

Building Performance Standards (BPS)

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Council Priority Question



- What information is needed to advance the conversation related to community electrification?



Reduce climate pollution and air pollution through best practices, emphasizing electrification

Saves Money

Energy-efficient appliances and buildings waste less electricity, saving consumers money on utility bills

Benefits the Environment

Wasting less electricity, driving an electric vehicle, and using clean energy reduce carbon emissions

Fosters Grid Resilience

Smart homes and appliances can work together to balance load on a clean energy grid

Improves Quality of Life

Newer, smarter technology can provide better living experiences at home and on the road

Courtesy of Beneficial Electrification League and Environmental and Energy Study Institute

Saves Money

- Efficiency first, consider building characteristics
- Behavioral changes needed for HVAC operation

Benefits the Environment

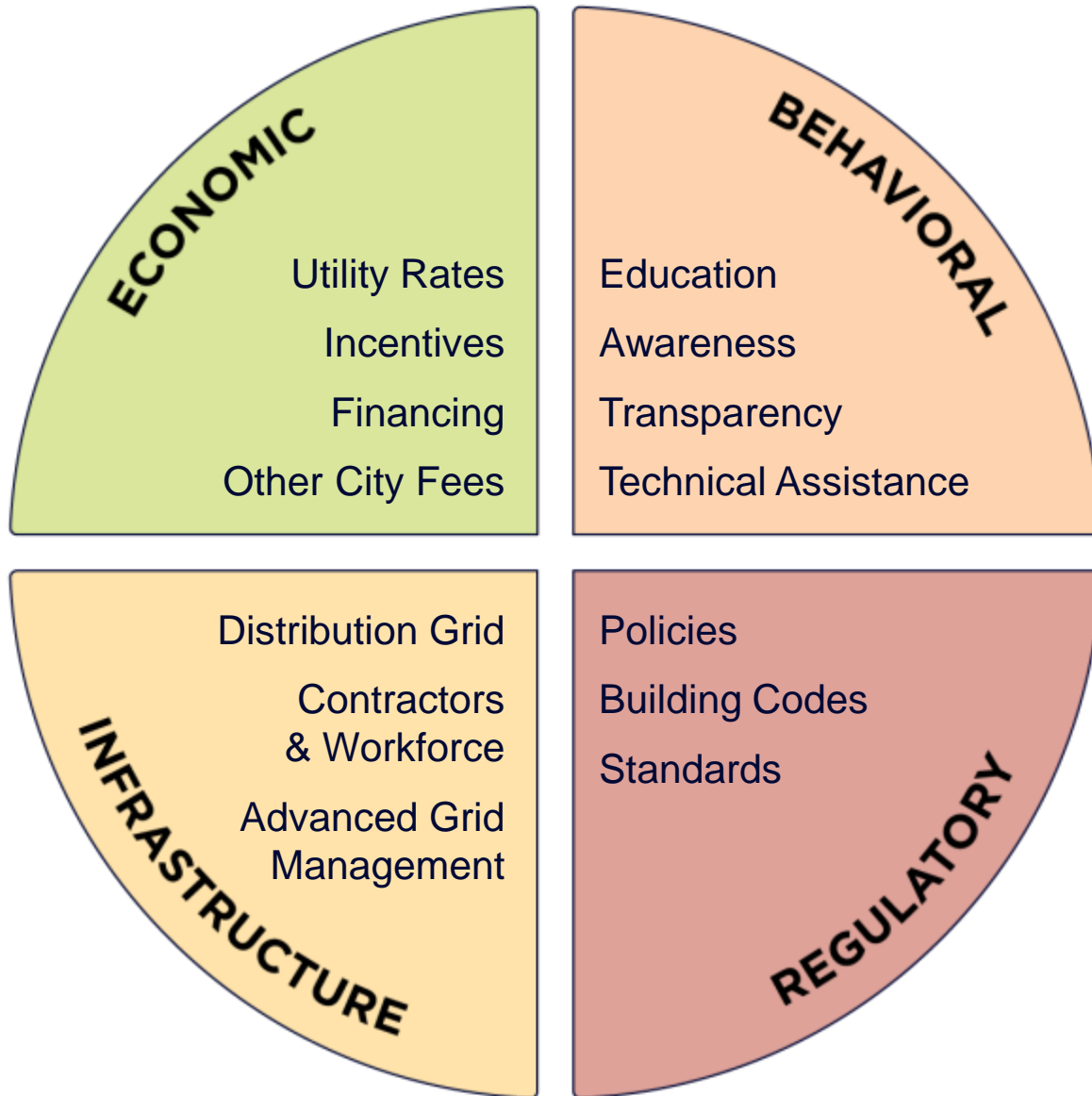
- Eliminate/minimize natural gas end use appliances
- Clean energy resource mix needed

