



# **Update on Sustainability Strategic Plan Goals**

Regents Finance Committee Meeting

May 22, 2024



# Past Action

- **June 2021**
  - CU System Strategic Plan approved by Board of Regents
- **May 2022**
  - One year progress presentation to Regents Finance Committee
- **May 2023**
  - Two-year progress presentation to Regents Finance Committee



# What Has Changed?

- **Challenges**

- Address staffing for preventative maintenance
- Continued inflationary pressure drives additional costs

- **New legislation**

- Global Warming Potential For Public Project Materials (HB 21-1303)
  - Sustainable building materials for new construction or renovation designed after January 1, 2024
- Greenhouse Gas Emission Reduction Measures (SB 23-016)
  - Updates statewide sustainability goals
- Capital Renewal Project Cost Threshold (HB 24-1422)
  - Increases threshold for controlled maintenance projects from \$2.0 to \$4.7 million



# Presentation Roadmap

## What is “EUI”?

- EUI, or Energy Use Intensity, expresses a building’s energy use as a function of its size. EUI is expressed as energy per square foot per year.

## What is “GHG”?

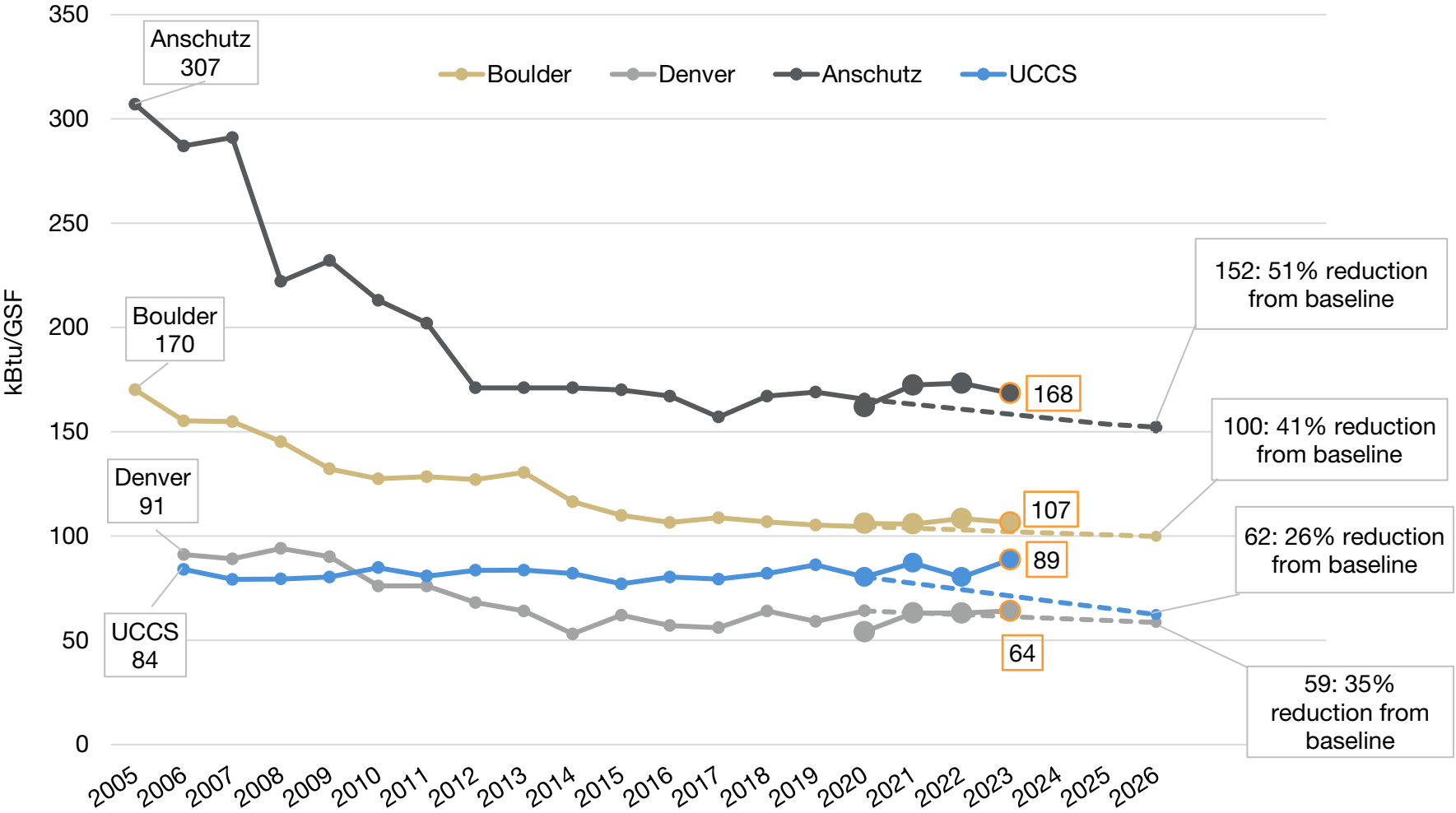
- Greenhouse gas (GHG) is measured in metric tons of carbon dioxide equivalent or MTCO<sub>2</sub>e. This unit represents an amount of a GHG whose atmospheric impact has been standardized to that of one unit mass of carbon dioxide based on the global warming potential of the gas.

## What is “FCI”?

- The Facilities Condition Index (FCI) measures the cost of remedying a building’s deficiencies compared to the building’s current replacement value. The target FCI is 85.
- If a building FCI is below 85, the building deficiencies are broadly described as deferred maintenance, or any outstanding maintenance or repair needs that have been delayed, typically because of budget constraints.



