Fort Collins City Council Work Session Agenda

6:00 p.m., Tuesday, April 23, 2024

Council Information Center (CIC), 300 Laporte Avenue, Fort Collins, CO 80521

NOTE: New location for Council work sessions.

NOTICE:

Work Sessions of the City Council are held on the 2nd and 4th Tuesdays of each month in the Council Information Center (CIC) of the 300 Building. Meetings are conducted in a hybrid format, however there is no public participation permitted in a work session.

City Council members may participate in this meeting via electronic means pursuant to their adopted policies and protocol.

How to view this Meeting:

Meetings are open to the public and can be attended in person by anyone.

Meetings are televised live on Channels 14 & 881 on cable television.

Meetings are livestreamed on the City's website, fcgov.com/fctv.

Upon request, the City of Fort Collins will provide language access services for individuals who have limited English proficiency, or auxiliary aids and services for individuals with disabilities, to access City services, programs and activities. Contact 970.221.6515 (V/TDD: Dial 711 for Relay Colorado) for assistance. Please provide 48 hours' advance notice when possible.

A solicitud, la Ciudad de Fort Collins proporcionará servicios de acceso a idiomas para personas que no dominan el idioma inglés, o ayudas y servicios auxiliares para personas con discapacidad, para que puedan acceder a los servicios, programas y actividades de la Ciudad. Para asistencia, llame al 970.221.6515 (V/TDD: Marque 711 para Relay Colorado). Por favor proporcione 48 horas de aviso previo cuando sea posible.

While work sessions do not include public comment, mail comments about any item on the agenda to cityleaders@fcgov.com

City of Fort Collins

Meeting agendas, minutes, and archived videos are available on the City's meeting portal at https://fortcollins-co.municodemeetings.com/

City Council
Work Session Agenda

April 23, 2024 at 6:00 PM

Jeni Arndt, Mayor
Emily Francis, District 6, Mayor Pro Tem
Susan Gutowsky, District 1
Julie Pignataro, District 2
Tricia Canonico, District 3
Melanie Potyondy, District 4
Kelly Ohlson, District 5

Council Information Center (CIC)
300 Laporte Avenue, Fort Collins

Cablecast on FCTV
Channel 14 on Connexion
Channel 14 and 881 on Comcast

Carrie Daggett	Kelly DiMartino	Heather Walls
City Attorney	City Manager	Interim City Clerk

CITY COUNCIL WORK SESSION
6:00 PM

A) CALL MEETING TO ORDER

B) ITEMS FOR DISCUSSION

1. **Poudre Fire Authority Intergovernmental Agreement and Annual Report.**

The purpose of this item is to provide Council and the Poudre Valley Fire Protection District Board with a review of the 2023 Poudre Fire Authority Annual Report. Additionally, staff will provide an update on the joint work currently in process by the City and Poudre Fire Authority staff to revise the existing Intergovernmental Agreement between the City and the Poudre Valley Fire Protection District.

2. **Building Performance Standards.**

The purpose of this item is to bring City Council recommendations derived from the Building Performance Standards (BPS) policy development process. Staff will also highlight how BPS, as a regulatory lever, is a key part of a larger strategy to reduce climate pollution and air pollution. From the start, staff have partnered with community contributors who helped provide a full consideration of local circumstances and conditions, sharing feedback that accounts for lived experiences in our community. Input from affected groups shaped the policy recommendations that will be outlined in this Work Session and associated materials. BPS policy work aligns with the 2024-2026 adopted council priorities and the Our Climate Future (OCF) plan; specifically, the goal of an 80% greenhouse gas emission reduction by 2030 and Big Move 6: Efficient, Emissions Free Buildings.

3. **Community Capital Improvement (CCIP) Program and Street Maintenance 1/4-cent Tax Renewals.**

The purpose of this item is to update the full Council on Council Finance Committee and other discussions and progress related to the renewal of both the Street Maintenance and the Community Capital taxes.

C) ANNOUNCEMENTS

D) ADJOURNMENT

Upon request, the City of Fort Collins will provide language access services for individuals who have limited English proficiency, or auxiliary aids and services for individuals with disabilities, to access City services, programs and activities. Contact 970.221.6515 (V/TDD: Dial 711 for Relay Colorado) for assistance. Please provide advance notice. Requests for interpretation at a meeting should be made by noon the day before.

A solicitud, la Ciudad de Fort Collins proporcionará servicios de acceso a idiomas para personas que no dominan el idioma inglés, o ayudas y servicios auxiliares para personas con discapacidad, para que puedan acceder a los servicios, programas y actividades de la Ciudad. Para asistencia, llame al 970.221.6515 (V/TDD: Marque 711 para Relay Colorado). Por favor proporcione aviso previo. Las solicitudes de interpretación en una reunión deben realizarse antes del mediodía del día anterior.

April 23, 2024

WORK SESSION AGENDA ITEM SUMMARY

City Council

STAFF

Derek Bergsten, Fire Chief, Poudre Fire Authority
Travis Storin, Chief Financial Officer

SUBJECT FOR DISCUSSION

Poudre Fire Authority Intergovernmental Agreement and Annual Report.

EXECUTIVE SUMMARY

The purpose of this item is to provide Council and the Poudre Valley Fire Protection District Board with a review of the 2023 Poudre Fire Authority (PFA) Annual Report. Additionally, staff will provide an update on the joint work currently in process by the City and Poudre Fire Authority staff to revise the existing Intergovernmental Agreement (IGA) between the City and the Poudre Valley Fire Protection District.

GENERAL DIRECTION SOUGHT AND SPECIFIC QUESTIONS TO BE ANSWERED

1. What questions do Councilmembers and District Board members have about the Poudre Fire Authority 2023 Annual Report?
2. What concerns or curiosities do Councilmembers and District Board members have about the existing Intergovernmental Agreement (IGA)?
3. What questions do Councilmembers and District Board members have about the work to date on the IGA update?
4. What guidance do Councilmembers and District Board members have for City or PFA staff in evaluating the IGA?

BACKGROUND / DISCUSSION

The City of Fort Collins ("City") and the Poudre Valley Fire Protection District ("District") established the Poudre Fire Authority ("PFA") with an Intergovernmental Agreement ("IGA") in 1981. This agreement was further adjusted in 1983 and 1987 to include a revenue allocation formula ("RAF"). This agreement was further amended and restated in 2014 to include an update to the RAF and Support Services provided to PFA by the City. The full 2014 amended and restated IGA including the RAF (Exhibit A to the IGA) and Support Services provided (Exhibit B to the IGA) is included as Attachment 2.

In early 2023, City staff and PFA staff (with District Board approval), began discussions about revisiting the agreement to update their understanding of the costs and details of the services provided under the terms of the agreement. The intent is to update the existing Support Services provided (Exhibit B to the IGA), with a detailed understanding of the cost of services being provided either in-kind or through direct charges. An additional goal is to make necessary adjustments to the RAF (Exhibit A to the IGA) to reflect

the updated level of services provided, and to account for changes impacting the underlying Property Tax and Sales Tax funding sources. This includes an updated analysis of the relative risk sharing of the funding mechanisms. Staff intend for agreed upon updates to the IGA to be completed for inclusion in the current 2025/26 Budgeting for Outcomes (BFO) cycle.

During the second quarter of 2023, City and PFA staff began the joint review of the Support Services Provided in Exhibit B (to the IGA). This effort involved over 30 collaborative meetings with both City and PFA personnel. The interviews and analysis involved investigation on the scope of services being provided by City personnel, including support areas that were not specifically outlined in Exhibit B as services to be provided. Additionally, certain services had transitioned to PFA over the ensuing time since the agreement update in 2014. In all instances, efforts were made to identify the time and costs involved in each City department or PFA division providing the support.

Preliminary costing of the services provided indicates the City provides PFA with approximately $728,000 annually of in-kind costs and an additional $3.5 million in direct charges ($3.0 million is for Benefits and Wellness). PFA's cost of services provided is estimated at approximately $452,000 annually ($320,000 is for two positions – IT Analyst III and Battalion Chief - Emergency Management). Functional breakout of the costs is highlighted below.

Preliminary - Cost of City Services to PFA

Service Area	Annual In-Kind Costs	Annual Charged	Total Cost of Services Provided
Finance	$182,115	$18,402	$200,517
Human Resources	$145,963	$2,969,712	$3,115,675
Information Technology	$191,481	$47,000	$238,481
Police - Dispatch	$159,462	$207,229	$366,691
Op Services	$5,390	$194,643	$200,033
All Other	$43,215	$20,000	$63,215
Total	$727,626	$3,456,986	$4,184,611

Preliminary - Cost of Services Absorbed by PFA

Service	Cost
Emergency Management	$176,214
Finance	$12,976
Risk Management	$23,296
Human Resources	$3,539
Information Technology	$72,138
Miscellaneous	$3,576
Total	$291,738

The RAF specifies how both the City and the District make contributions to the PFA. The District's contribution is annually through 100% of their annual mill levy. The City's contribution is through a combination of a portion of the City's base sales and use tax revenue, revenue from the Keep Fort Collins Great tax measure dedicated to fire protection and other emergency services funding, and 67.5% of the City's property tax revenue. The City's contributions are based on the biennial budgeted amounts for sales/use and property taxes. These amounts are not adjusted for actual collections (*please refer to Exhibit A of the existing IGA for the RAF calculation details*).

In the 2023 budget, the City contributed approximately $35.9 million in revenue sharing to PFA ($19.2 million in property tax and $16.9 million in sales/use tax, less $0.2 million for PFA contribution agreements). For the 2024 budget, the revenue contribution increased to approximately $38.7 million ($21.7 million in property tax and $17.3 million in sales/use tax, less $0.3 million in PFA contribution adjustments). The District contributed $8.8 million in 2023 and $12.4 million in 2024.

City and PFA staff are in the process of evaluating the existing RAF. Goals of this evaluation are to:

1. Align the updated costs of service with the existing funding mechanism,
2. Memorialize the Keep Fort Collins Great (KFCG) 0.6% base rate increase (which is currently accounted for as an agreed adjustment to the RAF),
3. Consider the concept of a “risk corridor” to share revenue risks and opportunities,
4. Add further definition around future growth and annexations.

The work plan is centered on fostering agreement between City and PFA staff on the scope and structure of the services to be provided in Exhibit B, determination of the form and extent of compensation for both parties, identifying needed service level agreements, adjustments needed to the RAF and other terms and conditions needing update in the body of the IGA. Work to date has highlighted the desire to create named administrators from each party to the agreement and to include more specificity as to the timing and structure of future agreement updates (i.e., contract re-openers).

NEXT STEPS

The goal is to complete the update of the IGA for inclusion in the 2025/26 BFO Cycle. City and PFA staff are working jointly to reach agreement on terms and conditions to include in an update to bring to both the City Council and District Board for approval. Tentative schedule for moving forward:

Work Streams:

April/May:	Complete Support Services and Revenue Allocation Formula Analyses
May/June:	Combined Agreement Terms and City/District Legal Evaluation

Communications/Actions:

May:	District Board - Update
June:	Council Finance Committee - Recommendation
June:	District Board - Recommendation
July:	City Council Adoption Consideration - 1st
July:	District Board Adoption Consideration
August:	City Council Adoption Consideration - 2nd

ATTACHMENTS

1. Poudre Fire Authority 2023 Annual Report
2. Amended and Restated Intergovernmental Agreement Establishing the Poudre Fire Authority (including RAF Exhibit A and Support Services Exhibit B)
3. Presentation

POUDRE FIRE AUTHORITY

ANNUAL REPORT 2023

SERVICE ABOVE SELF

Poudre Fire Authority
Fort Collins Colorado

A Note from Your Fire Chief

DEAR COMMUNITY MEMBERS,

I am thrilled to share the Poudre Fire Authority's (PFA's) 2023 Annual Report, highlighting a year of remarkable achievements. Our new badge and rank structure has boosted operational effectiveness and provided clear career paths for our firefighters, ensuring opportunities for professional growth. PFA firefighters are well-equipped to deliver the highest level of service to the public, thanks to the diligent efforts of our support staff.

Our community engagement efforts, including events and educational programs, have had a positive impact and strengthened our ties with residents.

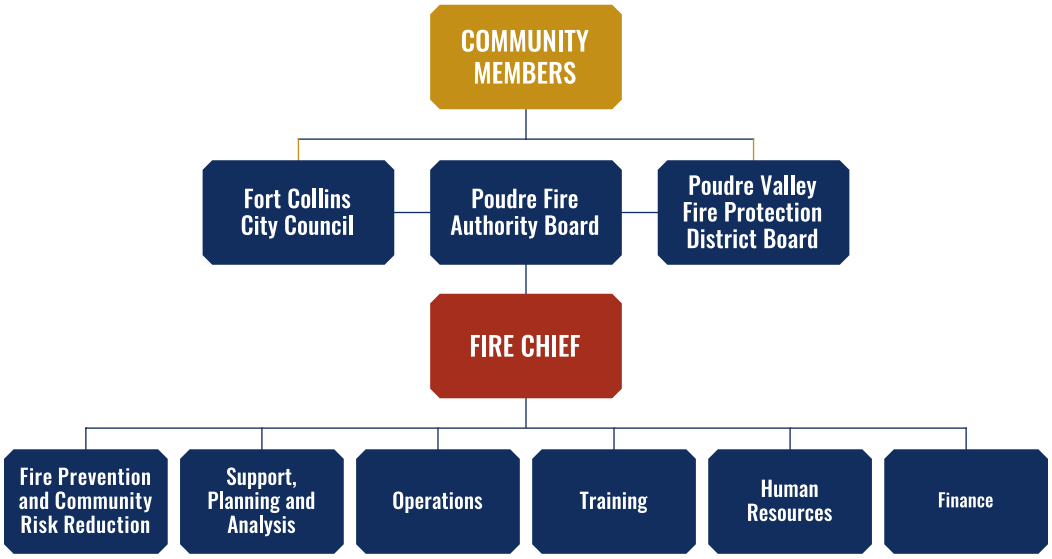
The addition of our newly designed red apparatus, showcased in the 2023 Fort Collins Independence Day parade, reflects our commitment to professionalism and staying at the forefront of firefighting technology.

As we move forward, our new Mission, Vision, Principles document continues to shape the Authority's culture, emphasizing values like integrity and teamwork. We are grateful for the unwavering support of our community as well as our board members, and together, we look forward to a promising future of continued excellence in service.

Derek Bergsten | Fire Chief

OUR RANK STRUCTURE

On January 9th of 2023, the new rank structure was implemented, which has improved PFA's organization and opportunity for growth. Three newly formed roles were developed: engineer, lieutenant, and captain.



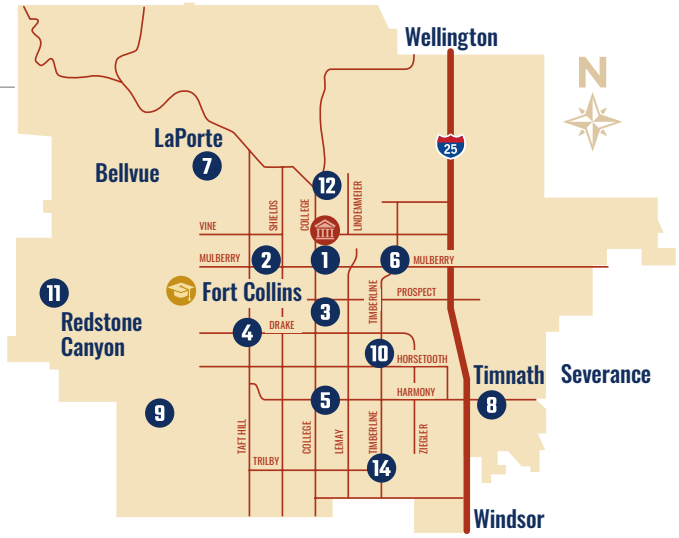
Who We Are

PFA is a partnership of the City of Fort Collins and Poudre Valley Fire Protection District, proudly serving Fort Collins, Timnath, Laporte, Bellvue, Horsetooth, Redstone Canyon, and areas of unincorporated Larimer and Weld counties. Composed of highly trained personnel, PFA is committed to providing exceptional emergency services to protect lives and property in our jurisdiction.

PFA is accredited through the Center for Public Safety Excellence and is committed to public safety through fire suppression and mitigation, hazardous material control, and emergency medical services. Moreover, PFA is an agency that embodies the idea of service above self through public education, appropriate response, and fostering the idea of community.

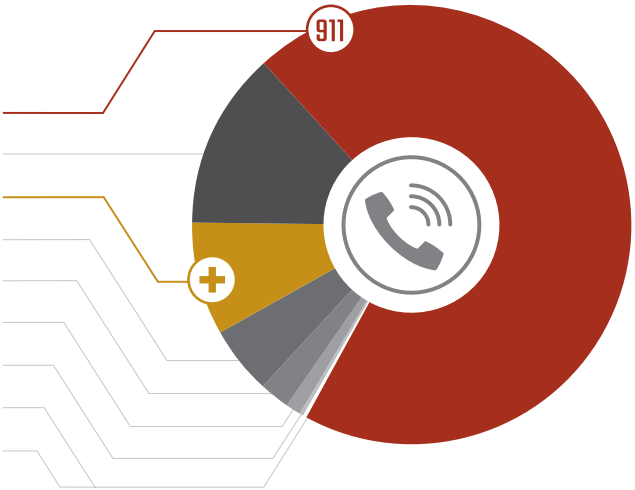
PFA SERVICE AREA 2023

- 1 Fire Station
- 2 Fire Station
- 3 Fire Station
- 4 Fire Station
- 5 Fire Station
- 6 Fire Station
- 7 Fire Station
- 8 Fire Station
- 9 Volunteer Station
- 10 Fire Station
- 11 Volunteer Station
- 12 Fire Station
- 14 Fire Station
- Training Center
- Headquarters



TOTAL SERVICE CALLS 25,349

Rescue & Emergency Medical Calls	17,904
Good Intent Calls	3,050
General Service Calls	2,030
False Alarm & False Calls	1,436
Hazardous Conditions (No Fire)	506
Fires	287
Special Incident Calls	69
Severe Weather & Natural Disasters	11
Overpressure Ruptures, Explosions, Overheat (No Fire)	10



911 Rescue & Emergency Medical Calls

Emergency Medical Incidents	13,713
Other	2,200
Motor Vehicle Accidents	1,016
Cardiac Arrests	96
Motor Vehicle/Human Accidents	88
Search & Rescue	52

General Service Calls

Lift Assist	912
Other Services	662
Police Department Assist	240
Illegal Fire/Unauthorized Burns	121
Water (Leaks)	102
Animal	39

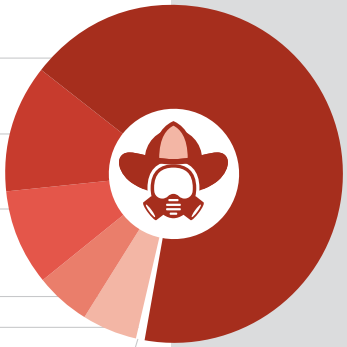
2023 Budget & Funding Outcomes

TOTAL REVENUE $44,556,506

Intergovernmental	$42,988,993
Fees and Charges for Services	$1,116,024
Miscellaneous Revenue	$237,489
Earnings on Investments	$204,000
Licenses and Permits	$10,000

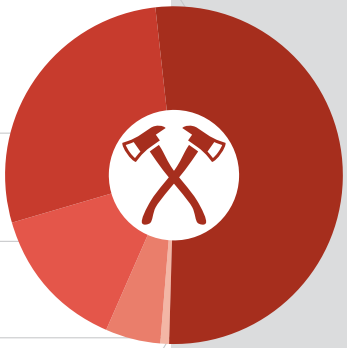
EXPENDITURE – TYPE $ 52,206,114

Salaries & Benefits	$35,092,219
Transfers to Capital Projects	$6,377,008
Other Purchased Services	$4,746,509
Materials, Supplies, & Equipment	$2,821,359
Capital Outlay	$2,722,711
Miscellaneous Other	$446,308



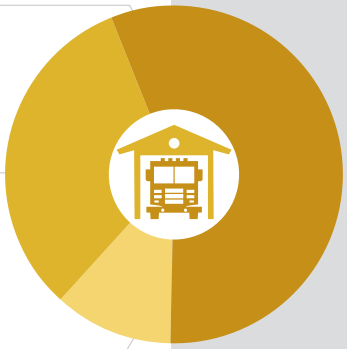
EXPENDITURE – DIVISION $52,206,114

Operations	$27,490,017
Support	$14,277,834
Administration	$7,231,772
Fire Prevention & CRR	$2,736,649
Grants/Projects	$469,843



CAPITAL BUDGET $8,538,658

Station 7 Remodel	$7,120,936
Headquarters Relocation	$3,711,575
Apparatus Replacement	$1,417,722



Reserves

$14.9 Million

Expenditures

Underspent by $1,018,957

1.95% of the Budget

Incidents/Operations

PFA, an all-hazards fire agency, diligently serves the community through its 13 strategically located fire stations. Comprising 11 staffed engine companies, two volunteer stations, two ladder truck companies, and one rescue company, the Authority ensures comprehensive coverage for various emergencies. These stations are strategically positioned to swiftly respond to incidents, showcasing PFA's commitment to rapid and efficient service.

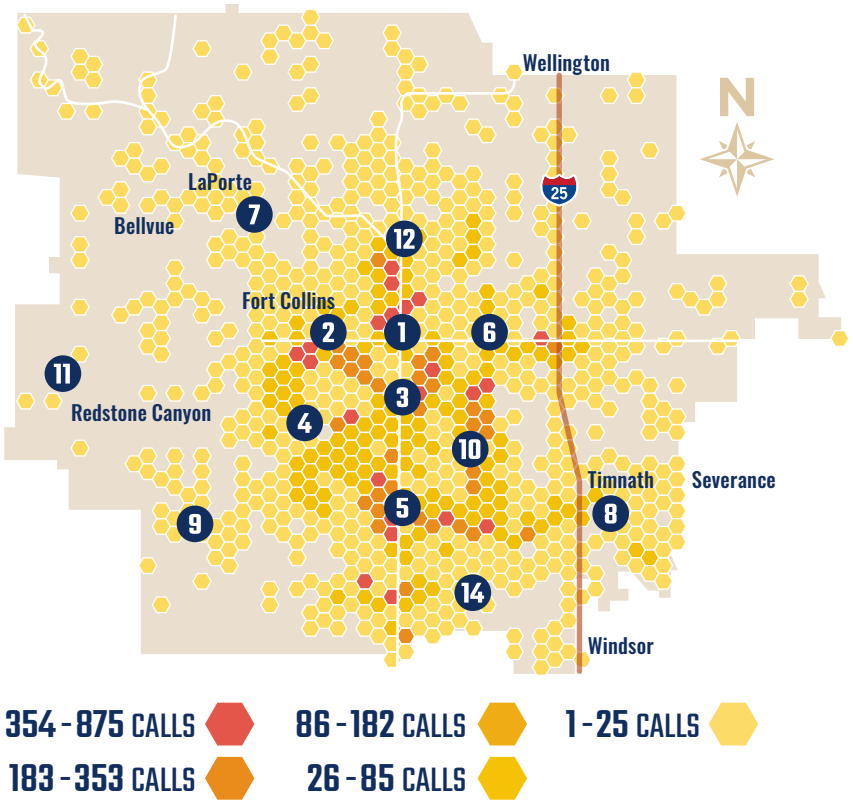
PFA's companies are equipped to handle diverse scenarios from structural fires, wildfires, hazmat, technical rescues, and medical emergencies. Additionally, Engines 4 and 7, Tower 1, Ladder 5, and Rescue 4 play a crucial role in specialized rescue operations, further expanding the Authority's capabilities.

PFA's various resources and specialized units underscore its dedication to addressing a wide array of hazards, ensuring the community's safety and well-being.

Cardiac Survivors

PFA responded to 120 cardiac arrest events in 2023. Of those, 56 (47%) had **Return of Spontaneous Circulation** (ROSC). ROSC is the restart of a sustained heart rhythm after a cardiac arrest. Of those 56, 21 (17.5%) walked out of the hospital neurologically intact. Compared to 2022, PFA had 127 arrests and 49 ROSC events with 19 neurologically intact saves.

PFA CALL RESPONSE MAP 2023



VOLUNTEERS/SEASONALS

The PFA volunteer and seasonal program supports responses from Stations 9 and 11 in the Horsetooth and Redstone Canyon areas by staffing Station 9 Friday through Sunday from Memorial Day to Labor Day. Volunteers also support emergency medical services coverage for events including Colorado State University football games.

In 2023, the volunteers worked on meeting goals set in the Strategic Plan. The rank structure of volunteers and seasonal firefighters were aligned with the new rank structure of the entire agency. This change included two promotions to captain and four promotions to lieutenant.

Many volunteers and seasonal firefighters have gone on to have careers at PFA or remain in the program for many years, a defining achievement of their dedication and the program's success.

PFA is thankful and proud of the individuals who give of their time, energy, and skills to serve the community. These individuals respond to calls 24/7/365 and commit to training three nights per month.

HIRING PROCESS

PFA received almost 800 applicants for the 2023 hiring process, all of whom were eager to begin the process. The hiring process includes a written exam, physical ability test, two interviews, a background check, and medical and psychological examinations. Out of this large pool of applicants, 42 made the eligibility list. A testament to PFA's commitment to ensuring public safety with highly qualified personnel.

PFA ACADEMY

This year, eight firefighter recruits graduated from their 16-week academy after approximately 800 hours of hard work and are now online applying their knowledge and training every day.

PFA IS COMPRISED OF

- 229 FULL-TIME POSITIONS
- 199 UNIFORMED POSITIONS
- 30 CIVILIAN POSITIONS
- 35 VOLUNTEER POSITIONS
- 20 PART-TIME POSITIONS

A Look Ahead

PARTNERSHIPS UCHEALTH/RED CROSS

The ongoing partnership PFA has with UCHealth and the American Red Cross is aimed at ensuring safety and well-being of the community. This year we collaborated to offer several community courses and outreach efforts that added a valuable dimension to our level of preparedness and emergency response. One of the most effective efforts has been the smoke alarm installations PFA participated in across the jurisdiction. We will continue to work with these organizations in order to educate the public, provide emergency medical assistance, and respond promptly to any crisis or disaster.

Capital Projects

Capital projects require a design or construction contract and will take over a year to complete. For PFA, these projects are significant improvements to or replacements for facilities and apparatus. In 2023, PFA finished the Station 6 Mechanic's Shop, obtained permits for breaking ground on Station 7's relocation, and purchased three new apparatus: Engine 1, Engine 5, and Brush 8.

STATION 7 CONSTRUCTION

The planning of Station 7 is underway with construction expected to start in the spring of 2024. The station's response capabilities have expanded to encompass swiftwater, wildland, rope rescue, extrication, and structure protection in addition to emergency medical services. The existing station is no longer sufficient for housing the necessary staff and equipment required to maintain the increased responsibilities.

APPARATUS REPLACEMENT

PFA's first red engines arrived in 2023. These engines set a new standard for future apparatus and will increase the reliability of the response system.

PFA Provides The Following Services To Our Community

- Fire Protection Services
- Emergency Medical Response
- Fire Suppression
- Haz-Mat Response
- Technical Rescues
- Wildland Fire Response
- Volunteer Firefighter Program
- Fire Investigations
- Inspection Services
- Public Affairs and Education

PFA Risk Reduction Programs To Our Community

- Friends and Family CPR/AED
- Fire and Life Safety Education (Fire Extinguisher Training)
- Lithium-Ion Battery Safety Class
- National Fire Prevention Month School Visits
- "Stepping On" Fall Prevention Course
- Wildland Urban Interface (WUI) Homeowner Education
- Youth Firesetting Intervention

See even more in our annual report online

Poudre Fire Authority
Fort Collins Colorado

AMENDED AND RESTATED

INTERGOVERNMENTAL AGREEMENT

ESTABLISHING THE POUDRE FIRE AUTHORITY

THIS AGREEMENT, entered into this 15th day of July, 2014, pursuant to Section 29-1-201 et seq., C.R.S., by and between THE CITY OF FORT COLLINS, COLORADO, a municipal corporation, hereinafter referred to as the "City", and THE POUDRE VALLEY FIRE PROTECTION DISTRICT, Larimer County, State of Colorado, hereinafter referred to as the "District".

WITNESSETH:

WHEREAS, the parties to this Agreement have entered into previous intergovernmental agreements providing for the formation of an independent governmental entity for the purpose of providing fire protection and related services, as noted in such previous intergovernmental agreements, within the respective territorial limits of the parties hereto, which entity is known as the POUDRE FIRE AUTHORITY; and

WHEREAS, those previous agreements, as amended, have been mutually beneficial in providing a higher degree of protection to persons and property within the respective territorial limits of the parties hereto; and

WHEREAS, the parties desire to provide for the continued existence of the POUDRE FIRE AUTHORITY, and to amend and restate in full all previous intergovernmental agreements regarding the establishment and operation of the POUDRE FIRE AUTHORITY.

