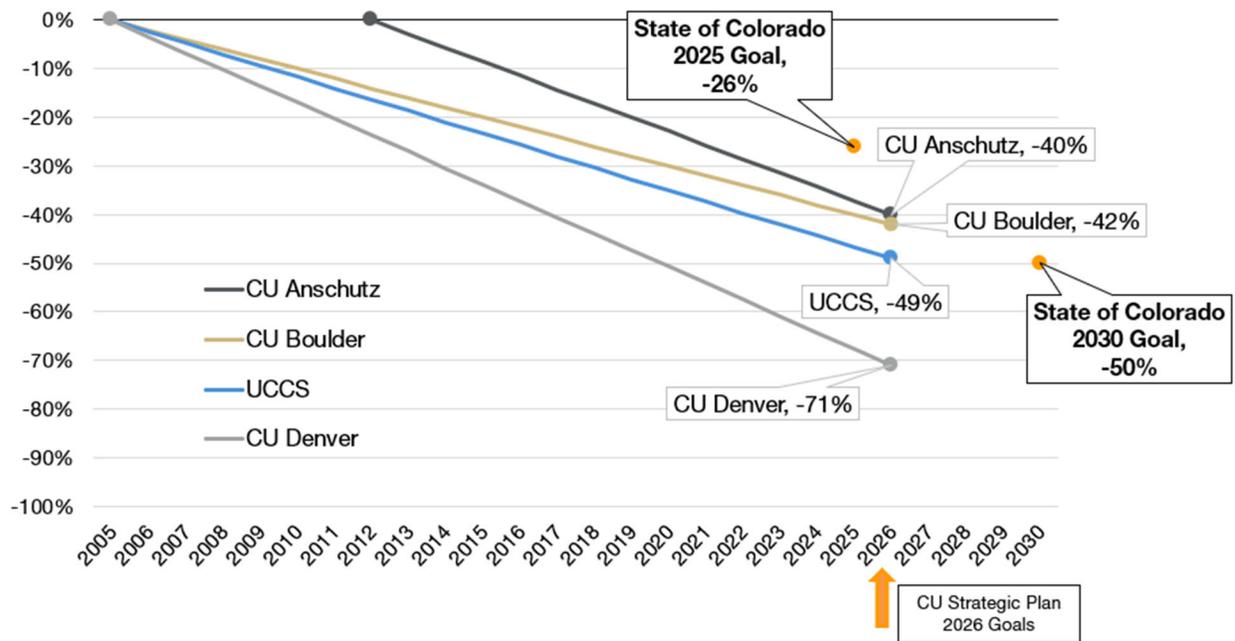
The Tava Trail is a recreational trail that is maintained by the campus grounds department. The campus community uses the trail for inter-campus north and south travel between locations near on-campus housing at Alpine Village and Summit Village.



## 2021 Strategic Plan

System-wide strategic planning efforts focused on sustainability began in 2019 and furthered the University's sustainability goals with near-term 2026 goals that reduce energy consumption and GHG emissions. The University's goals align with various efforts by local governments and the State of Colorado to address climate change. The University's near-term GHG emission reduction goals are illustrated in the figure below.

University of Colorado 2026 Greenhouse Gas Emission Reduction Goals



Constructing an outdoor swimming pool was a key sustainability feature of the 2014 expansion of the CU Boulder Student Recreation Center. The recreation center uses a heat-recovery loop, which takes heat produced by building uses and moves it to where it's needed elsewhere in the building and to the outdoor pool. The pool eliminates the need for a cooling tower because its temperature can vary based on the amount of heat that needs to be displaced from the building. This saves about 750,000 gallons of water/year that it would take to operate a cooling tower.

Source: ENRMountain States 7/11/14

## Local Government Goals

The University recognizes the symbiotic relationship between the sustainability work and goals of its local government partners and its own path toward a more sustainable future. Local government goals may complement or challenge the University's goals. Or, as is the case with local utilities, goals play a key role in helping the University move toward carbon neutrality.

### Aurora

In 2020, the City of Aurora partnered with Xcel Energy to develop an Energy Action Plan. The plan prioritizes energy efficiency and demand management, transportation electrification, and renewable energy.

### Boulder

In 2006, the City of Boulder instituted the nation's first voter-approved tax dedicated to mitigating climate change. In 2018, Boulder County established community GHG emission reduction goals. In October 2021, the Boulder City Council adopted an updated framework for climate action. The new framework created more aggressive emissions reduction targets:

**2030:** Reduce emissions 70% (against a 2018 baseline)

**2035:** Net zero emissions

**2040:** Carbon positive

The City is also in the process of revising its energy conservation code, which may add new requirements, such as a ban on natural gas in new construction and remodels.

### Denver

The City and County of Denver established its Office of Sustainability in 2013. In July 2018, Denver published its 80 x 50 Climate Action Plan, which established GHG emission goals. In 2020, the city's Climate Action Task Force revised the 2018 goals with more aggressive targets and referred a ballot measure to the voters to increase the local sales and use tax to create the Climate Protection Fund. The ballot measure was approved and Denver is working toward the following GHG emission reduction targets:

**2030:** Reduce emissions 65% (against a 2019 baseline)  
100% renewable electric system

**2040:** Net zero emissions

### Colorado Springs

The city of Colorado Springs is currently developing a sustainability action plan that will focus on integrating sustainability more intentionally in the community.

### Electric Utility Service Providers

The GHG emission reduction measures planned by local electric service providers directly benefit the University. So long as local providers emit GHG, so too will the University, since it uses the services of these providers.

The utilities that serve the four University campuses, Xcel Energy and Colorado Springs Utilities (CSU), have committed to resource plans that will gradually reduce GHG emissions between now and 2050.

**2030:** Xcel Energy - Reduce emissions 25%  
CSU – Reduce carbon emissions by 80% and retire all coal-generated power

**2050:** Xcel Energy – Produce 100% carbon-free electricity  
CSU – Reduce carbon emissions by 90%

In addition to the power it purchases from Xcel Energy, the CU Boulder campus has three district energy plants that provide heating, cooling, and power to facilities primarily located on the Main Campus and at Williams Village. A renewal project planned for 2024 will replace equipment in the West District Energy Plant with new equipment that will allow the campus to produce cleaner power than can currently be purchased from Xcel Energy. Additionally, the campus is strategically replacing equipment and piping in order to eventually transition from steam to hot water heat, which will support the use of renewable energy sources in the future.

## State Goals

In 2007, under Governor Bill Ritter, Colorado published its first Climate Action Plan, which set a goal of reducing GHG emissions by 20% below 2005 levels by 2020. In 2019, the Colorado General Assembly passed House Bill 19-1261, Climate Action Plan to Reduce Pollution. The bill established mandated GHG emission minimum reduction goals, relative to 2005 levels, for 2025, 2030, and 2050.

Governor Jared Polis furthered the goals established in HB 19-1261 through Executive Order D 2019 016, Concerning the Greening of State Government, which amended a prior Executive Order. Among other changes, the executive order refined the State’s GHG emission goals, encouraged an increase in the percentage of renewable electricity consumed or purchased by state facilities to 5% by the end of FY 2022-23, and required additional analysis of new construction and renovation projects with respect to renewable energy and utilities and the State’s High Performance Certification Program. Institutions of higher education are encouraged to comply with certain provisions of the executive order.

In 2023, the Colorado General Assembly adopted Senate Bill 23-016, which added additional benchmarks and revised the overall GHG emission reduction goal from House Bill 19-1261 from 90% in 2050 to 100% in 2050. The state’s GHG reduction goals are shown below. The new benchmarks added by SB 23-016 are shown in blue. The revised overall GHG emission goal is shown in green.



## Student Sustainability Work

CU students are active partners in reducing GHG emissions and promoting sustainability, whether through learning new behaviors after they come to campus, volunteering, or developing projects that make lasting positive environmental change.

At the CU Denver campus, students participate in the Auraria Sustainable Campus Program. The office spearheads programs that reduce campus energy consumption from non-renewable sources, promote alternative transportation, and divert waste. Student Eco Reps volunteer for activities such as trash clean-up along the Cherry Creek Trail or assisting with composting at campus events.



The UCCS Sustainability Office supports campus sustainability initiatives such as the Students for Environmental Awareness and Sustainability group and adding sustainable dining options at the Roaring Fork Dining Hall. The office also promotes student volunteerism with events like tree planting and the annual Creek Week clean up event.