# Energy Use Intensity Goals (with 2023 actuals)



# Energy Use Intensity Action Steps

**In the Strategic Plan, campuses committed to three action steps:**

1. Standardize the way that campuses calculate EUI
2. When possible, create or maintain campus fund to finance green initiatives
3. Upgrade 1800 Grant parking garage and stairwell lighting to LED



# Energy Use Intensity

## Progress Toward Action Steps

### 1. **Standardize the way that campuses calculate EUI**

- UCCS updated calculation to remove unconditioned square footage from EUI calculation

### 2. **When possible, create or maintain campus fund to finance green initiatives**

- Boulder: Financial Strategies being discussed in Climate Action Plan implementation
- Denver: Auraria Sustainable Campus Program - Funded by permanent student fee
- Anschutz: Repurpose rebates from Xcel Energy for conservation projects and focus on financial strategies as part of Energy Master Plan Process
- UCCS:
  - Green Action Fund (GAF) - Spring 2024, students voted to make fee permanent
  - CU System line of credit to fund program of energy performance projects to reduce EUI and GHG

### 3. **Upgrade 1800 Grant parking garage and stairwell lighting to LED**

- Garage converted in 2020
- Building lighting replaced floor-by-floor when other upgrades are undertaken



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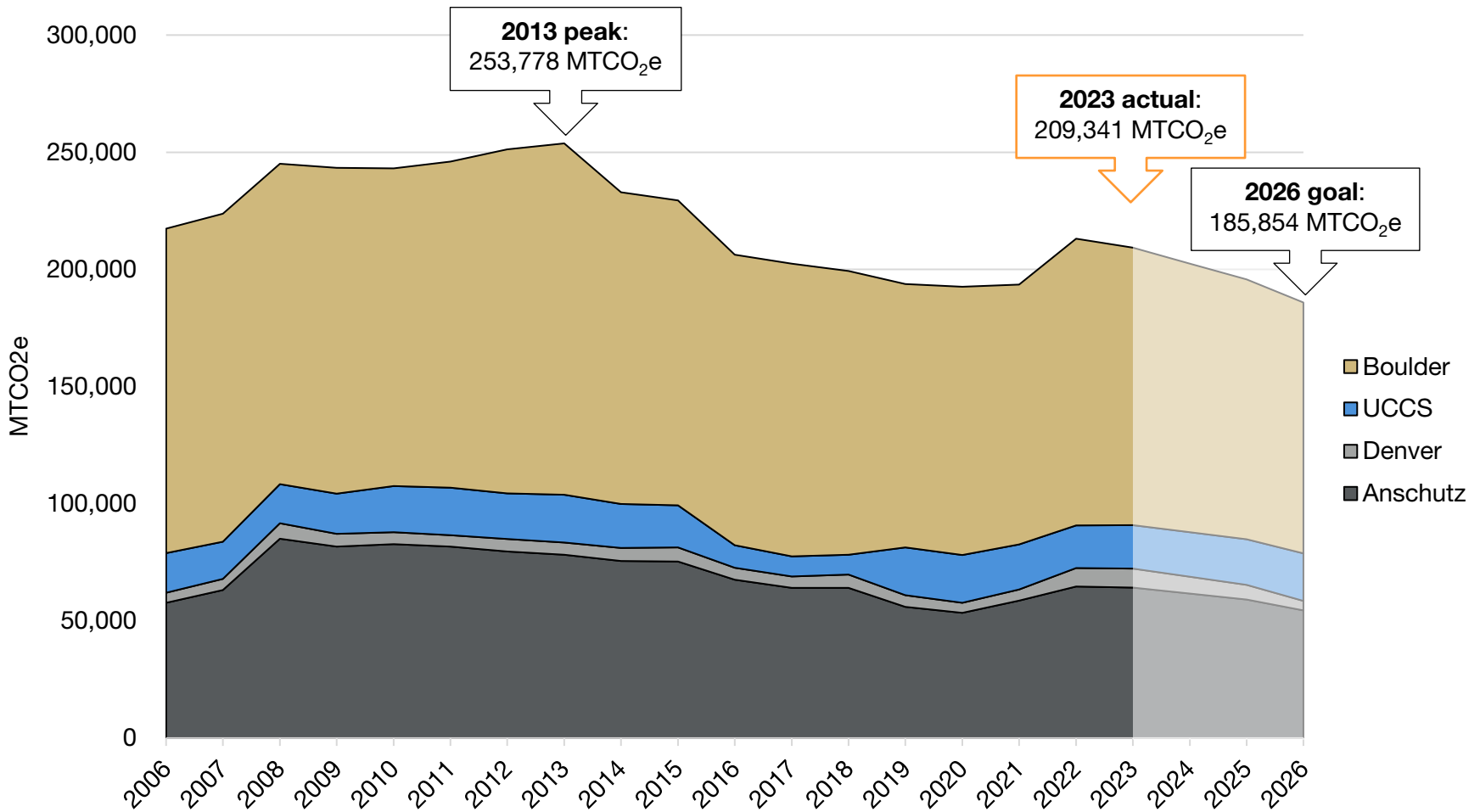
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# Greenhouse Gas Emissions (MTCO<sub>2</sub>e) Progress Toward Goal



