



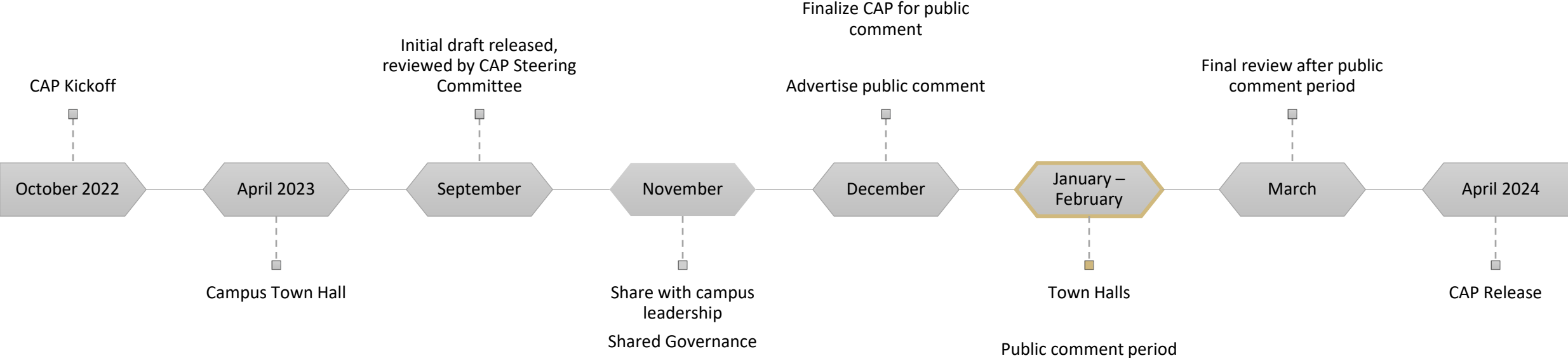
Climate Action Plan

Summary


Be Boulder.


Climate Action Plan


Boulder Campus




History and Status of CAP

 American College and University Presidents Climate Commitment (2007)

 Conceptual Plan for Carbon Neutrality (CPCN) (2009)

 Update of CPCN – today's Climate Action Plan (2023-2024)

 Overseen by Steering Committee of staff, faculty and students

 Learn more: <https://www.colorado.edu/sustainability/programs/climate-action-plan>

Learn more:



CAP Committees 2023-2024

CAP Steering Committee 2023-2024

- Karen Bailey, Assistant Professor of Environmental Studies
- Micah Borkan, Undergraduate Student, Environmental Studies | Co-Chair of the Environmental Board
- Chris Ewing, Vice Chancellor for Infrastructure and Sustainability
- Todd Hagerty, Vice Chancellor for Finance and Business Operations and Chief Financial Officer
- Courtney Kjelland, Climate Action Plan Administrative Coordinator
- Brian Lindoerfer, Associate Vice Chancellor for Facilities Management
- Brigid Mark, Graduate Student, Sociology Ph.D. Program
- David Newport, Director of the Environmental Center
- Josh Radoff, Renewable and Sustainable Energy Specialist Lead, Masters of the Environment Program (MENV)
- Heidi VanGenderen, Chief Sustainability Officer
- Chris Wright, Director of Capital Finance

CAP Equity Subcommittee 2023-2024

- Aniket Agrawal, Student Assistant IV, Climate Action Plan: Equity team
- Karen Bailey, Assistant Professor of Environmental Studies
- Jasmin Barco, Assistant Director Energy and Climate Justice Programs
- Brigid Mark, Graduate Student, Sociology Ph.D. Program
- David Newport, Director of the Environmental Center
- Spencer Wigodsky, Graduate Student, Masters of the Environment Program | Student Assistant IV, Climate Action Plan: Equity team

CAP Principles

1. Develop a **GHG inventory inclusive of Scopes 1, 2, and 3** and a reduction strategy that could **meet a Science-Based Target** consistent with UN and Science-Based Target Initiative definitions
2. Ensure that **equity, community health, and resilience are an important lens** through which recommendations made in the CAP can be evaluated.
3. Meet goals **without the use of purchased or unbundled RECs or offsets.**
4. The University is a customer of Colorado's largest investor-owned utility. Given that Xcel's goal is to achieve 80% clean energy by 2030, part of the goal will be to **evaluate and implement electrification strategies** that fully take advantage of this transition and include consideration of on- and off-site renewable electricity generation and the time of use impact of use and generation.
5. Find **cost effective and economically attractive pathways** that address both one-time and ongoing costs, and that **achieve the maximum benefits** (including health, equity, resilience, life cycle, and local economic development) for the campus and its stakeholders in realizing its goals.