Fosters Grid Resilience

- All-electric back-up heating could represent localized distribution risk

Improves Quality of Life

- Health, safety, comfort of building occupants



Methods or "Levers"

The City of Fort Collins has several methods, or “levers”, for making community progress with electrification. Managing a diverse portfolio of methods can optimize:

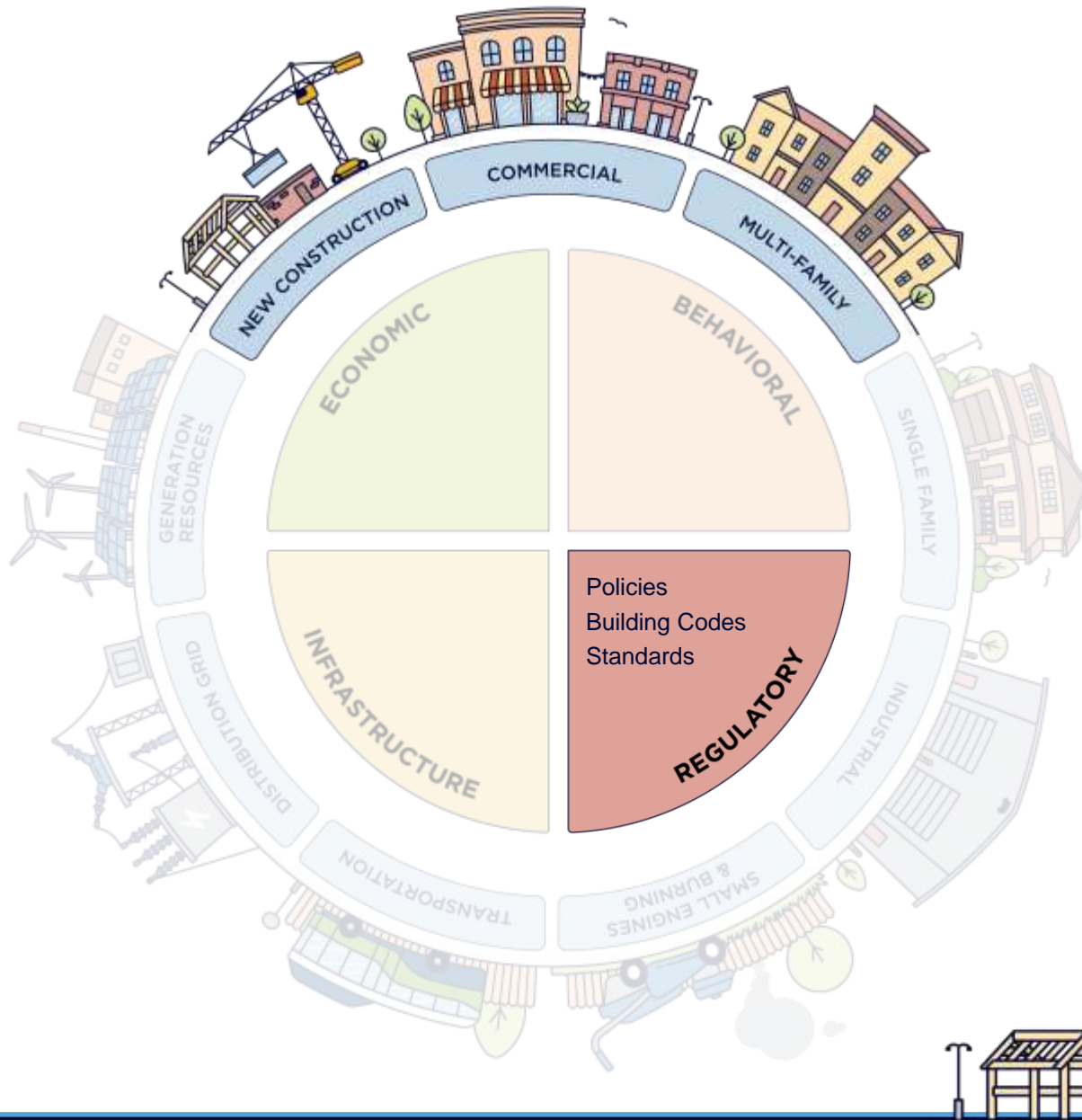
- Cost effectiveness
- Customer service
- Achievement of goals



Areas of Impact

Some levers can be used to make progress toward goals across several segments of the community, while others are more unique to a given segment.

- Existing buildings impacts recognized by economic and behavioral levers.
- New construction impacts mostly recognized in advancement of building energy code.



Building Performance Standards (BPS)

BPS, a proposed regulatory lever, identifies building energy use targets that building owners would be required to meet. BPS success will also depend on economic, behavioral, and infrastructure resources.