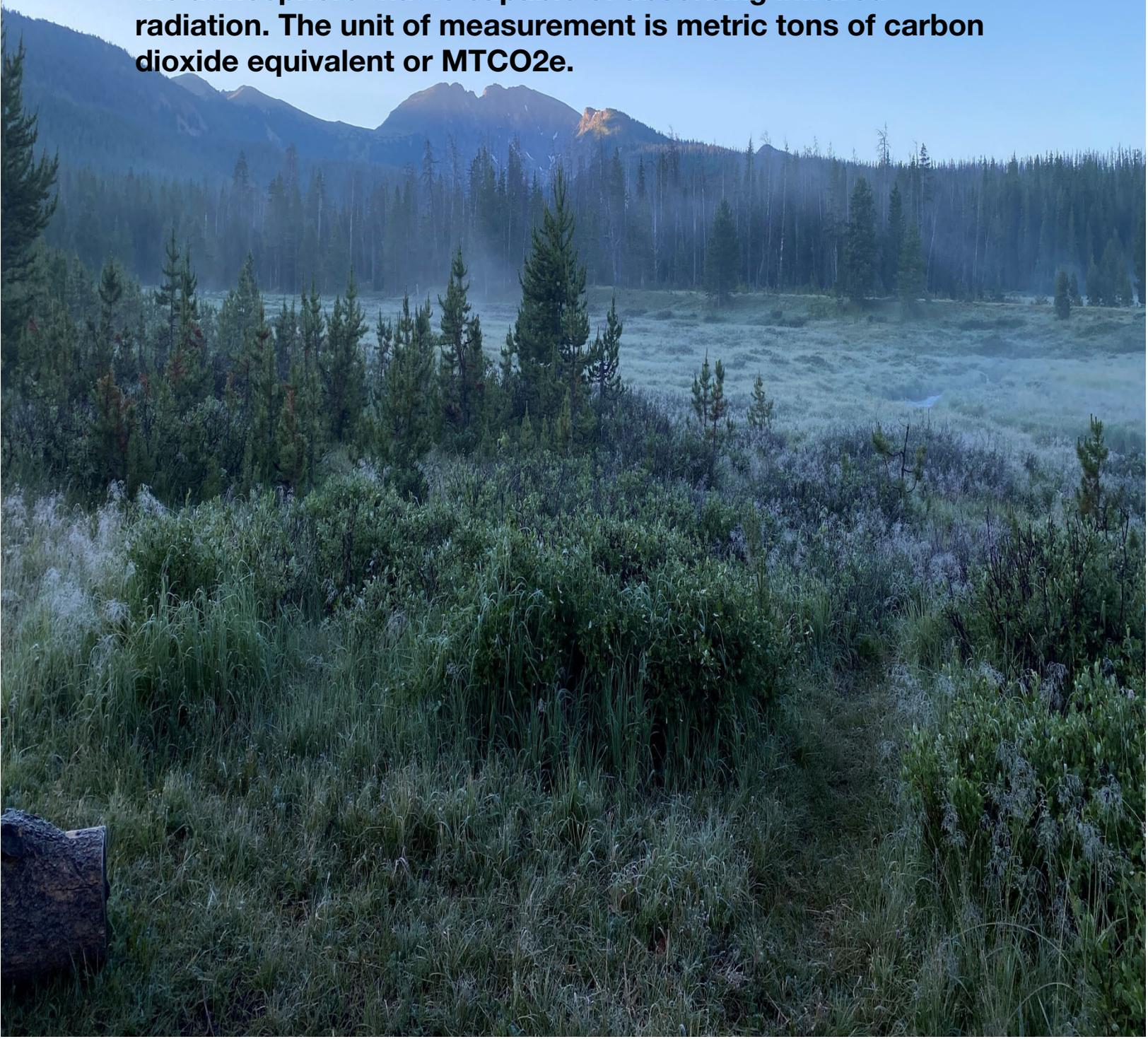
The University of Colorado Environmental Center is housed within the CU Boulder Division of Student Affairs. The Center supports 17 student groups and more than 250 lab, office, and hall student Eco Leaders. It also employs 150 students annually. The center promotes peer-to-peer education on climate change and climate justice. Students are encouraged to take the Sustainable Buffs Challenge and use various tools to estimate their carbon footprint. Students can also sign up for a free Eco Kit and talk to an EcoBuffs student expert to learn how to live a more zero-waste life style, use water more efficiently, and reduce energy bills.



The President's Sustainable Solutions Challenge (PSSC) was created in 2019 in partnership with the CU Boulder Environmental Center and Regents Heidi Ganahl and Leslie Smith. The first competition took place in spring 2020, with participation from students on the CU Boulder and UCCS campuses. The PSSC encourages student-led innovation in sustainability on all four CU campuses. Students compete for cash prizes. The annual challenge is sponsored by the President, with the support of the Regents.

# GREENHOUSE GAS EMISSIONS

The University recognizes greenhouse gas emissions as a major contributor to climate change. Greenhouse gas emissions measure the amount of gas (including carbon dioxide, methane and water vapor) released into the atmosphere. A greenhouse gas is any gaseous compound in the atmosphere that is capable of absorbing infrared radiation. The unit of measurement is metric tons of carbon dioxide equivalent or MTCO<sub>2</sub>e.



## Greenhouse Gas Emissions

As part of its 2021 strategic plan, CU set a goal of reducing Scope 1 and 2 GHG emissions 15% from 2019 emission levels by 2026.

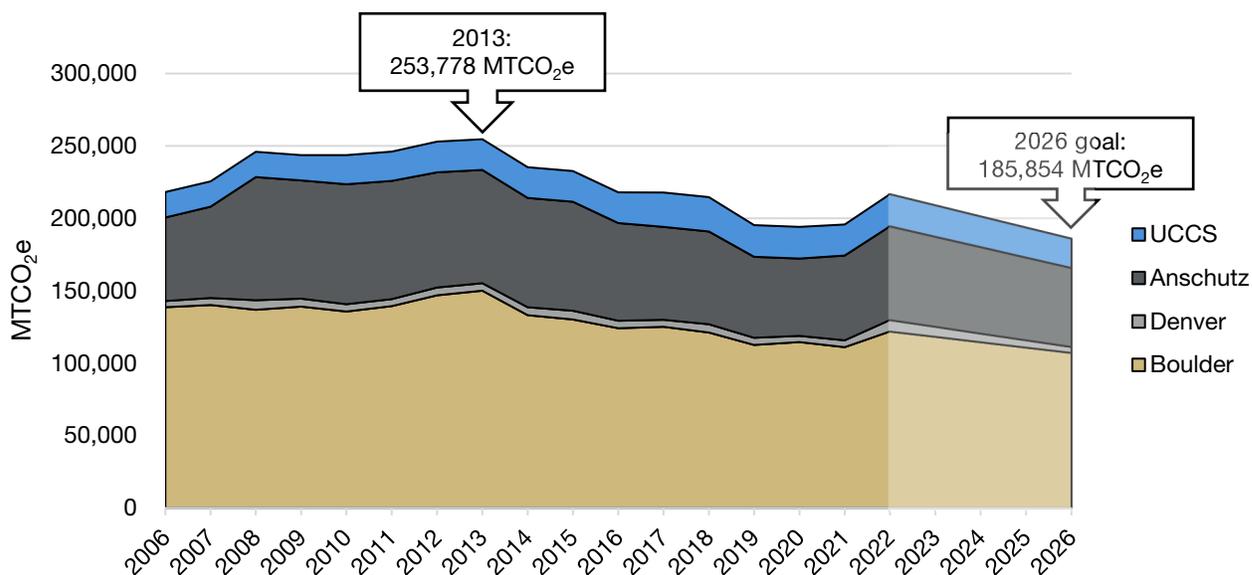
The following chart illustrates the change in GHG emissions from each campus' baseline year through 2021. The change is plotted against campus growth during the same period. The chart also illustrates the 2026 GHG

reduction goal selected by each campus through 2021 strategic planning. When the data is normalized as shown in these charts, three of the four campuses have already achieved the State's goal of a 26% reduction in GHG emissions over the 2005 baseline year by 2025.<sup>1</sup>

### GHG Emission Reduction Actual and Goal

Campus	2019 Actual	2026 Goal
CU Boulder	112,434	107,056
CU Denver	4,993	4,110
CU Anschutz	55,973	54,469
UCCS	20,389	20,219
System Office	1,270	1,079
<b>Total</b>	<b>195,059</b>	<b>186,933</b>

### Greenhouse Gas Emissions per GSF (MTCO<sub>2</sub>e/GSF)



**6%**

The anticipated percent change in employment for environmental scientists and specialists and environmental engineering through 2032. This change is twice the average growth rate for all occupations.

Source: U.S. Bureau of Labor Statistics (2022 data)