Equity in the CAP

- Climate change and the actions we take to mitigate the climate crisis have direct connections to inequality, inequity, and injustice, locally and globally.
- A fair and just transition to a more sustainable CU Boulder requires that we consider how individuals and communities are disproportionately impacted by CU Boulder's operations and the climate crisis more broadly.
- The CAP is committed to identifying and mitigating inequity in climate action.

How equity is included in the CAP

The plan considers equity in three primary ways

1. **Guidelines**: strategies and guiding principles to support equity in the implementation of the plan
 - E.g., Include the most affected groups in decision-making
 - E.g., Provide transparent and accessible communication around CAP implementation
2. **Co-benefits**: positive outcomes that arise alongside efforts to reduce emissions
 - E.g., transportation and mobility improvements can benefit frontline campus community members
 - E.g., residential housing efficiency and electrification can improve on-campus living space and decrease long term housing costs
3. **Priority actions**: highlighting emission reductions actions that have direct equity benefits
 - E.g., improved vanpool access, food recovery and distribution programs

Equity in the CAP

The CAP is primarily focused on campus operations and infrastructure.

While there are many aspects of climate change that intersect with life and work on CU's campus and beyond, this plan is **limited in scope to actions that impact operations and directly decrease GHG emissions**

Primary Equity Outcomes:

- Don't exacerbate inequities through our climate related efforts
- Include a diversity of voices to identify challenges and opportunities to mitigate inequity in our efforts
- Identify opportunities to address current and historic inequities through our efforts, in part to broaden our reach and participation
- Recognize that this is a mitigation plan, and doesn't include other campus policies on curriculum or hiring, but that those are efforts that can take place in parallel with and be mutually supportive of the CAP.