Council Priority Question



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Building Performance Standards

Katherine Bailey, Program Manager, Energy Services

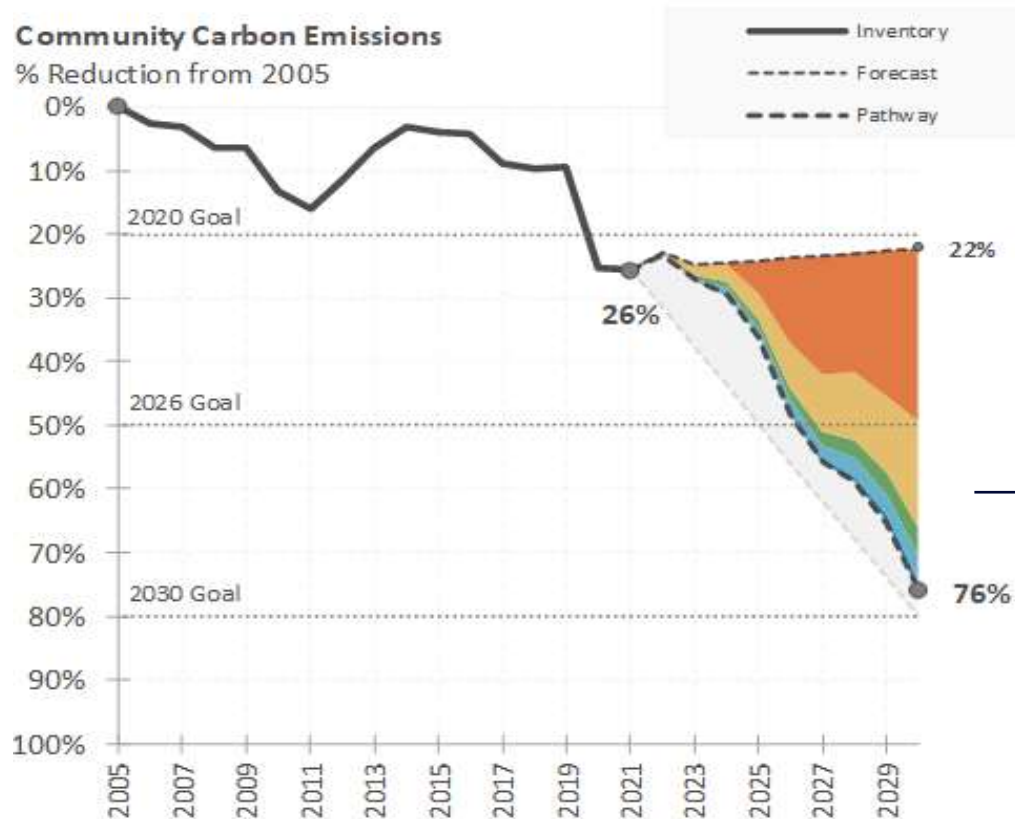
BPS Questions for Councilmembers

- Do Councilmembers have initial feedback on staff BPS recommendations?
- Do Councilmembers want staff to return to another work session to continue the BPS conversation? If so, what specific topics would be helpful to discuss?





Our Climate Future (OCF) Goal:
 Reduce greenhouse gas emissions **80% below 2005 baseline levels by 2030**
 Live Better: Big Move 6



Emissions Avoided vs 2005 Pathway Group	2030
Electricity	27.10%
Buildings	16.70%
• Regulatory (BEWS, BPS)	8.90%
• Economic	7.80%
Transportation	4.40%
Industry	4.10%
Waste	1.60%
Land Use	0.10%