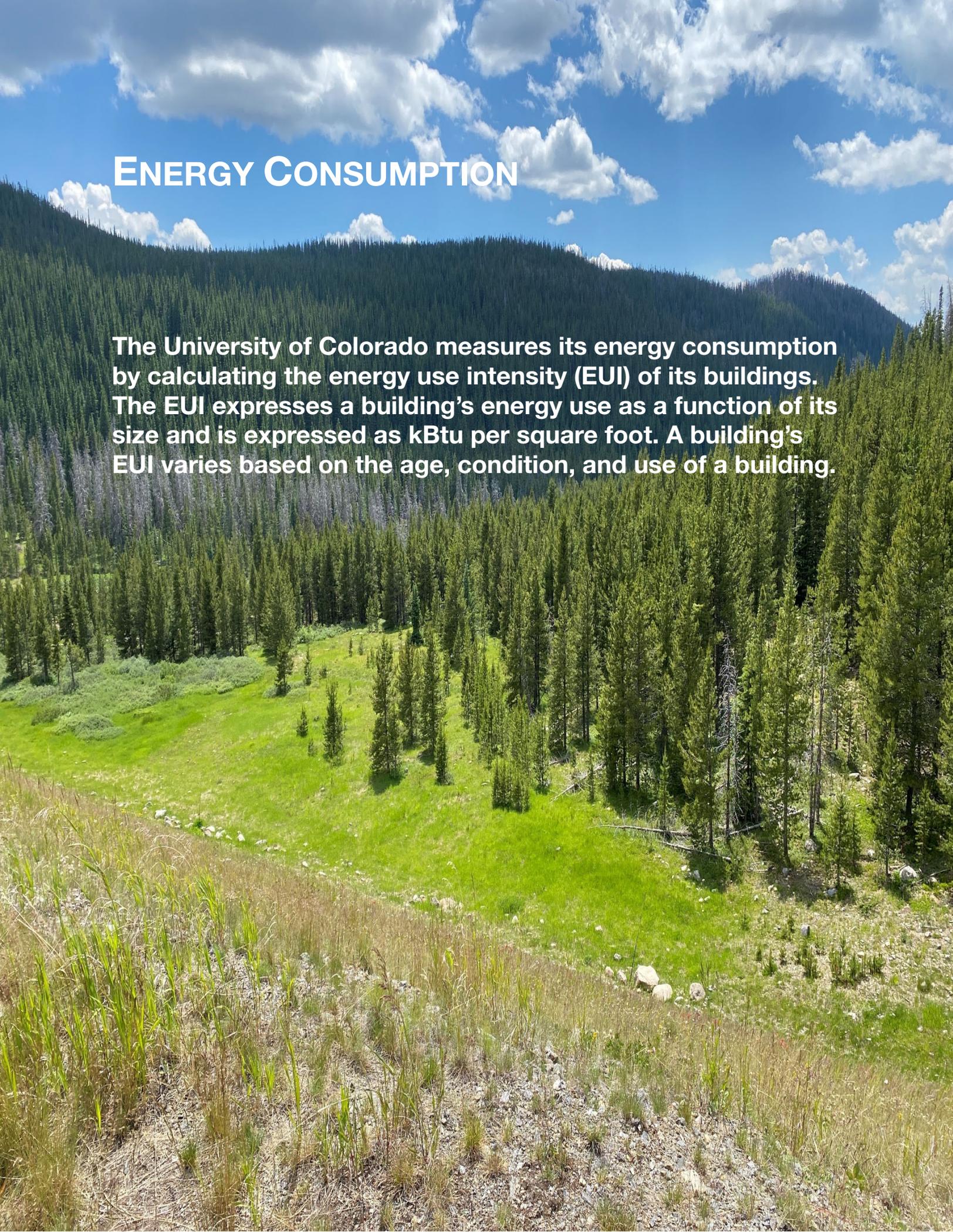
**45%**

The number of students surveyed who considered environmental sustainability in their college enrollment decision.

Source: Inside Higher Ed, 1/2023

<sup>1</sup> Note: The State's goal year (2025) and CU's 2021 Strategic Plan goal year (2026) differ. Also, the Denver and UCCS campuses use 2006 as the baseline year, rather than 2005; (data are unavailable for 2005).

# ENERGY CONSUMPTION



**The University of Colorado measures its energy consumption by calculating the energy use intensity (EUI) of its buildings. The EUI expresses a building's energy use as a function of its size and is expressed as kBtu per square foot. A building's EUI varies based on the age, condition, and use of a building.**

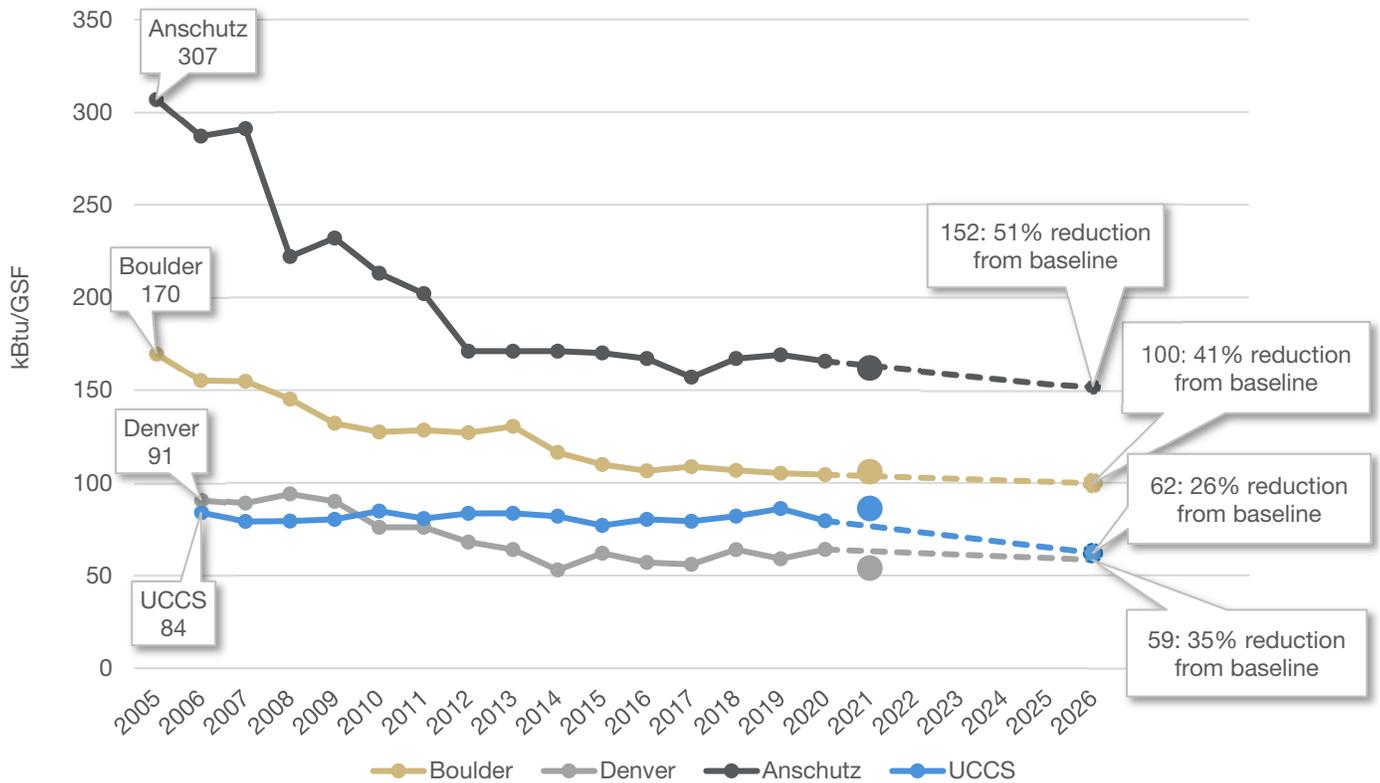
## Energy Consumption

Through its 2021 strategic plan, the University set a goal of reducing its energy use consumption (EUI) in campus buildings by up to 10% from 2019 levels by 2026.

A building's EUI varies based on the age, condition, and use of a building. Older buildings and buildings that are poorly constructed or maintained may have higher EUIs than newer, well-constructed buildings with similar use. Different building use types also have different EUIs. For example, laboratories typically use more energy per square foot than office spaces and office spaces generally use more energy per square foot than residence halls.

The University began tracking and reporting its EUI in the mid-2000s. Through a concentrated effort to improve the energy efficiency of its existing and newly constructed buildings, all four campuses have seen a measurable decline in EUI since tracking began. The chart below shows the reduction in EUI from each campus' baseline year<sup>2</sup> through the 2026 EUI reduction goal established through the University's 2021 strategic plan.

Energy Use Intensity Goals (with 2021 Actuals)



<sup>2</sup> The baseline year is 2005, with the exception of the Denver and UCSS campuses, which began tracking in 2006.

## Energy Performance Contracting

All four campuses recently completed building performance audits to identify and evaluate possible energy conservation measures. As a result of these audits, the campuses will be pursuing building upgrades beginning in the next year to be repaid from utility cost savings in the following years.

At CU Anschutz, a Bundled Energy Project will make improvements across multiple academic and research buildings and is projected to reduce GHG emissions by up to 5,754 metric tons/year. If the campus hits this target, it will reduce total GHG emissions 10% from its baseline year.

### What is Energy Performance Contracting?

Energy Performance Contracting (EPC) is a creative model for funding and implementing capital improvement upgrades, which allows entities to use future cost savings to fund projects.

Source: Colorado Energy Office

UCCS will begin making improvements across 48 campus buildings later in 2023 or early 2024 to retrofit old lighting; replace, retrofit, and recommission HVAC equipment; and replace end-of-life electrical equipment. The combined projects are estimated to reduce campus GHG emissions by 3,736 metric tons/year, an 18% reduction in total emissions from the campus' baseline year.

CU Boulder is currently assessing energy conservation measure projects in 18 buildings. It anticipates moving forward with an energy performance contract in 2024.

After a building performance audit of its downtown Denver buildings, CU Denver is planning the strategic replacement of legacy equipment in several buildings through the state controlled maintenance program and its campus cash-funded deferred maintenance program.

## Renewable Energy Production

There are challenges associated with meeting sustainability goals in concert with continued campus growth. One concern with measuring EUI is that some alternatives to new construction, like reconfiguring space in an existing building to increase space utilization, actually result in increased building EUI, but offset the increase in GHG emissions that would result from constructing a new building. Additionally, some efforts to eliminate GHG emissions, such as installing solar panels, do not correspondingly reduce EUI, even though the type of energy consumed is more sustainable. In order to further its sustainability goals, the University also seeks to offset its energy consumption through the production of renewable energy and the purchase of renewable energy credits.