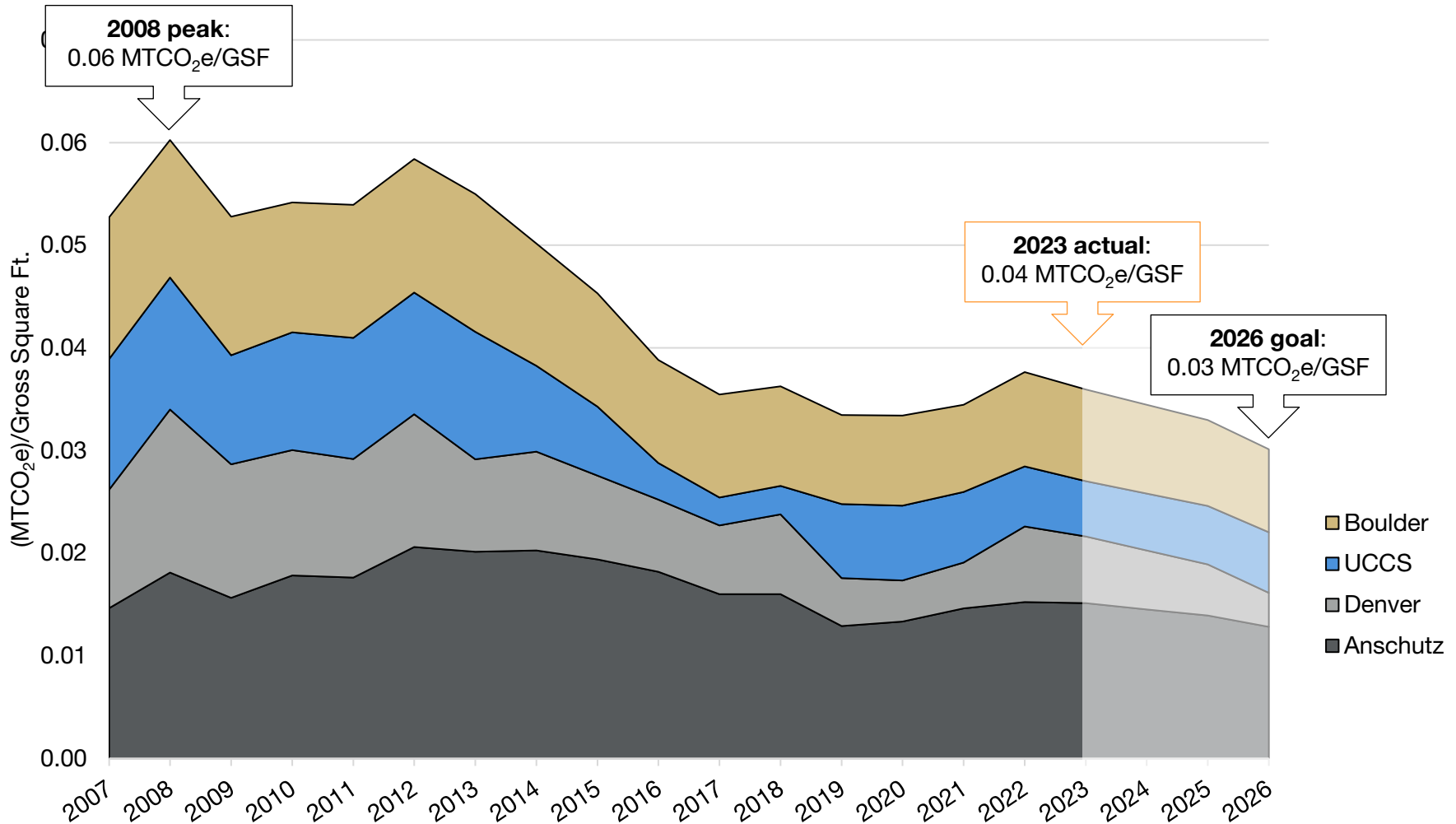
Note: UCCS, CU Denver, and CU Anschutz actual data through 2023. CU Boulder actual data through 2022.