Buildings account for more than two-thirds of our local greenhouse gas emissions

Greenhouse Gas

Most powerful, direct policy action to reduce emissions by 2030

Unique City strategy to significantly reduce natural gas

By 2030: slightly less impactful than all City efficiency programs combined

Community



Health



Safety



Comfort



Resilience

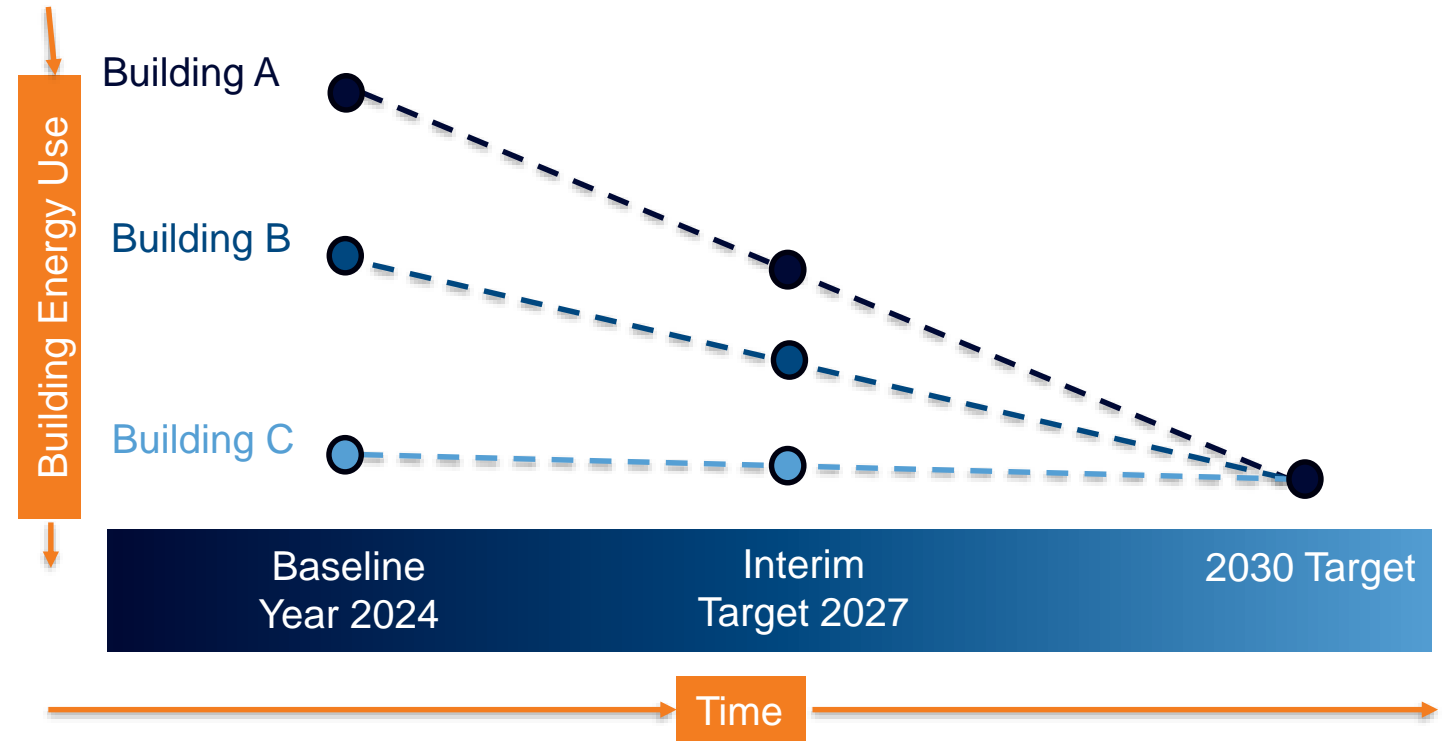
- Air quality
- Building occupancy
- Tenant retention
- Occupant productivity
- Economic growth
- Competitiveness

- Utility impacts from rising temperatures
- Energy burden

Disproportionately-impacted communities benefit from BPS

What are BPS?

- Require buildings to meet carbon or energy performance targets by specific deadlines
- Can include multiple standards, allowing for flexibility while increasing performance for an aspect of a building
- Targets become stricter over time, driving continuous, long-term improvement in local buildings



BPS center on flexibility

Federal Executive Order

Net-zero emissions by 2045; 50% reduction in building emissions by 2032

Colorado Introduced BPS

Buildings greater than 50,000 square feet:
Greenhouse gas **reduction of 7% by 2026 and 20% by 2030**