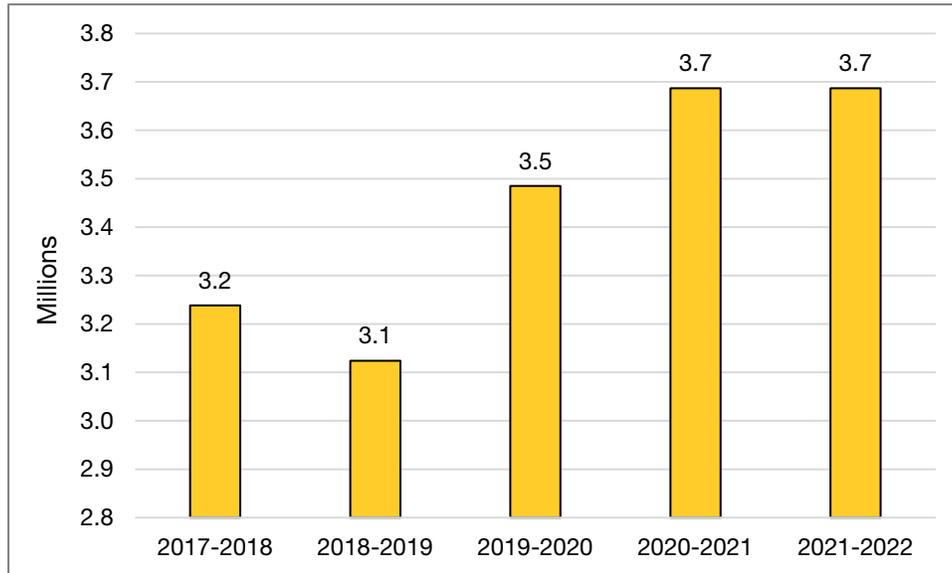
**Renewable Energy Production and Purchase Goals**

Campus	2019 Actual	2026 Commitment
CU Boulder	2.0% on-site	2.5% on-site and 14.2% off-site
CU Denver	1.5% on-site	3% on-site
CU Anschutz	0% on-site	5% on-site
UCCS	0.02% on-site and 34% through RECS	2% on-site and 40% through RECs
System Office	0	10% through RECs

CU Boulder and UCCS have both installed campus solar arrays. There is a solar array installed on the library on the Auraria Higher Education Center and CU Anschutz is in the process of installing solar panels on a carport to power its new net-zero energy Campus Safety and

Emergency Preparedness building. Additionally, CU Boulder is investigating installing an additional campus solar array in 2024 as well as pursuing a no-cost subscription to an off-site solar program approved by the state legislature in 2021. In the most recent year data were collected, the existing systems produced about 3.7 million kWh – enough to power 347 average American homes for a year.

Systemwide Annual Solar Production (kWh/year)

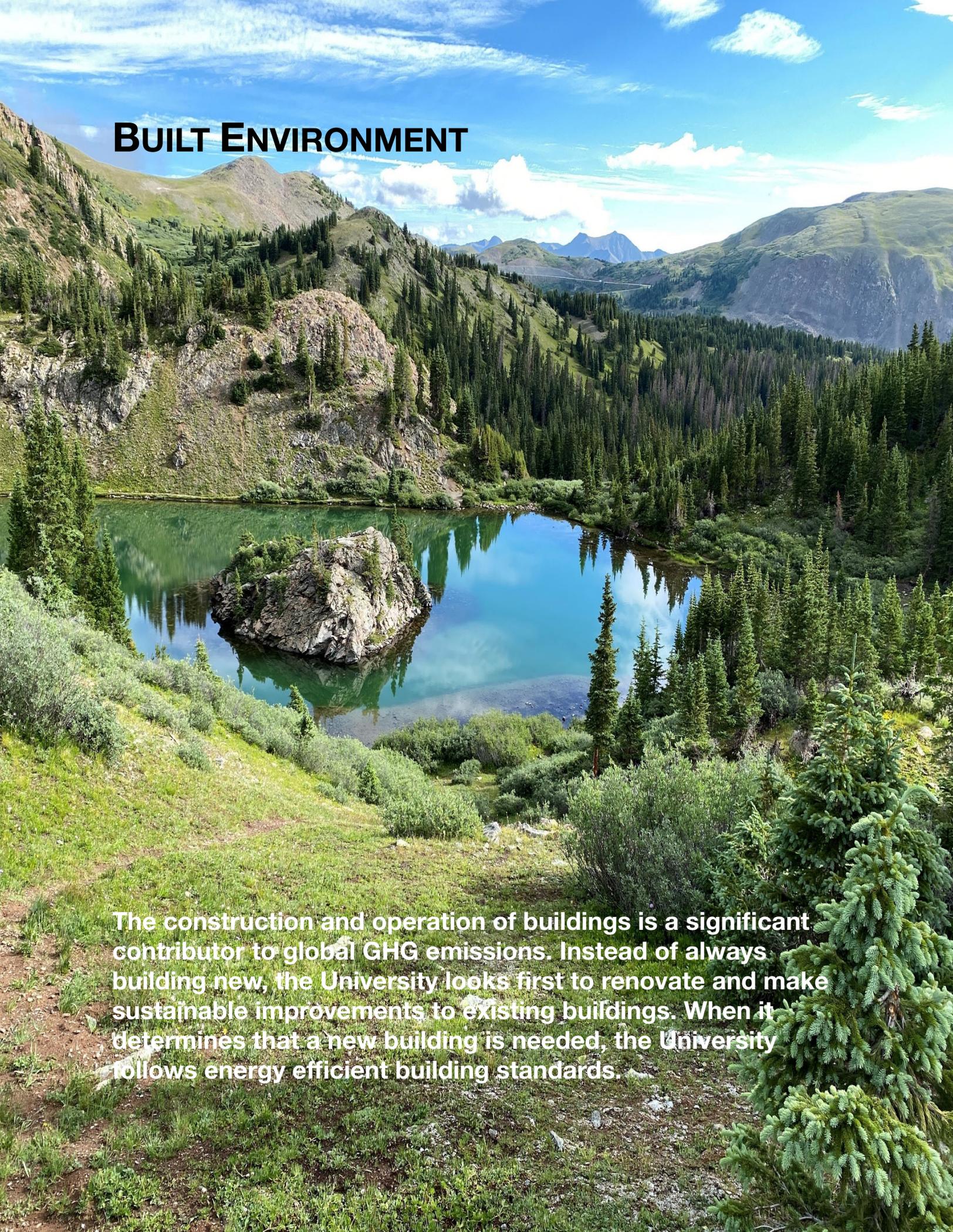


## Sustainability Planning

Campus long-range planning is essential to meeting sustainability goals. Campus facility master plans are undertaken every 10 years and imagine the future of a campus’ built environment. In concert with facilities master planning, climate action plans and energy master plans lay out a path to a more sustainable future. CU Boulder adopted an Energy Master Plan in February 2022. The Boulder Energy Master Plan *“established the University’s approach to realizing a financially sustainable energy program that focuses on energy efficiency, greenhouse gas (GHG) emissions reductions, and provides a reliable energy supply that enables and enhances the campus’ mission of education and research.”*

In April 2022, UCCS approved its 2030 Sustainability Strategic Plan. The four core strategies outlined in the plan as a response to the global climate crisis include, *“foster a culture of sustainability ...; model sustainability, efficiency, and innovation in campus operations ...; cultivate excellence in research and teaching related to sustainability, climate change, energy, and environmental justice and equity, and; engage UCCS students, faculty, staff, and members of the Colorado Springs community with events and programming related to sustainability.”*

Both CU Boulder and the Auraria Higher Education Center (including CU Denver) are finalizing new Climate Action Plans, to be adopted in 2024. CU Anschutz initiated planning for a Climate Action Plan and Energy Master Plan in 2023 and completion is anticipated in early 2025.



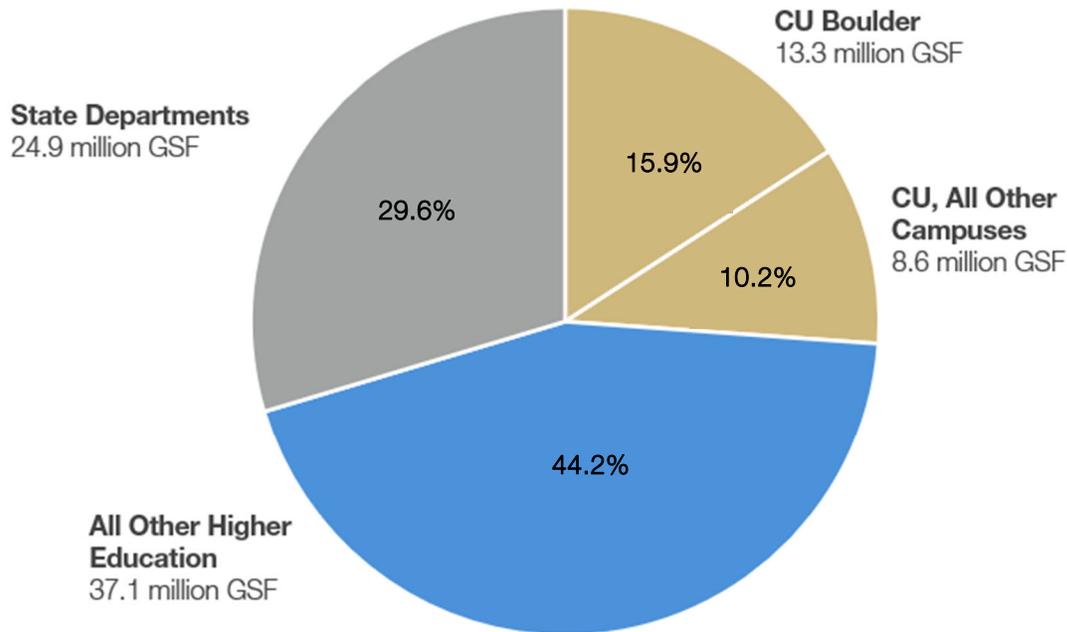
# **BUILT ENVIRONMENT**

**The construction and operation of buildings is a significant contributor to global GHG emissions. Instead of always building new, the University looks first to renovate and make sustainable improvements to existing buildings. When it determines that a new building is needed, the University follows energy efficient building standards.**

## Built Environment

The University of Colorado owns more than 400 buildings. All owned buildings constitute 21,922,334 gross square feet (GSF). The Boulder campus accounts for more than half of the University’s total owned GSF. And the University of Colorado accounts for more than one-fourth of the state’s total owned GSF.