NOW, THEREFORE, in consideration of the mutual covenants and obligations herein expressed, it is agreed by and between the parties hereto as follows:

ARTICLE I

GENERAL PROVISIONS

1.1. Term of the Agreement. This Agreement shall be in effect from the date first above written until terminated by the parties as herein provided. In addition to the option to terminate for non-appropriation as described in Section 5.4., below, this Agreement may be terminated under this Section by either party hereto, provided written notice of termination is given to the other party. The effective date of termination shall be on December 31 of any calendar year, provided said termination shall be no sooner than twenty-four (24) months after service of the written notice of termination.

1.2. Poudre Fire Authority. The existence of the independent governmental entity known as the "POUDRE FIRE AUTHORITY", hereinafter referred to as the "Authority", created by the intergovernmental agreement of the parties dated December 22, 1981, as such agreement was amended thereafter, is hereby continued. The Authority is an independent governmental entity separate and distinct from the City and the District. The Authority may provide, either directly or by contract, fire protection, emergency medical, rescue and ambulance services, enforcement of fire prevention codes, hazardous materials response, and other emergency services typically provided by a public fire department and that may be provided by a fire department under the City Charter and by a fire protection district organized pursuant to Article 1, Title 32, C.R.S., within the respective territorial limits of the parties (collectively, the "Fire Rescue Services").

1.3. Nature of the Authority. The Authority is a separate legal entity organized pursuant to Section 29-1-203(4), C.R.S. In carrying out its purposes, the Authority will observe and comply with statutes and laws applicable to the District and the City, including, but not limited to Parts 1, 5, and 6 of Article 1, Title 29, C.R.S., regarding budget preparation, accounting, and auditing; and Part 4 of Article 6, and Parts 2 and 3 of Article 72 as applicable to the Authority, and Article 10 of Title 24, C.R.S., regarding open meetings, open records, criminal justice records, and governmental immunity. The parties intend that the Authority not be considered a "district" subject to Article X, Section 20 of the Colorado Constitution. The Authority boundaries shall consist of the combined territorial boundaries of the parties.

1.4. Governing Board. The Authority shall be administered by a governing Board of five (5) members, hereinafter referred to as the "Board." The City shall appoint two (2) members and the District shall appoint two (2) members. The fifth member shall be appointed annually at the first regular meeting of the Board in August of each year by majority vote of the four other members as appointed by the City and District.

A. All appointees and terms of appointment shall be at the discretion of the appointing entity.

B. All vacancies on the Board shall be filled by the appointing entity.

1.5. Meetings of the Board.

A. Regular Meetings. The Board shall provide for regular meetings at a time and place fixed by resolution of the Board.

B. Special Meetings. Special meetings may be called by the Chair of the Board or by the Board at such times as the Chair or the Board may determine to be necessary, provided that written notice or notice by telephone or electronic mail of the time, place, and business of such meeting is given to each Board member at least twenty-four (24) hours prior to such meeting. Any Board member may sign a waiver of notice which waiver shall then be in lieu of any other notice requirement. A

Board member attending any special meeting shall be deemed to have received the necessary notice.

C. Open Meetings. All meetings of the Board shall be open to the public, except that the Board may go into executive session as permitted by state law.

D. Electronic Attendance. If approved by the Board, the Board members may participate by telephone or other technology that allows them to participate in a meaningful manner, so long as meetings are open to the public and the Board is not acting in a quasi-judicial capacity.

1.6. Minutes. The Secretary shall cause all minutes of the meetings of the Board to be kept and shall, prior to the next meeting, provide a draft of the minutes to each member of the Board for consideration at the next meeting.

1.7. Voting; Quorum; Required Votes. Each member of the Board shall have one (1) vote. A quorum of the Board shall consist of three (3) members, provided that the City and the District are represented by at least one of their appointees, and no official action on any matter may be taken by the Board unless a quorum is present. Unless otherwise required by law, the affirmative votes of a majority of the Board members present shall be required for the Board to take any action.

1.8. By-laws. The Board may adopt such by-laws, rules and regulations as necessary for the conduct of its meetings and affairs.

ARTICLE II

OFFICERS AND EMPLOYEES

2.1. Chair, Vice Chair and Secretary. The Board shall elect a Chair and Vice Chair from its members, and shall appoint a Secretary who may, but need not, be a member of the Board. Said officers shall perform the duties normal for said offices, including the following:

A. The Chair shall sign all contracts on behalf of the Authority, except contracts or agreements that may be signed by the Fire Chief of the Authority, as herein provided, and shall perform such other duties as may be imposed by the Board.

B. The Vice Chair shall perform all of the Chair's duties in the absence of the Chair.

C. The Secretary shall attest to all contracts signed on behalf of the Authority and perform such other duties as may be imposed by the Board.

2. 2. Management. The Board shall appoint a Fire Chief to manage the Authority. Subject to the supervision of the Board and the powers specifically reserved to the Board as

described in Article III of this Agreement, the Fire Chief shall have all powers and authorities provided for a municipal fire chief and a fire chief under Section 32-1-1002, C.R.S., and shall oversee and manage all business and affairs of the Authority, including the operation, maintenance, management, administration, and provision of all facilities, improvements, equipment, services and personnel, in the manner typically associated with a fire and emergency rescue agency for which the fire chief has been delegated authority by the governing body to manage all aspects of the agency, including the authority associated with a chief executive, administrative, and operational officer. The powers of the Fire Chief shall include, but not be limited to, the following:

A. To provide for the planning, design and construction of any buildings, additions or improvements to the facilities owned by the Authority.

B. To execute any contract for capital costs, costs of special services, equipment, materials, supplies, maintenance or repair that involves any expenditure by the Authority of less than Seventy-Five Thousand Dollars ($75,000), providing such expenditure is within budget. This expenditure limit will be increased or decreased every five years according to the cumulative Denver-Boulder Consumer Price Index for Urban Consumers, as published by the Bureau of Labor Statistics. Such adjustment will be made by the Board.

C. To employ all personnel of the Authority required for the provision of Fire Rescue Services and maintenance and operation of all facilities and to make such personnel decisions as he or she deems appropriate, including without limitation, decisions as to organization, staffing levels, deployment, promotions, demotions, discipline and, where deemed necessary by the Fire Chief, termination.

D. To employ all personnel required in connection with the planning, design and construction of any buildings, additions or improvements to the facilities owned by the Authority.

E. To expend funds and enter into contracts, whenever required, for the immediate preservation of the public health, safety, and welfare, provided that the amount of funds involved does not exceed one percent (1%) of the annual budget of the Authority for the year in which the funds are expended or the contract is made.

F. To dispose of by sale any personal property of the Authority with a value of less than Fifty Thousand Dollars ($50,000). This sale limit shall be increased or decreased every five years according to the cumulative Denver-Boulder Consumer Price Index for Urban Consumers, as published by the Bureau of Labor Statistics. Such adjustment shall be made by the Board.

G. To approve payroll payments and other demands for payments by the Authority, provided that such payments are within budget and that no individual payment exceeds Seventy-Five Thousand Dollars ($75,000). This payment limit will be increased or decreased every five years according to the cumulative Denver-Boulder Consumer Price Index for Urban Consumers, as published by the Bureau of Labor Statistics. Such adjustment will be made by the Board.

H. To prepare and submit to the Board an annual operating budget for the next fiscal year in accordance with the budget schedules of the City and District.

I. To adopt general operating guidelines, including but not limited to non-personnel matter policies and procedures, operating policies and inspection policies, as deemed appropriate by the Fire Chief.

J. To generally supervise the acquisition, construction, management, maintenance and operation of the Authority's facilities and personnel.

K. To negotiate with labor groups as may be required by state law or authorized by the Board.

L. To negotiate with a provider of ambulance services dispatched through the City's public safety answering point (PSAP) within the Authority's service area, including, but not limited to, an exclusive service agreement, performance standards, and other provisions as deemed appropriate, to be approved by the Board.

M. To conduct procurement and purchasing processes consistent with the City's administrative procurement policies and procedures, unless excepted from those policies and procedures by the Board.

N. To provide an Annual Report regarding the activities and accomplishments of the Authority, including reports to the City and District for the purpose of reviewing annual performance measurements and metrics, goals, actual spending to budget, benefits to the community related to strategic outcome goals, operational efficiency, productivity improvements, and issues of concern to the Authority, the District, and the City, with such report to be submitted annually in the second quarter of each year. The Authority shall also provide the community with regular updates throughout the year related to its performance as measured by relevant performance metrics, including analysis of effectiveness in meeting community service needs.

O. To perform such other duties as directed by the Board and report to the Board at such times and on such matters as the Board may direct.

2.3. Legal Advisor. The Board shall have the power to appoint, through a competitive selection process as determined by the Board, an attorney to provide legal services to the Authority.

2.4. Other Employees. The Board shall have the power to appoint and employ such other persons, agents, and consultants for the purpose of providing professional, technical or consulting services as may be necessary for the purposes of this Agreement.

ARTICLE III

POWERS OF THE AUTHORITY

3.1. General Powers. The Authority shall exercise, in the manner herein provided, the powers lawfully authorized to each of the parties, as provided by the laws of the State of Colorado, and all incidental, implied, expressed or necessary powers for the accomplishment of the purposes of this Agreement as provided herein. The Authority's powers shall be exercised by the Board unless otherwise designated by this Agreement, applicable law, or delegation of the Board. The Authority shall not have the power to levy taxes.

3.2. Specific Powers. The Authority is hereby authorized, in its own name, to do all acts necessary for the exercise of the foregoing powers including, but not limited to, the following:

A. To make, enter into, and perform contracts of every kind as authorized by law with other governmental entities, the State of Colorado, or any political subdivision thereof, the United States, or any political subdivision thereof, and any individual, firm, association, partnership, corporation or any other organization of any kind.

B. To employ all necessary personnel.

C. To acquire, construct, manage, maintain, and operate any buildings, works, improvements or other facilities.

D. To acquire, hold or dispose of property.

E. To sue and be sued in its own name.

F. To incur debts, liabilities, or obligations to the extent and in the manner permitted by law, and borrow money and, from time to time, make, accept, endorse, execute, issue and deliver bonds, notes and other obligations of the Authority for monies borrowed, or in payment for property acquired, or for any of the other purposes, services or functions of the Authority; and, as provided by law, and to the extent permitted by law, to secure the payment of any such obligations by mortgage, pledge, deed, indenture, agreement, or other collateral instrument, or by other lien upon or assignment of all or any part of the properties, rights, assets,

contracts, easements, revenues and privileges of the Authority; providing that all debts, liabilities, and obligations of the Authority shall be limited to or secured only to the extent of the Authority's revenues and assets; and further providing that no obligation of the Authority shall be or become an obligation of either the City or the District without the express written consent of such party.

G. To apply for, accept, receive and disperse grants, loans and other aid from any governmental entity or political subdivision thereof.

H. To invest any unexpended funds that are not required for the immediate operation of the Authority, as the Authority determines is advisable, in accordance with the laws of the State of Colorado; provided, however, that such investment management and cash management services will be provided by the City through its Finance Department.

I. To administer and enforce the Fire Code adopted by the City and District, and as adopted or consented to by other municipalities and counties within the Authority's service area.

J. To contract with a provider of ambulance services dispatched through the City's public safety answering point (PSAP) within the Authority's service area through any lawful means, including, but not limited to, an exclusive service agreement, performance standards or other provisions as deemed appropriate by the Board.

K. To adopt bylaws, rules, and regulations respecting the exercise of its powers and carrying out of its purposes.

L. To fix, maintain, and revise fees, rates, and charges for functions, services, or facilities provided by the Authority in the manner provided by law.

M. To own, operate, and maintain real and personal property and facilities in common with others, and to conduct joint, partnership, cooperative, or operations with others, and to exercise all the powers granted herein in joint, partnership, cooperative, or other operations with others.

N. To act as agent on behalf of the parties with regard to the functions and services described hereinabove and any existing contracts and agreements between either or both of the parties or any other party, to the extent permitted by law and the terms of such contracts and agreements.

O. To carry out all provisions of this Agreement.

ARTICLE IV

ORGANIZATIONAL PROCEDURE

4.1. Delegation of Powers. Duties and Responsibilities.

A. Each of the parties hereto delegates to the Authority the power, duty and responsibility to maintain, operate, manage and control all of the Fire Rescue Services facilities, equipment, resources and property of the Authority, including without limitation, all fire stations, land, buildings and firefighting, emergency medical and rescue equipment, and to employ the necessary personnel and do any and all other things necessary or desirable to provide continued efficient and economical Fire Rescue Services to all persons and property within the respective territorial limits of the parties hereto, which area shall be considered the jurisdiction of the Authority.

B. The Authority is hereby empowered to provide Fire Rescue Services to persons and property outside the jurisdiction of the Authority by agreement in exchange for payment or reciprocal services, as long as such additional services can be provided through the use of existing facilities, equipment, resources, and personnel of the Authority.

4.2. Personnel.

A. The Board shall adopt the rules, regulations and procedures necessary to govern personnel matters.

B. During the term of this Agreement, all employees transferred from the City and the District under the original Intergovernmental Agreement and all employees hired by the Authority shall be employees of the Authority subject to the terms and conditions of employment in effect as stated in Authority Personnel Rules and Regulations, as amended from time to time.

C. All of the time that a transferred employee has spent as a Fire Department employee of either the City or the District shall be considered as time employed by the Authority for the purpose of determining any conditions or benefits of employment with the Authority.

D. The establishment of the Authority as an independent governmental entity shall not affect in any manner the rights of City or District employees, hired prior to January 1, 1982, insofar as they relate to pension benefits provided by the laws of the State of Colorado.

E. At the termination of this Agreement, any unfunded pension liabilities incurred by the Authority during the term of this Agreement shall be assumed by the City or the District in proportion to the allocation of Authority personnel to the City and the District.

F. If this Agreement is terminated, the parties agree that any employee of the Authority who was an employee of the City or the District on January 1, 1982 shall be restored to employment with the employee's original employer (City or District as applicable) or the entity which has need for additional employees. Said employment shall be subject to the terms and conditions of employment then in effect as stated in City or District personnel rules.

4.3. Authority Fund. The Board shall establish an Authority Fund to account for all financial transactions of the Authority in accordance with generally accepted accounting principles.

ARTICLE V

BUDGET; MAINTENANCE AND OPERATION COSTS; OTHER COSTS

5.1. Annual Budget.

A. The Board shall adopt a preliminary budget for maintenance and operation costs, capital costs, and costs of other services in accordance with the budget schedules of the City and the District, which budget may be amended from time to time based on changes in revenue projections made by the City and the District. The Board shall submit the budget to the respective governing bodies of the parties hereto. The budget shall become the Authority budget only after approval of the appropriations by the respective governing bodies and final approval by the Board.

B. The financial contributions of the parties for the funding of the Authority shall be determined by the Revenue Allocation Formula, hereafter referred to as the "RAF," as set forth in Exhibit A, attached hereto and incorporated by this reference.

C. The Board shall present requests for supplemental appropriations to the respective governing bodies of the parties hereto. For the purposes of this Agreement, "supplemental appropriations" shall mean any appropriation made above and beyond the annual appropriation made during the budgetary process.

D. The Board shall have the power to reappropriate funds in the fund balance for whatever purpose the Board deems appropriate or necessary without approval of the City or District. Such reappropriations shall be made only

at meetings of the Board held after proper notice has been given, according to the bylaws of the Authority.

5 2. Records and Accounts. Through the City's Finance Department, the Authority shall provide for the keeping of accurate books of account, showing in detail the capital costs, cost of services, maintenance and operating costs and all financial transactions of the Authority which books of account shall correctly show any receipts and also any costs, expenses or charges paid to or to be paid by each of the parties hereto. Said books and records shall be open to inspection at all times during normal business hours by any representative of either party or by the accountant or other person authorized by either party to inspect said books or records. The Board shall provide for the auditing of all books and accounts and other financial records of the Authority on an annual basis, utilizing the same certified public accountant as is used by the City in the auditing of its financial records. The results of said audit shall be presented to the City and the District not later than thirty (30) days after receipt by the Board.

5.3. Payment of Costs. The City shall pay the Authority monthly and the District shall pay the Authority quarterly, in advance, its allocated share of the total budgeted annual costs and expenses. The Board is authorized to approve other arrangements for payments by the City and the District, provided the financial security of the Authority is not impaired. In addition to supplemental appropriation requests, the Board is authorized to request amounts in excess of any regular payment for the costs and expenses of the Authority, provided the total annual allocation does not exceed the estimated share of costs and expenses for either party to this Agreement. The Authority shall make available to each of the agencies a final detailed statement of the final costs and expenses for the fiscal year allocated in the same manner as estimated expenses were allocated, as soon as possible after the close of each fiscal year.

5.4. Appropriation and Non-Appropriation of Funds. Each party shall provide the funds required to be paid by it to the Authority under this Agreement from any source of funds legally available to such entity for such purpose. All financial obligations of the City and the District incurred pursuant to this Agreement are expressly contingent upon the annual appropriation of funds by each party. Upon an event of non-appropriation by one party, the party that has appropriated funds may, in its sole discretion, terminate this Agreement effective ninety (90) days after service of written notice of termination upon the other party, or may choose to continue this Agreement in effect, in which case the Authority shall adjust the level of service consistent with available revenues. If both parties fail to appropriate funds under this Agreement, then this Agreement shall terminate effective as agreed to by the parties, taking into consideration available revenues.

ARTICLE VI

SERVICES

6.1. Professional, Administrative and Support Services. The City shall provide to the Authority those professional, administrative, and support services described in Exhibit B, attached hereto and incorporated herein by this reference, upon the terms and conditions set forth therein. The Authority shall provide to the City those services also described in Exhibit B, upon

the terms and conditions set forth therein. The provision of those services shall be at no additional charge unless otherwise indicated on Exhibit B. Upon the written agreement of the City Manager and the Fire Chief, Exhibit B may be amended from time to time.

6.2. Additional Services. The City may agree to provide other additional services to the Authority, provided the Authority complies with the operating procedures of the City.

ARTICLE VII

OWNERSHIP OF PROPERTY

7.1. Real and Personal Property. The Authority shall continue to hold all right, title and interest in any and all real property and personal property transferred to the Authority by the City or the District or acquired by the Authority since January 1, 1982 for the purpose of providing Fire Rescue Services, unless such property is disposed of in compliance with the terms of this Agreement.

7.2. Asset Inventory Schedules. The Authority shall maintain separate asset inventory schedules for any and all property transferred from the City or the District which remains under the ownership of the Authority, as well as any and all property acquired by the Authority since January 1, 1982.

ARTICLE VIII

TERMINATION

8.1. Disposition of Assets. Upon termination of this Agreement pursuant to paragraphs 1.1. or 5.4. above, the assets of the Authority shall be disposed of as follows:

A. All assets acquired by the Authority from contributions from the parties shall be returned to the contributing party if said assets are still owned by the Authority.

B. If assets contributed to the Authority are not in existence, the contributing party shall have the option of receiving the fair market value of the asset at the time of disposal by the Authority in either cash (if available) or assets of the Authority acquired with funds provided by the parties.

C. All remaining assets acquired by the Authority after January 1, 1982, from funds provided by the parties shall be distributed to the parties on the basis of the appraised value of said assets at the time of termination and in the same proportion as the respective contributions of funds by the parties for acquisition of the assets over the life of this Agreement.

D. The parties may agree to dispose of any assets of the Authority in any other acceptable manner.

E. If the parties cannot agree on the disposition of certain assets of the Authority, said assets shall be subject to an independent appraisal and shall be sold at public auction with the proceeds allocated to the parties in the same proportion as the respective contributions of funds by the parties for acquisition of the asset.

ARTICLE IX

MISCELLANEOUS PROVISIONS

9.1. Notices. Any notice required hereunder shall be in writing and shall be sufficient if deposited in the United States mail, postage prepaid to:

CITY: City Manager
City of Fort Collins
P.O. Box 580
Fort Collins, Colorado 80522

DISTRICT: Chair of the Board
Poudre Valley Fire Protection District
102 Remington Street
Fort Collins, Colorado 80524

9.2. Consent. Whenever any provision of this Agreement requires consent or approval of the parties hereto, the same shall not be unreasonably withheld.

9.3. Amendments. This Agreement may only be amended in writing by the parties hereto.

9.4. Severability. In the event any provision of this Agreement is determined to be illegal or invalid for any reason, all other provisions of this Agreement shall remain in full force and effect unless and until otherwise determined. The illegality of any provision of this Agreement shall in no way affect the legality and enforceability of any other provision of the Agreement.

9.5. Successors. This Agreement shall be binding upon and shall inure to the benefit of the successors of the parties.

9.6. Assignment and Delegation. A party shall neither assign any of the rights nor delegate any of the duties created by this Agreement without the written consent of the other party.

9.7. Effect Upon Prior Agreements. This Agreement shall extinguish and replace the intergovernmental agreement entitled Intergovernmental Agreement dated November 3, 1987, and the three addenda to that Intergovernmental Agreement referenced in the Third

Addendum to the Intergovernmental Agreement Between the City of Fort Collins and Poudre Valley Fire Protection District dated May 21, 2013.

9.8. No Third Party Beneficiaries. This Agreement is made for the exclusive benefit of the parties hereto and shall not be construed to be an agreement for the benefit of any third party or parties and no third party shall have a right of action hereunder for any cause whatsoever.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be signed on the date hereinabove written.

CITY OF FORT COLLINS, COLORADO
a municipal corporation

By: _____
Mayor

ATTEST:

_____
City Clerk

CITY OF FORT COLLINS SEAL COLORADO

APPROVED AS TO FORM:

_____
City Attorney, Asst.

POUDRE VALLEY FIRE PROTECTION DISTRICT

By: _____
President of the Board

ATTEST:

_____
Vice President

APPROVED AS TO FORM:

_____
Counsel for District

Exhibit A
To Intergovernmental Agreement

Funding Formula and Revenue Allocation Formula (RAF)

The City of Fort Collins and the Poudre Valley Fire Protection District will each make annual contributions to the Poudre Fire Authority according to the following contribution calculations:

A. City Contribution to the Authority per RAF

Subject to the Adjustments described below, the City will annually contribute to the funding of the Authority the following amounts:

1. .29 of one cent of City base sales and use tax (excluding sales and use tax revenue which has been legally pledged for use only on specific projects and debt obligations, or has otherwise been restricted or committed for a particular use as a matter of law or contract); and
2. A sum equal to 67.5 percent of the operating mill levy of the City's property taxes; and
3. Sales and use tax revenue from the voter approved tax measure currently known as "Keep Fort Collins Great" (KFCG) per the tax measure provision for fire protection and other emergency services funding.

"City Sales and Use Tax" and "City Property Tax" refer to forecasts per the City's Financial Services April projection as part of the City's Biennial Budget process. The RAF will be updated throughout that same year if there are material changes to the City Sales & Use Tax and City Property Tax April projections.

City Contribution Calculations

The formula for determining the City's Calculated Annual Contribution to the Authority will be calculated as the sum of:

1. **A portion of Base Sales and Use tax revenue**

   Total City Base Sales & Use Tax Revenue (per Financial Services April projections)
   ÷ 2.25 DIVIDE: Total 2.25 cent Base City sales and use tax to equal subtotal of 1 cent of sales and use tax
   × 0.29 MULTIPLY: RAF sales and use tax percentage share of total revenue
   Sales and use tax RAF Amount

   Example: If 2.25% sales tax yields $60 million per year, then $60 million ÷ 2.25 = $26.66 million per 1% of sales and use tax; then $26.66 million x .29 = $7.733 million is .29 cents of sales and use tax to be contributed to PFA.

2. **PLUS a portion of Property Tax revenue**

   City 9.797 Mill Property Tax Revenue (per Financial Services April projections)
   × 0.675 MULTIPLY: RAF property tax percentage
   Property tax RAF Amount

3. **PLUS tax measure revenue from Keep Fort Collins Great dedicated to fire protection and other emergency services funding**

The sum of which components equals the **City Calculated Annual Contribution** to the Authority.

Phase-in of City Contribution Adjustment ($2.6 M over 5 years)

The City's current (2014) budgeted contribution to the Authority is $2.6M below the RAF calculated amount. It is the City's intent to phase in its total contribution to equal the RAF calculation over a 5 year time period beginning in 2015 as follows:

City Calculated Annual Contribution
MINUS: Escalation Adjustment for year
Total City Contribution

Escalation Adjustment by year:
2014 = $2.6M
2015 = $2.1M
2016 = $1.6M
2017 = $1.0M
2018 = $0.5M

Annexations Adjustment:

Annexation – primarily residential:
In the event of a City approved annexation of properties included in the District that are primarily residential in nature, the RAF sales and use tax percentage and RAF property tax percentage will be adjusted to ensure no loss of revenue to PFA.

Annexation – with significant commercial or industrial components:
In the event of a City approved annexation of properties included in the District that include a significant commercial or industrial components, the City and District will work cooperatively to ensure that service levels will be maintained through adequate funding adjustments after the annexation has occurred.

URA / TIF / Adjustments and Other Implications:

In the event of Urban Renewal Authority (URA) implementation of tax increment financing (TIF) that materially affects the City contribution to the Authority or cost of service to the Authority, the City and District will work cooperatively to ensure that service levels will be maintained through adequate funding adjustments.

All parties are committed to renegotiating the RAF or contribution amount in good faith in the event of "other" implications that affect the efficient implementation of the RAF or management of the Authority in a fiscally prudent manner.

B. District Contribution

The District will annually contribute to the funding of the Authority the following amounts: The District shall annually adopt a mill levy (minimum 10.595 mills) pursuant to state law, and 100% of the mill levy revenue, less reasonable administrative expenses for the operation of the District, shall be contributed to the funding of the Authority for any authorized purpose.

C. Other Revenues

The Poudre Fire Authority will generate other revenues for support of specific programs and services through a variety of sources. The PFA is authorized to expend these funds with approval of the PFA Board of Directors in the same manner as City and District funds are allocated to PFA purposes. These revenues will be considered to be PFA's alone and not revenue of either the City or the District. These revenue sources may include such sources as:

1. Fee Revenue
    a. Plan Review and Development Review Fees
    b. Sprinkler Inspection Fees
    c. Hazardous Materials Fees
    d. Wildland Reimbursements or Fees
    e. Capital Expansion Fees passed through the City of Fort Collins or other entities
    f. Opticom Maintenance Fees
2. Cost sharing revenue for City of Fort Collins Office of Emergency Management
3. Miscellaneous Income
4. Investment Income
5. Grant Revenue
6. Federal, State or County reimbursement for disaster assistance or other purposes.

D. General Provisions

If District or City funding of the Authority changes significantly, all parties commit to renegotiating the IGA and the City and District contribution amounts in good faith.