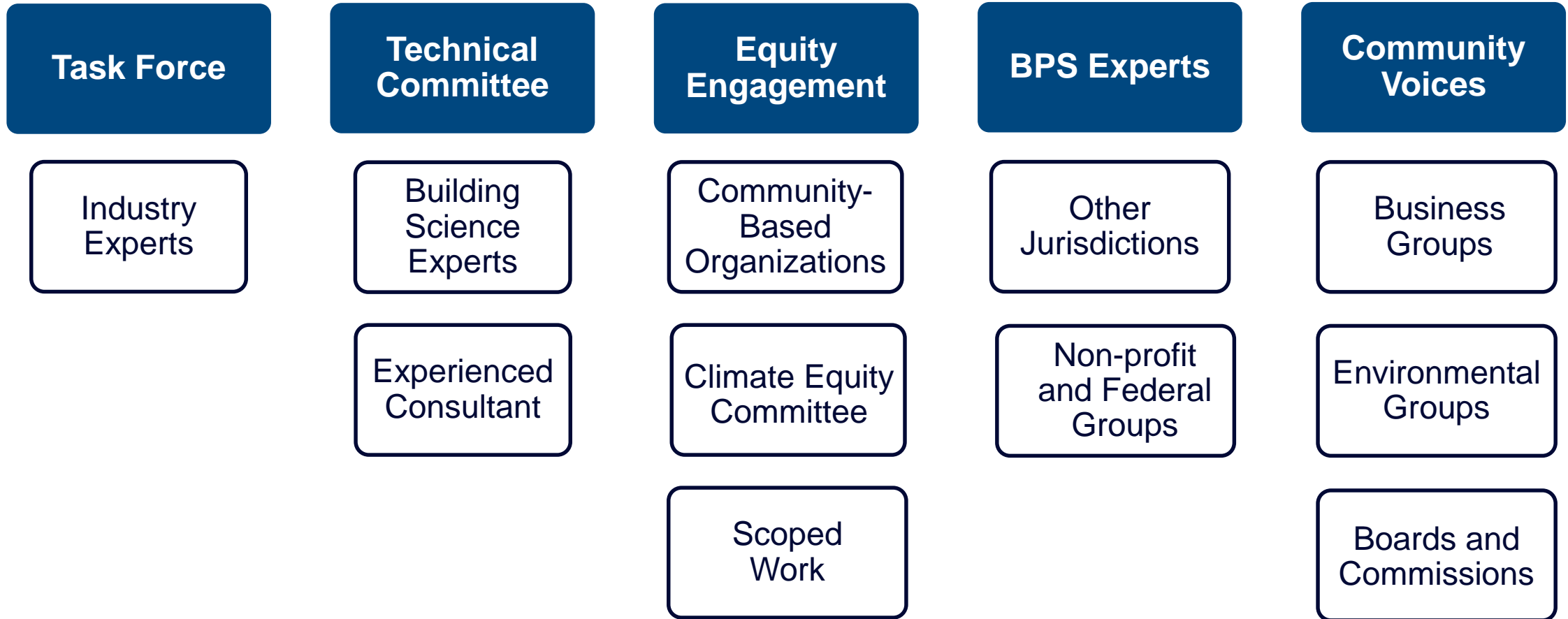
National BPS Coalition

The City of Fort Collins committed to adopting local BPS along with communities around the country

The State of Building Performance Standards (BPS) in the U.S.
Members of the National BPS Coalition as of December 2023



BPS are the most powerful policy tool available to drive improved building performance