Total Owned Gross Square Feet (GSF)



## Prioritizing Renovations and Repairs

The university has collectively invested about \$1.0 billion in renovation projects and repairs (deferred maintenance) over the last decade. Prioritizing renovation and repairs over new construction is just one way the University demonstrates its commitment to sustainability.

## Facility Condition Index and Deferred Maintenance

The University reports annually about the condition of its buildings using a metric called the Facility Condition Index score. The Facility Condition Index (FCI) measures the performance of a building and building systems as a

percentage showing the ratio of “repair needs” to “replacement value.” The target minimum FCI is 85%. The 2026 strategic plan set goals to improve the overall average FCI at each of the campuses through the reduction of the campus’ deferred maintenance backlog. Buildings with a higher FCI score are typically more energy efficient than those that perform poorly. Thus, a

Average FCI Actual and Goal

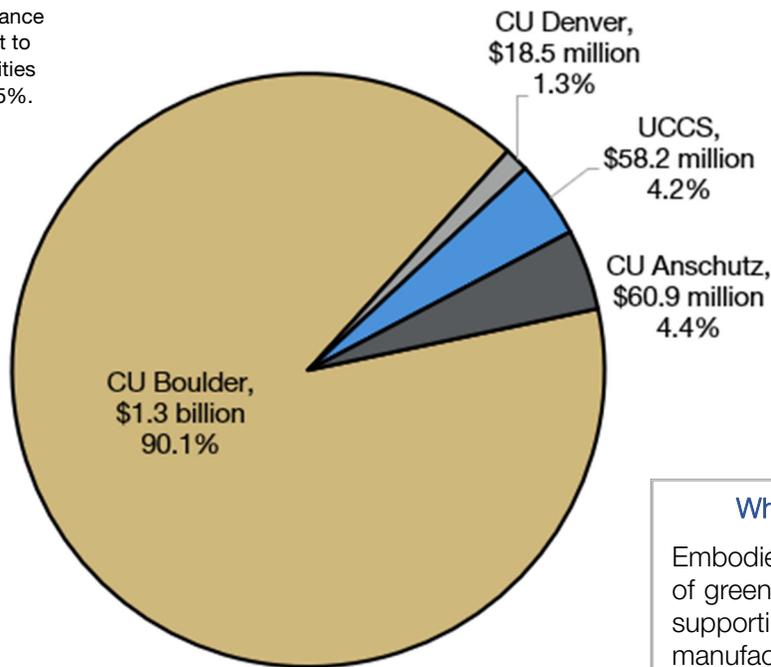
Campus	2019 Actual	2026 Goal
CU Boulder	55.0	56.0
CU Denver	84.0	84.5
CU Anschutz	82.5	85.5
UCCS	83.0	86.5

focus on addressing deferred maintenance has the added benefit of improving the overall sustainability of a campus' built environment.

The University's calculated backlog of deferred maintenance is \$1.39 billion. Three of the four campuses are on track to raise the average campus FCI to the target minimum by 2026. CU Boulder, which has the largest and oldest building inventory, owns almost 100 buildings with an FCI below 85%. The Boulder campus prioritizes deferred maintenance improvements in its annual capital planning.

### Total University of Colorado Deferred Maintenance Backlog

Note: Campus deferred maintenance backlog numbers reflect the cost to achieve a campus average Facilities Condition Index (FCI) score of 85%.



**What is embodied carbon?**  
 Embodied carbon refers to the release of greenhouse gases through activities supporting construction, such as manufacturing, raw material extraction, transportation, and building.

**Buy Clean Colorado Act**

Beginning in 2024, construction costing more than \$500,000 must incorporate building materials that do not exceed global warming potential limits set by the Colorado Office of the State Architect (measured as embodied carbon). These materials include:

- ✓ Asphalt and asphalt mixes
- ✓ Cement and concrete mixes
- ✓ Wood structural elements
- ✓ Glass
- ✓ Steel

CU is committed to selecting building materials that reduce the volume of GHG emissions associated with construction.

Ahead of the implementation of the Buy Clean Colorado Act, the CU Boulder campus adopted a standard that all new projects are required to track embodied carbon.



### What is a Net-Zero Energy Building?

In a net-zero energy building, the total amount of energy used by a building is equal to the amount of renewable energy created onsite annually.

To date, the University of Colorado has designed two net-zero buildings, the Indoor Practice Facility at CU Boulder, and the Campus Safety and Emergency Preparedness Facility at CU Anschutz. Net zero operation is made possible, in part, through onsite solar energy production.

## LEED Buildings

The University adopted a goal of building and renovating buildings to Leadership in Energy and Environment Design (LEED) Gold in 2009. LEED is a set of best practices established by the U.S. Green Building Council to promote sustainable building design and construction. The 2021 strategic planning process evaluated and upheld this goal.

Since 2007, the State has constructed or renovated 178 LEED-certified buildings. About one-third of these LEED-certified buildings were built by CU, including 11 LEED platinum-certified buildings, the highest of the four certification levels.

## Space Utilization

The University seeks a sustainable approach to growth. Rather than defaulting to new construction, it first considers opportunities to enhance the space utilization of existing buildings. It does so while creating attractive and healthy classrooms, laboratories, and workspaces for its students, faculty, and employees. Reconfiguring and reusing existing space presents opportunities to create efficiencies, improve the user experience, and increase collaboration. It also improves building performance.

The Boulder and Anschutz campuses have both adopted space guidelines to more effectively and consistently utilize physical space resources. The Boulder campus established a Space Optimization Office as part of its Planning, Design & Construction unit in 2017. The Office assists campus occupants by providing accurate space assignment and use data and reporting. The Office collaborates with other units to optimize space utilization and predict future space needs. Several recent projects have increased space utilization in existing buildings instead of building new. For example, a recent space optimization project converted 46 offices to 82 work spaces in the Fleming Building and the Engineering Center Administrative Wing, with \$1.8 million cost avoidance through a more efficient use of space.

The Anschutz campus has initiated a number of space optimization projects on campus, including several in the old Fitzsimons Army Hospital. The ten-story building houses many campus offices and has undergone a series of small improvements in the last decade. These improvements have increased the number of building occupants by 33%, which also addressing deferred maintenance and occupant comfort.

In 2023, the Anschutz campus won the [International Institute for Sustainable Laboratories](#) (I2SL) award for [Space Optimization](#). The award recognized campus efforts to identify underutilized or unused lab space to create space for new research and avoid the need to construct new lab spaces. The project also resulted in the disposal of 3,000 pounds of unused chemicals and the redistribution of over 4,000 consumable lab materials, such as pipettes and microscopes.

## Green Labs

The University has realized significant energy and other resource efficiencies in the operation of its campus laboratories. The Boulder campus started a Green Labs program in 2009. In the 13 years since the program's inception, there have been significant cumulative savings in electricity consumption (10.4 GWh) and water use (68 million gallons). Additionally, the program has fostered the creation and implementation of ongoing campus efforts that have diverted 428,000 pounds of laboratory-specific waste from the landfill, reused 3,200 gallons of solvent, and avoided \$3.0 million in research equipment purchases through equipment sharing efforts.

Both the Anschutz and UCCS campuses are also focused on reducing consumption in campus laboratories. Current efforts target increasing the temperature of laboratory freezers, which correspondingly decreases energy consumption. UCCS has also adopted an Energy Star appliance policy and is making retrofits to lighting and adding occupancy and vacancy sensors. The Anschutz campus has expanded lab recycling by identifying a number of products used in daily lab functions that can be recycled through the single-stream recycling program.

The CU Boulder Green Labs Program serves as a source of inspiration and advice for other institutions that want to implement green labs programs and initiatives. An example of the program's positive impact beyond the Boulder campus is the Laboratory Freezer Challenge, which was co-created by CU Green Labs and UC-Davis. The challenge is now an international competition led by My Green Lab and the International Institute for Sustainable Laboratories, with worldwide participation from research and medical institutions, government laboratories, and scientific companies.