EXHIBIT B
To Intergovernmental Agreement

Support Services Provided to the Authority by the City of Fort Collins

Department	Service	Description
Office of Emergency Management	Coordinated OEM services	• Work in close coordination with the Authority's designated emergency manager • Fund portion costs of the City's joint OEM in partnership with the City General Fund and Utility Services through the City's Budget process
Human Resources	Pension Administration	• Administer 401 Money Purchase Plans for Authority benefitted employees • Process new employee enrollment and changes in participant records • Provide GERP administration for existing participants
	Deferred Compensation Plans Administration	• Administration and support of 457 Deferred Compensation programs • Enrollment and changes processed
	Health and Welfare Benefits	• Administer health and welfare benefits (medical, dental, vision, life, long-term disability) within City self-insured plans and contract group insurance agreements • COBRA administration • New employee benefits sign-ups • Interpret plans to employees • Act as liaison between employees and insurance companies • Maintain records, files and forms
	Benefits Open Enrollment	• Provide access to health and welfare benefits through City sponsored plans in the same way as provided to covered City employees • Provide flexible spending accounts
	Training	• Access to skill development courses including technology, leadership and professional development classes. Access to personal enrichment courses such as wellness classes provided on a space available basis
	Job Posting	• Link from City employment web site to Authority's employment web site positions
	Pre-employment	• Drug Testing

EXHIBIT B
To Intergovernmental Agreement

Human Resources (cont.)	Records	• Personnel records maintenance • Employment verifications • Annual EEOC reporting
	Wellness programs	• Provide access to City Health Fair programs • Provide annual Health Screening/Blood Draw program to benefited employees in the same manner as provided to City employees • Provide annual flu shots to benefited employees in the same manner as provided to City employees • Provide office ergonomics reviews for Authority office employees • Provide EAP services (charged)
Financial Services	Payroll Administration	• Provide payroll services through the City's accounting and payroll system • Add new employees through the same New Hire process as used for City employees • Provide employee exit processing in the same manner as provided for City employees • Administer unemployment claims and garnishments
	Accounting	• Provide accounts payable, accounts receivable, and purchasing cards to Authority • Maintain files and records • Maintain asset inventory • Grant compliance • Cash management
	Banking and investing	• Capital projects investments (fee charged)
	Risk Management (charged)	• Provide point of contact for citizen claims • Process Worker Comp and liability claims to Authority insurance • Safety monitoring (atmospheric testing, radon, etc.) • Coordinate selection of worker's comp providers • Coordinate insurance renewals: Support and advice on Property and Casualty and Workers' Compensation Insurance contract • Liaison with insurance broker • Driver's license checks

EXHIBIT B
To Intergovernmental Agreement

Financial Services (cont,)	Purchasing	• Purchasing advice • Issuing purchase orders • RFP/Bid creation and coordination • Service Agreements/Contracts
	Capital Expansion Fees	• Collect and maintain accounts for Capital Expansion Fees collect from developer by the City on behalf of Authority
	Annual Financial Audit Coordination	• Annual financial audit by same auditor as contracted by the City (charged)
Operations Services:	Fleet	• Vehicle fueling (charged) • Pool vehicle rentals (charged) • Fuel payment cards • Vehicle repair (charged)
	Facilities	• Facility repairs (charged) • Service contacts (advice on who to call) • Preventive maintenance on HVACs, A/Cs, furnaces (charged) • Project management for larger projects (charged) • Real estate services (charged)
Police Services	Dispatch	• Dispatch consoles (charged)
Information Technology	Network Administration	• Work in close coordination with Authority IT in configuring, maintaining and managing the Authority's data network including network switches, routers, VPN access and wiring • Provide internet access • Provide access to internet web email • Partner with the Authority in FCPS Computer Aided Dispatch (CAD) systems • Connectivity to City core switch
	GIS	• Access to City GIS programs, data and licenses
	Voice/Phone system	• Land-line phone system network and maintenance • Partners in Verizon wireless purchases
	Server/Storage Administration	• Active Directory • Authority equipment in server room • Occasional server support

EXHIBIT B
To Intergovernmental Agreement

Services Provided to the City of Fort Collins by Authority	
Office of Emergency Management	• Office space for OEM • Training Center space for Emergency Operations Center • Portion of funding for Emergency Manager position • Day to day supervision of OEM function
Meeting Rooms	• Access to conference rooms, community rooms and Training Center space without fees
Community Education Programs	• Support of CityWorks program with presenters, demonstrations, access to Authority facilities • Participation in employee Safety Fair • Other fire service education programs upon request

PFA IGA and 2023 Annual Report

Fort Collins City Council & PVFPD Board
Work Session: April 23, 2024

SERVICE ABOVE SELF

POUDRE FIRE AUTHORITY

ANNUAL REPORT 2023

SERVICE ABOVE SELF

Poudre Fire Authority
Fort Collins Colorado

Poudre Fire Authority 2023 Annual Report Highlights

Year of Remarkable Achievements:

- Badge and Rank Structure boosted operational effectiveness and professional growth
- Community Engagement Efforts
- Red Fire Apparatus
- 19 neurologically intact cardiac arrest saves
- Community Health Program

Looking Ahead

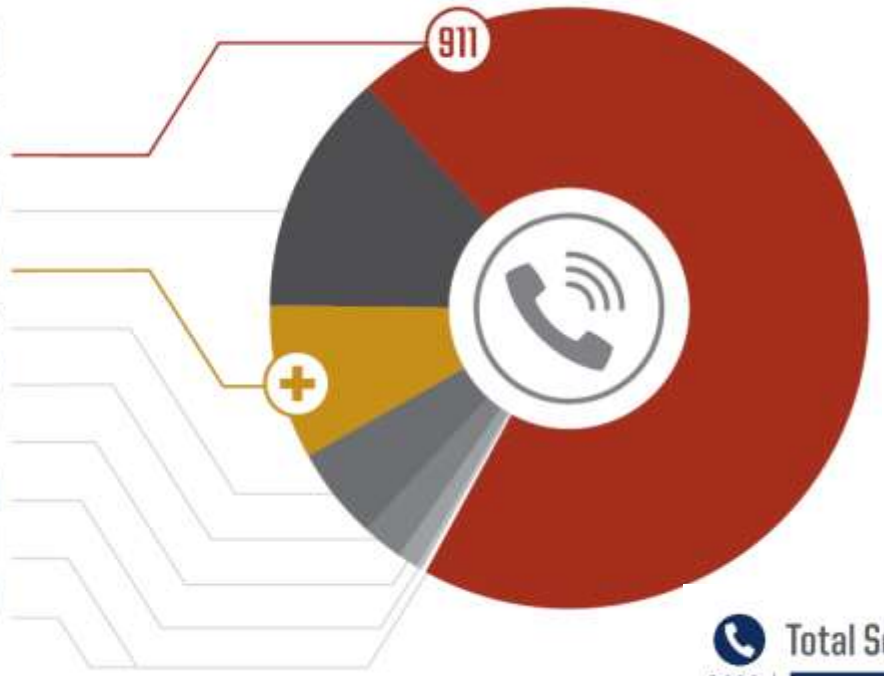
- Station 7 (LaPorte area) construction underway
- New Headquarters Facility in Old Town area
- EMS Survivors Event May 22, 2024
- 9/11 Groundbreaking

Poudre Fire Authority Service Call Load Information

2023

TOTAL SERVICE CALLS 25,349

Rescue & Emergency Medical Calls	17,904
Good Intent Calls	3,050
General Service Calls	2,030
False Alarm & False Calls	1,436
Hazardous Conditions (No Fire)	506
Fires	287
Special Incident Calls	69
Severe Weather & Natural Disasters	11
Overpressure Ruptures, Explosions, Overheat (No Fire)	10



Total Service Calls per Year

Poudre Fire Authority
Fort Collins Colorado

2023 Budget & Funding Outcomes

TOTAL REVENUE $44,556,506

Intergovernmental	$42,988,993
Fees and Charges for Services	$1,116,024
Miscellaneous Revenue	$237,489
Earnings on Investments	$204,000
Licenses and Permits	$10,000

EXPENDITURE – TYPE $ 52,206,114

Salaries & Benefits	$35,092,219
Transfers to Capital Projects	$6,377,008
Other Purchased Services	$4,746,509
Materials, Supplies, & Equipment	$2,821,359
Capital Outlay	$2,722,711
Miscellaneous Other	$446,308

Expenditures

Underspent by $1,018,957 *

1.95% of the Budget

* Unaudited figure

Poudre Fire Authority
Fort Collins Colorado

Questions on Annual Report?

Intergovernmental Agreement (IGA) Review

- Opportunity for City Council and District Board to meet and converse
- Opportunity to provide staff direction on:
  - Concerns/curiosity on existing IGA
  - Questions on work-to-date
  - Guidance for staff on evaluating the IGA
- Good health in review and update of City and District investment in fire and rescue service
- Not a current trigger point for different governance model

What is Poudre Fire Authority?

An independent governmental entity that provides fire and rescue services

A consolidated fire agency serving two jurisdictions

- Poudre Valley Fire Protection District
- City of Fort Collins

No taxing authority; dependent on “parents” for funding

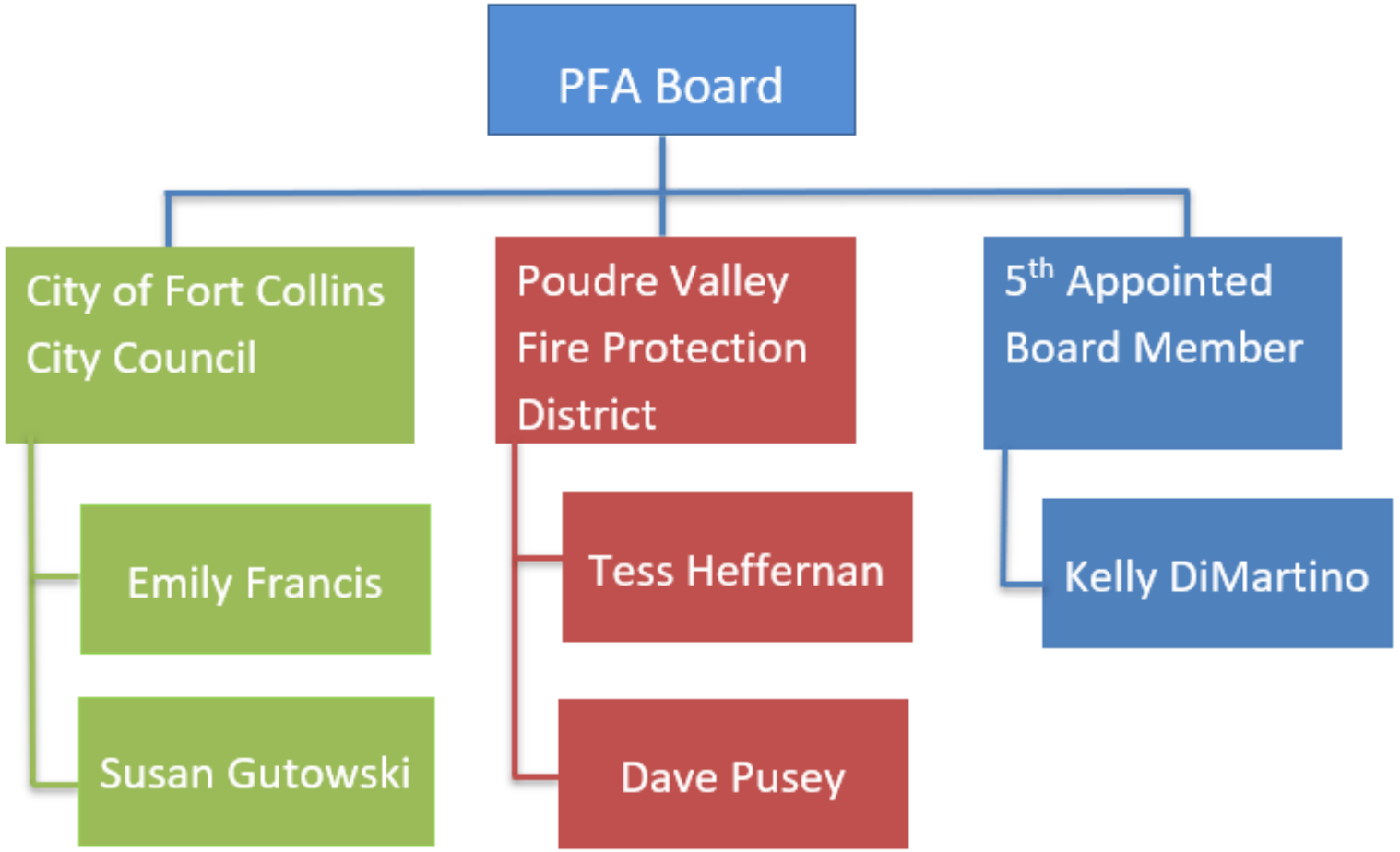
The Intergovernmental Agreement

Established in 1981;
Updated in 1987 and 2014

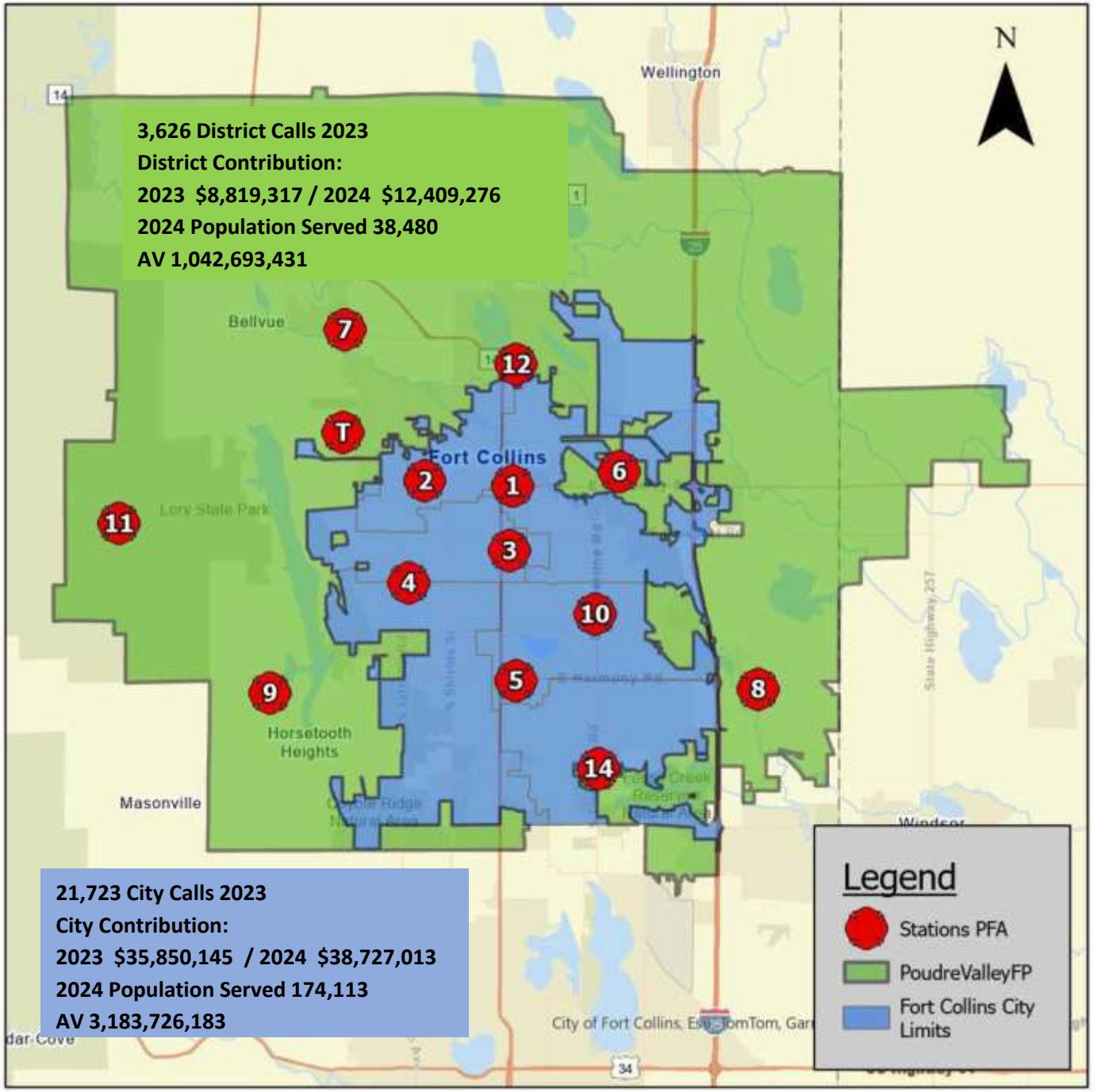
Enumerates responsibilities of Board, Chief, and staff

Sets limitations on powers

Sets funding formula and in-kind contributions (Exhibits A and B)


PFA Board
City of Fort Collins City Council
Poudre Valley Fire Protection District
5th Appointed Board Member
Emily Francis
Susan Gutowski
Tess Heffernan
Dave Pusey
Kelly DiMartino

Serving 230 square miles including the City of Fort Collins (blue) and the Poudre Valley Fire Protection District (green)



PFA Funding Overview

The Authority's funding is based on a revenue allocation formula.

- Takes into account call volume and assessed property value

Supports the relationship between the District and the City

- Total PFA Revenue of $53 million – 2024

Poudre Valley Fire PROTECTION DISTRICT

City of Fort Collins

Revenue Allocation Formula

City funding by formula (Exhibit A):

- .29% of one cent of base sales/use tax
- 67.5% of City Property Tax mill levy
- 11% of .85% Keep Fort Collins Great sales/use tax

District funding

- 100% of District Property Tax mill levy and special ownership tax (less administrative costs)
- Timnath TIF revenue in lieu of property tax provided through IGA executed in 2015 between the Town of Timnath, Timnath Development Authority, Poudre Valley Fire Protection District, and Poudre Fire Authority

Poudre Valley Fire PROTECTION DISTRICT

City of Fort Collins

Impact Fees Collected on Behalf of PFA

	City	District
2019	$457,407	-
2020	478,001	-
2021	622,725	$131,524
2022	620,673	244,580
2023	790,240	291,038
Total	$2,969,046	$667,142

For 2024, the District has adopted fees based on an updated Fee Study completed in 2023. For residential units, changes ranged from a decrease of 23% for the smallest units to an increase of 61% for the largest units.

City/District Comparative Statistics

in Percentages

	1989	….	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
City Calls	78.0		84.1	84.5	84.6	85.9	85.7	86.0	84.3	85.1	85.0	85.6	
City Assessed Value	75.8		82.0	82.1	80.9	82.1	80.3	80.2	80.7	80.4	80.6	80.3	78.6
City Contribution	75.9		82.3	82.9[1]	74.2	83.3	80.7	81.4	79.6	79.5	79.4	80.3	75.7
District Calls	22.0		15.9	15.5	15.4	14.1	14.3	14.0	15.7	14.9	15.0	14.4	
District Assessed Value	24.2		18.0	17.9	19.1	17.9	19.7	19.8	19.3	19.6	19.4	19.7	21.4
District Contribution	24.1		17.7	17.1	25.8[2]	16.7	19.3	18.7	20.5	20.5	20.6	19.7	24.3

Averages 1989 – 2014
Calls 83.4/16.6
Assessed Valuation (AV) 80.3/19.6
Contribution 79.9/20.1

[1]2015 included first year of updated City Revenue Allocation Formula contribution
[2]2016 included District capital contribution for Station 8 and Timnath Tax Increment Financing funds for Station 8 staffing and construction

Work-to-Date: Services Provided

- Data Gathering by City and PFA staff – complete
- Costing Process – complete
- Pain Points Identified – finalizing solutions
- Cost of Services agreement – work in progress

Cost of Services Provided

Preliminary - Cost of City Services to PFA

Service Area	Annual In-Kind Costs	Annual Charged	Total Cost of Services Provided
Finance	$182,115	$18,402	$200,517
Human Resources	$145,963	$2,969,712	$3,115,675
Information Technology	$191,481	$47,000	$238,481
Police - Dispatch	$159,462	$207,229	$366,691
Op Services	$5,390	$194,643	$200,033
All Other	$43,215	$20,000	$63,215
Total	$727,626	$3,456,986	$4,184,611

Preliminary - Cost of Services Absorbed by PFA

Service	Cost
Emergency Management	$176,214
Finance	$12,976
Risk Management	$23,296
Human Resources	$3,539
Information Technology	$72,138
Miscellaneous	$3,576
Total	$291,738

New Concept – IGA/Exhibit B

- Administrator positions (City/PFA) for Service Level Agreements
- Work in Progress
  - Role of Administrators
  - Renewal/Amendment Intervals (biennial)
  - Relationship building
  - Change management

IGA Work Remaining

Revenue Allocation Formula
- Move to actuals vs. budget
- Incorporate current exceptions

Annexations
- No economic loss concepts (District % and mill levy; sales tax addition)
- Establish timing for examining governance model

Risk Sharing
- Maximum City Contributions
- Minimum Authority Receipts

Timelines

Work Streams:

• Complete Support Services and RAF analyses	April/May
• Agreement Terms and Legal Evaluation	May/June

Communications/Actions:

• District Board – update	May
• Council Finance Committee – recommendation	June
• District Board - recommendation	June
• City Council Adoption consideration - 1st	July
• District Board – Adoption consideration	July
• City Council Adoption consideration - 2nd	August

Questions/Discussion

- Concerns/curiosity on existing IGA
- Questions on work-to-date
- Guidance for staff on evaluating the IGA

April 23, 2024

WORK SESSION AGENDA ITEM SUMMARY

City Council

STAFF

Brian Tholl, Energy Services Manager
Katherine Bailey, Energy Services Program Manager

SUBJECT

Building Performance Standards.

EXECUTIVE SUMMARY

The purpose of this item is to bring forward recommendations derived from the Building Performance Standards (BPS) policy development process. Staff will also highlight how BPS, as a regulatory lever, is a key part of a larger strategy to reduce climate pollution and air pollution. From the start, staff have partnered with community contributors who helped provide a full consideration of local circumstances and conditions, sharing feedback that accounts for lived experiences in our community. Input from affected groups shaped the policy recommendations that will be outlined in this work session and associated materials. BPS policy work aligns with the 2024-2026 adopted Council priorities and the Our Climate Future (OCF) plan; specifically, the goal of an 80% greenhouse gas emission reduction by 2030 and Big Move 6: Efficient, Emissions Free Buildings.

GENERAL DIRECTION SOUGHT AND SPECIFIC QUESTIONS TO BE ANSWERED

1. What information is needed to advance the conversation related to community electrification?
2. Do Councilmembers have initial feedback on staff BPS recommendations?
3. 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?

BACKGROUND / DISCUSSION

City Electrification Strategies

With the recent adoption of a Council priority related to reducing climate pollution and air pollution through best practices, emphasizing electrification, staff plan to define strategic electrification, and also outline the comprehensive strategies deployed by the City to advance toward the priority and council adopted BPS.

Stated simply, there is a right way and a wrong way to pursue electrification. Strategic electrification is defined as improving in one of the following categories without negatively impacting the others:

- Saves money

- Benefits the environment
- Fosters grid resilience
- Improves quality of life

Throughout the course of implementing programs and developing policies, staff heard initial concerns related to upgrade costs. After identifying the financial resources available, the conversation often quickly evolved into changes in behavior and education on technical resources. A key element to successful electrification is continuing our efforts toward increased efficiency. Efficiency related efforts often prevent negative impacts.

The City has a comprehensive strategy taking several approaches to reducing climate pollution and air pollution. The "levers" can be categorized as economic, behavioral, regulatory and infrastructure. A balanced approach to utilizing these levers is required to support the City's strategic objectives and achieve OCF goals. These levers can be used across different areas of impact, or segments, of our community.

Utilities has a long history of using economic and behavioral levers in both energy efficiency and conservation. In both residential and business engagement, energy savings are achieved through a balance of economic levers such as time of day rates and incentives for equipment upgrades, as well as behavioral levers such as transparency (social norming) and education on energy use. Despite our growing population, efficiency has helped limit the increase in electricity use. It is estimated that the electric use would be 27% higher without Utilities efficiency programs.

It is unlikely, however, that the City will be able to achieve OCF goals with economic and behavioral levers alone. An increasing reliance on regulatory strategies (such as BPS and advancing building codes) and updating infrastructure will be required. Staff recognize the success of any regulatory strategies is dependent on community access to financial and technical resources.

Building Performance Standards

Background

More than two-thirds of our community's carbon emissions come from local buildings. To help tackle climate change, improve air quality, and drive economic opportunities locally, Utilities has been exploring BPS.

BPS have the potential to be the most powerful, direct policy action the City can take to meet 2030 goals outlined in OCF (as building performance accounts for over 16% of projected efforts to meet an 80% greenhouse gas reduction). Additionally, BPS have a far greater impact on natural gas reduction than other Utilities programs. Utilities estimates savings from BPS alone could be just under that of every other efficiency program run by Energy Services combined.

Investing in our buildings is an investment in the future of our community, particularly in light of expected changes in our local and global climate. BPS supports the following City strategic objectives:

- Environmental Health (principal alignment)
- Neighborhood Livability and Social Health
- Economic Health
- Safe Community

BPS Community Benefits

BPS focus on increased building efficiency, plugging into a larger effort of climate change mitigation policies across Colorado, nationwide, and beyond. Investing in the built environment, where we spend 90% of our time, beneficially impacts health, safety, comfort, and resilience. More efficient buildings can lower utility bills and improve indoor and outdoor air quality. More efficient buildings have increased occupancy and tenant retention, facilitating community-building, which in urban areas is critical to resilience. Efficient commercial spaces are shown to have more productive employees and higher property values. BPS also lead to the creation of high-paying jobs and foster a more competitive economic environment.

BPS are a critical tool to mitigate and adapt to impacts of climate change both at the utility level and for community members. Better air quality benefits all residents, as do improvements resulting in increased health, safety, comfort, and resilience. Utility customers stand to benefit directly from BPS through lower utility bills. Multi-family tenants and property managers benefit from reduced operations and maintenance costs, and increased occupancy and tenant retention. Businesses benefit from higher productivity of on-site staff. Building owners benefit from the higher property value of efficient buildings and the value of efficiency investments.

BPS Development Process

In late 2022, Utilities convened an internal task force composed of City and Platte River Power Authority staff. Part of those discussions helped shape the external Task Force (participant summary listed in Community Engagement, Attachment 4) composed of experts representing industries that would likely be significantly impacted by BPS. Our external Task Force met throughout 2023 and brought critical perspectives to define policy recommendations for a truly implementable local BPS. Also in 2023, Utilities formed a Technical Committee. This committee is composed of an experienced consultant along with a group of local experts with deep expertise in building science. The Technical Committee (participant summary listed in Community Engagement, Attachment 4) supported Task Force recommendations with extensive data review while balancing real-world understanding of Fort Collins buildings (accounting for our local buildings, technical feasibility, upgrade timelines, and costs). The Technical Committee continues to meet.

Equity-focused engagement included:

- Meeting with several community-based organizations (CBOs) focusing on affordability
- Connecting with local subsidized housing providers
- Engaging with the newly formed Climate Equity Committee (CEC) for long-term partnership
- Beginning scoped work in 2024 to identify under-resourced commercial buildings and their barriers to efficiency

Staff plan to continue to check in with CBOs and partner with the CEC to monitor for negative repercussions from an equity lens. Should they occur, staff would partner to explore recommendations to address identified repercussions.

Broad community outreach with internal and external groups included business groups, environmental groups, other jurisdictions, federal partners, local boards, and more. We continue to seek feedback internally and in the community around the policy recommendations and required supporting resources. Program staff strive to bring leadership policy recommendations that are shaped by and for the community, informed by regional and nationwide partnerships leveraging industry-wide best practice along with learnings from jurisdictions with existing policies.

BPS Structural Recommendations

Find additional context in the Task Force Recommendations and Community Contributor Recommendations (Attachments 1 and 3).

Covered Buildings

BPS policy recommendations center on increased efficiency demonstrated through decreased Energy Use Intensity (EUI). Based on committee recommendations, staff recommend including (covering) commercial and multi-family buildings 5,000 square feet and above. The proposed BPS would cover just below 1,400 buildings, 32% of which already meet proposed targets. Covered buildings account for 40% of all Fort Collins building electricity use (including residential and industrial properties).

BPS Targets

Staff recommends adopting an EUI target for individual covered buildings. EUI is typically measured by thousand British thermal units (kBTU/square foot) and is a common metric that includes multiple fuels (often natural gas and electricity) used for energy in a building within a single metric. EUI is tracked through our existing benchmarking program, ensuring objective targets are easily monitored (Performance Target Recommendations, Attachment 6). A common metric for tracking BPS compliance around the country, and used in both Denver and the State of Colorado, EUI provides an objective comparison of all energy use accounting for weather, building size, and property use type.

Staff recommend buildings between 5,000-10,000 square feet have more-attainable targets.

Compliance Timeline

Staff recommend implementing a BPS with 2027 as the interim timeline and 2030 as the target deadline. For the smallest cohort of covered buildings, those 5,000-10,000 square feet, staff proposes an extended timeline. These dates ensure time for community education, engagement, and action, and also are timely enough to contribute to our OCF 2030 emissions reductions goals.

Alternative Compliance Pathways

Staff have designed alternatives to ensure buildings are not tasked with meeting unachievable targets. Recommended “off-ramps” include EUI reduction caps which limit the maximum energy savings a building would need to achieve, timeline and target adjustments, waivers, and the potential for providing additional help for under-resourced buildings.

Resources for Success

While BPS can have significant positive impacts on our community, any policy can do further harm and perpetuate existing inequities if not thoughtfully designed around social equity. Recommendations seek to shape a policy that encourages benefits in health, safety, comfort, and resilience while working to reduce the risk of increased unaffordability. Community contributors have discussed recommendations with program staff to encourage maintained affordability in housing, and ongoing work focuses on relevant offerings directed to under-resourced building owners.

Community contributors shared that successful implementation depends on resources for all buildings, with an emphasis on under-resourced buildings. This includes education on the benefits associated with BPS and their alignment with City and community goals, as well as robust and targeted educational, financial, and technical resources. Identifying and offering appropriate resources is an essential strategy to keep the policy from hindering economic growth.

Staff continue to explore ways to build upon the robust federal, state, and local incentives currently available for energy efficiency projects. Acknowledging that there will still be a cost associated for many buildings, partnership with “green” financing providers such as Colorado PACE and the Colorado Clean Energy Fund is an essential path to assure payments for upgrades better align with payoff periods, and high upfront costs are minimized or avoided entirely. Utilities plans further education for covered building owners to demonstrate how green financing can overcome perceived barriers focusing on return on investment. Partnerships also help determine where the City can assist with financing gaps.

While cost barriers may seem like the most profound, our informed community voices shared that technical and educational resources are no less critical. Educational resources set for development, if BPS policy is adopted, include training and on-demand recordings. A Help Center will be on hand to support building owners with compliance and provide assistance for both simple and highly technical questions and requests. An online hub will provide educational resources including technical and financial.

Existing technical support is available to building owners to identify low- and no-cost improvements along with smart investments in energy efficiency. Staff are prepared to build upon existing resources with additional support for all covered buildings and advanced technical support for under-resourced buildings through an expansion of existing vendor partnerships. On-site, whole building assessments with targeted recommendations will help assure building owners understand their best options to meet targets and encourage alignment with 2050 carbon neutrality goals.

Part of policy education includes sharing the benefits of BPS, so our community understands the work we are doing and why. Staff continue to address workforce challenges by exploring a local scholarship program. Collaborating with local jurisdictions with adopted policies (Denver, Boulder, Aspen, and the Colorado Energy Office) allows shared learning and resources, extends opportunity to expand the workforce and partner for other resources including funding opportunities.