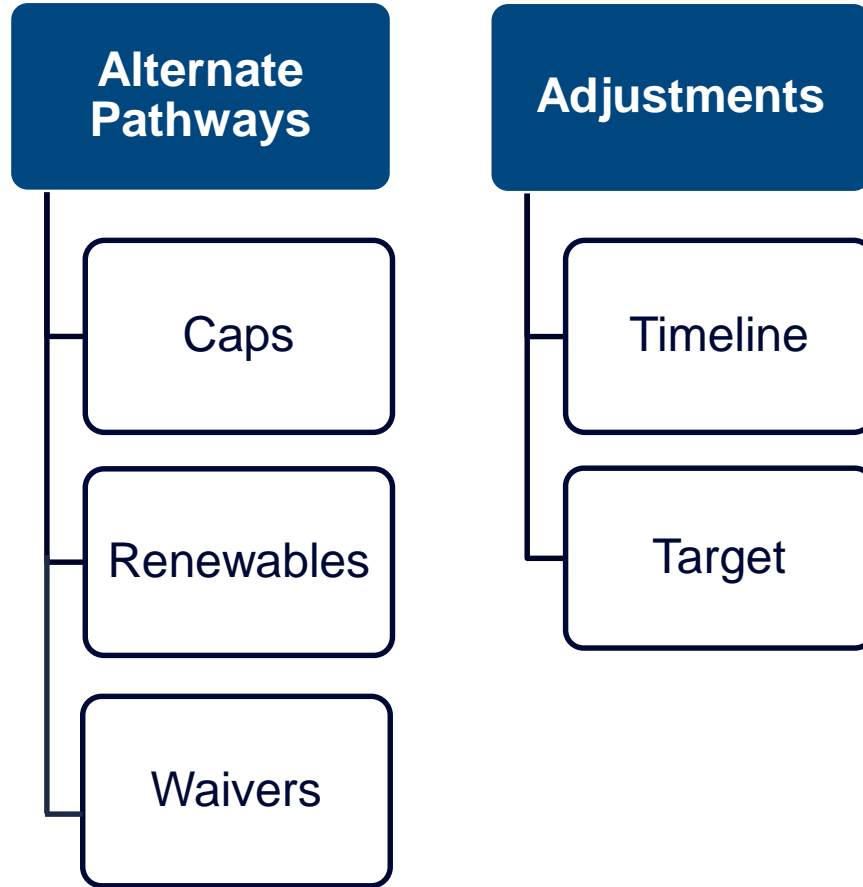


Community contributors shaped BPS policy recommendations

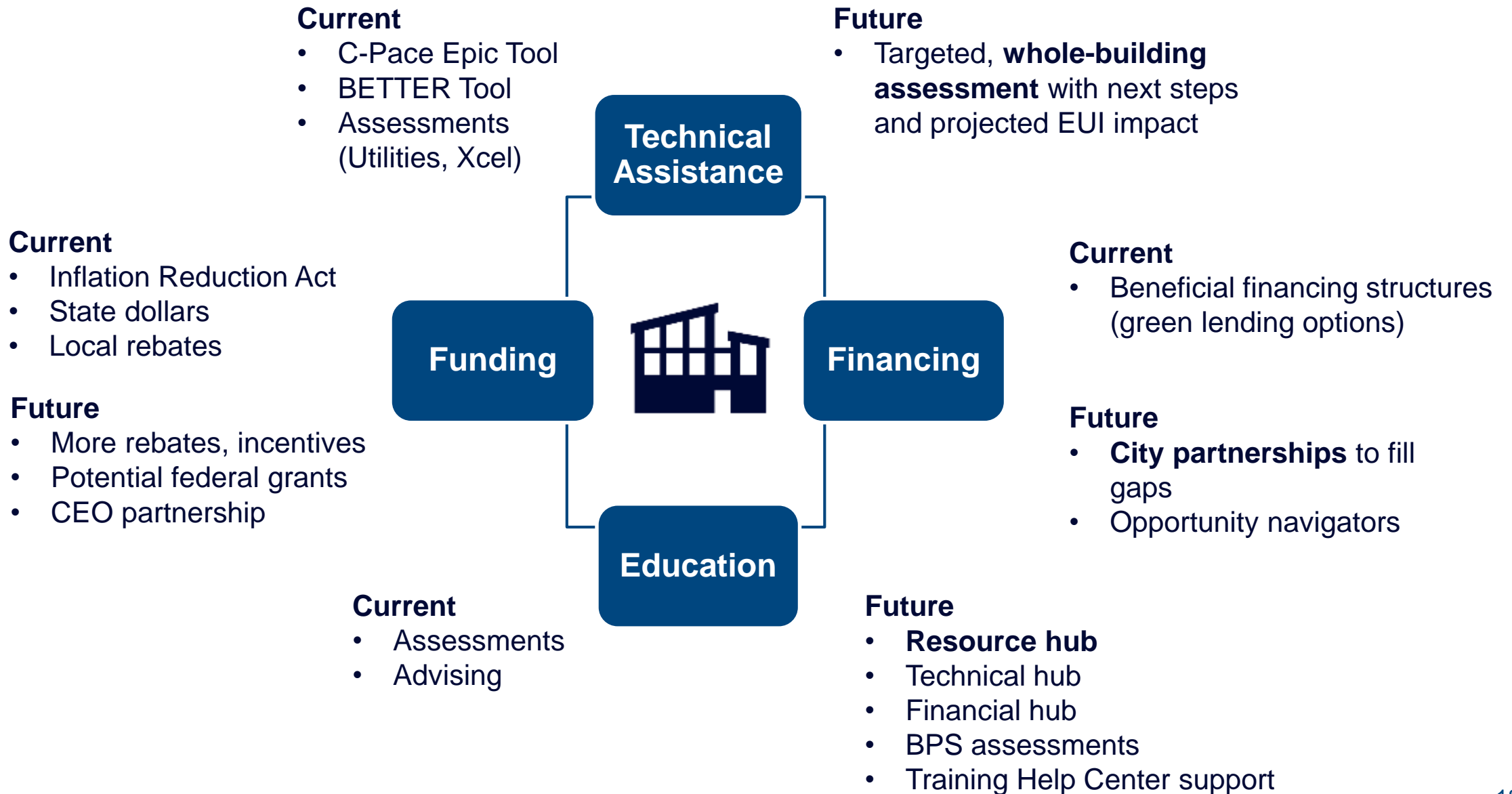
- Covered Buildings
 - 5,000 square feet: multi-family (MF) and commercial
 - Buildings 5,000-10,000 square feet have more attainable targets, timelines
- Efficiency Targets
 - Energy Use Intensity (EUI)
 - **Maximum flexibility**
- Resources and Support
 - **Education**, technical, financial
 - Adjustments
 - Additional assistance for under-resourced buildings



Task Force recommendations are published at ourcity.fcgov.com/BPS



Alternate pathways provide options for buildings that cannot meet EUI targets



Proposed Next Steps

Adoption:

Adoption well in advance of targets provides building owners more time to meet requirements.

Resource Gathering:

Successful implementation depends on resources for all buildings, with emphasis on under-resourced buildings. Staff are ready to build out educational, financial, and technical resource hubs.

Implementation:

Resources developed will be shared widely with the expectation of more support needed for individual building owners close to interim and final target dates.



