Biennial Sustainability Reporting
Regents Finance Committee Meeting
May 22, 2024
Introduction

• Biennial reporting since 2009
  o Regent resolution directs reporting on sustainability

• Campus progress highlights
  o New hires dedicated to sustainability
  o New cross-campus groups dedicated to sustainability
  o New planning efforts
  o Capital submittals report on sustainability improvements

• System progress highlights
  o Second System Sustainability Report published December 2023
  o New Systemwide Sustainability Steering Committee
    • Work begins 2024, first meeting held May 20
    • Focus on next CU Strategic Plan
CU Boulder Sustainability Overview

Campus Sustainability Planning
- Climate Action Plan (CAP) released April 25, 2024
  - Regular reporting planned on progress toward goals
- Implementation of 2024 CAP complements other planning efforts
- Transportation Demand Management Plan forthcoming

Sustainability Highlights
- New Sustainability Executive Council formed to facilitate CAP implementation
- Several energy efficiency and solar projects underway or planned for 2024-25
- Working with Colorado Energy Office to explore campus geothermal
- Next phase of main campus decarbonization study will begin summer 2024
- Purchasing two more electric busses (6 of 25 busses will be electric by 2025)
• Promote sustainability through creating bio-habitat diversity, using native plant species, choosing plants that benefit pollinators, and increasing the campus tree canopy

• New landscape designed to incorporate native and adaptive plantings with lower water requirements

• Turf limited to functional programmed areas and some sports fields
Recycling

<table>
<thead>
<tr>
<th>Year</th>
<th>Pounds of Recycling and Reuse</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2018-19</td>
<td>3,296,100</td>
</tr>
<tr>
<td>FY 2019-20</td>
<td>2,640,900</td>
</tr>
<tr>
<td>FY 2020-21</td>
<td>1,776,280</td>
</tr>
<tr>
<td>FY 2021-22</td>
<td>2,558,420</td>
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<tr>
<td>FY 2022-23</td>
<td>3,025,580</td>
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Composting

- In 2023, commercial contractor placed restrictions on acceptable composting materials

1.9 million pounds of food waste diverted in 2023

Campus pilot program of small-scale food waste collections in six buildings.
CU Boulder Renewable Energy

**Solar**
- Solar arrays installed on 16 campus buildings
  - Half of the solar arrays are owned by campus, others are leased through power purchase agreements
- New 1.1 megawatt solar array planned for east campus
- New 5.0 megawatt offsite solar planned for 2025

![Solar Energy Production Chart]

<table>
<thead>
<tr>
<th>Year</th>
<th>kWh</th>
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<tbody>
<tr>
<td>FY 2018-19</td>
<td>2,451,823</td>
</tr>
<tr>
<td>FY 2019-20</td>
<td>2,805,110</td>
</tr>
<tr>
<td>FY 2020-21</td>
<td>2,592,471</td>
</tr>
<tr>
<td>FY 2021-22</td>
<td>2,611,796</td>
</tr>
<tr>
<td>FY 2022-23</td>
<td>2,592,304</td>
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</table>
CU Boulder Community Engagement

Community Engagement

• Climate Action Plan Equity Team (Summer 2023 – Present)
  o Conducted 10+ engagement opportunities with on- and off-campus stakeholders
    • Presented to City and County of Boulder (February 2024)
  o Held 8 workshops and feedback gathering session for faculty, staff, and students

• 30th Annual Campus Sustainability Summit (April 2024)
  o Featured student projects competing for cash prizes

• CU Garden Club
  o Hosted 86 events with ~200 volunteers (2023)
    • Grew over 1,000 pounds of produce for residents of Graduate and Family Housing

• Ralphie’s Green Stampede
  o Celebrated 15th year (2023)
    • Supported zero waste operations, volunteerism, and gameday activities
    • Conducted 300 zero waste trainings for vendors
CU Boulder Academic Offerings

Academic Offerings and Research
• ~ 100 sustainability-focused courses for undergraduate and graduate students

Sample Academic Offerings
• Environmental Sustainability in a Globalized World (BUSM 3060)
• Sustainable Energy Policy (ENVM 5006)
• Environment-Society Geography (GEOG 1972)
CU Boulder Transportation and Equipment

Alternative Transportation

• Public Transit
  o BuffOneCard ID includes transit pass for students and employees
    • Use of RTD bus services has declined significantly since 2017
  o Subsidized vanpool program; serves 92 frontline service employees