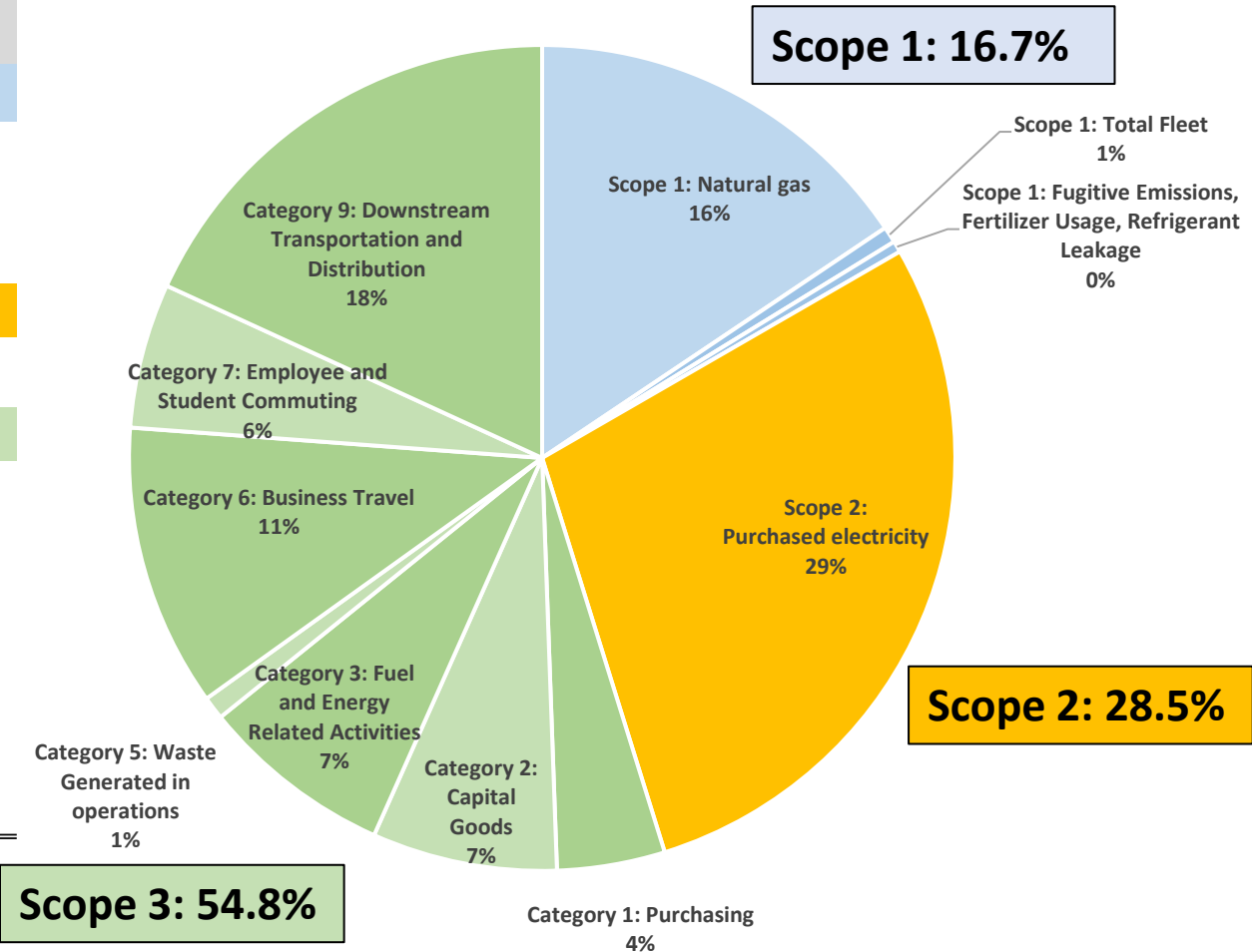
Scopes of Emissions

Scope 1	Carbon emissions resulting directly from fuel combustion on campus, primarily natural gas for heating or CU Boulder-owned vehicles.
Scope 2	Carbon emissions associated with energy purchased by CU Boulder and generated elsewhere, primarily grid electricity used on campus.
Scope 3	Carbon emissions resulting indirectly from CU Boulder operations, either from upstream activities, such as purchases of goods and services, or downstream activities, such as students and faculty commuting to and from campus. The University does not have direct control over these emissions, though it can exert influence over its operations, procurement and other activities to reduce these emissions.

Baseline Emissions Summary (2019)

Emissions By Source and Category (CO2e)

CATEGORY	GHG Emissions (Metric Tons CO2e)	Percent of Scope	Percent of Total
SCOPE 1	48,213		16.7%
Natural gas	45,097	93.5%	15.6%
Total Fleet	1,841	3.8%	0.6%
Fugitive Emissions, Fertilizer Usage, Refrigerant Leakage	1,275	2.6%	0.4%
SCOPE 2	82,528		28.5%
Purchased electricity	82,528	100.0%	28.5%
SCOPE 3	158,489		54.8%
Category 1: Purchasing	12,216	7.7%	4.2%
Category 2: Capital Goods	20,944	13.2%	7.2%
Category 3: Fuel and Energy Related Activities	21,782	13.7%	7.5%
Category 5: Waste Generated in operations	2,595	1.6%	0.9%
Category 6: Business Travel	32,041	20.2%	11.1%
Category 7: Employee and Student Commuting	16,407	10.4%	5.7%
Category 9: Downstream Transportation and Distribution	52,504	33.1%	18.2%
Scope 1-3 Total	289,230		



Climate Action Plan Goals

Core Goal 1

- Achieve 50% reduction in Scopes 1 and 2 by 2030 with a with a linear reduction to zero emissions by no later than 2050.
- Do so without the use of purchased offsets or unbundled Renewable Energy Certificates (RECs).

Core Goal 2

- Achieve a 50% reduction for those Scope 3 emissions where accurate estimates can be established, and which are within the University's influence and control.
- Further reduce these emissions to zero by 2050.