Staff propose Utilities lead BPS management and resulting citations, in partnership with the Court and Prosecution teams. Internal staff needed for BPS adoption may be reduced by partnering with trusted vendors, which allows program management to ratchet support up or down as appropriate across the wide range of programmatic support. We expect this to be a program with significant peaks in activity, although there should be a steadily growing baseline of activity associated with compliance. Staff propose education and resource development (resource hub, financial hub, technical assistance) be developed and shared widely early on, and regularly thereafter, with the expectation of more support needed for individual building owners close to interim and final target dates.

NEXT STEPS

Staff seek feedback from Council on policy recommendations. Staff acknowledge that further conversation with Council may be appropriate after this meeting to address specific aspects of the proposed policy.

ATTACHMENTS

1. Task Force Recommendations
2. BPS Potential Impact Numbers
3. Community Contributor Recommendations
4. Community Engagement Memo
5. Fort Collins BPS Case Studies
6. Performance Target Recommendations
7. BPS Cost Benefit Analysis
8. Presentation

Building Performance Standards (BPS) Task Force Recommendations

Charter

Fort Collins City Council approved Our Climate Future in 2021 to intensify community efforts to achieve environmental goals. Our Climate Future articulates an 80% reduction in greenhouse gas emissions by 2030.

Our Climate Future outlines a series of "Big Moves" designed to help the City of Fort Collins become carbon-neutral with zero waste. Big Move 6 – Efficient, Emissions Free Buildings has a stated goal that everyone lives and works in healthy and efficient buildings which transition to become emissions free.

In order to engage key stakeholders, the City convened a Building Performance Standards (BPS) Task Force to focus on a 'Next Move' within Big Move 6 relating to BPS. This Task Force was asked to recommend pathways for commercial building owners and operators to comply with BPS. Advice sought by the City focused on buildings to be covered, compliance pathways, alternate pathways, metrics for monitoring progress, and resource and workforce considerations.

The BPS Task Force was convened to address commitments the City had previously made to the National BPS Coalition and goals outlined in the Our Climate Future plan. The BPS Task Force was charged with providing high-level structural recommendations based on a shared understanding of our local community and buildings. It is the intention that these recommendations will provide a framework allowing for further detailed evaluations including cost and feasibility analyses (which have not been completed at the time these recommendations were developed). The BPS Task Force recommendations will be the first step in a developing process that will culminate in City Council consideration in 2024.

Recommendations

The BPS Task Force reached consensus on the following recommendations.

Buildings Included

The BPS Task Force recommends that the City of Fort Collins include buildings greater than 5,000 square feet in the BPS with two cohorts - including one for buildings 5,000-10,000 square feet and another for buildings 10,000 square feet and larger.

Small buildings: The BPS Task Force supports establishment of more attainable targets for buildings between 5,000 and 10,000 square feet, and supports consideration of phased implementation for those buildings, with an interim target of 2030 and a subsequent final target.

State buildings: The BPS Task Force opposes requiring buildings to meet two sets of requirements and recommends that any building covered by the State ordinance be waived from the Fort Collins BPS.

Industrial properties: The BPS Task Force recommends that the City invite further consideration by experts in industrial, manufacturing, and indoor agricultural properties to explore potential opportunities to include them in the Fort Collins BPS.

Multifamily: The BPS Task Force recommends that the Fort Collins BPS should apply to multifamily residential buildings as defined by § 12-202 of the Municipal Code.

New construction: The BPS Task Force recommends that the City of Fort Collins include new construction in BPS with the potential for timeline adjustments as needed.

Targets

The BPS Task Force recommends that the City of Fort Collins establish efficiency goals by property use type with interim and final goals.

Goals: The BPS Task Force recommends that Site Energy Use Intensity (EUI) be used to measure BPS program performance, with the potential inclusion of secondary greenhouse gas targets to align with the State of Colorado's ordinance.

Flexibility: The BPS Task Force recommends including multiple alternate pathways for all buildings to allow maximum flexibility to building owners, potentially including performance or financial caps, electrification, application of emerging technologies, and renewables.

Resources

Education: The BPS Task Force believes an education program designed to help building owners is CRITICAL. The program should include, but not be limited to, extensive outreach prior to implementation and ongoing programming surrounding physical building options, pathways, and overall effectiveness of changes made for building owners.

Resources: The BPS Task Force recommends that the City provide resources to support compliance, including:

- Technical support to building owners to help them evaluate the most cost-effective method for each building.
- A centralized location where building owners can access information on incentives, timelines, options, and benefits of meeting goals supported by a strong, fully resourced customer service team.

Adjustments

The BPS Task Force recommends that the City consider the following in determining eligibility for timeline and/or target adjustments:

- construction status (demolition or major renovation in process, temporary or no Certificate of Occupancy in place)
- unique circumstances (supply chain issues, historic buildings, affordable housing, not in public interest)
- the possibility of Financial Distress.

Fees: The BPS TF recommends that the City explore waiving or reducing City fees associated with coming into compliance.

Under-resourced buildings: The BPS Task Force recommends that the City provide additional assistance for buildings with less access to the resources necessary for coming into compliance as compared to similar buildings.

BPS Potential Impact Numbers

Proposed Covered Building Use

- 40% of all Fort Collins building electricity is used by covered buildings (including residential and industrial properties).
- 32% of covered buildings already meet proposed targets.

Greenhouse Gas Impacts

The tables below show the costs and associated emissions avoided through meeting the policy's targets. The emissions shown reflect the policy's estimated impact on the Community's 2030 Greenhous Gas Inventory, contributing to the related OCF goals.

The single-year emissions impact is different than the savings shown in the 'BPS Cost Benefit Analysis' document. That document reflects the cumulative savings over a 10-year period of implementation to estimate the policy's overall cost benefit.

These tables calculate the difference between the current and proposed EUI targets for each covered building within Fort Collins city limits. They also demonstrate the impact of caps (see Community Contributor Recommendations for more details on recommended EUI reduction caps).

The 'Locally Covered Buildings' table directly below excludes buildings over 50,000 square feet (ft^2) that would be covered by the State of Colorado's BPS (see Community Contributor Recommendations for more details).

Locally Covered Buildings - Impact of Meeting Performance Targets			
	Cost per Building ($)	**Cost per Built Area** ($/ft²)	**GHG Emissions Avoided** (MTCO2e in 2030)
with Reduction Cap	$161,000 to $174,000	$4.65 to $5.02	53,000 to 59,000
without Reduction Cap	$272,000 to $294,000	$7.85 to $8.48	88,000 to 97,000

The 'State and Local Covered Buildings' table (below) includes all potentially covered buildings above 5,000 ft^2, including those covered by the State of Colorado BPS.

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

The ‘Locally Covered Buildings by Building Size’ table below demonstrates the cost and emissions by building size aligning with recommended cohorts (see Community Contributor Recommendations) and excludes buildings that would be covered by the State of Colorado BPS.

Locally Covered Buildings - Impact of Meeting Performance Targets by Building Size			
Building Area (ft²)	**Cost per Building** ($)	**Cost per Built Area** ($/ft²)	**GHG Emissions Avoided** (MTCO2e in 2030)
5,000 to 10,000	$29,000 to $33,000	$4.11 to $4.56	2,000 to 3,000
10,000+	$214,000 to $231,000	$4.69 to $5.05	51,000 to 56,000

For reference, over the last decade, the average permit work valuation was $260,000 for commercial general alterations and $200,000 for commercial tenant finishes.

Community Contributor Recommendations

Table of Contents

Introduction

Community engagement throughout 2023 resulted in specific recommendations around the proposed Building Performance Standards (BPS) policy. For full recommendations from our Task Force of industry experts, please see Task Force – Final Recommendations.

Due to the complexity of the topics and intersection of potential repercussions across various cohorts within our local community, key recommendations were developed and/or supported through in-depth conversation with our Task Force, Technical Committee, and other community contributors. To provide context around the recommendations provided, details are included herein regarding the following specific recommendations:

1. Small Buildings: This recommendation speaks both to the smallest buildings that are covered by the proposed policy as well as the recommendation for more attainable targets and timelines for the smallest buildings covered.

2. EUI Caps: Caps provide a limit to the maximum energy use reduction that would be required for any building.

3. Renewables: Supporting the industry Task Force recommendation on increased flexibility, conversations with the community focused on what role renewables should play in a local BPS.

4. Industrial Buildings: This provides context on the work done supporting the Task Force recommendation focusing on industrial properties.

5. State Covered Buildings: This document provides additional context around considerations on how buildings within Fort Collins, that are also covered by the State of Colorado BPS, can be accounted for in a local BPS.

Small Building Recommendation

This memo summarizes Technical Committee work to date exploring the Task Force recommendation on small buildings.

Small buildings: *The BPS Task Force supports establishment of more attainable targets for buildings between 5,000-10,000 square feet, and supports consideration of phased implementation for those buildings, with an interim target of 2030 and a subsequent final target.*

Recommendation:

- Buildings between 5,000-10,000 square feet (ft^2) shall have a more attainable target via a 15% Energy Use Intensity (EUI) reduction cap (see EUI Caps Recommendation) and shall have an interim target of 2030 and final targets of 2035.

What constitutes small:

- Task Force recommended 5,000-10,000 ft^2, considering opportunity and number of buildings.
- The Technical Committee confirmed that based on opportunity and number of buildings, 10,000 ft^2 is a reasonable cutoff.

Excluding buildings below 5,000 ft^2 from BPS requirements:

- About 900 buildings are below 5,000 ft^2.
- Opportunity is significantly reduced per building.
- No benchmarking data is available.
- Considerations discussed included savings potential relative to administrative burden, work force limitations.
- Technical Committee supports excluding buildings below 5,000 ft^2.

Including buildings below 10,000 ft^2:

Community contributors discussed excluding buildings under 10,000 ft^2:

- Opportunity exists in buildings below 10,000 ft^2.
- 5,000 ft^2 'basement' aligns with Denver.
- Consideration around local building stock; generally more small to mid-sized buildings in Fort Collins.
- Benchmarking data exists.
- Contacts have been identified through benchmarking program.

Considerations for buildings 5,000-10,000 ft^2:

- Work force will be strained by addition of small buildings.
- Small buildings are less likely to have facility managers/more likely to have less technical acumen.
- Small buildings are less likely to access financing such as CPACE due to lower project costs.
- Small buildings may have more trouble finding contractors due to reduced project costs.
- Systems unlikely to differ significantly below ~25,000 ft^2; not a consideration for this discussion.

Small building requirements:

- Recommend an extended timeline for small buildings.
    - Provides additional time for small buildings to get acquainted with program requirements.
    - Reduces administrative burden by reducing number of covered buildings in ‘first wave’.
    - Reduces burden on work force by phasing work.
    - Allows program staff to work through potential barriers and resources that may impact small buildings.

Working toward 2030 goals:

- Interim targets may be set for 2030, allowing small building contribution to 2030 OCF goals.

EUI Caps Recommendation

This memo summarizes Technical Committee work to date exploring the Task Force recommendation on caps. Caps are a way of limiting the required Energy Use Intensity (EUI) percentage reduction and are a pathway that owners could choose as opposed to meeting their EUI targets.

Flexibility: *The BPS Task Force recommends including multiple alternate pathways for all buildings to allow maximum flexibility to building owners, potentially including performance or financial caps, electrification, application of emerging technologies, and renewables.*

Recommendation:

- 25% reduction cap for buildings 10,000 ft^2 and larger.
- 15% reduction cap for buildings 5,000-10,000 ft^2.

Purpose of caps:

- A cap is a 'ceiling' on the EUI reductions expected from BPS. Caps should be the highest amount reduction that is determined to be realistic for buildings in Fort Collins.

State buildings:

- A 29% EUI reduction cap can be applied to buildings covered by the State of Colorado BPS.

Considering the impact of a cap:

- City of Fort Collins staff created a tool that allowed Technical Committee members to see the impact in terms of energy savings and number of buildings covered with various caps.
- Updating these numbers with target EUIs shows that 40% of buildings covered by the proposed local policy are impacted by the cap.
- Cost savings associated with the cap are estimated between $121-130 million (dollars not spent to meet target).
- Savings loss associated with the cap is estimated at 36,175 metric tons of carbon dioxide-equivalent (MTCO2e); 51,248 megawatt hours (mWh).
- *See BPS Potential Impacts document for more details.

Small buildings:

- Caps offer a straightforward way to provide more attainable targets to small buildings.
- Using caps to assure more attainable targets reduces administrative burden, workforce burden, as well as responsibilities for building owners (as it is an easily understood approach that does not require additional work).
- If City Council does not approve a phased implementation with a delayed start for smaller buildings, consider a 10% EUI reduction cap. If the phased implementation is approved, recommend a 15% reduction cap.
- 10% EUI reduction is very achievable, 15% reduction is very achievable with a phased implementation.

Input around feasibility:

- Technical Committee input that a 25% reduction cap is achievable and is proportionally less aggressive than state requirements, aligning with consideration that local targets be somewhat less aggressive (considering reduced timeline).
- Caps are recommended as a way of assuring feasibility of targets.

Renewables in BPS Recommendation

This memo summarizes Technical Committee work to date exploring the Task Force recommendation on alternate pathways, specifically focusing on renewables, and provides staff recommendations.

Flexibility*: The BPS Task Force recommends including multiple alternate pathways for all buildings to allow maximum flexibility to building owners, potentially including performance or financial caps, electrification, application of emerging technologies, and renewables.*

Recommendation:

- To incentivize renewables without penalizing owners who do not install them, staff recommend that buildings with onsite solar may be awarded an EUI credit toward their final target.

Feedback:

- **Task Force**
  - The Task Force acknowledged that renewables aren't associated with building performance or efficiency, which is the point of BPS. But it also recognized that including renewables assists the goal of providing maximum flexibility in compliance pathways.
- **Energy Board**
  - On Feb. 8, 2024, Energy Board members expressed that efficiency needs to be the top priority of BPS but did not completely discourage the use of onsite renewables as a pathway to compliance.

Other jurisdictions and best practice:

- **State**
  - For buildings unable to meet a greenhouse gas intensity target or EUI target, renewables may be counted toward BPS targets after all feasible efficiency measures have been met (as assured by an Ashrae level 2 audit).
- **Denver**
  - Renewables may be used to meet efficiency targets by all buildings 25,000 ft^2 and above and are a prescriptive option for buildings 5,000-25,000 ft^2.
- **Best practice**
  - "BPS should be designed and implemented such that there is no option for buildings to use renewable energy procurement as an alternative for bold action on energy efficiency, electrification, and demand management." - Institute for Market Transformation.

Existing renewables in Fort Collins:

- Currently 11 Fort Collins Utilities programs focus on renewable energy.

Local opportunity:

- In 2022, our commercial and multi-family buildings with existing onsite solar covered about 20% of their load with solar.

- Based on a 2014 light detecting and ranging study exploring solar potential in Fort Collins, the maximum realistic achievable onsite solar impact (accounting for available roof space) would cover about 35% of our 2022 load.
- Approximately 50 potentially-covered buildings have onsite solar already.

Electrification and efficiency:

Lowering energy use through efficiency projects increases the impact of onsite renewables at the building level and the community level. It brings us closer to our goal of providing 5% of community electricity from local distributed renewable sources by 2030. Expanding electrification will increase electric use significantly, which will lower the impact of onsite renewables. Efficiency is a critical pathway to reducing the increased electric use expected due to electrification.

Onsite versus offsite:

Additional Renewable Energy Certificate (RECs) purchased by individual building owners don't change our community inventory or make any progress toward our goals. Therefore, staff do not support the use of RECs to meet local BPS policy. While there is variable opportunity in onsite renewables from one building to another, the same can be said for all pathways to meet BPS targets.

Additional community considerations:

- Installing onsite renewables may be less disruptive to business practices than other upgrades.
- Onsite renewables may be less cost effective than other opportunities that building owners will explore.
- Onsite renewables may be 'self-limiting' in that the maximum impact may be insufficient to meet targets, meaning that efficiency measures will still be a critical pathway.

Community Collaborator recommendations:

- Efficiency must come first through regulation or other means.
- Onsite renewables are an acceptable pathway to BPS compliance.
- Avoid mandating renewables (e.g., penalizing for failing to install onsite renewables).

Industrial Buildings Recommendation

This memo summarizes staff work to date exploring the Task Force recommendation on industrial buildings.

Industrial Properties: *The BPS Task Force recommends that the City invite further consideration by experts in industrial, manufacturing, and indoor agricultural properties to explore potential opportunities to include them in the Fort Collins BPS.*

Recommendation:

- Continue to explore industrial properties opportunity for future consideration.
- Focus on education and incentives for industrial properties at present.

Industrial properties:

- There are 34 individual buildings in Fort Collins defined as Industrial per Energy Star Portfolio Manager (31 'campuses' accounting for multiple buildings together as part of one complex), currently using 124,000 mWh.
- Industrial properties account for 10% of total city use, 94% of which is in buildings 50,000 ft^2 and above (covered by the State of Colorado BPS).

Task Force recommendation - State of Colorado BPS:

The Task Force opposes requiring buildings to meet two sets of requirements and recommends that any building covered by the State of Colorado ordinance be waived from complying with the Fort Collins BPS requirements. Therefore, individual buildings 50,000 ft^2 and larger may be eligible for a waiver from the City of Fort Collins. Industrial buildings are referenced by the state ordinance but not required to meet BPS targets if more than 50% of the gross floor area is industrial.

Feedback from industrial properties:

Local industrial company #1:

- Industrial companies have financial motivation to manage usage and costs (directly associated with profit margin, unlike building owners who do not pay utility costs).
- Regulated load has very little impact; vast majority of industrial use is process load.
- Incentive system is adequately providing support for industrial properties and driving efficiencies where they can be found.
- A mandate would impact competitiveness in the business market, and potentially drive industries out of Fort Collins.
    - Many similar facilities are outside of the U.S.
    - Industrial properties could move outside of the city or state more easily than many commercial/multi-family buildings.
        - Smaller industries without resources may be more tempted to leave Fort Collins.
- Process load is variable due to fluctuations in amount/rate of production; reduced usage may reflect changes to output rather than efficiencies.
- Industrial opportunities are not a 'fixed number'; a target would not work.
    - The trajectory would vary significantly across industries.

- Industrial Company #1 exemplifies a property that has already made significant efficiency improvements/has and continues to fully explore efficiency opportunities and yet is still a huge energy consumer.
- Many fixed systems are not flexible; there is not better technology for some process loads; inflexibility exists in process.
- Retrocommissioning provides ‘small beans’ opportunities as it does not impact process load.
    - Likewise prescriptive pathways would not impact process load and would have very insignificant impact on their usage.

Industrial company #2:

- Concurred with the points above.
- Noted the challenges of a shared target given the vastly different practices across industries.
- Need to keep process loads within certain ranges due to temperature targets, etc. required to make their product.
- They strive for efficiency but are limited as they can’t exceed tolerances required for production at their standard.

Input around feasibility:

- Utilities staff notes that industrial properties are not currently benchmarking per § 12-203 of the City Code. This has implications on our ability to consider achievable targets for these properties and on our ability to isolate the appropriate building contact.
    - City staff recommends any consideration to require compliance with BPS in industrial properties should first begin with no less than three years of required benchmarking.
- Utilities staff worked with other City staff (Economic Health Office and Utilities Business Resource Team) to seek further insights, which aligned with bullets noted above.
    - Utilities staff was discouraged from further outreach to industrial properties.

State Covered Buildings Recommendation

This memo summarizes staff work to date exploring the Task Force recommendation on buildings covered by the state BPS.

State buildings: *The BPS Task Force opposes requiring buildings to meet two sets of requirements and recommends that any building covered by the state ordinance be waived from the Fort Collins BPS.*

Recommendations:

- Staff and community contributors support the Task Force recommendation that no building has to meet different targets for both the City and state.
- Staff and community contributors support the intent of the Task Force recommendation that buildings covered by the state BPS only comply with state targets and requirements.
- Staff recommend that additional consideration be given to enforcing state targets in the 84 local buildings covered by the state, to ensure compliance given the magnitude of savings in those buildings.

Local buildings covered by the state BPS:

- 84 buildings in Fort Collins are covered by the State of Colorado BPS.
- Those buildings account for 18,900 mWh, or 18%, of total projected electric savings, when applying the state targets and caps.

Community greenhouse gas savings and costs:

- See BPS Potential Impacts document for details on energy use and costs for compliance in all buildings within Fort Collins compared to only those not covered by the state BPS.

Other jurisdictions:

- Denver is requiring that buildings comply with both state and local BPS.

Community Engagement Memo

This memo summarizes community engagement and outreach touchpoints Utilities has accomplished to date supporting Building Performance Standards (BPS) policy recommendation development.

Introduction:

A significant number of Community Contributors helped define the recommendations that staff bring around BPS, beginning with an internal Task Force of City and Platte River Power Authority staff. In March 2023, staff convened an external Task Force of individuals who are part of industries that would be significantly impacted by a potential BPS policy. That Task Force worked together for most of 2023 to provide high level policy recommendations. The Task Force was supported by a Technical Committee which is continuing to meet as of April 2024. The Technical Committee is comprised of a consultant who has experience doing this work in other jurisdictions and another body of volunteer experts; these with deep expertise in building science who can balance the raw data with boots on the ground experience in local buildings, allowing for a more holistic approach to data review.

Equity engagement began in the spring of 2023 when community-based organizations shared insights and recommendations. Staff have additionally benefitted from the partnership of local subsidized affordable housing providers, who have had their own insights to share, and another body of volunteer experts, the Climate Equity Committee, who was tasked with reviewing the proposed policy both during development and throughout potential implementation and can raise a red flag and provide recommendations if negative repercussions are seen. Additional work is planned for 2024 to help identify under resourced commercial buildings and their barriers to efficiency.

The policy development process also benefited significantly from the expertise of other jurisdictions including those here in Colorado and beyond, who have been able to share lessons learned and best practices. Nonprofit and federal groups including the Institute for Market Transformation, U.S. Department of Energy, and U.S. Environmental Protection Agency have been invaluable sources of support and resources.

Community voices have contributed to policy recommendations as well, including business groups, environmental groups, and local boards.

Internal Task Force:

Clay Frickey; Cyril Vidergar; John Phelan (retired); Claudia Menendez; Brian Tholl; Adelle McDaniel; David Suckling; Sue Beck-Ferkiss; Meaghan Overton; Brad Smith; Stu Reeve; David Pritchett; Ashley Kailburn; Stephanie Crecca; Kellie Gorman; Honora Thompson; Max Duggan; Pete Iengo; Heather Young; Madelene Shehan; Alaina Hawley (Platte River Power Authority)

Task Force (Industry Experts):

- Affordable housing: Steve Kuehneman (CARE Housing)

- Multi-family housing: Jean Robbins (Ram's Village)
- Small business & building owner: Kim Mary (Vintage Marketplace)
- Service provider/contractor: Michelle McLaughlin (Mac Electric)
- Commercial real estate: Tom Hall (Waypoint Real Estate, on behalf of Joshua Guernsey) & Huston Hoffman (RPT Realty)
- Sustainable Living Association: Kellie Falbo
- Downtown Development Authority: Derek Getto
- North Fort Collins Business Association: Michael Bello
- Commercial building inspection: Gary Higgins (National Inspection Services)
- City (David Suckling, Energy Services; Stu Reeve, Energy Manager)

Technical Committee:

- Steven Winters Associates (consultant)
- Platte River Power Authority: Alex Pray
- City: David Suckling, Energy Services; Brad Smith, Energy Code; Damien Wilson, Building Inspector; Pete Iengo, Community Engagement
- EMU Passive: Mariana Pickering
- Farnsworth: Julie Sass, Corey Chinn
- CSU School of Construction Management: Svetlana Olbina, Rodolfo Valdes Vasquez
- CSU Energy Management: Stacey Baumgarn, Carol Dollard
- Institute for the Built Environment: Josie Plaut
- Saunders Heath: Maral Jalili
- Adolfson and Peterson Construction: Adam Sass
- National Inspection: Gary Higgins
- Integrated Mechanical: Thomas Segelhorst
- Architecture West: Steven Steinbicker

Climate Equity Committee:

Comprised of members of the community working to develop recommendations for City staff to guide OCF implementation (more information available at *fcgov.com/climateaction/cec*).

Community-Based Organizations:

Met with representatives from La Familia, Fuerza Latina, Alianza NORCO, Colorado Poverty Law Project, BIPOC Alliance, Neighbor to Neighbor, Care Housing, Housing Catalyst

Environmental Groups:

- 350
- Northern Colorado Renewable Energy Society (NCRES)
- Climate Reality Project
- Fort Collins Sustainability Group
- Citizens' Climate Lobby

Business Groups:

- Downtown Development Authority
- Fort Collins Area Chamber of Commerce – Local Legislative Affairs Committee (LLAC)
- Northern Colorado Commercial Association of Realtors (NCCAR)
- Northern Colorado Rental Housing Association (NoCoRHA)
- Fort Collins Utilities Commercial Accounts Meeting
- CBRE

Federal and Non-Profits:

- Guidehouse
- Cadmus
- U.S. Environmental Protection Agency
- U. S. Department of Energy
- Institute for Market Transformation
- Local affordable housing groups (monthly meeting)

City Boards:

- Energy Board
- Air Quality Advisory Board
- Economic Advisory Board
- Natural Resources Advisory Board

Local Jurisdictions:

- Denver
- Aspen
- Boulder

- Colorado Energy Office

City of Fort Collins Building Performance Standard

CASE STUDY SUMMARY

BACKGROUND

Steven Winter Associates (SWA) is developing case studies of representative buildings within the most prevalent typologies covered by a proposed Fort Collins BPS. These case studies identify buildings that will have to invest in energy efficiency improvements to test model assumptions and help inform larger costs and savings.

PROCESS

The largest occupancy types within the 2022 benchmarking data based on ENERGY STAR were identified:

Rank	Occupancy Type	Count	%
1	Office	241	20.6%
2	Multifamily housing	154	13.2%
3	Retail store	76	6.5%
4	Worship facility	61	5.2%
5	Strip mall	40	3.4%
6	Non-refrigerated warehouse	37	3.2%
7	Other	37	3.2%
8	College/university	36	3.1%
9	Medical office	34	2.9%
10	Laboratory	33	2.8%
10	Restaurant	33	2.8%

Worship Facilities were originally recommended to be excluded from case studies as they can vary widely in system type, construction type, and age and often contain unique systems. The common factor for these properties is the decision-making structure and financial constraints, rather than assumed physical similarities.

SWA worked with the City of Fort Collins to identify candidates where utility data, building information, and building staff were available to gather needed information. Buildings ideally represented some of the most common occupancy types, and performed at or above their respective median (average or more than average energy use) to identify common paths to energy reductions.

The case studies are desktop audits based on phone interviews and provided drawings and other documentation. Analyses are conducted with assumed energy savings based on available research and cost estimates are based on existing research studies, industry experience, and data provided by the City of Fort Collins.

FINDINGS

Three of four targeted case studies have been completed. These case studies identify differing compliance scenarios potentially presented to buildings:

Case Study	Occupancy Type	Purpose	Estimated Cost/ SF
1	Office	Moderate energy savings required (9% reduction)	$2.85
2	Multifamily Housing	Energy savings cap (25% Reduction)	$4.44
3	Retail Store	Energy savings cap (25% Reduction)	$4.36

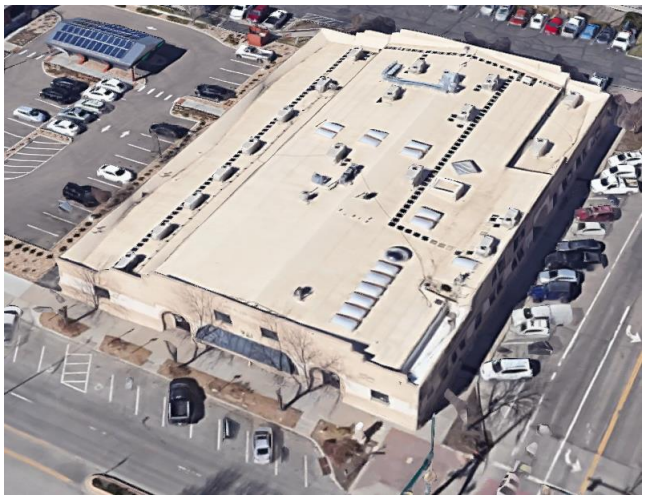
Case Study 1 highlights an office property with well-maintained existing systems and acts as an average use case. Here, improved HVAC controls and other cost-effective measures can reduce energy usage to meet the target. Major system or envelope component replacement is not required.

Case Studies 2 & 3 identified properties where more substantial action is needed as their existing energy performance meets the standard triggering the 25% reduction cap. Both properties have opportunities to replace equipment at or near the end of useful life with higher performance equipment. The cost per square foot figures are similar in the two cases although the approaches were different. In Case Study 2, other envelope improvements had already been instituted, except for windows which date to the original construction of the property. In Case Study 3, the existing heating equipment can be replaced with a definite high performance alternative appropriate to this building type.

Providing case studies of buildings with the maximum required reduction allows for an understanding of the top end of what may be required, rather than insight into what an average building may need to do. This has dual benefits in both allowing confirmation that the EUI reduction cap is appropriate based on projected costs to meet the cap, and in demonstrating upgrades and alterations that would have the most effect in reducing EUI.