University of Colorado

Boulder | Colorado Springs | Denver | Anschutz Medical Campus

# Greenhouse Gas Emissions (MTCO<sub>2</sub>e)/Gross Square Ft.



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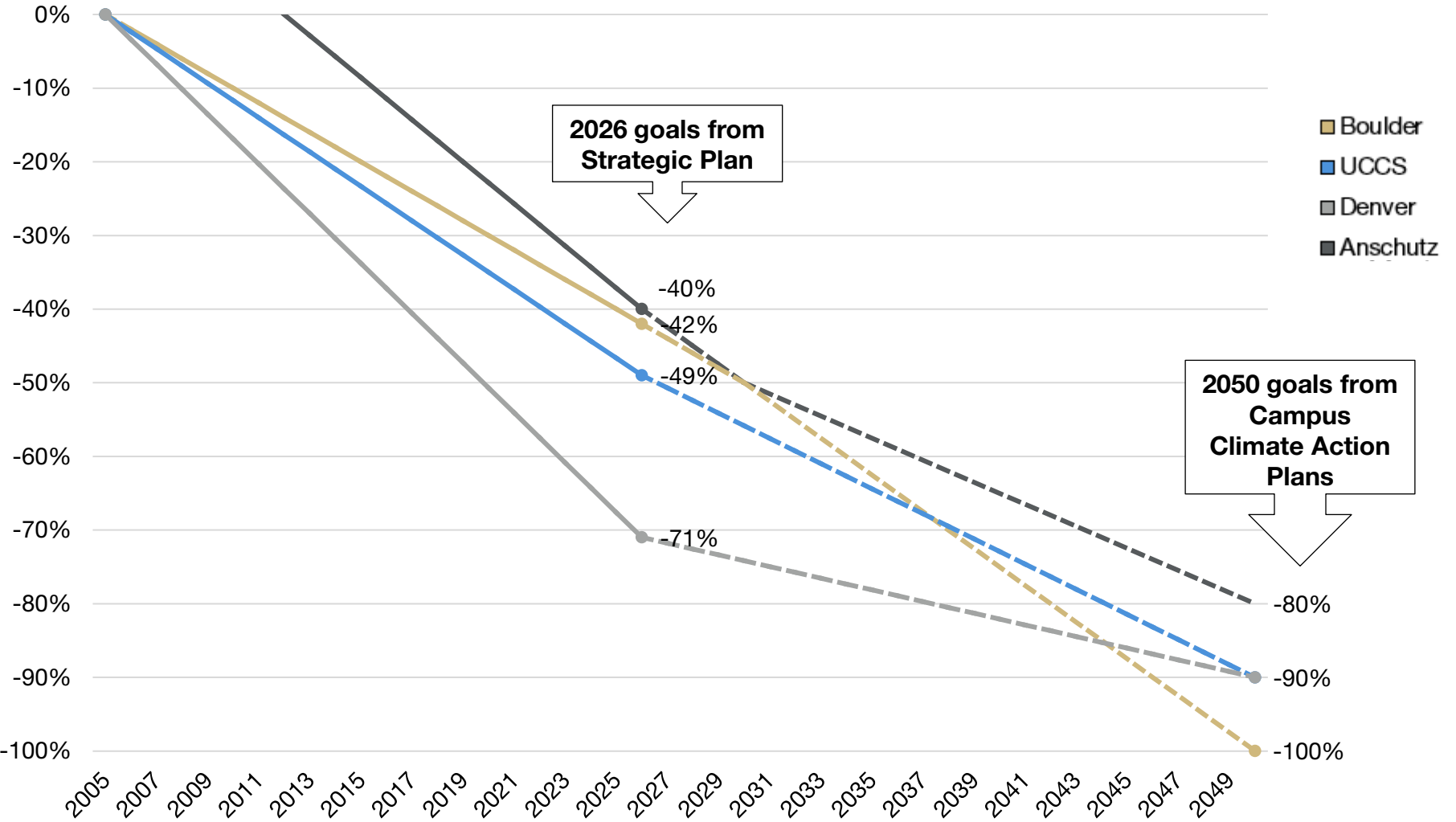
# Greenhouse Gas Emissions Action Steps

## **Campuses implementing five action steps:**

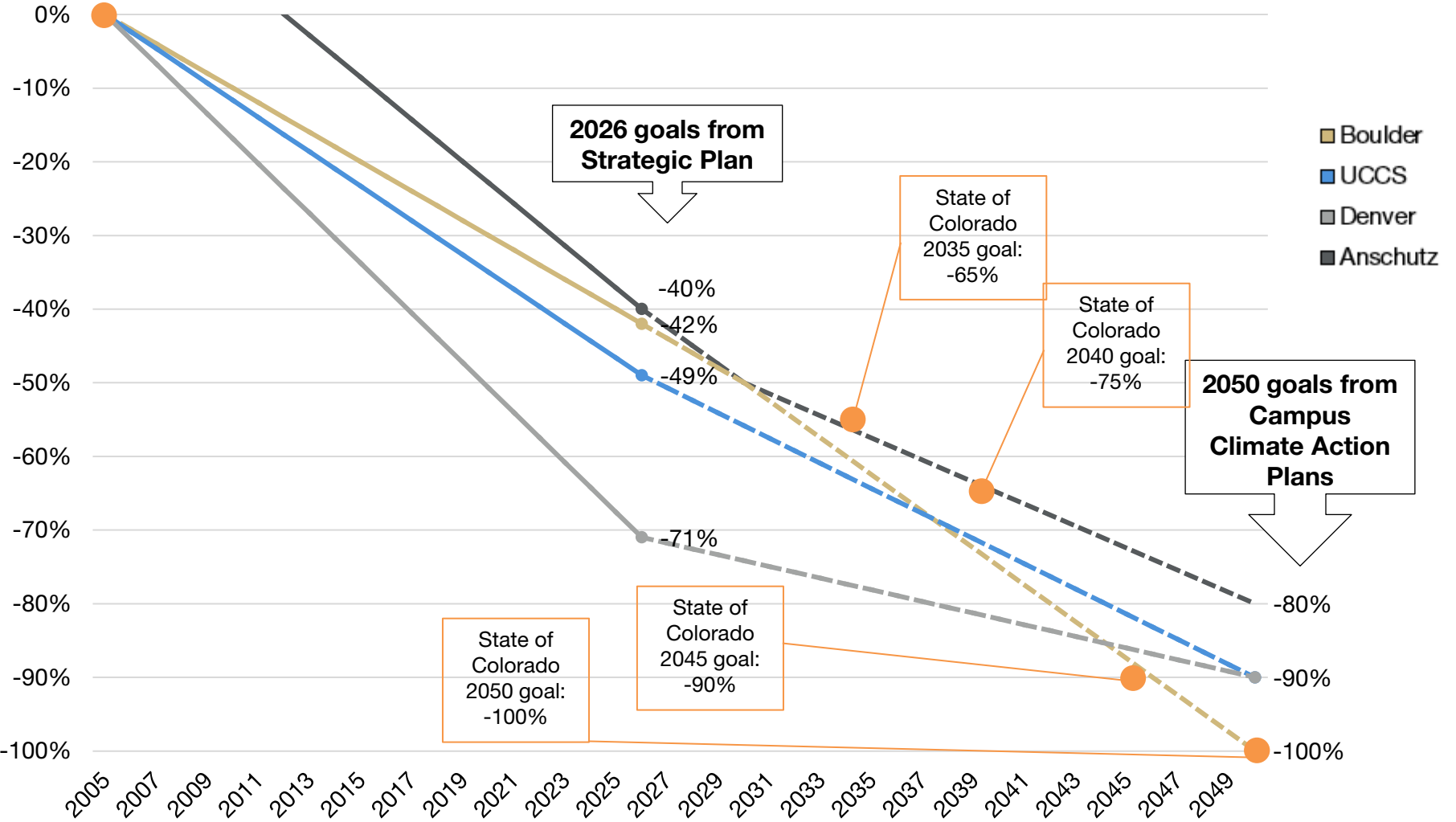
1. Update Campus Climate Action Plans with focus on reducing greenhouse gas emissions
2. Look for opportunities to transition to green vehicle fleet
3. Increase the renewable energy mix within campus energy portfolio
4. Replace legacy equipment with more energy efficient equipment in all spaces including labs, residence halls and offices
5. Identify energy-savings opportunities in capital improvement projects, including deferred maintenance projects