• Extensive infrastructure to support bicyclists (lockers, shelters, repair centers)
  o 1.3 miles of bike-only paths and 5.9 miles of shared-used paths
  o E-bike and e-scooter trips exceed 750,000 trips annually

Electric Vehicle Charging Stations

• 45 Level 2 ports for commuters
• 12 Level 2 ports for fleet vehicles
• 4 Level 3 ports for fleet busses

Campus Fleet and Equipment

• 5% of fleet is hybrid and 5% of fleet is electric
• Facilities Management Outdoor Services transitioning to electric equipment

Campus Night Ride service has four electric fleet vehicles. Estimated reduction in gas consumption August 2023 to April 2024 = 1,748 gallons.
UCCS Sustainability Overview

Campus Sustainability Planning
• 2022 - Sustainability Master Plan
• 2023 - Energy Performance Audits (ongoing)
• 2024 - Sustainability Tracking, Assessment & Rating System (STARS)
• 2024 to 2028 - Energy Performance Program project execution

Sustainability Highlights
• Hired technical staff to implement energy performance projects in-house
  o Building Performance Specialist (10/2023)
  o Director of Energy and Utility (1/2024)
• New hires will complete energy performance projects
• Campus is progressing from measurement and gap analysis of energy and deferred maintenance needs to implementation of new efficiencies and deferred maintenance improvements
UCCS Water Consumption

Potable Water Consumption

<table>
<thead>
<tr>
<th>Year</th>
<th>Water Consumption (k-gal)</th>
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</thead>
<tbody>
<tr>
<td>FY 2018-19</td>
<td>51,168</td>
</tr>
<tr>
<td>FY 2019-20</td>
<td>46,919</td>
</tr>
<tr>
<td>FY 2020-21</td>
<td>44,751</td>
</tr>
<tr>
<td>FY 2021-22</td>
<td>54,996</td>
</tr>
<tr>
<td>FY 2022-23</td>
<td>50,625</td>
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</table>

- Use mix of water wise shrubs, perennials, ground covers, grasses, and annuals to develop colorful campus entry points (see first photo)
  - Plants are selected to supply winter interest as well as water savings

- Use low grow native grass mixes, instead of high-water turf, in large, unused areas of campus (see second photo)
  - Only watered when first planted

Percent of Potable Water Used for Campus Landscaping

46.2%
UCCS Waste Diversion

Recycling

Pounds of Recycling

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<tbody>
<tr>
<td>222,277</td>
<td>190,697</td>
<td>157,600</td>
<td>170,888</td>
<td>290,182</td>
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</table>

247,650 pounds of food waste diverted in 2023

Other

- Students have been monitoring campus waste diversion for 14 years resulting in a waste diversion rate of 46% or better over the last five years

- City of Colorado Springs provided two-year paid internship through WastelessCOS to UCCS student to support city-wide waste characterization study

Geography and Environmental Studies student Hayden Strait conducting a recent audit of the campus composting program and provided recommendations for improvement.
UCCS Renewable Energy

Renewable Energy Credits
- Provided 10.8 million kWhs of campus power over last five years

Solar
- Solar arrays installed on five campus buildings
  - Alpine Parking Garage (2015)
  - Centennial Hall (2011)
  - Gallogly Events Center (2017)
  - Osborne Center (2009)
  - Sustainability House (2019)
UCCS Community Engagement

Community Engagement

- Templeton Gap Floodway Cleanup Event (September 2023)
  - Office of Sustainability partnered with UCCSlead, Reisher Scholars, and GPS class
    - One of five UCCSlead's Day of Service and Activism service projects
- CU President's Sustainable Solutions Challenge (November 2023)
  - Three student winners. Winning proposals included:
    - Improve soil at UCCS Farm
    - Extend shuttle service to nearby shopping center
    - Address food waste and food insecurity on campus with to-go containers
- Central Colorado Foodshed Gathering (March 2024)
  - Hosted by UCCS and led by UCCS instructor

Sample Academic Offerings

- Introduction to Environmental Studies and Sustainability (GES1500)
- Introduction to Energy Science I (PES1500)

29 students enrolled in a degree program with a sustainability minor
UCCS Community Engagement (Cont.)

Templeton Gap Floodway Cleanup Event. 65 student participants collected 54 bags of trash and 21 shopping carts.