Adoption (April-July)

Refine BPS requirements with Council



Resource Gathering (July-December)

Secure and customize required resources



Implementation (January 2025)

Begin offering education and resources; notifications begin

Questions for Councilmembers

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BPS Questions:

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Additional Context

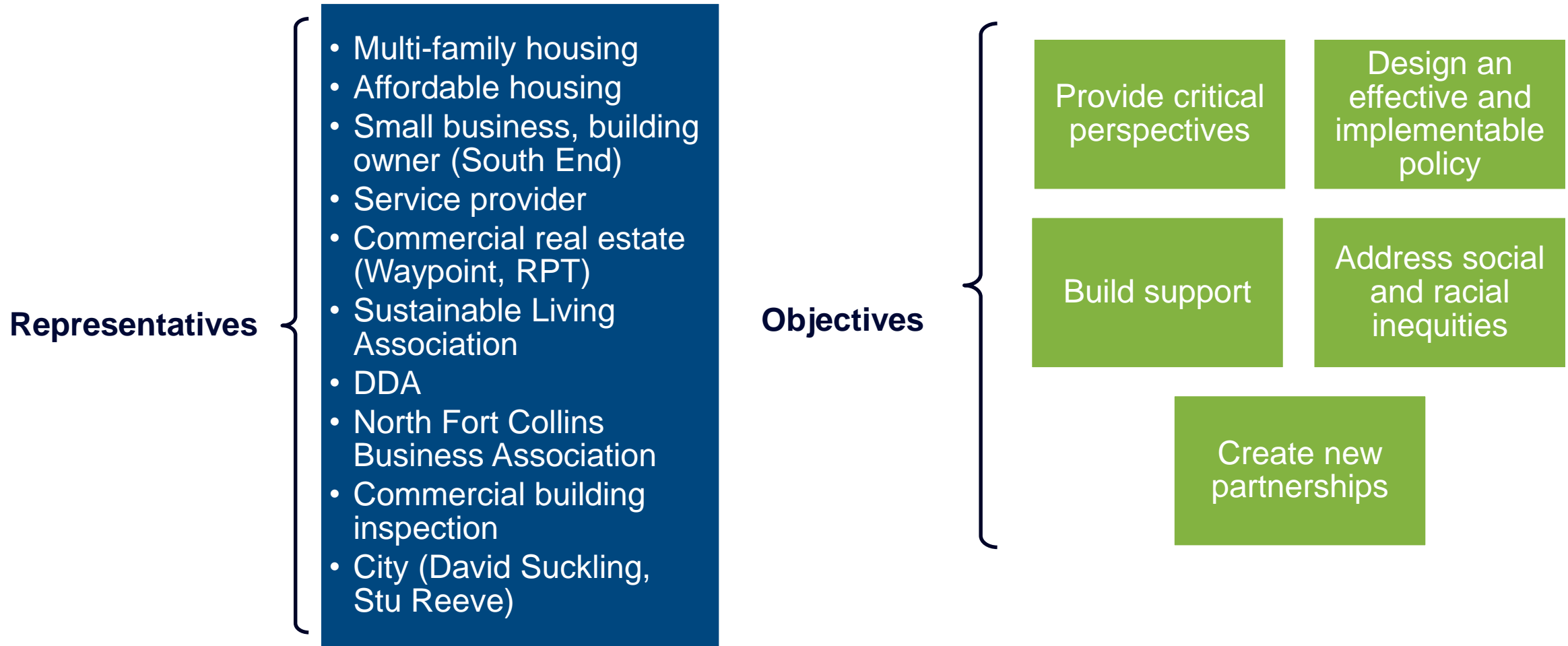
Katherine Bailey

Program Manager, Energy Services



Potential Customer Journey





The Task Force provided high level policy recommendations that are implementable and account for goals

Consultant and Expert Volunteers

- Steven Winters Associates
- Volunteer Technical Committee:
 - ⑩ Platte River Power Authority
 - ⑩ City: Energy Services, Energy Code, Building Inspector
 - ⑩ EMU Passive
 - ⑩ CSU Health
 - ⑩ Adolfson and Peterson Construction
 - ⑩ National Inspection
 - ⑩ Integrated Mechanical
 - ⑩ Architecture West

Technical Committee Objectives

Establish recommended targets based on Task Force framework

Explore small building cohort & recommendations

Further define alternative compliance pathways (e.g., electrification, % reduction caps, renewables)

Penalties (projected cost of compliance)

5,000-10,000 square feet buildings:

Delayed timeline

Recommendation: 2030 interim, 2035 final target

- ~30% covered buildings
 - Workforce considerations
 - Administrative considerations

More attainable targets

Recommendation: 15% EUI reduction cap

- Financial considerations
 - Lending
- Technical considerations



Caps as a 'ceiling'

- Average targeted reduction ~15%-20%
 - Caps slightly above average

Small buildings

- Caps provide a way to assure more attainable targets

Impact on Savings:

State and Local Covered Buildings - Impact of Meeting Performance Targets			
	Cost per Building (\$)	Cost per Built Area (\$/ft²)	GHG Emissions Avoided (MTCO₂e in 2030)
with Reduction Cap	\$183,000 to \$197,000	\$4.60 to \$4.97	65,000 to 72,000
without Reduction Cap	\$300,000 to \$324,000	\$7.57 to \$8.17	105,000 to 116,000