# Greenhouse Gas Emissions Reduction Goals



# Greenhouse Gas Emissions Reduction Goals





# Greenhouse Gas Emissions

## Progress Toward Action Steps: Boulder

- Climate Action Plan (completed April 2024)
  - Originally planned to Address Scope 1 and 2 GHG emissions, expanded to Scope 3
  - Incorporates climate justice and equity
- Campus ahead of goal for Battery Electric Buses
  - Awarded two grants totaling \$1.7 million for a 45% cost share to purchase 4 buses
    - Went into service November 2022 and August 2023
  - Awarded \$1.5 million grant for a 60% cost share to purchase 2 buses (delivery 2025)
- Campus energy performance contract
  - Seeking approval for energy improvements in 18 buildings
  - Seeking approval for 1.1 MW East Campus Solar Project
- 5 MW solar virtual net metering project, array will be built in eastern Weld County
- Williams Village steam to hot water conversion project initiated
- Grant applications submitted for geothermal studies



# Greenhouse Gas Emissions

## Progress Toward Action Steps: UCCS

- Performed investment grade energy audit in 2023
  - Created five-year portfolio of projects to reduce scope 1 & 2 GHG emissions
    - Valued at \$17.8 million
    - Projected to reduce campus GHG by 18%
    - Hired staff to complete program of projects in-house for a savings of \$3.5 million
- Green vehicle fleet
  - One 2022 F-150 Hybrid in service and one 2024 Ford F-150 Hybrid on order
- Engaged with Colorado Springs Utilities to increase purchase of RECs
- Energy Projects:
  - Six recently completed energy projects
  - Four energy projects in progress
  - Upcoming projects:
    - Engineering Building Renovation (scheduled to commence 2024)
      - Addresses \$10.4 million of deferred maintenance



# Greenhouse Gas Emissions

## Progress Toward Action Steps: Denver

- AHEC Climate Action Plan recently completed
  - Anticipated approval in 2024
- CU Denver hiring Sustainability Manager (Summer 2024)
- AHEC purchased commercial composter and hired Compost Operations Manager
  - CU Denver is composting in Student Commons and Lawrence Street Center
  - Exploring composting in the residence halls and CU Denver Building
- Recently completed LED lighting retrofit in all three CU Denver parking garages
- AHEC entered into Energy Performance Contract
  - Will address lighting and other EUI and GHG reduction items in shared campus buildings



# Greenhouse Gas Emissions

## Progress Toward Action Steps: Anschutz

- Energy Master Plan to be completed late 2024
  - Addresses long-term energy and GHG emissions reductions
  - Informs GHG emissions scopes 1 and 2
- Climate Action Plan to be completed in 2025
  - Addresses scope 3 GHG emissions and campus sustainability culture
- Space Utilization Guidelines
  - Emphasizes renovation over new construction
  - Optimizes existing resources, reduces EUI, and shrinks carbon footprint
- Purchased four electric vehicles for Facilities Management
  - Continue to build-out EV charging infrastructure
- Capital improvement projects
  - Evaporative cooling and heat recovery projects in Research 1
    - Will save an estimated 4,500 MT-CO<sub>2</sub>e
  - Parking lot lighting projects
    - Increases safety and reduces GHG emissions by 26 MT-CO<sub>2</sub>e



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# FCI Action Steps

## **1. Routine assessment of facility condition and deferred maintenance**

- Uniform methodology across the campuses
- Report current replacement value to the state

## **2. Plan for funding maintenance of new and renovated buildings**

## **3. Reduce deferred maintenance backlog or backlog growth**

## **4. Long-term funding and spending plan to:**

- Stop the growth of the deferred maintenance backlog
- Reduce deferred maintenance backlog, particularly critical need and life safety
- Proactively fund preventative maintenance



# FCI Progress Toward Action Steps: CU Boulder

## **1. Routine assessment of facility condition and deferred maintenance**

- Assess General Fund buildings every five years, 20% of inventory each year
- Continue to use asset management software tool for General Fund buildings
  - Starting to add auxiliary building portfolio to software

## **2. Plan for funding maintenance of new and renovated buildings**

## **3. Reduced deferred maintenance backlog growth by over \$20 million per year**

## **4. Long-term funding and spending plan to slow the growth of deferred maintenance backlog**

- 10-year capital plan prioritizes investment in existing building inventory
- Small project repair budget increased to \$10 million annually
  - Focus on critical building system repair and high use common spaces
- Continue to leverage state funded controlled maintenance program
- Proactively fund preventative maintenance to maximize life cycle of critical equipment and systems



# FCI Progress Toward Action Steps: UCCS

## 1. Routine assessment of facility condition and deferred maintenance

- Assess FCI of General Fund buildings every year using OSA methodology
  - Assess auxiliary facilities every two years
- New process to assess deferred maintenance every five years
  - 20% of inventory each year
  - Uses current replacement value