CASE STUDY 1: OFFICE

281 North College Avenue is an office building that houses building services employees for the City of Fort Collins. It is comprised of two lobby areas, offices, conference rooms, restrooms, and storage space. The occupied hours set for the building are Monday through Friday, 7:00 am to 5:00 pm.



The envelope consists of double-paned windows, a roof with an estimated R-20 level insulation, and some assumed batt insulation within the block walls. The building was originally a lumber facility with storage but was refinished from this use into an office space roughly 16 years ago.

Electricity is provided to the building by Fort Collins Utilities under the E300 rate. This rate utilizes a monthly electric energy usage charge and a monthly facility demand change. Natural gas is provided by Xcel Energy.

Heating, cooling, and ventilation are provided by 19 constant volume units with DX cooling, gas heating, and economizers that were installed in 2009. The building also has 8 gas furnaces with split DX systems and a minimum fresh air requirement that help provide heating. The rooftop units are controlled by individual Viconics thermostats that are wirelessly networked to the JCI controls system for monitoring; this is integrated into the enterprise City of Fort Collins building automation system. A schedule is set to set back temperatures during unoccupied hours and weekends: 65 °F during the heating season and 85 °F during the cooling season. Domestic hot water for the restrooms is provided by natural gas boilers that were installed in 2010. The lighting is mostly comprised of T-8 fluorescents, however there are some LEDs already installed. The other major source of electricity consumption in the building is the basic office equipment used.

BUILDING INFORMATION

Property Use Type	Office
Name	Fort Collins City Services Building
Address	281 North College Ave Fort Collins, CO 80524
SF	37,603

Basic System Information

Category	Type	Fuel	Approximate Equipment Age (Years)
Central Building Management System (BMS)	A schedule is used to set back temperatures during unoccupied hours and weekends: 65 °F during the heating season and 85 °F during the cooling season. The occupied hours are Monday through Friday, 7:00 am to 5:00 pm.	N/A	unknown
Heating	19 constant volume rooftop units with DX cooling, gas heating, and economizers. 8 gas furnaces with split DX systems and minimum fresh air intake	Natural gas	15
Cooling	19 constant volume rooftop units with DX cooling, gas heating, and economizers.	Electric	15
Ventilation	Provided for the building by the RTUs and split DX system with minimum outdoor air intake.	Electric	15
Domestic Hot Water (DHW)	Natural gas boilers	Natural gas	14
Lighting	Primarily T8 fluorescent	Electric	unknown
Envelope	Windows: double-paned Wall: Brick and block construction Roof insulation: Est R-20	N/A	16
Metering	Electricity: provided by Fort Collins Utilities under the E300 rate utilizing a monthly electric energy usage charge and a monthly facility demand change. Natural gas: purchased from a gas wholesaler.	Electric/ Gas	N/A

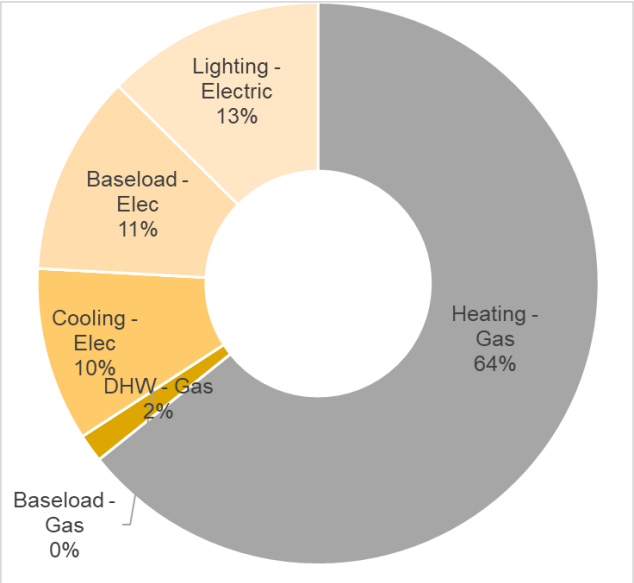
Utility End Use Assessment

The buildings' energy types and estimated end uses are composed of the following fuels:

- Natural Gas: Used primarily for heating and domestic hot water.
  - Accounts for 67% of energy use.
- Electricity: Electricity is used for cooling, ventilation, lighting, and office equipment plug loads.
  - Accounts for 33% of energy use.

Heating - Gas	Cooling - Gas	DHW - Gas	Baseload - Gas	Heating - Elec	Cooling - Elec	DHW - Elec	Baseload - Elec	Lighting - Electric	Total EUI
41.9	0.0	1.0	0.0	0.0	6.2	0.0	7.1	7.8	**64.1**
65%	0%	2%	0%	0%	10%	0%	11%	12%	**100%**

Note that the total EUI represented here may slightly differ from the ENERGY STAR Portfolio Manager calculated weather normalized EUI in the Fort Collins benchmarking data. This is due to the analysis and weather normalization required to estimate end uses between the fuels and differing approaches. The analysis here is based on actual monthly utility data for 2022.



Assumed Energy Prices

Utility rate assumptions were provided by the City of Fort Collins

- Natural Gas: $0.79/ therm
- Electricity: $0.09/ kWh

While energy rates differ by service class and usage profile, these rates are assumed to represent the average costs for these types of buildings Fort Collins.

BPS EUI TARGET AND RECOMMENDED ENERGY EFFICIENCY MEASURES

Fort Collins City Services Building's 2022 estimated EUI for the purpose of this study is 61.9 kBtu/ SF. This is 11% lower than the median performance of a Fort Collins office building of 68.8 kBtu/ SF.

The EUI target for Office buildings is 56.4 kBtu/ SF.

This represents a 9% reduction in energy performance.

Recommended Measures

A summary table is below highlighting the recommended energy efficiency measures (EEMs). Costs are estimated to represent the total cost for equipment replacement. Where noted, incremental upgrade costs are calculated by comparing the difference in the upgrade cost as compared to a "business as usual" (BAU) replacement. These costs do not include estimated incentives.

#	Measure	EUI Savings (%)	Cost Savings ($/yr)	Measure Cost ($)	Simple Payback (Years)
1	Upgrade HVAC Controls	7.7%	$2,887	$100,000	34.6
2	LED Lighting Upgrade	3.2%	$1,990	$7,145	3.6
Total		**10.8%**	**$4,877**	**$107,145**	**22.0**
Cost/ SF		**$2.85**			

Resulting EUI

Value	Heating - Gas	Cooling - Gas	DHW - Gas	Baseload - Gas	Heating - Elec	Cooling - Elec	DHW - Elec	Baseload - Elec	Lighting - Elec	Total EUI
Resulting EUI	37.1	0.0	1.0	0.0	0.0	5.9	0.0	5.3	5.9	**55.2**
Reduction	7%	0%	0%	0%	0%	4%	0%	25%	25%	**11%**

Measure Descriptions

The purpose of the package of measures is to identify load reduction and energy efficiency measures to meet its respective target.

Fossil fuel equipment replacement is avoided as it can carry 15-20 year lifespans which may not meet future, stronger energy efficiency or GHG-reduction targets prior to EUL.

Heating and DHW system electrification is only recommended where it may present a relatively cost-effective opportunity based on site conditions, or no other feasible path is present. Electrification of heating or DHW will almost certainly enable most buildings to meet the target. The intent of this study and prospective targets, however, is to identify improvement of existing systems, including those that require fossil fuels.

Upgrade HVAC Controls

The existing heating and cooling system is controlled by a wireless central BAS. The controls permit night setbacks and temperature setbacks as needed. The RTU units are assumed to be constant volume which makes individual zoning and control not feasible.

More robust wired controls can better manage temperatures and institute temperature setbacks. Additionally, an updated controls system could conceivably control fresh air dampers on the units which balance between return air and fresh air. Overnight, the dampers could be controlled to reduce conditioned air loss during unoccupied periods.

Savings assumptions assume a combination of improved temperature setbacks and control of RTU dampers.

LED Lighting Upgrade

Interior lighting is primarily non-LED. LED replacement of existing fixtures, coupled with appropriate scheduling, will result in substantial savings for assumed lighting energy use.

Measures Reviewed but Not Recommended

Multiple measures were reviewed but not included in this study:

Retro-Commissioning

The building regularly engages with city staff to ensure equipment is maintained and calibrated on a routine basis. The HVAC system has also been tested and balanced periodically. No additional savings are expected from further analysis.

Electrification

The buildings' HVAC layout lends itself to heating electrification – the existing gas-fired RTU units could be replaced with heat pump equivalents. Building management has noted familiarity and past experience with heat pump replacements of this nature and are recommended at the end of useful life of the existing equipment. Electrification of the heating system would ensure the building surpasses an energy efficiency target.

Roof Insulation

This significant roof area to square footage ratio warrants investigation of roof insulation potential. The existing roof, however, is assumed to have already R-20 levels of insultation; recommended values would be to increase to R-30, but the cost/ benefit of this approach is not assumed to be worthwhile.

CASE STUDY 2: MULTIFAMILY

Eagle Tree is a complex of multi-family apartments that was built in 1997. It is comprised of three (3), three-story walk-up buildings with 2- and 3-bedroom apartments with a total of 36 apartments. The complex also includes a clubhouse and a pool for residents' use.

The envelope consists of vinyl windows and sliding doors and R-30 Batt insulation in the walls, both original to the building. The complex completed a weatherization project in 2016 where the following improvements were implemented: R-38 blown insulation in the attic and basement crawl space, low-flow faucets, new refrigerators, and weatherstripping on the windows.

Each apartment unit is directly metered for gas and electricity. The clubhouse is separately metered. The electric and gas use of the clubhouse, the exterior lighting, and the common area maintenance are paid by ownership.

Apartment heating is provided by 36 decentralized forced-air gas-fired furnaces; a small number of which have been replaced since construction. The temperature of each apartment is individually controlled by the residents. Each apartment has a through-the-wall AC unit in the living room, most of which have been replaced in the last decade. Additionally, many residents choose to add additional window units to their other spaces. DHW is provided by individual natural gas water heaters located next to the furnaces in the mechanical closet of each apartment; these were installed roughly 10 years ago. Each bathroom contains an exhaust fan that operates with the light switch for ventilation. Cooking is provided by an electric stove in each apartment. Lastly, lighting is mostly comprised of LEDs, including exterior lighting, except for fluorescents lamps in kitchens.

Ownership runs an annual assessment for all properties which determines the upgrades each property requires in the short and long term. Eagle Tree has access to a low-income housing tax credit on a schedule of 20-30 years for approved upgrades and renovations. The upcoming cycle starts in 2026 for financing and closes in 2028 which is when renovations can begin. With these upgrades, Eagle Tree aims to meet recent energy efficiency standards and increase efficiency as much as possible without putting a burden on the residents.

BUILDING INFORMATION

Property Use Type	Multifamily
Name	Eagle Tree
Address	6675 S Lemay Avenue Fort Collins, CO 80525
SF	71,388
Units	36

Basic System Information

Category	Type	Fuel	Approximate Equipment Age (Years)
Central Building Management System (BMS)	None. Tenants control own thermostats. Clubhouse has scheduled heating and cooling times.	N/A	27
Heating	Decentralized, forced-air gas-fired furnaces. One in each apartment.	Natural gas	27 (Majority)
Cooling	Through-wall AC units provided in living rooms. Residents can add window units.	Electric	< 10
Ventilation	Exhaust fans in bathrooms that operate on a switch w/ the light.	Electric	27
Domestic Hot Water (DHW)	40 gallon water heaters in each apartment	Natural gas	10
Lighting	Mostly converted to LED. 4ft florescent lights in kitchens.	Electric	5 (estimate)
Envelope	Windows: vinyl Walls: R-30 Batt Insulation Roof: R-38 Blown in insulation in the attic	N/A	27
Metering	Apartments are direct metered (gas and electric)	Electric/ Gas	n/a

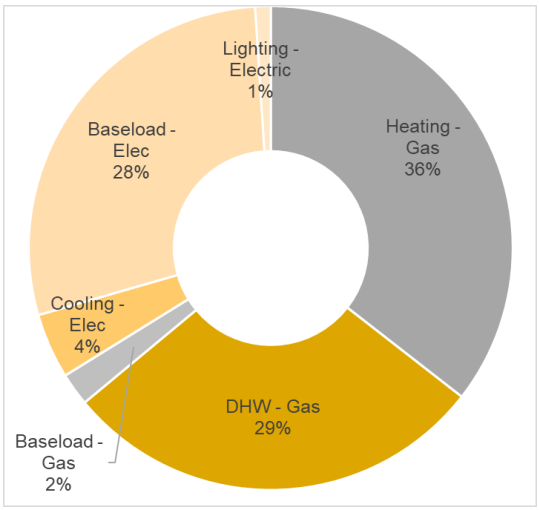
Utility End Use Assessment

The buildings' energy types and estimated end uses are composed of the following fuels:

- Natural Gas: Used primarily for heating and domestic hot water. The building also contains an outdoor pool which is assumed in operation throughout the summer which may require heating.
    - Accounts for 66% of energy use.
- Electricity: Electricity is used for cooling, ventilation, cooking, and resident plug loads.
    - Accounts for 34% of energy use.

Heating - Gas	Cooling - Gas	DHW - Gas	Baseload - Gas	Heating - Elec	Cooling - Elec	DHW - Elec	Baseload - Elec	Lighting - Electric	Total EUI
25.9	0.0	20.7	1.6	0.0	3.2	0.0	20.7	0.8	**72.9**
36%	0%	28%	2%	0%	4%	0%	28%	1%	**100%**

Note that the total EUI represented here may slightly differ from the ENERGY STAR Portfolio Manager calculated weather normalized EUI in the Fort Collins benchmarking data. This is due to the analysis and weather normalization required to estimate end uses between the fuels and differing approaches. The analysis here is based on actual monthly utility data for 2022.



Assumed Energy Prices

Utility rate assumptions were provided by the City of Fort Collins

- Natural Gas: $0.79/ therm
- Electricity: $0.09/ kWh

While energy rates differ by service class and usage profile, these rates are assumed to represent the average costs for these types of buildings Fort Collins.

BPS EUI TARGET AND RECOMMENDED ENERGY EFFICIENCY MEASURES

Eagle Tree's 2022 estimated EUI for the purpose of this study is 72.9 kBtu/ SF. This is 29% higher than the median performance of a Fort Collins multifamily building of 51.9 kBtu/ SF.

The EUI target for Multifamily buildings is 42.7 kBtu/ SF.

This represents a 41% reduction in energy performance. As a result, a 25% cap on required energy reduction is calculated here to estimate the likely performance requirements for this building.

Recommended Measures

A summary table is below highlighting the recommended energy efficiency measures (EEMs). Costs are estimated to represent the total cost for equipment replacement. Where noted, incremental upgrade costs are calculated by comparing the difference in the upgrade cost as compared to a “business as usual” (BAU) replacement. These costs do not include estimated incentives.

#	Measure	EUI Savings (%)	Cost Savings ($/yr)	Measure Cost ($)	Simple Payback (Years)
1	Retro-Commissioning	5.7%	$4,039	$24,986	6.2
2	Window Replacement	6.9%	$2,989	$202,028*	67.6
3	Whole Building Air Sealing	2.3%	$1,036	$52,827	51.0
4	Smart Thermostats	2.1%	$845	$10,708	12.7
5	HVAC Duct Sealing	0.6%	$235	$10,708	45.5
6	Low Flow Aerators	5.6%	$2,283	$1,080	0.5
7	Refrigerator Replacement	2.1%	$2,905	$14,440	5.0
Total		**25.1%**	**$14,333**	**$316,737**	**22.1**
Cost/ SF		**$4.44**			

* Window replacement calculated as incremental cost as compared to BAU. See description below.

Resulting EUI

Value	Heating - Gas	Cooling - Gas	DHW - Gas	Baseload - Gas	Heating - Elec	Cooling - Elec	DHW - Elec	Baseload - Elec	Lighting - Elec	Total EUI
Resulting EUI	15.9	0.0	15.4	1.5	0.0	3.0	0.0	18.0	0.8	**54.6**
Reduction	38%	0%	26%	6%	0%	6%	0%	13%	0%	**25%**

Measure Descriptions

The purpose of the package of measures is to identify load reduction and energy efficiency measures to meet its respective target.

Fossil fuel equipment replacement is avoided as it can carry 15-20 year lifespans which may not meet future, stronger energy efficiency or GHG-reduction targets prior to EUL.

Heating and DHW system electrification is only recommended where it may present a relatively cost-effective opportunity based on site conditions, or no other feasible path is present. Electrification of heating or DHW will almost certainly enable most buildings to meet the target. The intent of this study and prospective targets, however, is to identify improvement of existing systems, including those that require fossil fuels.

Retro-Commissioning

Retro-commissioning (RCx) is the process of ensuring systems are designed, installed, functionally tested, and capable of being operated and maintained according to the owner’s operational needs. It is a crucial process for maintaining existing building performance and is generally recognized as the first stage in the building upgrade process. Starting a staged upgrade approach with RCx accounts for interaction among energy flows within a building and ensures a systematic method to target the greatest possible energy savings. This process is always site-specific but is an effective real-world intervention.

Industry research estimates whole building energy savings can range widely from 5% to 30%, making precise estimates difficult. The RCx scope of work can vary widely depending on the needs of a building and available budget. Buildings where the existing building automation system (BAS) had more visibility into terminal equipment is assumed to have a higher percentage savings.

Window Replacement

The buildings windows and balcony doors date to the construction of the building and are at or near the end of useful life. In this case, calculating the marginal cost of replacement between the already needed BAU replacement and a high-performance alternative is deemed appropriate.

- The BAU cost is estimated at $457,600. This includes a 25% adder for design and construction management fees.
- The high-performance alternative is estimated at $659,700. This includes a 25% adder for design and construction management fees.
- The marginal cost difference displayed here is $202,100.

This 25% increase estimated for a recommended design and construction management process to ensure appropriate details are implemented to result in an effective upgrade.

High-performance windows are estimated with a U-Value of 0.17. Savings also include improved air sealing from installation and weatherstripping. Passive house certified or equivalent windows are often triple paned with generous thermal breaks and gasketing and hardware that ensure airtightness.

Air Sealing

Further whole building air sealing is recommended to seal any potential openings or leakages to the exterior and joints, doors, and wall penetrations. Sleeve A/C units can be better sealed and fit within openings to minimize uncontrolled air movement and heat loss.

Smart Thermostats

Programmable thermostats can be installed to better manage heating consumption. While furnaces are managed individually and heating is paid for by residents, a level of savings can be expected which reduced overheating and implementing smart schedules.

HVAC Duct Sealing

Reducing air leakage from forced-air system ducts is a direct method of reducing energy usage and improving comfort. Losses from ducts within non-conditioned spaces can result in a significant amount of energy waste while those located in conditioned space can still improve temperature control even with reduced energy savings potential.

This study cannot calculate actual duct leakage levels within the building, however a conservative estimate of savings is assumed based on system type and equipment age.

Low Flow Aerators

Low flow aerators were installed in 2016 during a weatherization process. The assumption here is that after this amount of time, aerators need replacement or re-installation to meet low flow rate targets. These values are assumed at:

- 1.5 gpm for kitchens
- 1.0 gpm for bathrooms
- 1.5 gpm for showers

Refrigerator Replacement

Equipment was replaced in 2016 as part of the weatherization process. Equipment will be over 10 years old by the BPS compliance period. Upgrades to ENERGY STAR labeled equipment is recommended.

Measures Reviewed but Not Recommended

Multiple measures were reviewed but not included in this study:

Wall, Roof, and Crawlspace Insulation

The building already addressed roof and crawlspace insulation during the weatherization process, and already contains insulation within the walls. No additional cost-effective options remain.

LED Lighting

Most lighting had already been converted to LED except for kitchen fixtures.

Electrification

The buildings' size and decentralized heating and DHW systems make it a candidate for available electrification technologies. Heating electrification can be accomplished through heat pump integration into the existing furnace infrastructure, mini-spilt technology (which would require placement of condensers) and through-wall package terminal heat pumps (PTHPs) (which would require sufficient dimensions for existing sleeves).

Individual heat pump DHW heaters can replace the existing equipment, however an adequate pathway for venting would be required.

Cooking is already electrified.

CASE STUDY 3: RETAIL STORE

Ulta is a retail space that opened in 2008 located within a strip of other large retail structures with adjacent exterior walls. This location is a part of a larger national chain with locations throughout the US. The store has a small frontage at the front and back of the store and a large, flat roof.

Ulta leases the space from a property owner. The roof is the owner's responsibility, while the envelope, including the outer front and back and the interior walls, and mechanical systems are Ulta's responsibility. Ulta is directly metered for all utilities.

Heating and cooling are provided by four (4) packaged rooftop units: two for the sales floor, one for the salon, and one for the office and back of house space. The domestic hot water system was replaced in 2019 with a gas-fired unit; water use is minimal in the space and is used only for the salon and bathrooms. The salon and bathrooms also contain exhaust fans for ventilation. The HVAC system is controlled by a Building Automation System (BAS) that operates based on occupied and unoccupied hours. Lighting in primarily non-LED lighting.

As an organization Ulta assesses the performance and capital needs of each location to determine upgrade priorities. Internally, Ulta has carbon reduction goals they use to increase the energy efficiency of their stores to meet sustainability targets and increase comfort and store experience.

This Ulta location is scheduled for a 2024 upgrade which includes an LED retrofit, HVAC replacement, and other interior improvements.

BUILDING INFORMATION

Property Use Type	Retail Store
Name	Ulta
Address	4405 Corbett Dr., Fort Collins, CO 80525
SF	10,080

Basic System Information

Category	Type	Fuel	Approximate Equipment Age (Years)
Central Building Management System (BMS)	Yes - Tied to occupancy and operating schedule	All	4
Heating	(4) Rooftop RTU	Natural Gas	16
Cooling	(4) Rooftop RTU	Electricity	16
Ventilation	Exhaust fans for the salon and restrooms	Electricity	16
Domestic Hot Water (DHW)	Single AO Smith hot water heater	Natural Gas	5
Lighting	Primarily non-LED	Electricity	16
Envelope	Small street frontage; located between two buildings. Large roof responsibility of the landlord.	n/a	16
Metering	Direct metered for energy usage.	n/a	n/a

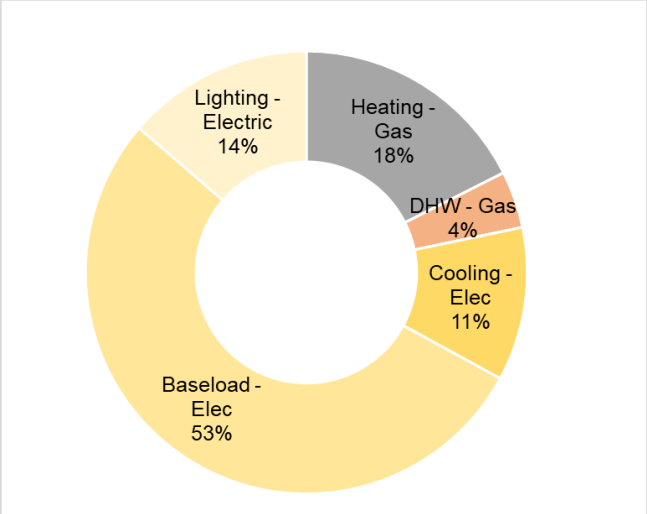
Utility End Use Assessment

The buildings' energy types and estimated end uses are composed of the following fuels:

- Natural Gas: Used primarily for heating and domestic hot water.
  - Accounts for 22% of energy use.
- Electricity: Electricity is used for cooling, ventilation, and plug loads.
  - Accounts for 78% of energy use.

Heating - Gas	Cooling - Gas	DHW - Gas	Baseload - Gas	Heating - Elec	Cooling - Elec	DHW - Elec	Baseload - Elec	Lighting - Electric	Total EUI
18	0	4		0	12	0	55	14	**103**
18%	0%	4%	0%	0%	11%	0%	53%	14%	**100%**

Note that the total EUI represented here may slightly differ from the ENERGY STAR Portfolio Manager calculated weather normalized EUI in the Fort Collins benchmarking data. This is due to the analysis and weather normalization required to estimate end uses between the fuels and differing approaches. The analysis here is based on actual monthly utility data for 2022.



Assumed Energy Prices

Utility rate assumptions were provided by the City of Fort Collins

- Natural Gas: $0.79/ therm
- Electricity: $0.09/ kWh

While energy rates differ by service class and usage profile, these rates are assumed to represent the average costs for these types of buildings Fort Collins.

BPS EUI TARGET AND RECOMMENDED ENERGY EFFICIENCY MEASURES

Ulta's 2022 estimated EUI for the purpose of this study is 103 kBtu/ SF. This is 42% higher than the median performance of a Fort Collins Retail Store building of 60.2 kBtu/ SF.

The EUI target for Retail buildings is 49.5 kBtu/ SF.

This represents a 52% reduction in energy performance. As a result, a 25% cap on required energy reduction is calculated here to estimate the likely performance requirements for this building.

Recommended Measures

A summary table is below highlighting the recommended energy efficiency measures (EEMs). Costs are estimated to represent the total cost for equipment replacement. Where noted, incremental upgrade costs are calculated by comparing the difference in the upgrade cost as compared to a "business as usual" (BAU) replacement. These costs do not include estimated incentives.

#	Measure	EUI Savings (%)	Cost Savings ($/yr)	Measure Cost ($)	Simple Payback (Years)
1	Retro-Commissioning	5.2%	$1,200	$3,500	2.9
2	Heating Electrification	13.5%	$508	$32,500	63.9
3	Enhanced Process & Plug Load Management	3.0%	$848	$6,000	7.1
4	LED Lighting Upgrades	3.4%	$964	$1,900	2.0
Total		**25%**	**$3,520**	**$43,900**	**12.5**
Cost/ SF		**$4.36**			

* Heating Electrification calculated as incremental cost as compared to BAU. See description below

Resulting EUI

Value	Heating - Gas	Cooling - Gas	DHW - Gas	Baseload - Gas	Heating - Elec	Cooling - Elec	DHW - Elec	Baseload - Elec	Lighting - Elec	Total EUI
Resulting EUI	0	0.0	4.0	0	3.1	10.9	0	48.6	10.6	**77.2**
Reduction	100%	0%	6%	0%	-200%	6%	0%	12%	-25%	**25%**

Measure Descriptions

The purpose of the package of measures is to identify load reduction and energy efficiency measures to meet its respective target.

Fossil fuel equipment replacement is avoided as it can carry 15-20 year lifespans which may not meet future, stronger energy efficiency or GHG-reduction targets prior to EUL.

Heating and DHW system electrification is only recommended where it may present a relatively cost-effective opportunity based on site conditions, or no other feasible path is present. Electrification of heating or DHW will almost certainly enable most buildings to meet the target. The intent of this study and prospective targets, however, is to identify improvement of existing systems, including those that require fossil fuels.

Retro-Commissioning

Retro-commissioning (RCx) is the process of ensuring systems are designed, installed, functionally tested, and capable of being operated and maintained according to the owner's operational needs. It is a crucial process for maintaining existing building performance and is generally recognized as the first stage in the building upgrade process. Starting a staged upgrade approach with RCx accounts for interaction among energy flows within a building and ensures a systematic method to target the greatest possible energy savings. This process is always site-specific but is an effective real-world intervention.

Industry research estimates whole building energy savings can range widely from 5% to 30%. The RCx scope of work can vary widely depending on the needs of a building and available budget. Buildings where the existing building automation system (BAS) had more visibility into terminal equipment is assumed to have a higher percentage savings.

In the case of Ulta, energy uses can be significantly reduced through calibration and adjustment to the existing BAS.

Heating Electrification

Ulta is already planning to replace its four gas-fired RTUs with more efficient models in 2024.

Viewing the marginal cost of an electric heat pump alternative with gas backup is deemed appropriate as this replacement is already scheduled. Especially as this improved equipment is estimated to have relatively similar capital costs to purchasing new gas-fired equipment.

- BAU cost: the cost of installing another gas-fired unit is estimated at $234,500.
- High-performance alternative: the cost of installing an electric heat pump with gas backup is estimated at $267,000.
- The marginal cost difference displayed here is $32,500.

Enhanced Process & Plug Load Management

As noted, electrical plug loads are the largest end use in the property. Every appliance and piece of equipment connected to an outlet draws electricity which may not be monitored. Multiple approaches to reducing loads could be applied such as replacement with ENERGY STAR labeled equipment where available, occupancy sensors to enable zoning and equipment shut down, power management settings on computers and other equipment, instituting standby mode on equipment, and power management surge protectors.

There may be constraints in plug load management for retail that is part of a national chain. However this study identifies the necessary reductions needed to achieve the EUI target, which are within the expected bounds of estimated savings.

LED Lighting Upgrade

Interior lighting is primarily non-LED and scheduled for an upgrade in 2024. Full LED replacement of existing fixtures, coupled with appropriate scheduling, will result in substantial savings for assumed lighting energy use.

Measures Reviewed but Not Recommended

Multiple measures were reviewed but not included in this study:

Roof Replacement

A high-performance roof assembly with increased insulation values and resurfacing and reduce heating and cooling loads due to the large ratio of roof area to building square footage. Roof insulation replacement values are estimated with a U-Value of 0.30.