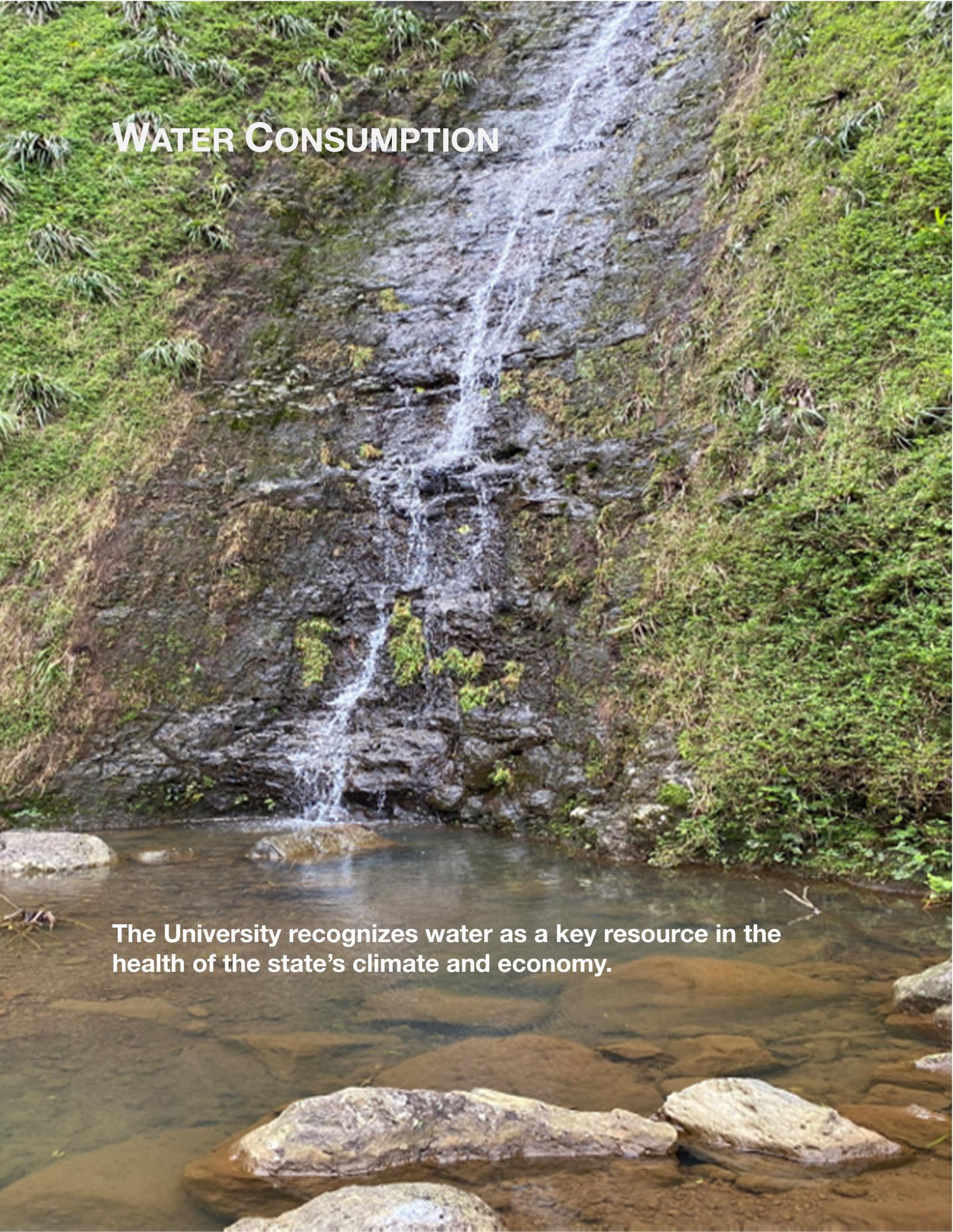
### Highlighting Unique Academic Offerings

**CU Boulder** – Beginning in Fall 2023, the Environmental Center is offering a new micro-credential program: Foundations in Sustainable Leadership. The six-week program “introduces students to the foundational sustainability concepts needed to understand the challenges society faces while exploring the skills leaders working in sustainability need to tackle the challenges.”

**CU Denver** - The Business School is launching a new Master of Science in Sustainable Business (MS SUSB) in academic year 2024-25. The new degree program builds on the success of an existing MBA specialization: Managing for Sustainability, which was established in 2007.

**CU Anschutz** - In Fall 2023, the Colorado School of Public Health launched a new PhD of Climate and Human Health. The program focuses on understanding the effects of the changing climate on human health, including the study of food insecurity and the potential for the new emergence of infectious diseases.

**UCCS** – As part of its Compass Curriculum — the campus-wide undergraduate general education program — UCCS students are required to take a sustainability course that explores the interaction between human development and the natural environment, specifically addressing ideas about social equity, economic development, and environmental impact.



# **WATER CONSUMPTION**

**The University recognizes water as a key resource in the health of the state's climate and economy.**

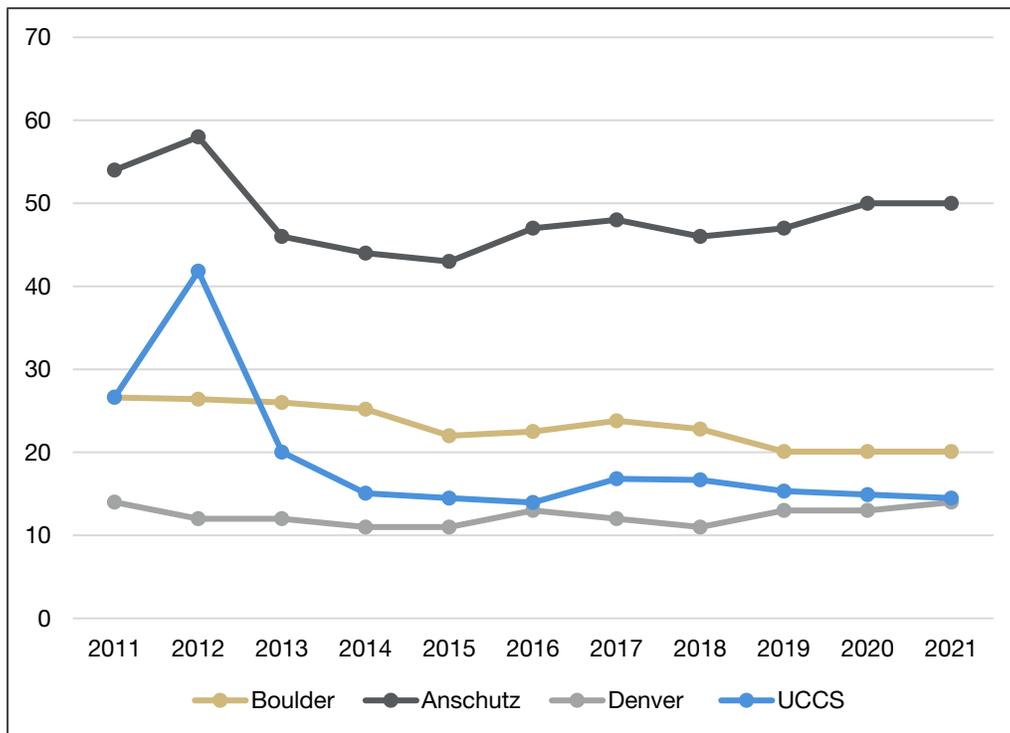
## Water Consumption

Although Colorado only averages 17 inches of total precipitation annually, the state relies almost entirely on precipitation to supply its fresh water resources. While the 2021 strategic plan does not set water consumption goals, the four campuses recognize water as a finite resource and track and report on water use annually, with a common goal of limiting overall water consumption.

The campuses limit potable water consumption through conservation measures such as the installation of low-flow toilets and upgrading autoclaves and glass washers in labs. At UCCS, the Osborne Center for Science and Engineering building was designed to use 42% less water than a comparable baseline building. On the Boulder campus, the Green Labs program has saved 68 million gallons of water over the last decade.

The chart below shows the average amount of potable water used in gallons per total GSF by campus. Note that the CU Anschutz campus, which consumes the most potable water of the four campuses, supports research in a number of water-intensive wet laboratories. Also note that CU Boulder, which is the largest of the four campuses, has a source of non-potable water that supports almost all of the landscape watering needs on its main campus