## 2. Plan for funding maintenance of new and renovated buildings

## 3. Reduce deferred maintenance backlog growth

- Use System Treasury line of credit to execute program of energy performance projects to save \$3.5 million

## 4. Long-term funding and spending plan to slow the growth of deferred maintenance backlog

- Continue to leverage state funded controlled maintenance program
- 10-year capital plan prioritizes investment in existing building inventory
  - Engineering Building renovation will reduce backlog by \$10.4 million



# FCI Progress Toward Action Steps: CU Denver

## **1. Routine assessment of facility condition and deferred maintenance**

- Use 2023 building audit to create annual assessment and deferred maintenance list

## **2. Plan for funding maintenance of new and renovated buildings**

- Deferred maintenance funded projects totaled \$2.0 million over last two years
  - \$2.6 million remaining in the current deferred maintenance fund

## **3. Reduce deferred maintenance backlog growth**

- Adding 1 FTE Building Maintenance and Operations staff member to allow for more preventative maintenance

## **4. Long-term funding and spending plan to slow the growth of the deferred maintenance backlog**

- Use state controlled maintenance process to improve FCI for buildings that have recently transitioned off 15-year ownership waiting period
  - Received \$4.3 million in projects over last three years



# FCI Progress Toward Action Steps: CU Anschutz

## **1. Routine assessment of facility condition and deferred maintenance**

- New facilities condition audit (completed November 2022)
- Uniform methodology across campus for condition assessment, deferred maintenance backlog, and capital renewal planning

## **2. Plan for funding maintenance of new and renovated buildings**

- Working on 10-year maintenance plan to be used in annual budgeting exercise

## **3. Reduce deferred maintenance backlog or backlog growth**

## **4. Long-term funding and spending plan to slow the growth of the deferred maintenance backlog**

- Significantly reduce backlog of deferred maintenance
- Proactively fund preventative maintenance
- Identify sustainability components and projects





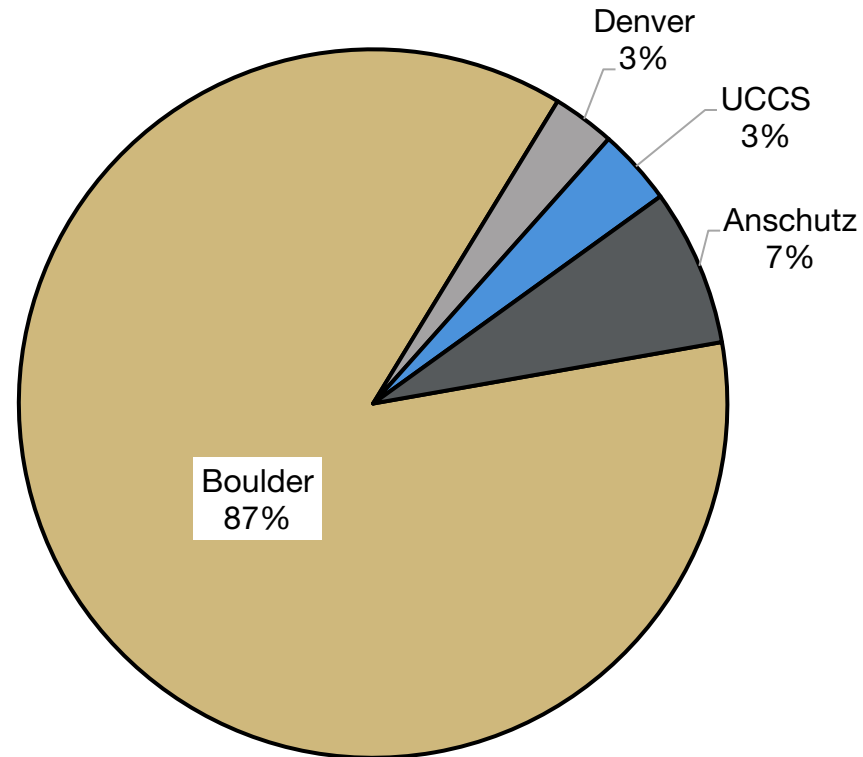
# Deferred Maintenance

## Total Deferred Maintenance Backlog

Campus	2022	2023
<b>Boulder</b>	<b>\$1.25 billion</b>	<b>\$1.30 billion</b>
General Fund	\$752.6 million	\$780.5 million
Non-General Fund	\$497.6 million	\$517.3 million
<b>UCCS</b>	<b>\$58.6 million</b>	<b>\$52.2 million*</b>
General Fund	\$49.6 million	\$40.3 million
Non-General Fund	\$8.6 million	\$11.9 million
<b>Denver</b>	<b>\$18.5 million</b>	<b>\$42.8 million*</b>
General Fund	\$17.8 million	\$39.9 million
Non-General Fund	\$638,550	\$2.9 million
<b>Anschutz</b>	<b>\$60.9 million</b>	<b>\$107.5 million*</b>
General Fund	\$44.3 million	\$75.1 million
Non-General Fund	\$16.6 million	\$32.4 million
<b>Total</b>	<b>\$1.39 billion</b>	<b>\$1.50 billion</b>
General Fund	\$864.3 million	\$935.9 million
Non-General Fund	\$523.4 million	\$564.5 million