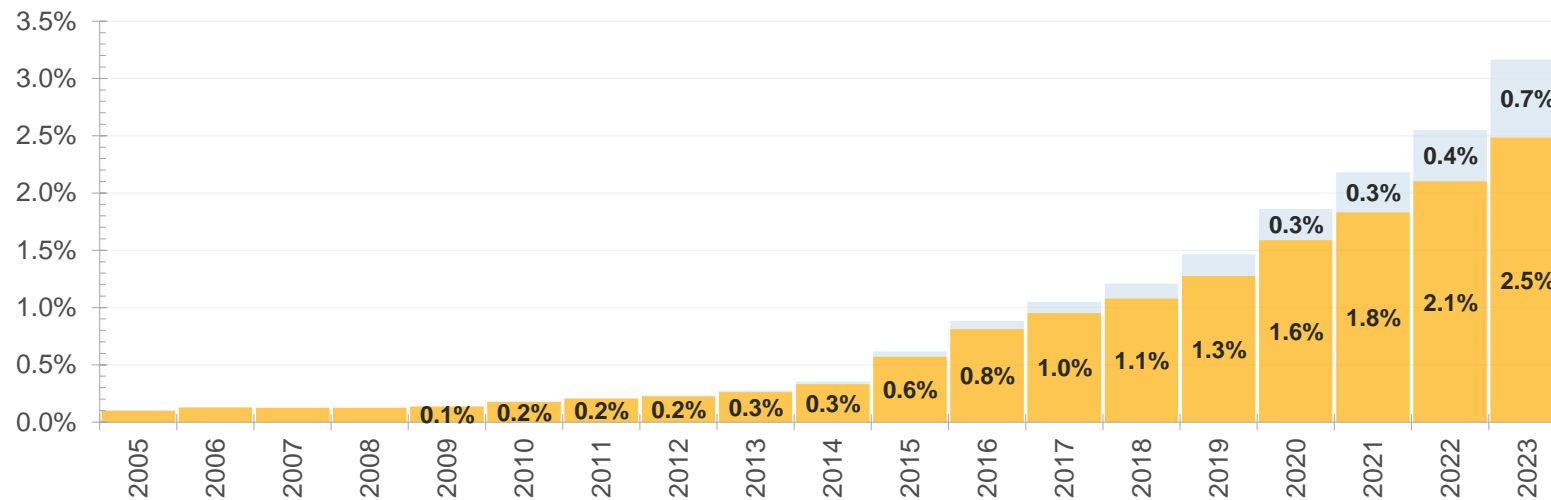
Our Climate Future Council Roadmap



*Indicates a change or addition from 2022 OCF Council Roadmap

Renewables and Efficiency

- Efficiency reduces energy use
- Reduced energy use increases impact of existing and new solar
- Impact of electrification



Local renewables as a percent of resource mix (generation % of operational consumption) with efficiency impact

Efficiency Enables Renewables



Onsite, offsite

- Encouraging owners to purchase additional RECs won't change our community inventory or make progress toward our goals
- Variable opportunity with onsite alone (but that's true with everything)

When considering only energy savings, BPS implementation has a projected benefit of \$0.85 for every \$1 in cost spent between 2024-2035. When factoring in the avoided social cost of greenhouse gas emissions, such as health effects, property damage from climate-related natural disasters, and the disruption of energy systems, the benefit increases to \$2.99 for every \$1 in cost.

Benefits		Costs	
Avoided Social Costs of Carbon (\$)	\$491,572,553	Capital Cost	\$226,400,000
Energy Savings (\$)	\$194,800,000	Program Administration Cost	\$3,188,000
Total	\$686,372,553	Total	\$229,588,000

Cumulative over a 10-year period

Cost Benefit Analysis: Owner and Occupant Benefits

- “Green” buildings or buildings with higher-than-average efficiency have demonstrated occupancy rates up to 18% higher than average, greater occupancy retention, and a 5.9% higher net operating income.
- Reductions in onsite energy demand can lead to energy bill averages at approximately 35% lower than those of an average office building.
- Due to market demand, building owners can charge higher premiums for leased spaces.
- Green building upgrades may add between 2%-17% to a building’s resale value.
- Building operating costs can drop 30% following green building upgrades, and maintenance costs may decrease 25-30% as well.



- Rule of thumb: Penalties should be slightly over the projected cost of compliance.
- Denver: Civil penalty of up to \$0.70 per year for each required kBtu reduction that the covered building fails to achieve that year.
- Fort Collins: Independent analysis of local data supports Denver's penalty, based on local projected costs of compliance.



THANK YOU!

For More Information, Visit

ourcity.fcgov.com/bps