Winners of 2023 CU President’s Sustainable Solutions Challenge.
UCCS Transportation and Equipment

Alternative Transportation

- Extensive infrastructure to support bicyclists (lockers, shelters, repair centers)

Electric Vehicle Charging Stations

- Level 1 charging stations
  - 2 scheduled for repair
  - 3 scheduled for purchase

Campus Fleet and Equipment

- 9% of fleet is hybrid
- Purchasing two electric riding mowers, as well as electric trimmers, and blowers

2024 Campus Transportation Survey Results

28% of students used more sustainable commuting options as their primary mode of transportation; increased from 14% of respondents (compared to 2019 survey).
CU Denver Sustainability Overview

Campus Sustainability Planning

- Auraria Campus Climate Action Plan underway (anticipated approval summer 2024)

Sustainability Highlights

- Auraria Sustainable Campus Program purchased commercial composter and hired Compost Operations Manager
- CU Denver hiring Sustainability Manager (Summer 2024)
- Auraria campus finalizing energy performance contract
  - Includes lighting, chilled water system, and control upgrades in 26 buildings (2.3 million square feet)
- Auraria campus received FY 2023-24 controlled maintenance funding for HVAC upgrades in multiple buildings, which will lead to energy savings
CU Denver Water Consumption

Potable Water Consumption
CU Denver and AHEC

<table>
<thead>
<tr>
<th>FY</th>
<th>AHEC</th>
<th>CU Denver</th>
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<tbody>
<tr>
<td>FY 2018-19</td>
<td>N/A</td>
<td>24,058</td>
</tr>
<tr>
<td>FY 2019-20</td>
<td>N/A</td>
<td>29,870</td>
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<tr>
<td>FY 2020-21</td>
<td>7,364</td>
<td>29,498</td>
</tr>
<tr>
<td>FY 2021-22</td>
<td>6,870</td>
<td>36,862</td>
</tr>
<tr>
<td>FY 2022-23</td>
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<td>33,757</td>
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Percent of Potable Water Used for Campus Landscaping

2.7%

• Use native, drought tolerant landscaping on all new projects
• AHEC developing landscaping guidelines to promote native and drought tolerant landscaping and systematically replace turf where possible

Hardscape with Planters- CU Denver Building
CU Denver Waste Diversion

Recycling

Pounds of Recycling
CU Denver and AHEC

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<tr>
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<tbody>
<tr>
<td>N/A</td>
<td>224,136</td>
<td>N/A</td>
<td>312,139</td>
<td>366,659</td>
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Composting

- Managed by Auraria Sustainable Campus Program and WOMPOST (Women-Owned Composting)
  - Purchased new commercial composter (image above)
  - Hired new compost manager
  - Purchased electric tricycles for compost pickup
- Composting also available in two off-campus CU Denver buildings

92,947 pounds of food waste diverted in 2023 (AHEC)
CU Denver Renewable Energy

Solar

- Solar arrays installed on three campus buildings
  - Arts Building (2015)
  - Auraria Library (2020)
  - Lynx Crossing (2009)

Solar Energy Production
CU Denver and AHEC

<table>
<thead>
<tr>
<th>Year</th>
<th>kWh</th>
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<tbody>
<tr>
<td>FY 2018-19</td>
<td>N/A</td>
</tr>
<tr>
<td>FY 2019-20</td>
<td>381,872</td>
</tr>
<tr>
<td>FY 2020-21</td>
<td>384,105</td>
</tr>
<tr>
<td>FY 2021-22</td>
<td>1,415,484</td>
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<tr>
<td>FY 2022-23</td>
<td>1,413,566</td>
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Installation of Auraria Library Solar Array
CU Denver Community Engagement

Community Engagement

• Shared Meals App
  o Notify campus community of leftover food from events

• Auraria Sustainable Campus Program Free Store
  o Collects ~10,000 pounds of items annually from students who move out of on-campus housing to offer to incoming students at no cost

• Cherry Creek Clean Up
  o Monthly Auraria Sustainable Campus Program event

Academic Offerings

• 21 total course offering in sustainability
  o Business School
    • Master’s Degree in Sustainable Business (Fall 2024)
    • MBA “Managing for Sustainability” certificate
  o College of Liberal Arts and Sciences
    • Minor in Sustainability
CU Denver Transportation and Equipment

Alternative Transportation
• Public Transit
  o RTD Eco Pass offered to all employees
  o Commutrics App (developed by CU Denver professor) launching soon
• Extensive infrastructure to support bicyclists (lockers, shelters, repair centers)
  o Two student-designed and -built bike shelters
  o Bike parking throughout campus and in three parking garages