As the contact for the case study does not have direct control over the roof assembly, projections were run focusing on those measures within Ulta's control. Roof insulation is modeled to save roughly 4% of site energy with an estimated cost of roughly $150,000. Less cost intensive measures were considered.

BUILDING DESKTOP AUDITS

Case studies were developed through interviews with building managers and site staff to collect – for major equipment only – equipment type, equipment age, operating parameters, types of fuel used for various end uses, information on recent capital upgrades, and any comments on plans for future upgrades and decision-making processes in relation to energy management. Architectural and mechanical drawings and supporting documentation were reviewed when available.

Desktop audits were performed in order to develop the case studies contained in this report. Desktop audits use information provided from building owners and operators to develop recommendations, but do not contain any onsite observations. This methodology is effective for informing policy-level decisions as it can effectively capture broad-stroke approaches; however, this methodology does not tend to capture measures that are more limited in impact (e.g., mechanical systems that only serve part of the building). Applicability of desktop audit measures to a specific building typically requires some amount of onsite investigation in order to determine applicability of measures for any specific building in a given typology. This technical analysis is limited to desktop audits and measure recommendations are limited to what could be recommended based on the data collected by the auditor.

Where possible, supplemental energy audit information performed by others is incorporated into the case studies. These energy audits, which may contain onsite observations, were completed prior to this desktop audit process.

Steven Winter Associates, Inc.
Improving the Built Environment Since 1972

City of Fort Collins Building Performance Standard

PERFORMANCE TARGET RECOMMENDATIONS

BACKGROUND

In 2021, the City of Fort Collins, in partnership with residents and businesses, established a strategic goal to reduce 2030 greenhouse gas emissions by 80% below 2005 baseline levels. Fort Collins' buildings account for over two thirds of carbon emissions, and thus, are the largest opportunity for carbon savings. The Our Climate Future plan, the community guide to creating a carbon neutral, zero waste, and 100% renewable electricity future, identified Building Performance Standards as a pathway to explore under Big Move 6: Efficient, Emissions Free Buildings.

This report recommends the Building Performance Standards, or "targets", for buildings 5,000 square feet and above located in the City of Fort Collins. Technical analysis aimed to recommend achievable targets for building types (e.g., office, retail) by the year 2030.

The theory of this technical analysis is that there is a site EUI (energy use intensity) target that is technically achievable for nearly all buildings in an occupancy type that would encourage and enable, but not require, electrification. Setting an EUI target lower than that technically achievable lower limit would result in many buildings being unable to comply.

This report describes how the targets were calculated based on locally available data, national data, and achievable energy efficiency projects.

RECOMMENDED TARGETS

Final targets, which are the numeric value of site EUI that each covered building must achieve or exceed by the final year of the performance standard, were analyzed using the CNCA EBPS tool, which is described in *Methodology* section.

The primary target analyzed is an Energy Efficiency (EE) Target. These site EUI targets would be applied to each occupancy type in a building. The EE Target assumed all energy end uses were deeply optimized and tuned through efforts such as existing system optimization, high-efficiency water fixtures and conservation, efficient appliances, and retro-commissioning where appropriate. Occupant behavior changes such as energy conservation were not considered, though conservation would also work toward this target. This target-setting method assumed that typical buildings could maintain the use of fossil-fuel burning systems for typical end uses such as space and water heating but would eliminate inefficiencies of those systems.

Numerous studies suggest economically feasible reductions of 10-30%[i,ii,iii] with an upper limit to reductions in typical buildings of 30%. The US Department of Energy (DOE) Advanced Energy Retrofit Guides list numerous measures and retrofit packages for several commercial building types without considering electrification. See *Technical References* for more detail on specific measures across a few building types.

Occupancy types with minimal gas use in the 2022 Median column have relatively smaller reductions to reach the EE target. Within a site EUI framework, all-electric buildings are typically more efficient because electricity-driven systems have fewer opportunities for energy waste, and that waste is expensive because electricity is a relatively expensive commodity compared to natural gas.

Table 1: Recommended Building Performance Targets by Occupancy Type

Occupancy Type	Baseline	Interim	EE Standard Target
	Site EUI	Site EUI	Site EUI
Adult Education	93	85	77
Ambulatory Surgical Center	128	117	105
Aquarium	133	122	112
Automobile Dealership	86	78	71
Bank Branch	101	91	82
Bar/Nightclub	279	264	249
Barracks	110	103	96
Bowling Alley	70	64	57
Casino	133	122	112
College/University	113	103	93
Convenience Store with Gas Station	286	262	237
Convenience Store without Gas Station	286	262	237
Convention Center	133	122	112
Courthouse	103	94	84
Data Center	See Below	See Below	See Below
Distribution Center	66	60	54
Drinking Water Treatment & Distribution	162	147	131
Enclosed Mall	140	130	119
Energy/Power Station	162	147	131
Fast Food Restaurant	279	264	249
Financial Office	69	64	59
Fire Station	75	68	62
Fitness Center/Health Club/Gym	74	68	61
Food Sales	286	262	237
Food Service	279	264	249
Hospital (General Medical & Surgical) (Excluded)	*208*	*191*	*173*
Hotel	77	71	65
Ice/Curling Rink	133	122	112
Indoor Arena	48	44	40
K-12 School (Excluded)	*59*	*53*	*48*
Laboratory	264	240	215
Library	76	70	63
Lifestyle Center	116	106	96
Mailing Center/Post Office	104	93	83
Manufacturing/Industrial Plant (Excluded)	*96*	*87*	*79*
Medical Office	69	63	56

Mixed Use Property	See Below	See Below	See Below
Movie Theater	112	102	92
Multifamily Housing	52	47	43
Museum	84	77	69
Non-Refrigerated Warehouse	43	40	36
Office	69	63	56
Other	81	73	66
Other - Education	93	85	77
Other - Entertainment/Public Assembly	66	61	55
Other - Lodging/Residential	80	75	69
Other - Mall	86	79	72
Other - Public Services	103	94	84
Other - Recreation	133	122	112
Other - Restaurant/Bar	251	206	162
Other - Services	70	63	56
Other - Specialty Hospital	128	116	104
Other - Stadium	133	122	112
Other - Technology/Science	162	147	131
Other - Utility	134	122	109
Outpatient Rehabilitation/Physical Therapy	128	117	105
Parking	See Below	See Below	See Below
Performing Arts	81	74	67
Personal Services (Health/Beauty, Dry Cleaning, etc.)	104	93	83
Police Station	103	94	84
Pre-school/Daycare	68	62	56
Prison/Incarceration	103	94	84
Race Track	133	122	112
Refrigerated Warehouse	76	69	61
Repair Services (Vehicle, Shoe, Locksmith, etc.)	65	59	52
Residence Hall/Dormitory	71	66	61
Residential Care Facility	110	102	94
Restaurant	251	235	219
Retail Store	60	55	49
Roller Rink	133	122	112
Self-Storage Facility	5	4	4
Senior Living Community	80	74	68
Single Family Home (Excluded)	*66*	*61*	*55*
Social/Meeting Hall	54	50	45
Stadium (Closed)	133	122	112
Stadium (Open)	133	122	112
Strip Mall	122	112	103
Supermarket/Grocery Store	180	164	148
Swimming Pool	133	122	112
Transportation Terminal/Station	133	122	112

Urgent Care/Clinic/Other Outpatient	80	73	66
Veterinary Office	98	89	80
Vocational School	93	85	77
Wastewater Treatment Plant	162	147	131
Wholesale Club/Supercenter	105	96	87
Worship Facility	43	39	35
Zoo	133	122	112

Certain use types require specific guidance:

Swimming Pools

Specific guidance can apply when swimming pools are a secondary use within a property. Heated swimming pools as a non-primary building use were identified in the 2022 benchmarking data:

- 9 entries contain *Heating Swimming Pools* as second largest property use type
- 34 entries contain *Heated Swimming Pools* as third largest property use type

SWA recommends using site EUI kBtu adjustments from ENERGY STAR Portfolio Manager. Portfolio Manager does not allow swimming pool size to be entered and instead assumes given sizes based on the pool type (recreational, short course, and Olympic). Given this, using a kBtu/SF target for pools on a per-building basis is infeasible.

Using the assumptions contained in the Swimming Pools and the ENERGY STAR Score reference, Figure 1 and the calculations contained in Figure 2 of the same link, SWA calculated the equivalent site EUI values to compare to the source EUI values

School	ENERGY STAR Source Energy kBtu/Yr		
	Recreational	Short Course	Olympic
	1,250,920	2,084,866	6,234,213
	ENERGY STAR Site Energy kBtu/Yr		
	Recreational	Short Course	Olympic
	1,160,077	1,933,462	5,781,480
Hotel	ENERGY STAR Source Energy kBtu/Yr		
	Recreational	Short Course	Olympic
	1,004,331	1,673,885	5,005,288
	ENERGY STAR Site Energy kBtu/Yr		
	Recreational	Short Course	Olympic
	925,231	1,542,051	4,611,075
Other	ENERGY STAR Source Energy kBtu/Yr		
	Recreational	Short Course	Olympic
	847,601	1,412,668	4,224,191
	ENERGY STAR Site Energy kBtu/Yr		
	Recreational	Short Course	Olympic
	775,964	1,293,273	3,867,174

Denver has a similar methodology and approach to the proposed site EUI-specific translation. Indoor pool calculations do not appear to have regionality built in, so the site EUI allowances can be used directly. See Appendix B2.

For outdoor pools, the impact on site energy use is relatively small, approximately 10-15% the impact of an equivalent indoor pool based on the ENERGY STAR reference linked above. Best benchmarking practices from ENERGY STAR indicate that pool energy use should be sub-metered and excluded from a Portfolio Manager entry. If this is not possible, our recommendation is to use the Denver equivalencies.

Data Centers

Data centers are listed as secondary property use types in two buildings in the 2022 Fort Collins benchmarking data. ENERGY STAR provides estimates[iv] that allow buildings to identify these spaces' energy usage. These estimates are provided due to the complexity of calculating this space type's usage and the variations between them. The ENERGY STAR estimate for data center energy use per unit of floor area is as follows:

$$Source\ Energy\ (kBtu) = 2{,}000 \frac{kBtu}{ft^2} \times Floor\ Area\ of\ Data\ Center\ (ft^2)$$[v]

However, there is a cap for the source energy of a data center if the data center's floor area is greater than 10% of the property's gross floor area, which is not frequently the case. SWA recommends referring to this guidance from ENERGY STAR to estimate energy use.

Washington DC and Denver reference this approach as well. However, the installation of a sub-meter to provide an accurate measure of data center energy data is strongly encouraged and considered a best practice.

Mixed Use Property

SWA recommends properties reporting as *Mixed Use* report their actual space use types to determine a weighted EUI target for the purpose of complying with BPS.

ENERGY STAR Portfolio Manager ESPM defines *Mixed Use* properties:

- "A Mixed Use (or multi use) property is one that contains multiple property types, none of which are *greater than* 50% of the total Gross Floor Area (GFA), *including parking GFA*."
- "Mixed Use properties can get an ENERGY STAR score and certification if they meet two criteria:
  - 75% of the property's GFA (*excluding parking*) is comprised of property types that are eligible for an ENERGY STAR score
  - At least one property type (that is eligible for certification) is more than 50% of the GFA (*excluding parking*)"[vi]

Parking

ENERGY STAR Portfolio Manager instructs users to submeter parking usage within a building then exclude that energy use and gross floor area, or if data is not submetered, include the parking square footage and Portfolio Manger will estimate parking's energy usage. Further guidance is available at:

- Parking and the ENERGY STAR Score in the United States and Canada
- How do I enter parking? (site.com)

Parking frequency was identified in the 2022 benchmarking data:

- 3 buildings list *Parking* as the primary property type
- 269 entries contain *Parking* as second largest property use type
- 19 entries contain *Parking* as third largest property use type

SWA recommends two options for determining a *Parking* target:

- Adopt elements of Denver's approach (Appendix B.3: Parking)[vii]
  - *"2.4.1.4 Parking* - Parking should be entered with its square footage and configuration: open, partially enclosed, and completely enclosed and whether or not there is supplemental heating. If parking is a part of the building and the energy use is not able to be excluded from the Benchmarking Report following ESPM guidance, there is a target adjustment available (Section 3.4.6). If the parking structure is a stand-alone building and considered to be 100% of the building's property type, the building will receive a 2030 target as an individual building (See Appendix A). See EPA's Technical Reference on Parking and the ENERGY STAR Score in the United States and Canada for more information."
    - Stand-alone parking structures can also be excluded from BPS target setting
- Analyze IECC vs ENERGY STAR, adjust for Fort Collins weather
  - Revise parking EUI targets based on ENERGY STAR Technical Reference and IECC code 2018
  - Lighting power densities in the 2018 IECC are higher than the ENERGY STAR Technical Reference, but the Technical Reference includes ventilation and heating.
  - See sample below from a separate jurisdiction:

Parking Recommendations	
	Parking Area Site Energy Target (kBtu/SF/Yr)
Partially Enclosed	4.5
Completely Enclosed	7.0

IECC 2018 Table C405.3.2(1)				
	End Use	W/ft2	Operating hours/day	Parking area site energy kBtu/SF/Yr
Parking Garage	Lighting	0.15	24	4.483

2023 Adjustment Based on ENERGY STAR Reference				
	End Use	**W/ft2**	**Operating hours/day**	**Parking area site energy kBtu/SF/Yr**
Partially Enclosed	General Lighting	0.11	24	2.85
	Daylight Transition Zone Lighting	0.95	12	1.42
	ENERGY STAR Site EUI			4.27
Recommendation (2018 IECC)				**4.48**
Completely Enclosed	General Lighting	0.11	24	2.88
	Daylight Transition Zone Lighting	0.95	12	1.42
	ENERGY STAR Site EUI			4.30
	Recommendation (2018 IECC)			**4.48**
	Ventilation	0.29	6	2.17
		0.01	18	0.22
		Ventilation Subtotal		2.39
	Heating	0.009354	325*	0.01
TOTAL				**6.88**

METHODOLOGY

The study team reviewed the current methods utilized for setting performance standards across the country. There is not a standard methodology used across jurisdictions, therefore they are selected based on localized goals and data availability.

To identify targets, the analysis team relied on the Carbon Neutral Cities Alliance's "Performance Standards for Existing Buildings: Performance Targets and Metrics Final Report"[viii]: a methodology and workbook[ix] ("CNCA EBPS tool") created to inform technically achievable performance standards across building occupancy types. Steven Winter Associates and Sustainable Energy Partnerships authored this framework in 2020 with participation by expert advisors and government sustainability staff from around the country.[x]

The target calculations are comprised of four components; Define Paths and Targets, Typology Assignment, Baseline End Uses and Fuel Split Calculations, and Target Setting.

Define Paths and Targets

Building targets will not be useful unless based on achievable standards. These pathways, or packages of measures that can result in a building reaching a target, must be technically feasible today for each typology. The CNCA process identifies multiple target options:

- Energy Efficiency (EE) targets are determined based on an assumption of optimizing existing systems in the near term. *This is the method used to set the Fort Collins Targets.*
- More aggressive targets, such as long-term Zero Net Carbon (ZNC) targets will require replacement and electrification of major systems. *This methodology could be implemented for future targets.*
- Interim targets are developed to address technical performance limits. The most aggressive targets may not be achievable in the next 10-20 years because of equipment life, capital planning, and retrofit mobilization.
    - For example, these interim targets identify where buildings need to be in 2027 so that the 2030 goals are achievable.

Site energy use intensity (EUI) was selected as the target performance metric as a way to promote holistic energy efficiency as well as decarbonization of fossil fuel systems.

Typology Assignment

Buildings are organized by typology based on prevalence within the jurisdiction in order to identify reasonable standards for each based on similarities of use and construction types.

The activities that occur within a building, along with the size, occupancy, and equipment, determine the energy use intensity and carbon emissions. As such, setting a single performance target (i.e.. 20% reduction) would not account for these variabilities. The City of Fort Collins' performance targets were designed to be achievable for each unique building typology.

EPA's ENERGY STAR Portfolio Manager (ESPM) is the industry standard for measuring building performance and tracking progress towards goals. ESPM has 87 different property types that were developed from the Energy Information Agency's (EIA) Commercial Building Energy Consumption Survey (CBECS).

While some jurisdictions choose to group building types into fewer categories to assign targets, SWA recommends maintaining the 87 specific categories provides a more accurate representation of average building use profiles by category.

Additionally, the State of Colorado and the City of Denver utilized ESPM property types to both calculate and communicate building performance targets. Aligning Fort Collins' targets with those adopted by the Colorado Energy Office as much as possible will minimize confusion or unnecessary complication within the building energy industry across the state.

Baseline End Uses and Fuel Split Calculations

Site EUI Baselines

Energy use baselines in this technical analysis were based on calendar year 2022 energy use (weather normalized) from the City of Fort Collins, when available. In the case of limited data, where there were fewer than 10 benchmarked properties for a given use type, the most recent years of benchmarking data from Denver and Boulder were combined with Fort Collins to get a better picture of average energy usage. The recommended median baseline EUI was selected using the following hierarchy:

1. Fort Collins Benchmarking Data
2. CO Benchmarking Data
3. National CBECS Data

Note: Memos were generated on 1-24-2024 and 2-29-2024 describing this process and results in detail.

End Use Loads

Once median site EUI's were selected for each use type, target EUIs were calculated by applying feasible reductions to end uses. End use profiles in this technical analysis were based on national CBECS data and weather normalized.

This approach was selected to account for differing implications of varying fuel reductions. This methodology addresses the unique loads of differing building types, as well as the differences between gas and electric equipment efficiencies. For example, the amount of achievable heating savings for a warehouse is significantly less than what is possible for a multifamily building.

Table 2: End Use Breakdown by CBECS Property Type

CBECS Use Type	% Space Heating	% Domestic Hot Water	% Cooking	% Gas Other	% Cooling	% Plug Loads and Other
Multifamily Housing	49%	44%	7%	0%	33%	67%
Education	65%	17%	4%	14%	24%	76%
Food sales	54%	5%	41%	0%	4%	96%
Food service	18%	20%	62%	0%	20%	80%
Health care Inpatient	49%	23%	11%	17%	27%	73%
Health care Outpatient	91%	9%	0%	0%	11%	89%
Lodging	30%	56%	0%	14%	17%	83%
Mercantile Enclosed and strip malls	38%	24%	26%	12%	13%	87%
Mercantile Retail (other than mall)	71%	9%	21%	0%	16%	84%
Office	64%	12%	0%	24%	15%	85%
Other	95%	5%	0%	0%	15%	85%
Public assembly	73%	4%	13%	10%	40%	60%
Public order and safety	51%	42%	7%	0%	25%	75%
Religious worship	82%	0%	18%	0%	23%	77%
Service	70%	30%	0%	0%	17%	83%
Warehouse and storage	63%	11%	0%	26%	16%	84%
Vacant	91%	9%	0%	0%	15%	85%

End use profiles were then mapped to ESPM typologies to calculate averages using local benchmarking electricity and natural gas use data.

Target Setting

EE Targets are set for the typologies accounting for the baseline use of buildings, feasible reductions, and ultimate reduction goals. EE targets describe interim steps and performance standards that can be applied to gas-using end uses to reduce energy use without electrification. The resulting energy efficiency performance targets will not be enough to achieve zero-net carbon targets since gas and on-site combustion are implicitly allowed.

Zero Net Carbon (ZNC) targets build off the EE Target as a new baseline and converts all fuel-burning end uses to electricity using a ratio for that end use. This is included in the proposal for future consideration acknowledging Fort Collins' 2050 goals.

Achievable Reductions

To calculate feasible targets, the study team approximated what the typical building of a given occupancy type can achieve using assumptions on existing systems and their efficiency, both current and what is technically achievable. This summarizes the approach to target setting, but it does not dictate a specific retrofit package for a particular building. Any individual building would develop a scope of work that reflects how it would achieve or exceed its respective target.

The results of the following retrofits align with the Energy Efficiency (EE) target:

1. Energy efficiency improvements to all end uses that require electricity. In a carbon-neutral grid scenario, this measure reduces electricity loads and constraints on the grid when gas end uses are electrified.
2. Basic air sealing and, while not required, enhanced thermal efficiency of most commonly replaceable envelope elements (i.e., windows, roofs) may be done at end of useful life to meet targets.
3. Energy efficiency of gas-based space heating systems – such as better heating controls, duct sealing, distribution balancing. [This does not include installation of more efficient gas equipment.] Electrification of heating systems would not be required but could be done as a way to meet the target.
4. Energy efficiency domestic hot water systems – such as better controls, pipe insulation, low flow fixtures. [This does not include installation of more efficient gas equipment.] Electrification of domestic hot water systems would not be required but could be done as a way to meet the target.
5. Potential efficient electrification of cooking, laundry, and other gas process loads would not be required but could be done as a way to meet the target.

The target does not explicitly assume the addition of (a) wall insulation to the exterior of the building, (b) high performance window installations, or (c) energy recovery ventilation systems because of the limited applicability of the measures across all building types. However, these measures can greatly improve the performance of buildings and make further decarbonization possible by reducing heating and cooling loads, thereby decreasing the necessary capacity of electric heating and cooling systems. These retrofits could be implemented by any individual building in pursuit of achieving a site EUI target, but the target-setting calculations themselves do not assume the implementation of these retrofits.

To apply these assumptions, achievable percent reductions, described in Table 3, were applied to the end use of each ESPM property type.

Table 3: Achievable energy reduction percentages by end use

End Use	Assumptions	Current Fort Collins Assumptions
Baseload Electricity	Lighting efficiency improvements, appliance upgrades, plug load management, elevator replacement; basic air sealing	20%
Space Heating	Controls and distribution improvements to reduce overheating; basic air sealing	20%
Water Heating	Reduction in distribution losses and fixture GPM reductions	10%
Cooking	Improvements would require equipment replacement with more efficient options	0%
Other	*Laundry:* Point of use equipment for specific uses. Same approach as cooking *Gas Process Loads:* Various industrial and process loads (cleaning, lab equipment, etc) including laundry. Accounts for 4% of gas use nationwide. Wide range of dissimilar uses.	0%

APPENDICIES

FUTURE CONSIDERATIONS

While Fort Collins will begin with an Energy Efficiency standard, it is important to consider what targets are necessary to achieve city, state, and national goals towards carbon neutrality. As such, a Zero Net Carbon-Compatible (ZNC) target was also analyzed for future consideration.

A Zero Net Carbon-Compatible (ZNC) Target: an EUI level simulating the electrification of all fossil fuel end uses using market-ready technology in an energy efficient building. This target was intended to be compatible with Zero Net Carbon goals because it implicitly required the elimination of most on-site fuel burning.

The ZNC target assumes on-site fuel burning is eliminated through electrification, further reducing site EUI based on standard assumptions in the CNCA EBPS tool. This Zero Net Carbon-Compatible (ZNC) target can be thought of as a technically feasible limit on building energy performance for each group.

The electrification of end uses assumes that those end uses are optimized through the energy efficiency assumptions laid out in the Energy Efficiency target. While the order may not always be sequential, the technical potential of buildings would be realized by optimizing end uses, especially space heating and cooling uses and electrifying beyond those uses. Alternatively, it may be easier for some buildings, such as those with difficult-to-optimize heating systems (i.e., central steam plants) to electrify immediately and undertake the energy efficiency measures in parallel. Energy efficiency of heating and cooling may be achieved with the act of modernizing the system, enabling better control and heat delivery, instead of undertaking the often-challenging task of optimizing the existing heating systems.

The largest percentage savings required to reach the targets was in multifamily buildings, particularly older multifamily buildings, which typically have central heating and hot water systems heated by burning fossil fuels. These systems have the most potential for site EUI reduction because the heat pump systems that can replace them are efficient in comparison[11].

Table 4: Projected ZNC Targets

Occupancy Type	Baseline Site EUI	ZNC Target Site EUI
Adult Education	93	40
Ambulatory Surgical Center	128	66
Aquarium	133	58
Automobile Dealership	86	41
Bank Branch	101	55
Bar/Nightclub	279	148
Barracks	110	59
Bowling Alley	70	42
Casino	133	58
College/University	113	54
Convenience Store with Gas Station	286	172
Convenience Store without Gas Station	286	172

Convention Center	133	58
Courthouse	103	44
Data Center	tbd	tbd
Distribution Center	66	32
Drinking Water Treatment & Distribution	162	92
Enclosed Mall	140	78
Energy/Power Station	162	92
Fast Food Restaurant	279	148
Financial Office	69	43
Fire Station	75	35
Fitness Center/Health Club/Gym	74	41
Food Sales	286	172
Food Service	279	148
Hospital (General Medical & Surgical) (Excluded)	*208*	*112*
Hotel	77	49
Ice/Curling Rink	133	58
Indoor Arena	48	27
K-12 School (Excluded)	*59*	*31*
Laboratory	264	128
Library	76	42
Lifestyle Center	116	74
Mailing Center/Post Office	104	34
Manufacturing/Industrial Plant (Excluded)	*96*	*48*
Medical Office	69	41
Mixed Use Property	tbd	tbd
Movie Theater	112	67
Multifamily Housing	52	26
Museum	84	46
Non-Refrigerated Warehouse	43	21
Office	69	38
Other	81	43
Other - Education	93	40
Other - Entertainment/Public Assembly	66	35
Other - Lodging/Residential	80	46
Other - Mall	86	53
Other - Public Services	103	44
Other - Recreation	133	58
Other - Restaurant/Bar	251	110
Other - Services	70	30
Other - Specialty Hospital	128	91
Other - Stadium	133	58
Other - Technology/Science	162	92
Other - Utility	134	67
Outpatient Rehabilitation/Physical Therapy	128	66

Parking	tbd	tbd
Performing Arts	81	42
Personal Services (Health/Beauty, Dry Cleaning, etc.)	104	34
Police Station	103	44
Pre-school/Daycare	68	35
Prison/Incarceration	103	44
Race Track	133	58
Refrigerated Warehouse	76	54
Repair Services (Vehicle, Shoe, Locksmith, etc.)	65	26
Residence Hall/Dormitory	71	41
Residential Care Facility	110	65
Restaurant	251	147
Retail Store	60	32
Roller Rink	133	58
Self-Storage Facility	5	3
Senior Living Community	80	49
Single Family Home (Excluded)	*66*	*27*
Social/Meeting Hall	54	27
Stadium (Closed)	133	58
Stadium (Open)	133	58
Strip Mall	122	73
Supermarket/Grocery Store	180	115
Swimming Pool	133	58
Transportation Terminal/Station	133	58
Urgent Care/Clinic/Other Outpatient	80	46
Veterinary Office	98	51
Vocational School	93	40
Wastewater Treatment Plant	162	92
Wholesale Club/Supercenter	105	66
Worship Facility	43	18
Zoo	133	58

APPENDIX: TECHNICAL REFERENCES

Targets are intended to achieve energy efficiency savings while not specifically requiring electrification for a median performing building. These reductions are intended to use technology and best practice O&M strategies available today.

Estimated reductions are based on a range of literature on building retrofit outcomes:

- Lawrence Berkeley National Laboratory, Systems Retrofit Trends in Commercial Buildings: Opening Up Opportunities for Deeper Savings
  - https://buildings.lbl.gov/sites/default/files/Regnier%20-%20Systems%20Retrofit%20Trends.docx__1.pdf
- Berkely Lab, U.S. Building Sector Decarbonization Scenarios to 2050
  - https://buildings2050.lbl.gov/
- Lawrence Berkley Lab, Building Commissioning
  - lbnl-cx-cost-benefit-pres.pdf (lbl.gov)
- ACEEE, Moving the Needle on Comprehensive Commercial Retrofits
  - https://www.aceee.org/sites/default/files/pdfs/b2203.pdf
- Department of Energy Advanced Energy Retrofit Guides
  - https://www.energy.gov/eere/buildings/advanced-energy-retrofit-guides
- Energy Savings from GSA's National Deep Energy Retrofit Program
  - https://www.gsa.gov/system/files/NDEREnergySavingsReport5.pdf

- Fort Collins Provided Data
- Buildings Sector Report, A Technical Report of the Massachusetts 2050 Decarbonization Roadmap Study
  - https://www.mass.gov/doc/buildings-sector-technical-report/download
- Ecotope for the City of Seattle, Building Energy Use Intensity Targets Final Report
  - https://www.seattle.gov/documents/departments/ose/bldgengy_targets_2017-03-30_final.pdf
- Northwest Energy Efficiency Alliance, A Search for Deep Energy Savings NEEA's Study of Existing Building Energy Efficiency Renewals Final Report
  - https://newbuildings.org/wp-content/uploads/2015/11/NEEA_Meta_Report_Deep_Savings_NBI_Final81520111.pdf
- One City Built to Last: Transforming New York City Buildings for a Low-Carbon Future, Technical Working Group Report.
  - https://www.nyc.gov/html/gbee/downloads/pdf/TWGreport_2ndEdition_sm.pdf
- Guarini Center on Environmental, Energy & Land Use Law, Carbon Trading for New York City's Building Sector
  - https://guarinicenter.org/9430/
- Building Energy Exchange, Low Carbon Multifamily Retrofit Playbooks:
  - https://be-exchange.org/lowcarbonmultifamily-main/
- International Energy Agency Deep Energy Retrofit – Case Studies
  - https://iea-ebc.org/Data/publications/EBC_Annex%2061_Subtask_A_Case_Studies.pdf

APPENDIX: METHODOLOGY COMPARISONS

Institute for Market Transformation (IMT) BPS Model Ordinance

IMT created a BPS model ordinance which calls for the government department implementing the ordinance to:

- Sort covered buildings into groups according to property type (office, retail, etc).
- Create more targeted categories if desired (affordable housing, convenience stores separate from grocery, etc).