Core Goal 3

- Utilize climate action to deliver the co-benefits of equity, health, and resilience.

Core Goal 4

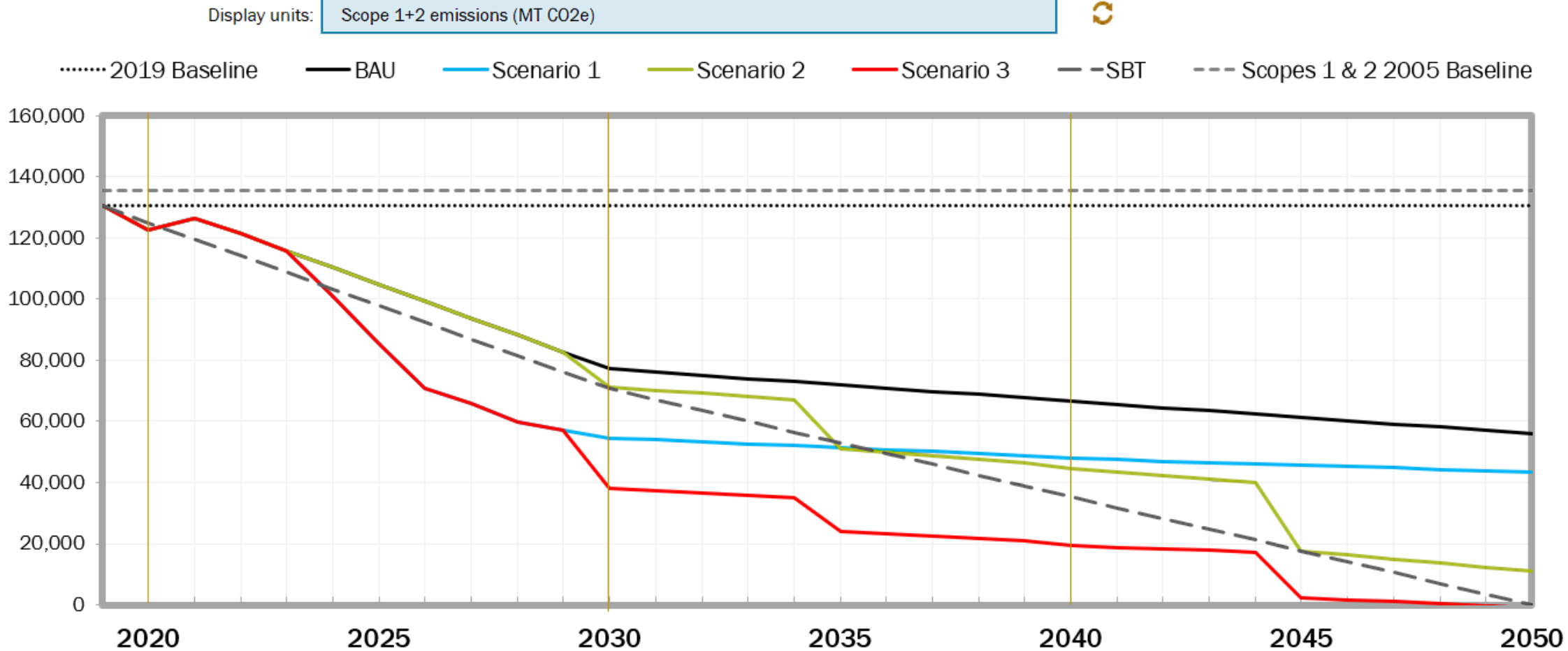
- Strengthen internal and external management and accountability structures to ensure the campus achieves the goals outlined in the plan.

Core Goal 5

- Build a Community Engagement Strategy to integrate communication, feedback, and reporting and achieve an increasing level of transparency with campus and broader community.