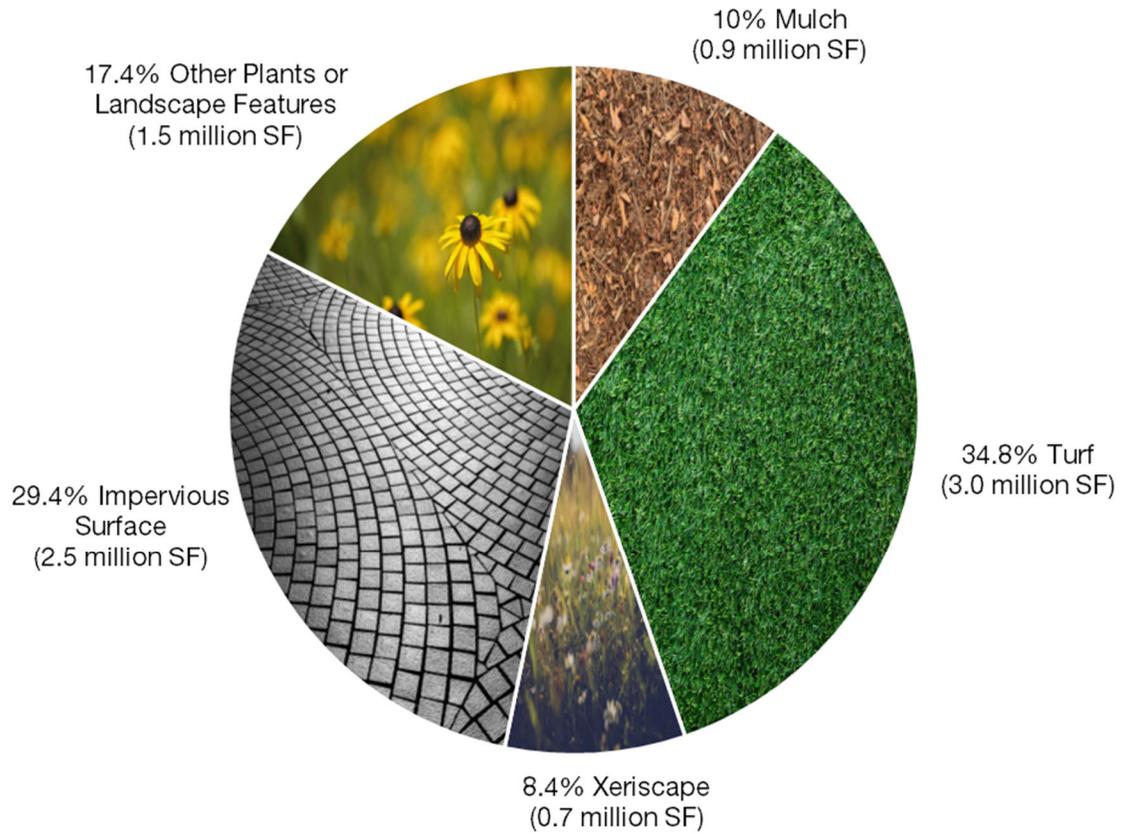
Ten-Year History of Potable Water Consumption  
Areas of Irrigated Landscape (Gallons/GSF)



The campuses limit water use for landscaping by planting native plant species and installing irrigation controls and rain sensors. As a result, water consumption has declined both overall and at each campus during the last decade.

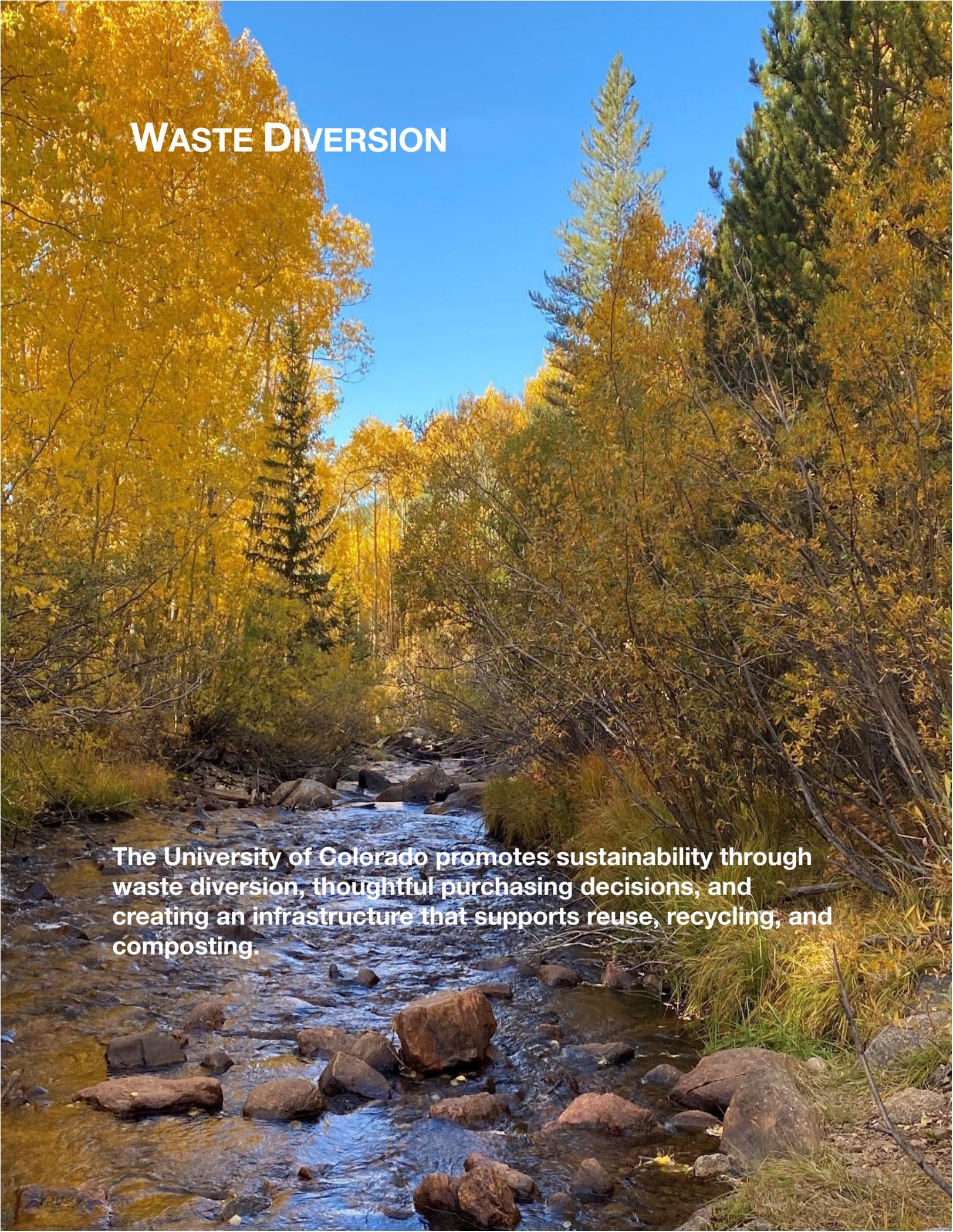
In total, the campuses maintain about 8.7 million square feet of area, or 199 acres, of landscaping and hardscape. The chart below illustrates the distribution across the 199 acres.

### Total University of Colorado Landscaping and Hardscape, by Type



In order to limit water usage, the campuses strive to limit the amount of turf planted in open areas and focus on the inclusion of native plant materials.

# WASTE DIVERSION



**The University of Colorado promotes sustainability through waste diversion, thoughtful purchasing decisions, and creating an infrastructure that supports reuse, recycling, and composting.**

## Waste Diversion

The University tracks the amount of waste that is diverted from the landfill through recycling and composting. It sponsors on-site recycling and composting programs and works with student groups to promote and increase compliance. It also provides online recycling and waste guidelines. The Boulder campus has a waste diversion goal of 90% by 2025 and the UCCS campus has a waste diversion goal of 50% by 2030. The campus goals also focus on opportunities to reduce consumption and to reuse resources.



UCCS conducts periodic building waste audits to learn about the habits of building occupants and to inspire new educational campaigns to encourage reduce, reuse, and recycling. For instance, as the result of past building waste audits, the campus developed a campaign to encourage its community members to bring their own cups to campus coffee shops. Participants receive a 10 cent discount on their beverage purchases.

## Composting

Boulder and UCCS actively compost food waste from on-campus dining services. Boulder began composting in 2004, and by 2016 composting was in place in all dining and conference facilities, as well as major sports venues. The Anschutz campus is piloting compost collection with its food service vendors in three buildings. The Denver campus is expanding the AHEC composting program into its facilities on the east side of Speer Boulevard. Additionally, AHEC recently purchased an anaerobic digester to assist with processing on-campus food waste. The System Administration office has compost collection bins building wide. In 2023, several Front Range composting companies began excluding paper products from the list of acceptable composting materials. This change has reduced the University's overall amount of composting.