Ambitious but achievable final performance standards are set for each property type by a specified future date

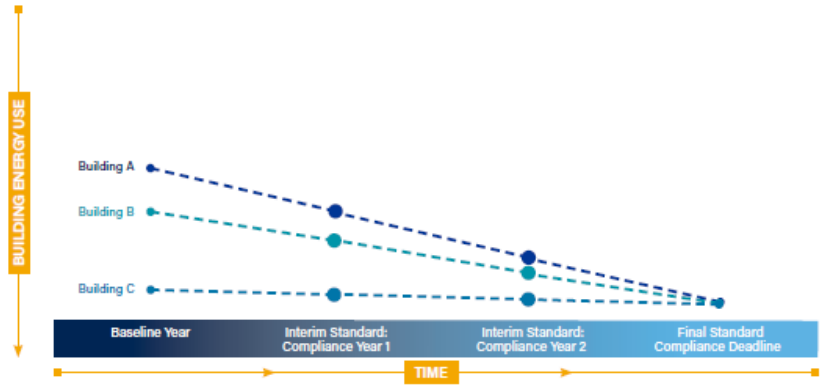
- IMT recommends setting final performance standards 15-30+ years in the future. This long timeframe will allow almost all buildings to encounter at least one opportunity to make a capital investment to dramatically improve performance, such as replacing a roof or HVAC system.
- IMT recommends an interim performance standard to ensure that buildings make progress toward the final performance standard, in five-year intervals

A “trajectory approach” identifies interim standards for each individual building to reflect its baseline performance. The ordinance assumes that performance data is available for covered buildings for each of the standards included in the ordinance or that needed data will be collected as the first step in implementing the ordinance.

The diagram below illustrates how a department determines each individual building’s trajectory and interim performance standards.

- The building’s performance level in the baseline year and its required performance in the final year are plotted.
- Three multifamily buildings must meet the same standard, but have different improvement slopes based on their starting performance; Building A has a higher EUI and must reduce energy more dramatically than Building C which only needs to maintain current levels of efficiency.

Diagram 1: The IMT BPS Trajectory Approach



The final page of the guidance document shares a recommends use of the CNCA tool: https://www.imt.org/resources/imt-model-bps-ordinance-summary/

Colorado

Each covered building must meet a maximum site EUI standard based on its occupancy type by the year 2030. CO owners can also elect GHGI targets.

- Buildings are required to meet interim performance targets in 2026 to ensure progress toward the final, 2030 standard.
- Interim targets are determined according to the building's "trajectory" from its baseline site EUI performance in 2019 to the final site EUI standard for its property type.

Denver, CO

Denver employed IMT's BPS "trajectory approach" from their Model Ordinance.

Denver worked with an engineering firm to analyze benchmarking data and national CBECS data to determine EUI performance standards for covered property types.

Each covered building must meet a maximum site EUI standard based on its occupancy type by the year 2030. Buildings are required to meet interim performance targets in 2024 and 2027 to ensure progress toward the final, 2030 standard. Interim targets are determined according to the building's "trajectory" from its baseline site EUI performance in 2019 to the final site EUI standard for its property type.

There are over 70 building types with specific site EUI targets for 2030. There are several unique building types (e.g., museums, convention centers, etc.) for which Denver was not able to set a specific Site EUI target for 2030. Instead, buildings of these types must achieve a 30% Site EUI reduction from their 2019 baseline.

Boston, MA

Boston hired a consulting company, Synapse Energy Economics, to recommend GHG standards for each covered property type and to estimate the cost of common emission abatement strategies.

Property types are organized by ENERGY STAR Portfolio Manager building types, and each property type has its own GHG target starting in 2025 until 2050 where all buildings are limited to 0. Targets become more stringent every 5 years. Building owners can apply for an individual compliance schedule achieving 50% emissions reduction by 2030 and 100% by 2050 using a 2005 or later baseline.

Montgomery County, MD

Montgomery County set specific EUI standard by building type with interim and final standards. Targets were set using the CNCA tool methodology.

New York, NY

New York City used audit data collected under its Local Law 87 to analyze the most cost-effective energy and GHG reduction strategies in its large building stock.

Goals include reducing aggregate GHG emissions from covered buildings by 40% in 2030 and 80% by 2050 relative to 2005 levels. This will be achieved through gradual improvements outlined in compliance cycles of 5 years, beginning in 2024.

Emissions limits for various building class types are outlined for compliance periods of five years starting in 2024, becoming more stringent each period.

Washington DC

Washington, DC set most of its standards for most property types at the local median ENERGY STAR score for each property type. The city worked with C40 Cities and Lawrence Berkeley National Laboratory to estimate the costs and savings at the building level.

The building energy performance standard shall be no lower than the District median ENERGY STAR score for buildings of each property type. The city will issue new performance standards every six years, and will set campus-wide standards for educational campuses and hospitals.

Chula Vista, CA

Compliance cycle occurs every five years. One target is based on ENERGY STAR scores:

- Baseline ENERGY STAR Scores of 0-45 have an improvement target of 30%
- 46-65 of 20%
- 66-79 of 10%

Alternatively, properties may comply by reducing their EUI as compared to the baseline measure.

- Baseline EUI-WN of 80+ have a reduction target of 30%
- 51-79 of 20%
- 19-50 of 10%

These targets refresh with every compliance cycle and are subject to change.

Additionally, there is a minimum improvement target buildings must meet every 10 years. This involves minimum improvements of 15% for baseline Energy Star scores of 0-45 and 10% for 46-65.

Additional requirements include:

- Annual benchmarking through Energy Star Portfolio Manager
- Energy audits in conformance with ASHRAE Standard 211 at Level 1 or greater to be completed every five years.
- Retrocommissioning is to be completed every five years in buildings containing 50,000 SF of conditioned space, including HVAC, lighting, water heating, and renewable energy systems

Washington

Washington used an amended version of *ASHRAE Standard 100 – Energy Efficiency in Existing Buildings* to set EUI targets for covered properties. EUI targets must be no greater than the average energy use intensity for the building's occupancy type with adjustments for unique energy-using features. Proposed rules set first target at 15% below average EUI for building type.

Rather than estimate compliance costs for covered properties, the state wrote a requirement into its law that buildings that do not meet the standard on their own by the compliance deadline will go into a conditional compliance path.

These owners are required to conduct an energy audit and energy management plan that uses life-cycle cost analysis to determine a bundle of measures that will meet the standard with a savings-to-investment ratio of 1.0 or greater. Thus, no owner will be required to pay for uneconomic improvements.

Maryland

Existing buildings over 35,000 square feet achieve a 20% reduction in net direct greenhouse gas emissions on or before January 1, 2030, as compared with 2025 levels for average buildings of similar construction; and net–zero direct greenhouse gas emissions on or before January 1, 2040.

Saint Louis, MO

Standards to be set no lower than the 65th percentile by property type, so that at least 65% of the buildings of the property type have a higher EUI. The Office of Building Performance will issue new performance standards at the end of each compliance cycle.

---

[i] NYC Buildings Technical Working Group. See Rudin Management case study, page 71, among others: https://www1.nyc.gov/assets/sustainability/downloads/pdf/publications/TWGreport_04212016.pdf
[ii] https://www.aceee.org/sites/default/files/publications/researchreports/a1402.pdf
[iii] DOE Advanced Energy Retrofit Guides (AERGs) for various commercial building types, also detailed in Appendix III: https://www.energy.gov/eere/buildings/advanced-energy-retrofit-guides
[iv] Data Center Estimates in the United States and Canada (energystar.gov)
[v] https://www.energystar.gov/sites/default/files/tools/Data_Center_Estimates_August_2018_EN%20-%20508%20Blue.pdf
[vi] https://portfoliomanager.energystar.gov/pm/glossary?_gl=1*3hftae*_ga*MTM3MjU2OTk0Mi4xNzAxNzE3NjE5*_ga_S0KJTVVLQ6*MTcwMzA4NDA3My4yLjAuMTcwMzA4NDA3My4wLjAuMA..#FinancialOffice
[vii] https://denvergov.org/files/assets/public/v/1/climate-action/documents/energize-denver-hub/ed-technical-guidance-buildings-25000-sq-ft-and-larger-v2_june-2023_clean.pdf
[viii] http://carbonneutralcities.org/wp-content/uploads/2020/03/CNCA-Existing-Building-Perf-Standards-Targets-and-Metrics-Memo-Final-March2020.pdf
[ix] http://carbonneutralcities.org/wp-content/uploads/2020/03/CNCA-Existing-Building-Perf-Standards-Targets-Workbook-Final.xlsx
[x] Slide 4. http://carbonneutralcities.org/wp-content/uploads/2020/03/CNCA-Existing-Building-Perf-Standards-Project-Summary-Final.pdf
[11] Hopkins, Takahashi, Glick, Whited. “Decarbonization of Heating Energy Use in California Buildings”. October 2018. Synapse Energy Economics, Inc. Page 10 says “*Because a heat pump moves heat rather than generating it, the efficiency of heat pumps can be over 100 percent… for heating season, heat pumps could typically have a COP exceeding 3, meaning a heat output 300 percent of the energy input.”* This 300% efficiency is much more efficient than the <95% efficient gas equipment that a heat pump would replace.

Steven Winter Associates, Inc.
Improving the Built Environment Since 1972

City of Fort Collins Building Performance Standard

COST BENEFIT ANALYSIS

BACKGROUND

In 2021, the City of Fort Collins, in partnership with residents and businesses, established a strategic goal to reduce 2030 greenhouse gas emissions by 80% below 2005 baseline levels. Fort Collins' buildings make up over two thirds of local community carbon emissions, and thus are the largest opportunity for carbon savings. The City Our Climate Future Plan, the community guide to address climate, waste and energy goals, identified Building Performance Standards as a Next Move under Efficient, Emissions Free Buildings.

This report estimates the overall costs and benefits associated with implementing a Building Performance Standard for buildings over 5,000 square feet located within the City of Fort Collins. The costs are based on lessons learned from other jurisdictions, local energy and cost data, and on-the-ground energy efficiency experience and technical expertise.

BUILDING PERFORMANCE STANDARDS

Building Performance Standards (BPS) are policies that require energy use reduction in existing buildings. A BPS mandates building owners to meet performance targets by actively improving their buildings over time. By 2023, thirteen U.S. cities and states had passed legislation to implement a BPS. These policies are unique to each jurisdiction with no one-size-fits-all approach. Fort Collins reviewed existing policies as part of the work to determine a localized approach for the community.

The main components of the recommended building performance policy are outlined in table 1.

Table 1: Building performance standards elements

Covered Buildings	Commercial and multi-family buildings 5,000 SF and above	
Performance Targets	Using 2022 data, average energy use was determined for ENERGY STAR ® Portfolio Manager ® building types and achievable reductions were applied to end uses. If a building is:	
Compliance	**10,000 SF+**	**5,000 – 10,000 SF**
	Buildings must meet the established targets by 2030	Buildings must meet the established targets by 2035
Alternative Compliance Options	**10,000SF+**	**5,000 – 10,000 SF**
	If the established target represents greater than a 25% from baseline, buildings are not required to exceed a 25% reduction. Mixed use buildings can request a blended target to account for various use types.	If the established target represents greater than a 15% reduction from baseline, buildings are not required to exceed a 15% reduction. Mixed use buildings can request a blended target to account for various use types.
Exemptions	The following property types will be exempted from having to comply: Industrial, indoor agricultural, manufacturing, single family residential, public buildings	
Penalties	$0.70/kbtu	$0.70/kbtu

ENERGY AND GREENHOUSE GAS COST SAVINGS

All energy, greenhouse gas (GHG), cost, and savings figures are presented as cumulative totals between 2025 (an assumed starting point of the policy) and 2035 (the proposed final compliance year for local buildings). These values are the result of assumed compliance for all covered buildings required to meet their respective target, with the savings caps described above in place. Savings are assumed to gradually accrue until the final compliance periods.

To estimate the impact of the building energy performance standards, the analysis team developed a model that applied the performance standards to a draft covered buildings list. The analysis team then calculated the cumulative impact of the potential standards on energy use, energy cost, retrofit capital cost, administrative costs, and GHG emissions. The cumulative impacts were measured from the years 2025 to 2035 to estimate the ten-year savings for both large and small buildings. The ten-year time model also allows for sensitivity to changes in energy and capital costs. While the energy and greenhouse gas savings will extend beyond the timeframe of this policy, they were capped at 2035 in this study, the final year for small buildings to comply.

Table 2: Cumulative Impacts of a BPS from 2025-2035

Benefits		Costs	
Avoided Social Costs of Carbon ($)	$534,900,000	**Capital Cost**	$226,400,000
Energy Savings ($)	$194,800,000	**Program Administration Cost**	$3,188,000
Total	**$729,700,000**	**Total**	**$229,588,000**

Energy Use

The 2025-2035 cumulative result of a BPS in Fort Collins could lead to energy savings of over 8,000,000 MMBtus. On an individual building level, this will likely result in lower utility bills. Buildings that follow efficiency upgrades similar to those proposed in the BPS have shown to average energy bills that are “at least $0.50 per square foot lower per year, or 35% lower than the average office building.”[1]

Greenhouse Gas Emissions

The 2025-2035 cumulative result of a BPS in Fort Collins could lead to a reduction in greenhouse gas emission of 0.8 Million Tons of CO2e. This is equivalent to the annual emissions of nearly two natural gas fired power plants.[2]

Social Cost of GHG emissions

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 $3.18 for every $1 in cost. When considering only energy savings, BPS implementation has a projected benefit of $0.85 for every $1 in cost spent between 2025-2035.

[1] Air Pollution Control Division. (2023). *Cost-Benefit Analysis.* Colorado Department of Public Health and Environment.
[2] United States Environmental Protection Agency. *Greenhouse Gas Equivalencies Calculator.* Greenhouse Gas Equivalencies Calculator | US EPA

O&M Considerations

Operations and maintenance (O&M) costs are the costs associated with "obtaining, installing, operating, and maintaining the equipment to meet the performance standard"[3]. While these costs are not factored into the above cost/benefit ratio, a statewide analysis of O&M costs shows that even when using high-end estimates of upfront O&M costs, the benefit cost ratio remains over 2.5 for the state of Colorado[4]. Studies have demonstrated that energy efficiency upgrades lower building operation costs by 30% on average, and lower maintenance costs between 25%-30%[5]. Initial O&M costs for installing and operating equipment vary depending on the measures being implemented. For example, a statewide analysis of partial and full electrification of gas furnaces was shown to increase O&M costs between 5-8.5%. However, partial and full electrification using heat pump rooftop units decreased annual operating costs between 5-9.7%. Colorado State's analysis of the costs of BPS implementation calculated a total O&M cost of $229,705,746 across 8,000 affected buildings. This roughly amounts to an O&M cost of $28,713 per building. Energy savings resulted in over $5 billion, or $644,325 per building[6].

IMPACT COMPARISONS

The analysis team calculated the annual and cumulative energy use and associated costs and emissions for the years 2025-2035, shown in Table 3, without a BPS policy. No capital cost was assumed under the baseline case, as the technical analysis considered the total capital cost of upgrades without including business as usual equipment replacements.

Table 3: Baseline case vs BPS compliance scenario

Category	2022 Annual Totals (No Policy) All Buildings	2025-2035 Cumulative Totals (No Policy)	2025-2035 Cumulative Totals (BPS Compliance)
Electricity Use (Million Btu)	2,340,434	28,085,209	23,408,540
Electricity Savings (Million Btu)	-	-	4,676,670
Gas Use (Million Btu)	2,456,584	29,481,416	26,022,363
Gas Savings (Million Btu)	-	-	3,459,053
GHG Emissions (Million Tons CO2e)	0.4	5.3	4.5
GHG Emissions Savings (Million Tons CO2e)	-	-	0.8
Energy Cost (Million $)	$89	$1,214	$1,019
Energy Cost Savings (Million $)	-	-	$194
Capital Cost (Million $)	-	-	$226.4

[3] Air Pollution Control Division. *Cost-Benefit Analysis.*
[4] ibid
[5] ibid
[6] ibid

BPS Groups

The proposed BPS policy applies to buildings between 5,000 and 50,000 SF and will allow for smaller buildings (5,000-10,000 SF) to delay compliance. While the State of Colorado requires all buildings over 50,000 SF to comply with a statewide BPS, the City of Fort Collins may also consider enforcing compliance for those buildings as well. To better understand the variances between these the impact and costs, the study team created three building groups. The three size groups were adopted for the modeling portion of the technical analysis and referenced within as 'BPS Groups':

Table 4: Group descriptions

Group	Size	Model Start Year	Interim Target Year	Final Target Year
Group 1	5-10k City	2025	2030	2035
Group 2	>10k City	2025	2027	2030
Group 3	State	2025	2027	2030

The table below describes the differences between savings in each BPS Group.

Table 5: Group results

Group	Group 1 (5-10k SF City)	Group 2 (>10k SF City)	Group 3 (State)
Floor Area	2,518,855	37,096,230	14,145,840
Parcel Count	358	815	102
Parcels Retrofitting	243	506	47
Energy Savings (Million BTU)	221,245	4,686,610	3,227,869
GHG Savings (Million Tons CO2e)	0.02	0.4	0.4
Capital Costs (Million $)	$14.9	$171.3	$40.2

COST IMPLICATIONS

Building Owners and Tenants

Building owners commonly see cost savings from implementing energy efficiency measures. Studies have demonstrated reductions in onsite energy demand can lead to average energy bills approximately 35% lower than those of an average office building[7]. Further studies have also shown that building operating costs can drop 30% following green building upgrades, and maintenance costs may decrease between 25-30% as well[8,9] Electrification also has the benefit of adding stability and predictability to long-term capital planning.

[7] ibid
[8] Washington DC Department of Energy & Environment (2022). *Cost and Benefit Impact Study of the Building Energy Performance Program.* https://dc.beam-portal.org/api/v3/media/helpdesk/attachments/kb/BEPS/79/BEPS_Cost-Benefit_Study.pdf
[9] Air Pollution Control Division. *Cost-Benefit Analysis.*

Depending on how far an individual building is to the target, building owners may have to take on expenses. Building owners might pass on the cost of implementing this rule to their tenants, which could lead to higher rents. In addition to pass-through-costs, there is the risk that implementation of the proposed building performance standards could "harm equity priority communities through gentrification and housing displacement, while benefiting landlords."[10]

However, tenants typically see economic benefit from this policy as well through lower utility bills. On average, packaged renovations and retrofits have shown to reduce operating costs by 11.5% and 17% respectively. If tenant utility bill reductions are equal to the rent increase, then the change in costs could be net neutral. Additionally, the reduction in demand also reduces risks associated with accelerating utility costs or spikes."[11]

Other issues may arise with communication and clarity of rule requirements, technological comprehension of reporting and compliance software, and funding for under-resourced buildings. It is in the public's best interest to keep the compliance process as simply and streamlined as possible.

Government Administration

BPS implementation costs are estimated between $200 - $400 per building per year where data exists for other jurisdictions, meaning Fort Collins would need to invest between $240,000 and $575,000 per year for staffing and external contractors.

Due to the existing Building Energy and Water Scoring program, the City of Fort Collins has already invested the key infrastructure needed to run a BPS program. Key infrastructure includes:

- A benchmarking database and disclosure map
- External communication materials (website, guidance documentation, FAQs)
- Industry engagement and education on building performance measurement
- Internal staff to manage a program

Fort Collins may be on the lower end of these ranges because these investments have been made.

Table 6: Administrative cost estimates for a BPS

Building Size	Cost range
5,000 SF+ City Buildings	$205,800 - $411,600
5,000 SF+ City and State Buildings	$255-000 - $510,000

Opportunities for Cost Mitigation

While there are significant expenses associated with program implementation, there are incentives available for both city government and building owners through state and federal funding. The 2022 Inflation Reduction Act (IRA) is $370 billion investment in clean energy solutions across the economy[12] and represents the most significant federal action on the topic. The funding in this package will flow to local jurisdictions through grants, loans, rebates, incentives, and other investments to local governments and utilities. The funding from this program is designed to alter the market and encourage electrification on multiple fronts. The IRA contains

[10] Ibid.
[11] Dodge Construction Network. (2021). *World Green Building Trends 2021.* https://www.construction.com/resource/world-green-building-trends-2021/
[12] Cleanenergy.gov. (2022). *Inflation Reduction Act Guidebook.* https://www.whitehouse.gov/cleanenergy/inflation-reduction-act-guidebook/

funding for many elements, electric grid modernization, electric vehicle charging infrastructure, battery supply chain support, public transportation, and clean energy generation.

A suite of programs within the IRA address building efficiency in particular:

179D – Energy Efficient Commercial Building Deduction

179D is a $0.50-$1.00 tax deduction per square foot for buildings achieving a range of reductions in energy use from a qualified retrofit baseline or ASHRAE 90.1 guidelines. A larger bonus up to $5.00 per square foot is available if certain labor requirements are met. The ASHRAE pathway must use Internal Revenue Service (IRS) approved modeling software and for both pathways, a qualified person must certify savings. Lighting, HVAC, and envelope improvements are covered, and the deduction applies to existing buildings and new construction.

Clean Electricity Investment Tax Credit (ITC)

The ITC provides deep reductions for clean energy system costs (including solar, wind, geothermal, energy storage, microgrid controllers and dynamic glass) via a credit of up to 30% of cost. Up to an additional 20% credit is available depending on the location of the project within a designated “energy community”.

Multifamily Components

Specific sections apply to multifamily properties. These are described here to highlight the breadth of the incentives:

- 45L Tax Credit - Energy Efficient Home Credit: For buildings meeting energy efficiency targets
- High Efficiency Electric Home Rebates (HEEHRA): Rebates for electric HVAC equipment upgrades
- Home Energy Performance-Based Whole-House Rebates (HOMES): Rebates for energy-saving retrofits, include heat pump installation

Funding for Local Government, Utilities, and Non-Profits

- Technical assistance for building energy code adoption: $1B grants to help local governments adopt and implement new energy codes
- Greenhouse Gas Reduction Fund: $27B to be distributed to Green Banks or similar
- Environmental and Climate Justice Block Grants: $3B for local governments and nonprofits for disadvantaged communities
- GHG Planning and Implementation Grants: Support for municipalities to develop and implement plans for reducing GHG emissions
    - Includes support for development of BPS
- Advanced Industrial facilities deployment program
- State Home Efficiency Contractor Training Grants

EXTERNAL BENEFITS

In addition to the greenhouse gas savings from implementing a BPS, there are several other benefits that were not explicitly quantified for this analysis but should be considered as part of the policy discussion.

Creation of New Local Jobs

The development of building performance standards will increase the demand for workers in the building efficiency and renewable energy industries. According to the International Energy Agency, six to fifteen jobs are created for every $1 million USD spent on building efficiency[13]. Additionally, it is anticipated that between 2019 and 2029 the job growth for HVACR mechanics and installers will be 4%[14]. This increases the demand for both union and non-union trade workers and supports workforce growth and development in these industries throughout implementation. Qualified technicians are required for the growing number of sophisticated climate-control systems, driven by the demand for energy efficient equipment in commercial and residential buildings. On average, workers in the energy efficiency industry "earn 28% above the national median wage"[15]. Therefore, building energy performance standards will drive the growth of quality employment in Fort Collins throughout its life cycle.

Health and Safety

The necessary upgrades buildings will be required to make due to the development of building performance standards will ultimately decrease health and safety risks for residents. While Fort Collins does not require electrification, it may encourage it. Electrification eliminates equipment using gas or liquid fuels that require on-site combustion. The combustion process releases air pollutants such as methane, nitrogen oxides, carbon monoxide, and particulate matter that are damaging to human health. For example, studies have linked respiratory illness cases to gas cooking[16]. Children are particularly vulnerable to these health impacts; children living in a home with a gas cooking stove have a 42% increased risk of current asthma and a 24% increased lifetime risk of asthma[17]. BPS policies may drive the replacement of this equipment with those such as heat pumps and induction stoves that do not require a chimney, gas line, oil tank, or the burning of fuels. It will also drive action in older buildings that may have higher retrofit needs including deferred maintenance like critical health and safety improvements, poor envelope performance, and outdated wiring and HVAC distribution systems. This is even more significant for older buildings that serve low- and moderate-income households. Overall, the implementation of BPS will create a healthier and safer environment for building occupants including its most vulnerable members.

Increased Economic Competitiveness of Building Owners

In addition to operating cost benefits, studies have shown that energy efficiency upgrades add consumer desirability and raise demand for building occupancy[18]. Green buildings or buildings with higher-than-average efficiency have demonstrated occupancy rates up to 18% higher than average, greater occupancy retention,

---

[13] Air Pollution Control Division. *Cost-Benefit Analysis.*
[14] U.S. Bureau of Labor Statistics. (2023). *Occupational Outlook Handbook: Heating, Air Conditioning, and Refrigeration Mechanics and Installers.* https://www.bls.gov/ooh/installation-maintenance-and-repair/heating-air-conditioning-and-refrigeration-mechanics-and-installers.htm#tab-1
[15] Air Pollution Control Division. *Cost-Benefit Analysis.*
[16] Kalinoski, Gail. (2020, November 16). Cutting Carbon Emissions Through Electrification. *Commercial Property Executive.* v https://www.commercialsearch.com/news/cutting-carbon-emissions-through-electrification/
[17] Emerald Cities Collaborative. (2020). *The Building Electrification Equity Project.* https://emeraldcities.org/wp-content/uploads/2021/04/BEE_Report_Final.pdf
[18] Colorado Department of Public Health and Environment.

and a 5.9% higher net operating income[19,20]. Due to market demand for green buildings, building owners are able to charge higher premiums for leased spaces[21]. Green building upgrades may also add between 2%-17% to a building's resale value[22]. Investor, tenant, and regulator perceptions of energy efficient buildings contribute to added value and consumer desirability of green buildings. Tenants prefer to lease space in green buildings and expect buildings to demonstrate their commitment to sustainability[23]. Building performance standards provide a metric for stakeholders to gauge progress towards responsible business practices, and as a result, green building upgrades for building owners. Failing to comply with building performance standards may reduce the economic competitiveness of building owners, as stakeholders perceive non-compliance as a failure to commit to responsible business practices[24].

METHODOLOGY FOR COST ANALYSIS

Creating the Potential Covered Buildings List

Using a combination of Fort Collins property records and benchmarking data, the floor area and covered buildings were identified using the size thresholds and buildings definition in the proposed BPS policy.

For all building types, the various definitions rules were applied to buildings with floor area over 5,000 SF:

- If the building did not submit benchmarking data, the Land Use Code was used to determine the occupancy type.
- Exempt use types and publicly owned buildings were filtered out
    - College/University
    - Data Center
    - Hospital (General Medical & Surgical)
    - Manufacturing/Industrial Plant
    - Parking
    - Public Buildings

Mapping baseline energy use to non-benchmarked buildings

Reported buildings were assigned energy use based on known distribution from benchmarking data. For buildings without energy benchmarking data (n=106), the methodology for mapping energy data to buildings without energy data was the same for all building types. The known energy distribution from statewide benchmarking (Boulder, Denver, and Fort Collins combined) was averaged by use type and the median Electric EUI and Gas EUI was applied to the properties of the same use type. Electric and Gas kbtus were then estimated using the GFA of the property found in the county tax assessor dataset. On aggregate, the impact of achieving targets can be estimated this way, even if the energy use for a given non-benchmarked building would not be accurate for that specific building.

---

[19] CBRE. (2023), *U.S. Building Performance Standards in 2023 and Beyond.* https://www.cbre.com/insights/viewpoints/u-s-building-performance-standards-in-2023-and-beyond
[20] Colorado Department of Public Health and Environment.
[21] Ibid.
[22] Ibid.
[23] CBRE. *U.S. Building Performance Standards in 2023 and Beyond.*
[24] ibid.

Approximating the Energy Reduction Paths of Covered Buildings

For all covered buildings, evaluated on the building level, the following analysis is performed to calculate the impact of the final performance standard:

- If the building had a lower site EUI than the final performance standard, the energy use did not change (building maintains current energy use through the entire BPS period).
- If the building had a higher site EUI than the final performance standard, energy is lowered to the final performance standard or to the cap (whichever requires less of a reduction) by reducing gas use and electricity use through energy efficiency. Once the Energy Efficiency (EE) threshold is met through efficiency retrofits, and if the building's target is lower than the EE target for that occupancy type, further energy reductions are made through electrification of gas equipment, while increasing electricity proportionally as a result of the conversion from gas to electric equipment. If electricity needs to be further reduced after gas use is eliminated, it is reduced until the final performance standard is met by the final compliance cycle.