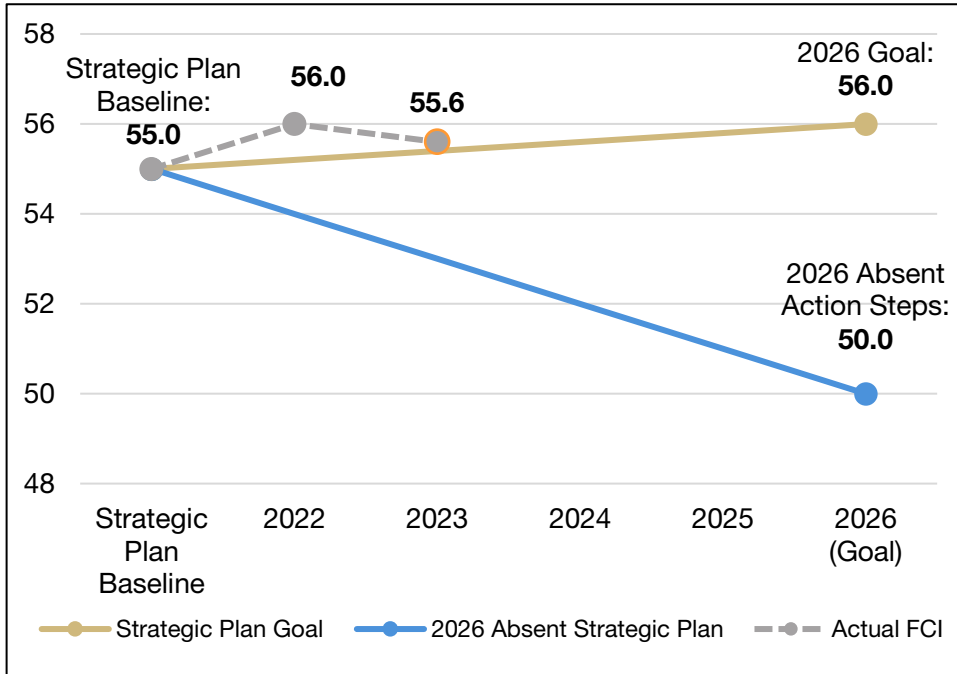
Source: Campuses

\*2023 adjustment is primarily due to more accurate data from most recent Facility Condition Audits.



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

# FCI Action Steps CU Boulder



## Facilities Condition Index

- Current index for all facilities – 55.6%
  - 95 GF buildings below 85% FCI
  - 15 GF buildings above 85% FCI

## Deferred Maintenance

- University-funded - \$26 million
- State-funded - \$6.5 million
- Slowed growth of backlog by \$29.0 million
- Fleming Phase II - \$10.0 million

## Upcoming Projects

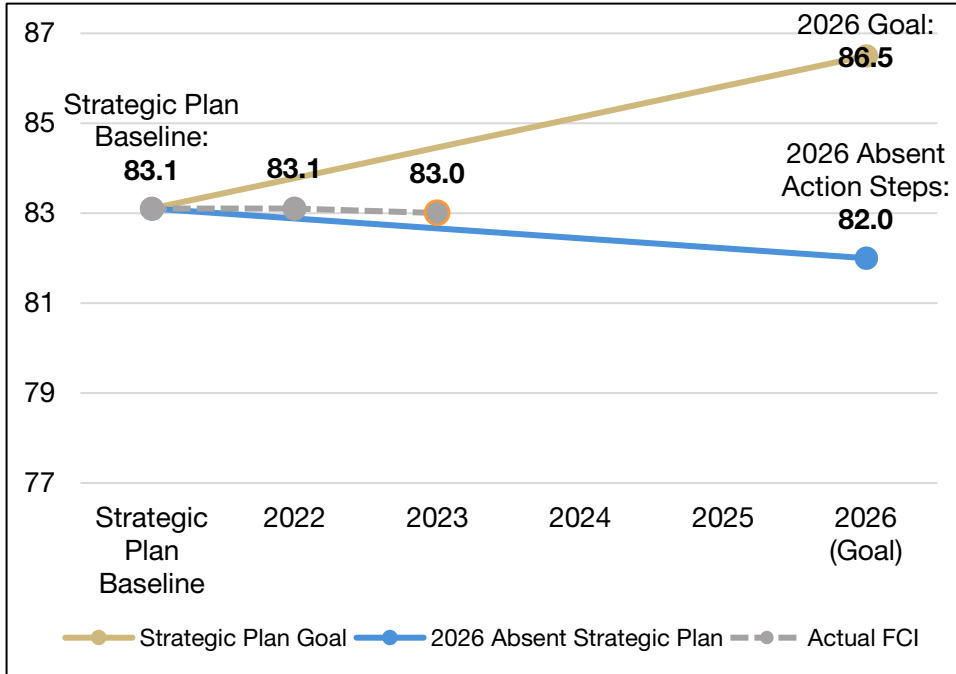
- University-funded
  - Ekeley Sciences – \$15.0 million
  - Energy Performance – \$3.0 to \$5.0 million
  - Old Main Exterior - \$7.0 million
  - Annual small project allocation - \$7.5 million
- State-funded
  - Hellems Renovation - \$36.8 million
  - Six controlled maintenance projects - \$8.5 million

## Timeline for Borrowing Plan

- First capital and deferred maintenance-related debt in summer 2024

# FCI Action Steps

## UCCS



### Facilities Condition Index (Cont.)

- Kraemer Family Library/El Pomar Center FCI improved by 9%
- Average FCI is skewed due to newer buildings