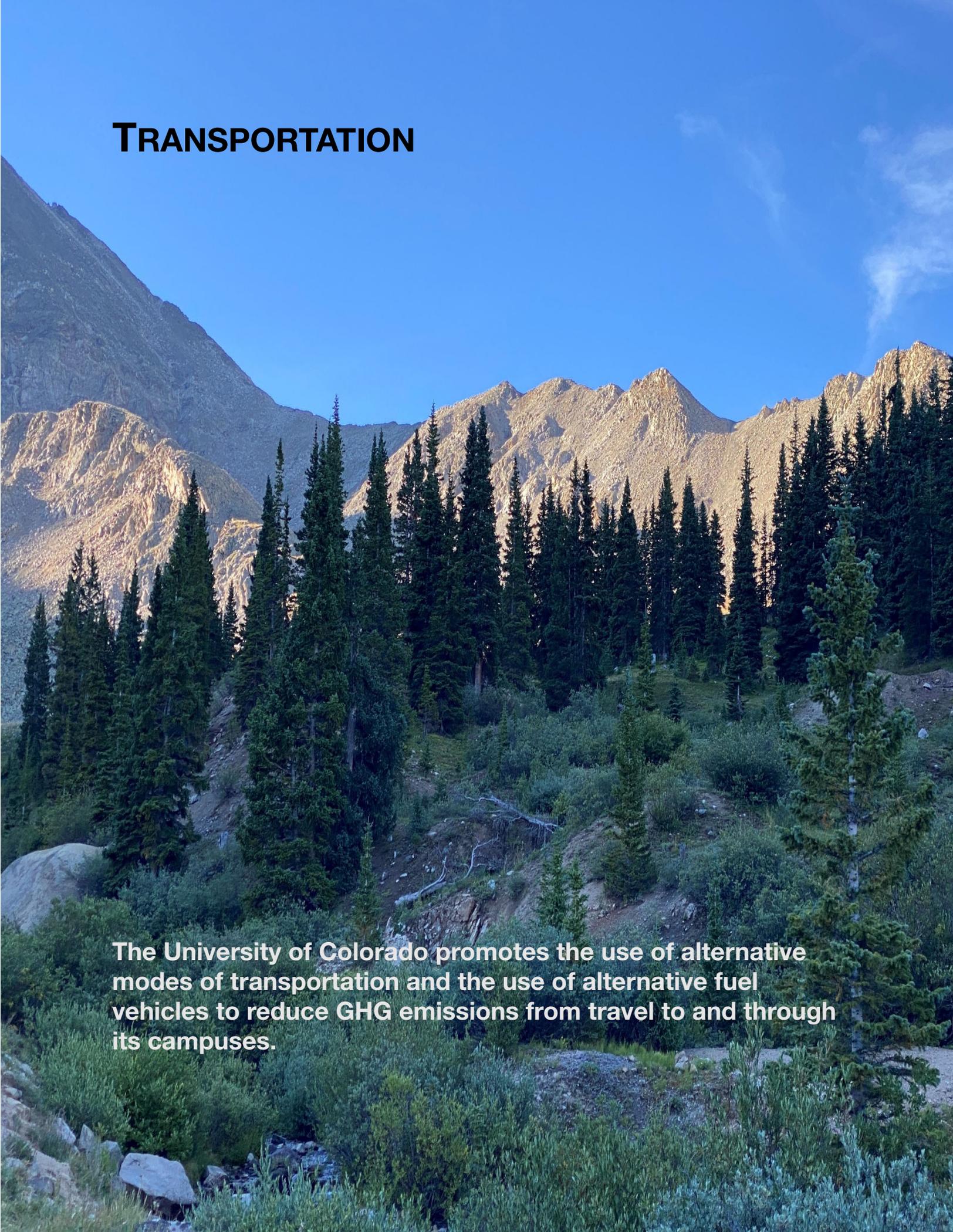


*CU Boulder football, basketball, and volleyball games held at Folsom Field or the CU Events Center are zero waste events.*

## Purchasing

The Procurement Services Center (PSC) works directly with many of its vendors to calculate the carbon footprint of the University's purchases and to identify more sustainable purchasing behaviors. For instance, in 2023, the PSC worked with Dell and Fisher Scientific to develop more sustainable purchasing practices. The PSC also works with campus sustainability representatives to identify opportunities for more sustainable purchasing and to reduce Scope 3 GHG emissions from shipping and deliveries.

# TRANSPORTATION

A scenic mountain landscape. In the foreground, there is a dense forest of tall, dark green evergreen trees. The ground is covered with green grass and some rocks. In the background, there are rugged, rocky mountains with a golden-brown hue, suggesting a sunset or sunrise. The sky is a clear, bright blue with a few wispy clouds.

**The University of Colorado promotes the use of alternative modes of transportation and the use of alternative fuel vehicles to reduce GHG emissions from travel to and through its campuses.**

## Transportation

The transportation sector is a major contributor to GHG emissions. In 2021, 28% of all GHG emissions in the United States were generated from burning fossil fuels for transportation vehicles, according to the Environmental Protection Agency (EPA). Additionally, “the combustion of fossil fuels such as gasoline and diesel to transport people and goods was the largest source of CO<sub>2</sub> emissions... .” The University promotes sustainable practices in transportation in the commute to and travel on its campuses. It is continuously developing infrastructure that supports alternative fuel vehicles and multi-modal transportation. It also participates in community programs that support public transportation.

### Electric Vehicles

As part of CU’s 2021 strategic plan, the campuses committed to transitioning traditional fleet vehicles to alternative fuel vehicles. The chart at right illustrates the campus goals.

**Electric Vehicle Goal**

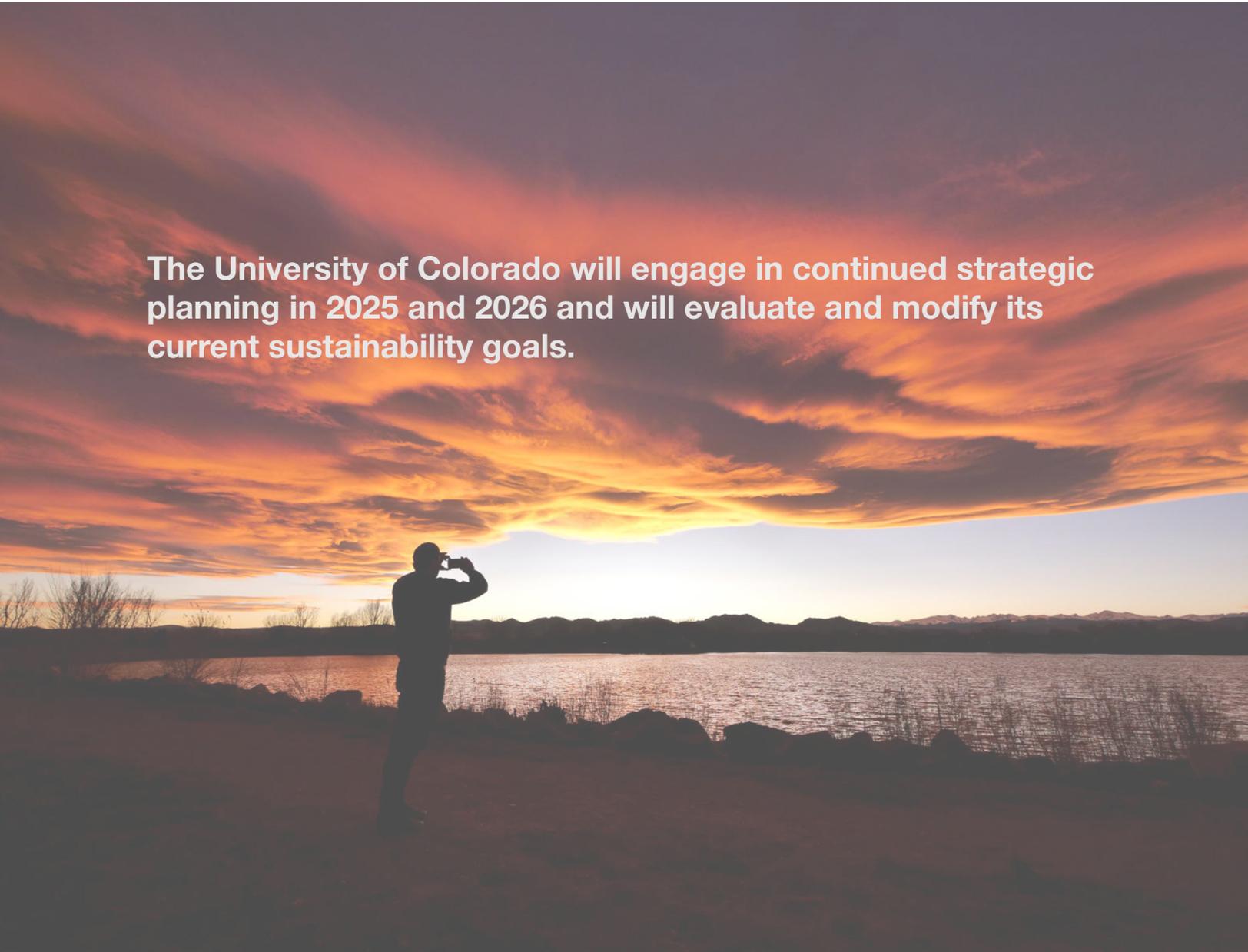
Campus	2026 Commitment
CU Boulder	Convert 17% of bus fleet to battery electric buses
CU Denver	Transition all vehicles to electric
CU Anschutz	Transition 20% of fleet vehicles to electric (excludes buses)
UCCS	Replace one diesel bus with an electric bus

The campuses and the System Administration Office all have electrical vehicle (EV) charging ports on site and study opportunities to add additional stations when planning for renovation or new construction. CU Boulder has almost doubled the number of charging ports on campus in the last few years and continues to identify opportunities to add charging ports at underserved locations, such as graduate and family housing.

### Multimodal Transportation

The shift to prioritizing multi-modal transportation on University campuses can be seen in changes like the decision by UCCS to redesign its Parking & Transportation Services website to integrate parking information with information about alternative means of travel to and around campus. The University supports multi-modal transportation through campus shuttle operations, bike share programs, and bicycle and pedestrian infrastructure. The Boulder campus has more than 14,000 bike parking spaces and provides free access to the Boulder BCycle bikeshare system for short trips. The city and campus also partner to build underpasses to support safer access between the campus and the surrounding neighborhoods, like the recently completed underpass at 30<sup>th</sup> Street and Colorado Avenue.

The Anschutz campus is connected by light rail and commuter bus service to the greater Denver Metro area. The Boulder, Denver, and Anschutz campuses, as well as the System Administration Office, provide discounted or free access to the RTD EcoPass. The EcoPass can be used for city and regional transit. Campus buses and shuttles are free to students, faculty, and staff at all four campuses. And for those who commute to campus by car, the University offers parking preferences for carpoolers and low emission fuel efficient vehicles and encourages participation in ride-share programs.



**The University of Colorado will engage in continued strategic planning in 2025 and 2026 and will evaluate and modify its current sustainability goals.**

## Acknowledgments

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