Scope 1 + 2 CAP Goals and Proposed Scenario

Scenario Comparison Chart



Scope 1 + 2 Measure Summary

STRATEGY	Implementation Timeline	First Cost (\$m)*	NPV (\$m), incl SCC	% of 2050 Emissions	Co-Benefits**
Lighting retrofits	2024 - 2030	\$55.6	\$31.00	8.20%	E, H, R, STR, \$
Envelope improvements	2024 - 2040	\$23.7	(\$8.50)	4.50%	E, H, R, STR, \$
Re-commissioning projects	2024 - 2030	\$3.6	\$31.90	5.50%	E, H, R, STR, \$
HVAC system retrofits	2024 - 2030	\$58.7	\$41.20	16.60%	E, H, R, STR, \$
Main campus heating system upgrade	Phased, 2029 - 2050	\$650 - \$1,250	(\$577.00)	34.10%	E, H, R, STR
On-campus solar PV (7MW)	2024 - 2050	\$0***	(\$0.79)	2.30%	E, H, R, STR, \$
Electrify campus fleet	2024 - 2050	\$42.7	(\$33.20)	0.63%	H
New Building Design Standards	2024 - 2050	Modest Premium			E, H, R, STR
Existing Building Space Optimization	2024 - 2030	No Premium			E, \$

*approximate costs based on high level project estimates

*** Contracted via PPA

** Key:	Promotes:
E	Equity
H	Health
R	Resilience
STR	STARS Platinum
\$	Cost Savings

Scope 3 Categories

#	Category	Inventory	Target Set
1	Purchased goods and services	Y	✓
2	Capital goods	Y	✓
3	Fuel and energy related activities (FERA)	Y	✓
4	Upstream transportation and distribution	Included in Category 1	
5	Waste generated in operations	Y	✓
6	Business travel	Y	✓
7	Commuting	Y	✓
8	Upstream leased assets	Y	
9	Downstream transportation and distribution	Y	
10	Processing of sold products	N/A	
11	Use of goods and services sold	N/A	
12	End-of-life treatment of sold products	N/A	
13	Downstream leased assets	N/A	
14	Franchises	N/A	
15	Investments (Endowment)	N	

Out of CU Boulder Scope/Control. Estimate Provided.

Scope 3 Measure List

Key:	Promotes:
E	Equity
H	Health
R	Resilience
STR	STARS Platinum
\$	Cost Savings

Scope 3 Category	Category	Strategy	Co-Benefits
2	Embodied Carbon	Update building design standards for new construction and major renovations	E, H, R, STR
7	Transportation	Institute a formal Transportation Demand Management Plan with strategies aimed at increasing the use of transit, biking, vanpool, carpool, carshare, and micro mobility	E, H, R, STR
7	Transportation	Develop a community EV Charging plan with affordable rates for off campus commuters	E, H, R, STR
1	Procurement	Develop Low Carbon Procurement Policy	E, STR
5	Circularity	Institute a construction waste diversion policy	STR
1	Circularity	Establish a food recovery program on campus for all catering and culinary events	E, STR
1	Food	Increase percentage of locally-grown foods purchased and plant-based meals served	E, H, R, STR
5	Procurement	Eliminate purchase of disposable or single-use plastics for nonessential uses	STR
5	Procurement	Further reduce package-related plastic waste by sourcing products with sustainable packaging	STR
5	Circularity	Establish a campus reuse center (for clothes, furniture, etc.)	E
9	Transportation	Initiate surveys to measure student travel during breaks and family visit air travel (currently this category is not well measured)	
9	Transportation	Test programs that reduce the need for travel between Fall and Winter breaks	

Current Progress

Energy efficiency projects in
18 buildings

Virtual net metering
agreement for **5.9 MW of
solar**

- 12-15 MW average campus usage

1.1 MW of onsite solar on
east campus

STARS path to **Platinum**

**Williams Village hot
water conversion**

**Geoexchange & Deep
Geothermal Studies**

Electrification of fleet
vehicles and grounds
equipment

**Main Campus
Decarbonization Study**
underway

**Campus Sustainability
Executive Council**



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A Few Additional Facts



A public dashboard will accompany the CAP that allows any and all to monitor progress on our GHG reduction efforts.



The CAP is an intentional living document that will be reported on and updated annually as new opportunities and course corrections arise.



The CAP draft will be posted on the CAP web site and a month-long public comment period will open on February 5, 2024. **Please join in review and comments!!**

Learn more:



Thank you!
Q&A



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