### Deferred Maintenance

- University-funded - \$836,000
- State-funded - \$3.5 million

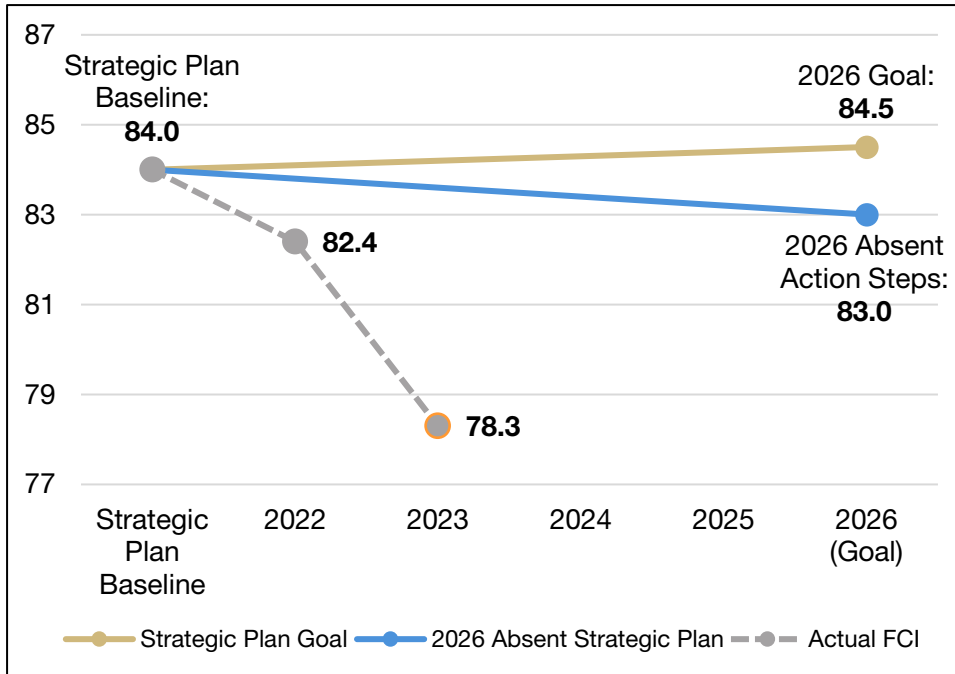
### Upcoming Projects

- University-funded
  - Engineering Building – \$10.4 million
- State-funded
  - One controlled maintenance project - \$2.0 million

### Facilities Condition Index

- Current index for all facilities – 78.0%
  - 40 facilities below 85% FCI (-7 from 2023)
  - 34 facilities at or above 85% (+10 from 2023)
- 2023 adjustment is primarily due to more accurate data from most recent Facility Condition Audits

# FCI Action Steps CU Denver



## Deferred Maintenance

- University-funded - \$610,000
- State-funded - \$3.0 million
  - CU Denver Building Electrical Distribution (Phase 2 of 2) - \$1.2 million
  - CU Denver Building Fire Protection Replacement - \$1.8 million

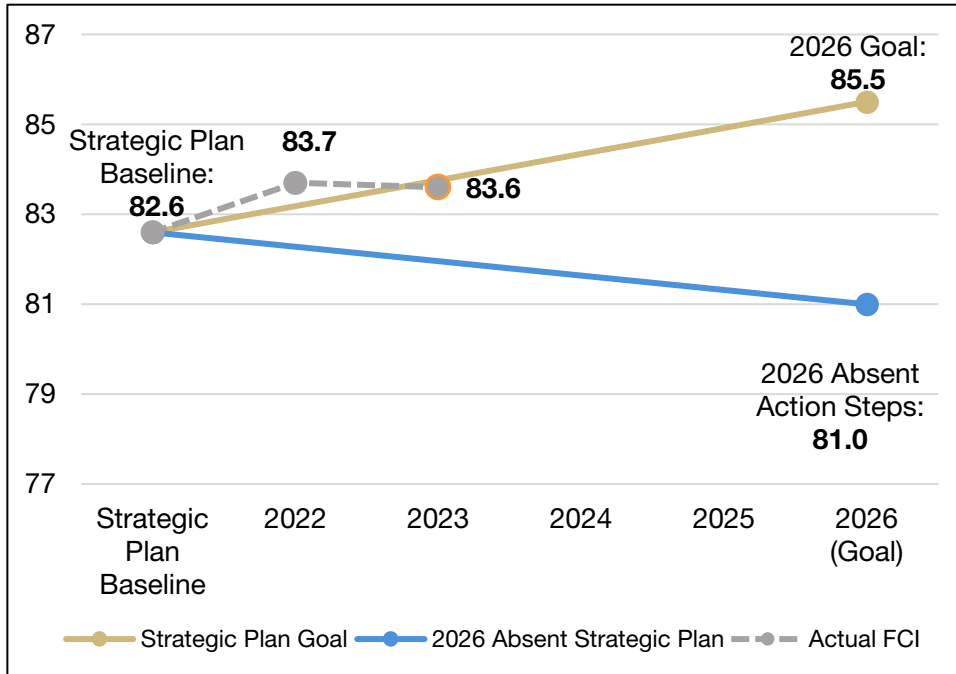
## Upcoming Projects

- University-funded - \$1.3 million
- State-funded (AHEC)
  - Three controlled maintenance projects - \$3.1 million

## Facilities Condition Index

- Current index for all facilities – 78.3%
  - 2 facilities below 85% FCI
  - 2 facilities over 85% FCI
- 2023 adjustment is primarily due to more accurate data from most recent Facility Condition Audits

# FCI Action Steps CU Anschutz



## Deferred Maintenance

- University-funded – \$7.2 million
- State-funded – \$6.5 million

## Upcoming Projects

- University-funded - \$10.9 million
- State-funded - Two controlled maintenance projects – \$3.6 million

## Facilities Condition Index

- Current index for all facilities – 83.6%
  - 10 facilities below 85% FCI
  - 15 facilities over 85% FCI
- 2023 adjustment is primarily due to more accurate data from most recent Facility Condition Audits