Electric Vehicle Charging Stations
• Level 1 charging locations: 1 garage, 1 surface lot
• Finalizing installation of one charger at Business School

Campus Fleet and Equipment
• CU Denver has one gas vehicle, but all carts and equipment are electric
• Auraria has a blend of diesel, gas, and electric fleet vehicles
CU Anschutz Medical Campus
CU Anschutz Sustainability Overview

Campus Sustainability Planning
- Initiated Energy Master Planning in 2024 (anticipated completion 2025)
  - Hired team of experts
  - Plan will:
    - Create roadmap to energy and GHG emission reduction goals
    - Be incorporated into broader Climate Action Plan
    - Address scope 3 GHG emissions and sustainability culture

Sustainability Highlights
- Recent expansion of sustainability and climate action efforts on campus include:
  - New Sustainability Council
  - Revamped website and quarterly newsletter
  - New hires to address waste and energy conservation needs
    - Green Labs Coordinator
    - Sustainability Resources & Waste Diversion Coordinator
CU Anschutz Water Consumption

Potable Water Consumption

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<tbody>
<tr>
<td>k-gal</td>
<td>175,299</td>
<td>188,555</td>
<td>186,395</td>
<td>204,221</td>
<td>192,311</td>
</tr>
</tbody>
</table>

Percent of Potable Water Used for Campus Landscaping

11.4%

- Campus Services Building reduced irrigation around facility by 11,000 square feet through replacement of turf with rocks and native plants
- 15,000 square feet of drought tolerant fescue grass and native species used instead of bluegrass at Campus Safety and Emergency Preparedness Facility
  - Saves up to 30% of irrigation water needs
CU Anschutz Waste Diversion

Recycling

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<thead>
<tr>
<th>Year</th>
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<tbody>
<tr>
<td>FY 2018-19</td>
<td>N/A</td>
</tr>
<tr>
<td>FY 2019-20</td>
<td>N/A</td>
</tr>
<tr>
<td>FY 2020-21</td>
<td>848,950</td>
</tr>
<tr>
<td>FY 2021-22</td>
<td>864,000</td>
</tr>
<tr>
<td>FY 2022-23</td>
<td>936,000</td>
</tr>
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Composting

- Campus began composting in 2023
  - Food service
  - Campus events

Other

- 30 labs participate in nitrile glove recycling program

2,947 pounds of food waste diverted in 2023
CU Anschutz Renewable Energy

Renewable Energy Credits
• 20.2 million kWh over 10-year term on behalf of Anschutz Health Sciences Building

Solar
• Campus Safety and Emergency Preparedness Facility
  o Roof and carport mounted
  o Leased, 270 kW system
  o Recently installed, insufficient data to report on energy production
CU Anschutz Community Engagement

Community Engagement

- Climate & Health, Advocacy, Sustainability, and Education (CHASE)
  - Focused on raising awareness about health implications of climate change
  - Open to all students, faculty, and staff
- Medical Students for a Sustainable Future
- Chancellor’s Cabinet for Sustainability
  - New Sustainability Council
    - Includes broad campus community in decision making and guideline development related to Energy Master Plan, Climate Action Plan and campus sustainability culture on campus
CU Anschutz Academic Offerings

Academic Offerings

• Colorado School of Public Health
  o Climate and Human Health, PhD
  o Environmental and Occupational Health, MPH

• School of Medicine
  o Climate and Health Program
    • Mission to further understanding impacts of climate change on human health
    • Diploma in Climate Medicine (continuing education certificate program)

• Sample Courses of Interest:
  o Climate Change and Health (EHOH 6635)
  o Climate and Disaster Mental Health (EHOH 6642)
  o Global Response to Disaster and Climate Crisis (EHOH 6625)
  o Planetary Health: Look Up and Lead (IDPT 5042)
  o Politics of the Environment & Sustainability (POLS 6700)
CU Anschutz Transportation and Equipment

Alternative Transportation
- Public Transit
  - RTD Eco Pass offered to all employees; 2,014 active Eco Pass Holders
  - Carpool discount offered; 142 active carpools
- Extensive infrastructure to support bicyclists (lockers, shelters, repair centers)

Electric Vehicle Charging Stations
- Level 1 charging stations: 54 (free to charge)
- Level 2 charging stations: 6 + 8 scheduled for installation (free to charge)
- Fleet vehicle charging station under construction, will support 16 vehicles

Campus Fleet and Equipment
- 6% of fleet is electric
- All hand-held lawn equipment is electric