Specifically, retrofits happen in this order for each building to meet the interim target and the final year target:

1. If gas EUI was greater than the gas component of the EE threshold, gas use was reduced through efficiency work (without electrification).
2. If electricity EUI was greater than the electricity component of the EE threshold, electricity used was reduced toward the electricity component of the EE threshold.
3. If more reduction was needed, uses were electrified to meet the target.

Baseline energy use was based on calendar year 2022 benchmarking data, the most current year of data available for this technical analysis. From that baseline, each covered building was assumed to meet the interim and final year performance targets by the compliance deadline and maintain interim performance until the next deadline.

Cost Assumptions

Utility Rates

Fort Collins utility rates were utilized to estimate costs per kbtu. To estimate electricity rates specifically, the business and residential rate classes were averaged at $0.10/kWh. A 5% escalation rate was then applied to both gas and electricity to estimate rates in future years.

Table 7: Estimated Utility Rates

Fuel	Period	Class	Cost	Unit
Natural Gas	Current	All	$0.7897	$/therm
Electricity	Current	Business	$0.0899	$/kWh
Electricity	Current	E200 | GS	$0.1162	$/kWh
Electricity	Current	E250 | GS25	$0.1033	$/kWh
Electricity	Current	E300 | GS50	$0.0979	$/kWh
Electricity	Current	E400 | GS750	$0.0767	$/kWh
Electricity	Current	E600 | Substation	$0.0716	$/kWh
Electricity	Current	All	See below	$/kWh

Retrofit Costs

The costs to retrofit a building were estimated based on data from historical Efficiency Works Business tracking data (verified against CA CEDARS, ComEd planning, Xcel planning and actual data), as well as Steven Winter Associates' research and retrofit experience. Costs were separated into three different categories: Electric energy efficiency measures, Natural Gas energy efficiency measures, and Natural Gas system replacement. Costs were estimated by kbtu/sqft for each use type.

Disclaimer on Retrofit Capital Costs

While best estimates are used to develop total retrofit costs for measures, each measure is subject to a wide variety of factors within and outside the building. Each cost estimate should be interpreted as a rough estimate that is the result of a high-level review of building conditions and applicable measures. Costs are total equipment and labor costs, not including avoided costs of existing equipment replacements, incentives, or financing agreements which may reduce initial capital costs, all of which are components of developing a net cost of each measure for each building.

GHG Assumptions

Greenhouse gas emissions factors from energy consumption were provided by the City of Fort Collins. The emissions factors provided by SPP were used to calculate future ghg savings.

Table 8: GHG emissions factors

Fuel	Period	Metric	Conversion
Natural Gas	Current	0.0052 MTCO2e/therm	0.052 kg/kBtu
Electricity	Current	0.460853 MTCO2e/MWh	0.135 kg/kBtu

Natural gas emissions factors are calculated to remain constant through the 2035 period at 0.135/ kg/kBtu.

Electricity emissions factors are currently estimated to also remain constant at 0.135 kg/kBtu through the 2035 period for this exercise. Keeping the factor constant assumes no savings are claimed through the decarbonization of the electricity grid through 2035. Calculations can be adjusted, however, to reflect changes to the grid during the compliance period and separate savings from a BPS as compared to those resulting from the grid.

The Social Cost of Carbon, and the savings realized by the reduction in GHG emissions, is calculated as a net present value across the ten-year plan of the BPS implementation. A social cost of $190 per metric ton of GHG emissions for 2020 to 2030 and $230 per metric ton of GHG emissions for 2030 to 2035 were used along with a discount rate of 2.0%. These values were provided by an EPA Impact Analysis released in 2022.[25] A 'Business as Usual' scenario social cost was calculated by assuming that the 2025 GHG rates would stagnate throughout the ten-year time horizon. A BPS scenario social cost was developed by decreasing the GHG emissions at the same yearly relative percentage rate as the gas use decrease, using the current 2025 and the projected 2035 GHG emissions rates. Once the net present value of each scenario's social cost was calculated, the two were compared to realize the savings from the BPS implementation.

[25] U.S. Environmental Protection Agency. (2023). *EPA Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances.* https://www.epa.gov/system/files/documents/2023-12/epa_scghg_2023_report_final.pdf

APPENDIX:

Calculation Steps for a Sample Building

1) Example building: Multifamily Building (FC1113)
    a. Elec EUI: 22 kBTU/SF
    b. Gas EUI: 41 kBTU/SF
    c. Site EUI: 63 kBTU/SF
    d. Floor Area: 136,527 SF
2) Building Final Performance Standard was assigned by occupancy type. The EE target was used for this example:
    a. Multifamily Target: 43 kBTU/SF Site EUI
    b. Because the difference between the target and the baseline is 32%, a cap of 25% was applied and set the new standard to 47 kBTU/SF
3) Interim Performance Standard Target were calculated as halfway between current site EUI and final standard
    a. Interim Performance Standard: 55 kBTU/SF
4) Electrification site EUI ratio was calculated per occupancy type using this calculation, which is the weighted average of the electrification ratios for each end use in the building, weighted by the estimated energy use of each end use for the occupancy type[26]:
    a. (ZNC elec EUI – elec_EE EUI) / gas_EE EUI)
    b. = 26 - 16 / 27 = 0.36
5) The building's gas EUI and electricity EUI were both higher than the Energy Efficiency thresholds, so energy efficiency work is modeled to be done to meet the target.
6) For Interim Performance Standard
    a. Electricity use was reduced by 2 kBTU/SF through energy efficiency.
    b. Gas use was reduced by 6 kBTU/SF through energy efficiency.
        i. The building was able to reduce gas use to make up the rest of the way to the target without going below the gas EE threshold
    c. Resulting EUI was 63 – 2 – 6 = 55 kBTU/SF and the building met the Interim Performance Standard.
    d. Using the occupancy type specific capital costs for different end uses on a $/kBTU savings basis, costs to meet each target are estimated as:
        i. 2kBTU/SF of electricity energy efficiency work * $0.32/kBTU = $89,979
        ii. 6kBTU/SF of gas energy efficiency work * $0.20/kBTU = $162,222
7) For Final Performance Standard, repeated step 6 using the Interim Performance Standard result as the new baseline energy use
    a. Electricity use was reduced by 1kBTU/SF through energy efficiency which costs $60,286
    b. Gas use was reduced by 7kBTU/SF through energy efficiency which costs $181,002.
8) Electricity and gas EUI were multiplied by floor area to do citywide impact calculations in kBTU

[26] Elec_EE EUI and gas_EE EUI are the electricity and gas components of the EE target, as calculated in the CNCA tool. These EUIs are used to compare an individual building's electricity and gas use to the assumed optimal efficiency EUI in each energy type. Achieving a gas EUI lower than the gas_EE EUI in a building would likely require some form of electrification.

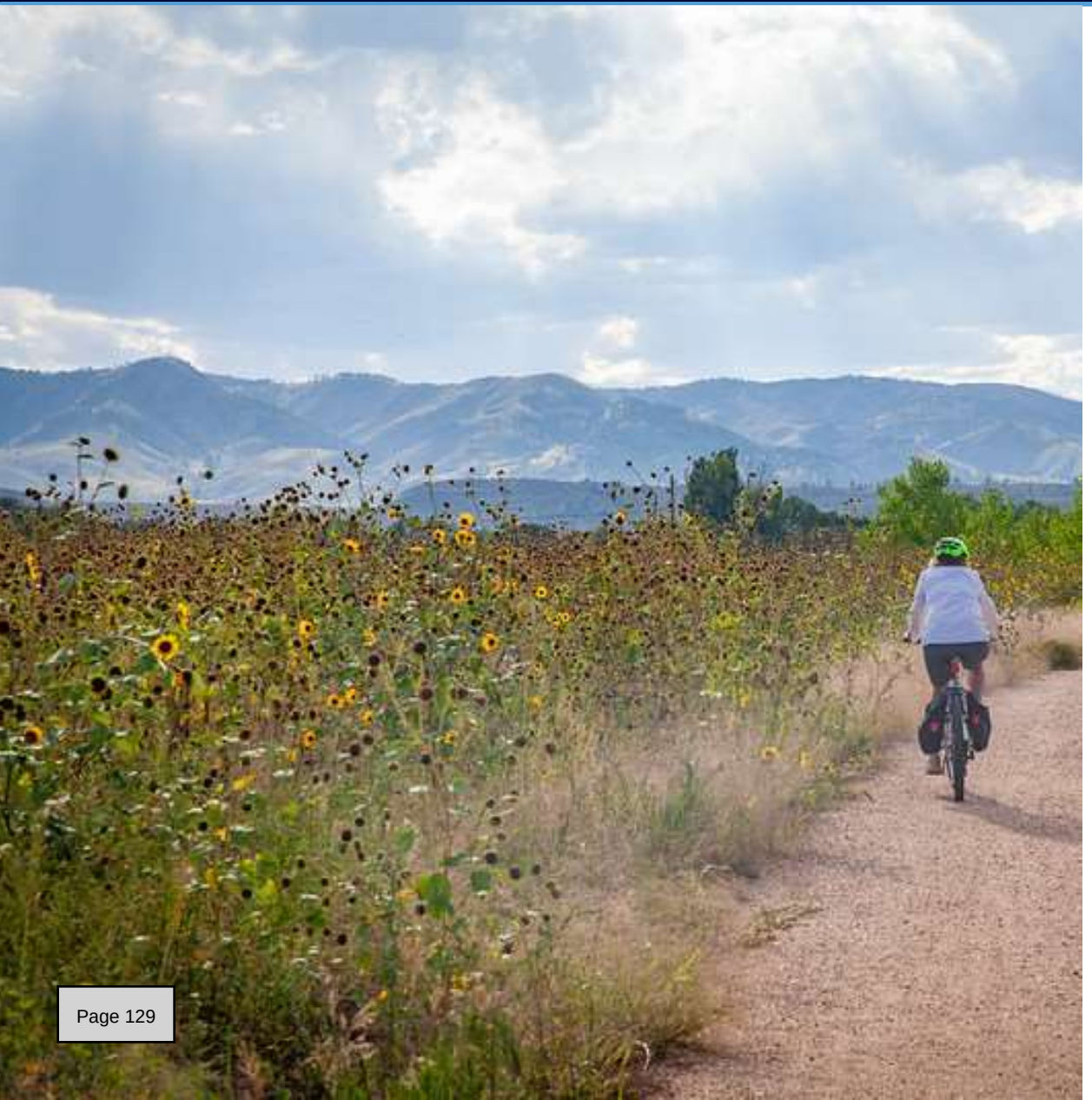
4-23-24

Building Performance Standards (BPS)

Brian Tholl
Manager, Energy Services

Katherine Bailey
Program Manager, Energy Services

uncil Priority Question



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

uncil Priority and Defining Electrification

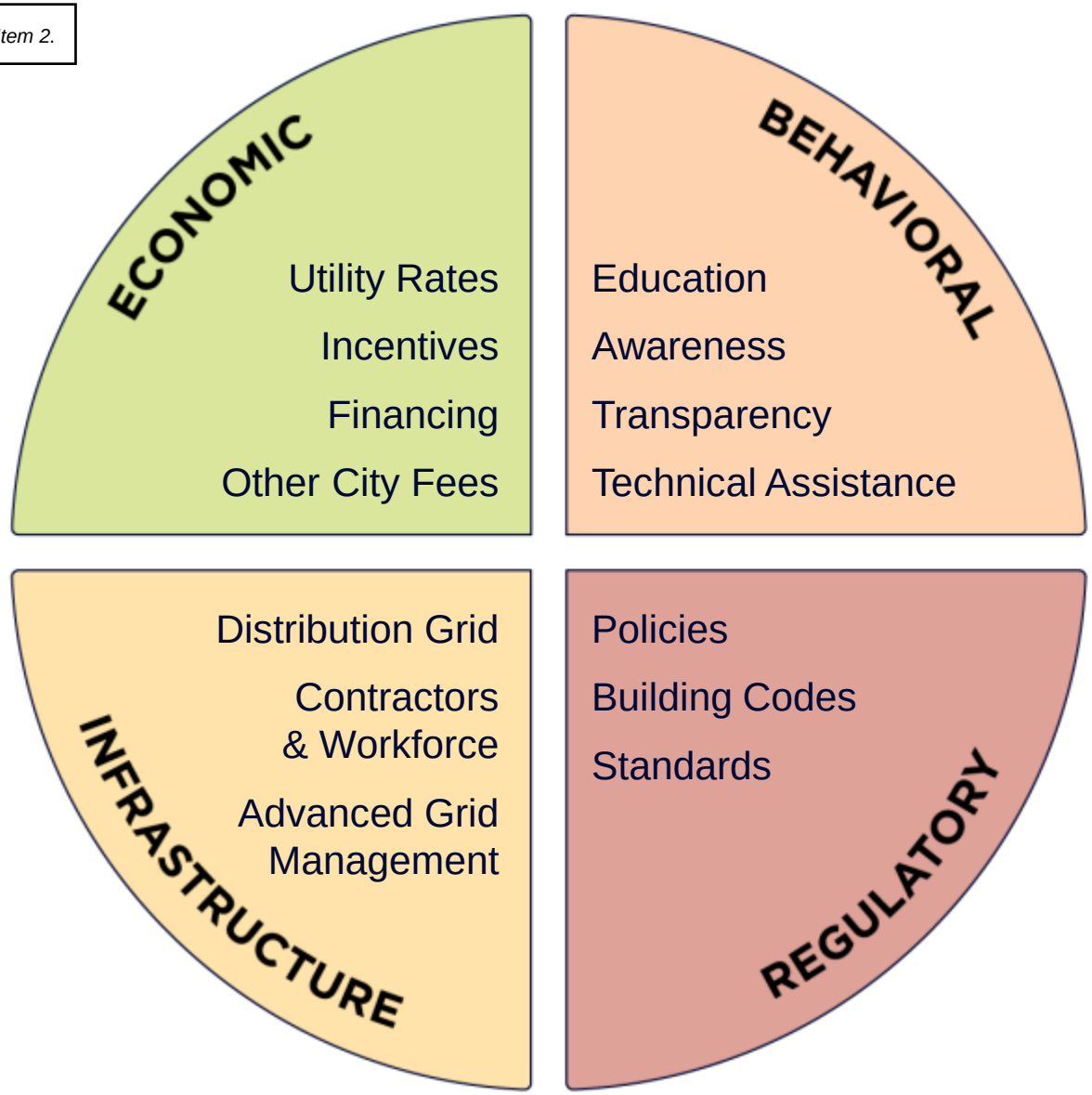
Reduce climate pollution and air pollution through best practices, emphasizing electrification

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

ectrification example: Residential HVAC retrofit considerations

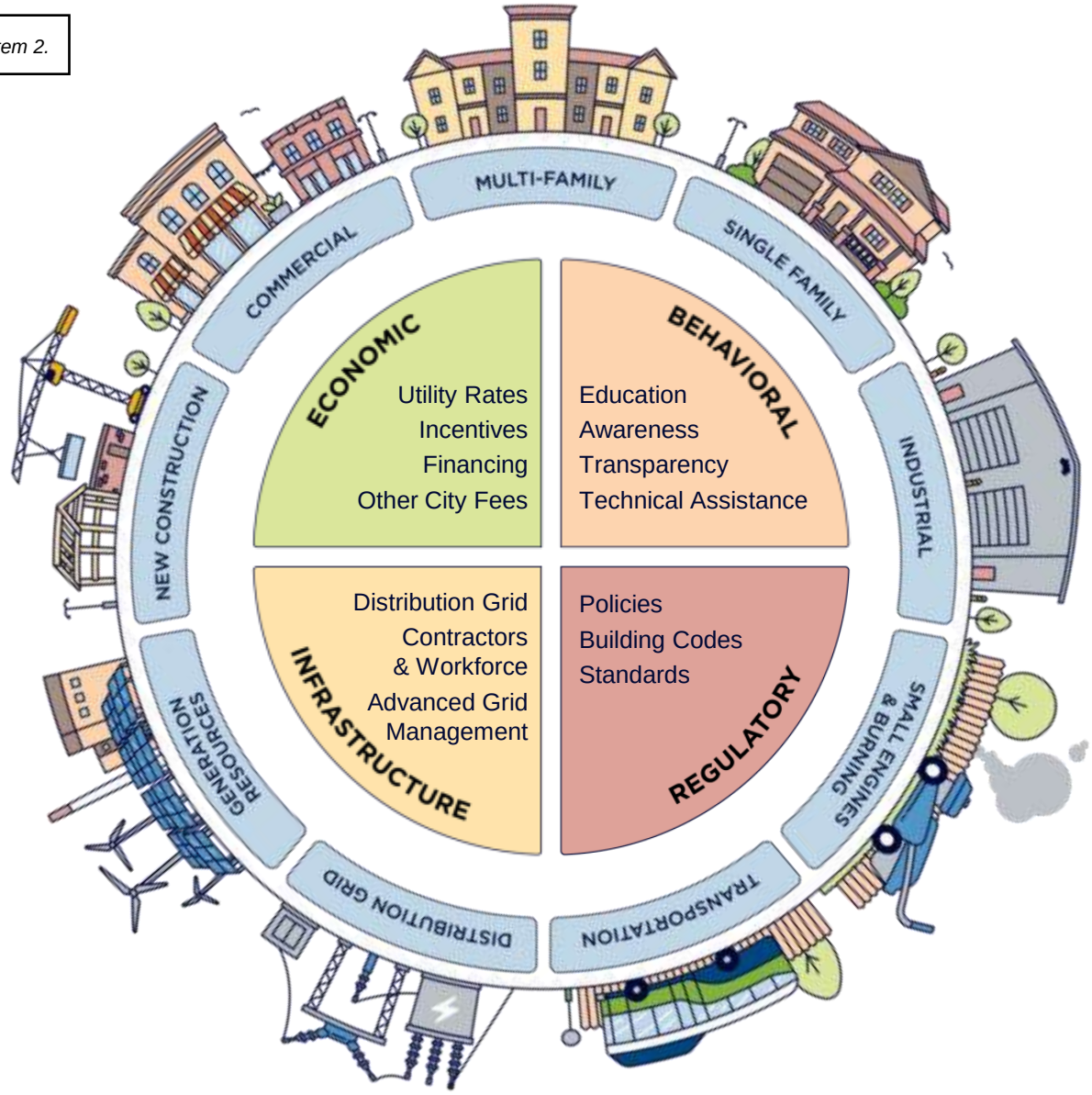
Saves Money	• Efficiency first, consider building characteristics • Behavioral changes needed for HVAC operation
Benefits the Environment	• Eliminate/minimize natural gas end use appliances • Clean energy resource mix needed
Fosters Grid Resilience	• All-electric back-up heating could represent localized 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:

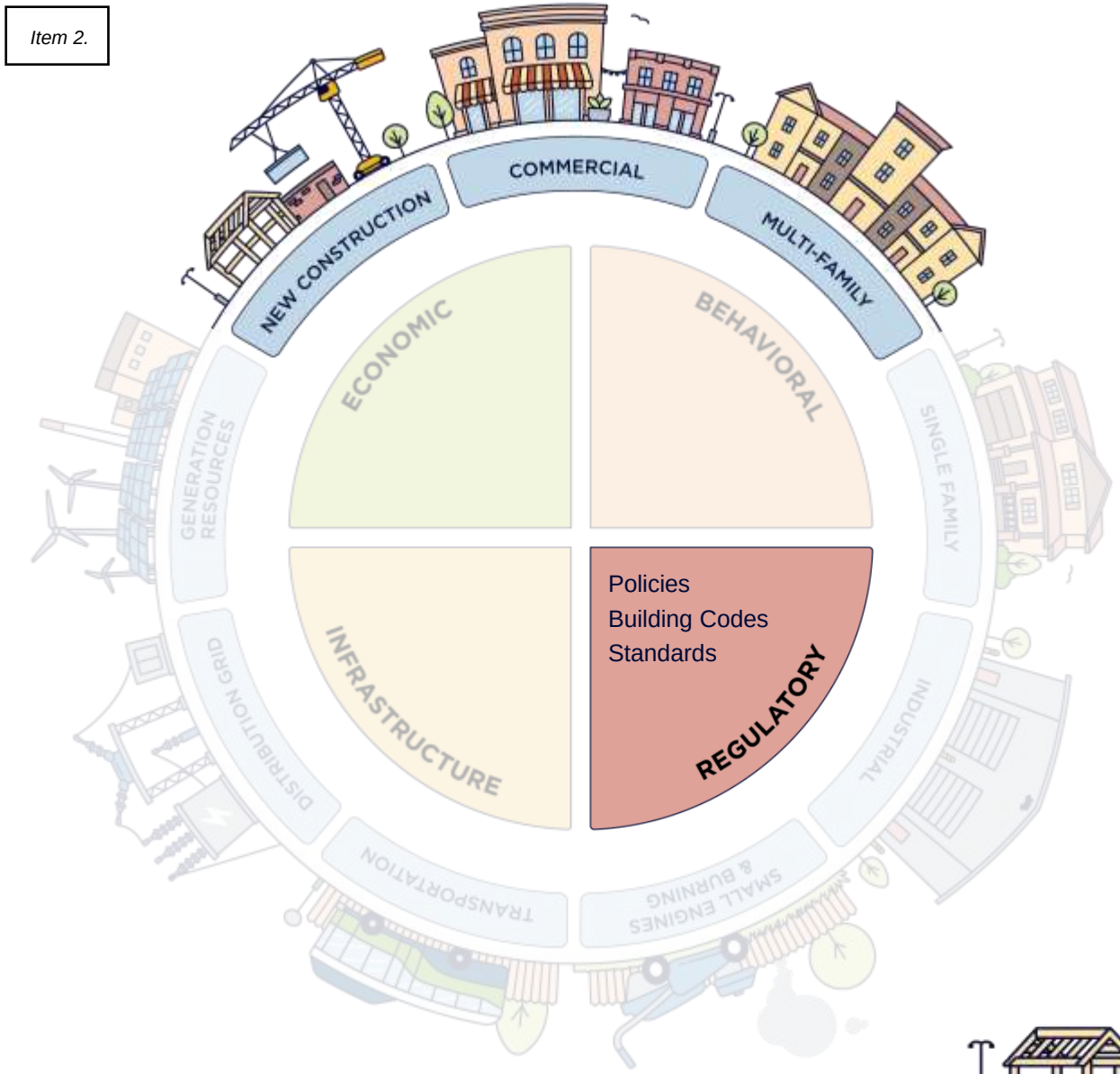
- Cost effectiveness
- Customer service
- Achievement of goals



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.

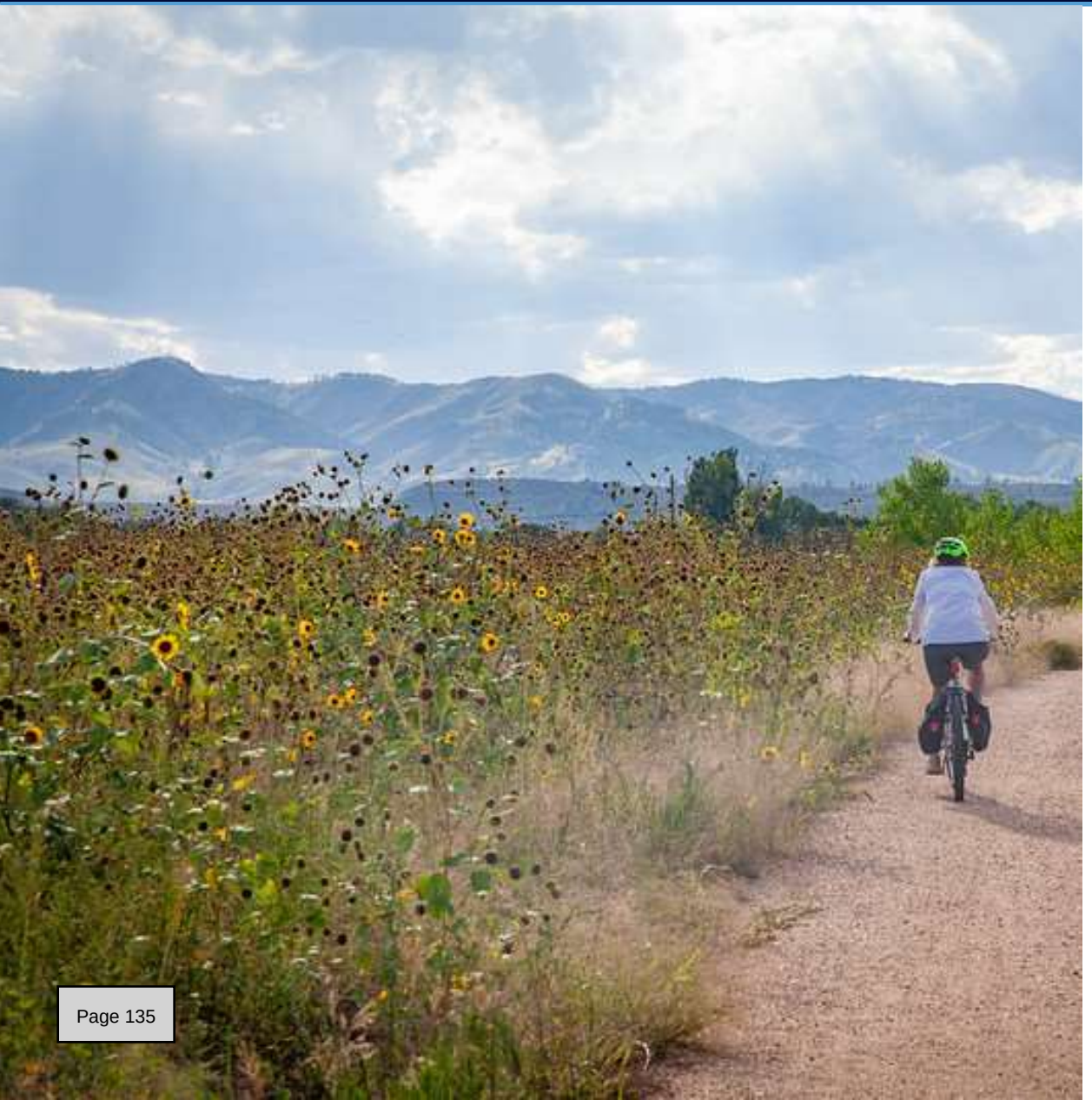
- Existing buildings impacts recognized by economic and behavioral levers.
- New construction impacts mostly recognized in advancement of building energy code.



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.

uncil Priority Question



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

Building Performance Standards

Katherine Bailey, Program Manager, Energy Services

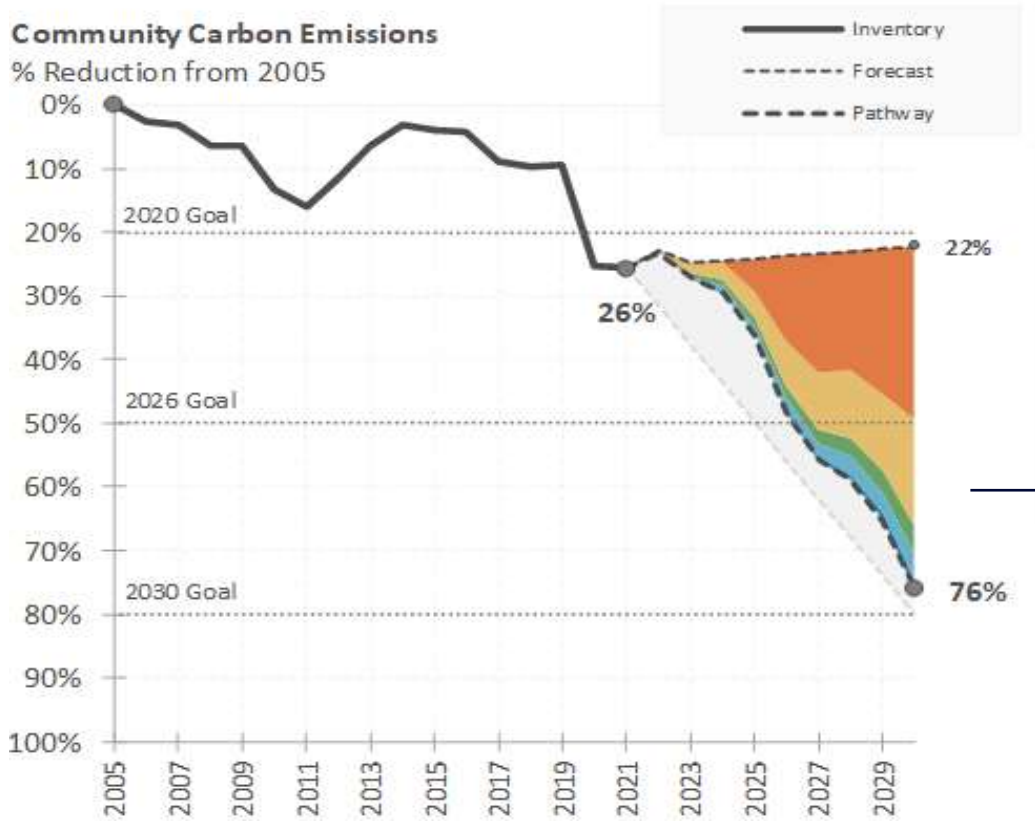
S Questions for Councilmembers

- 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?

S and Our Climate Future

OUR CLIMATE FUTURE

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

S Benefits

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**

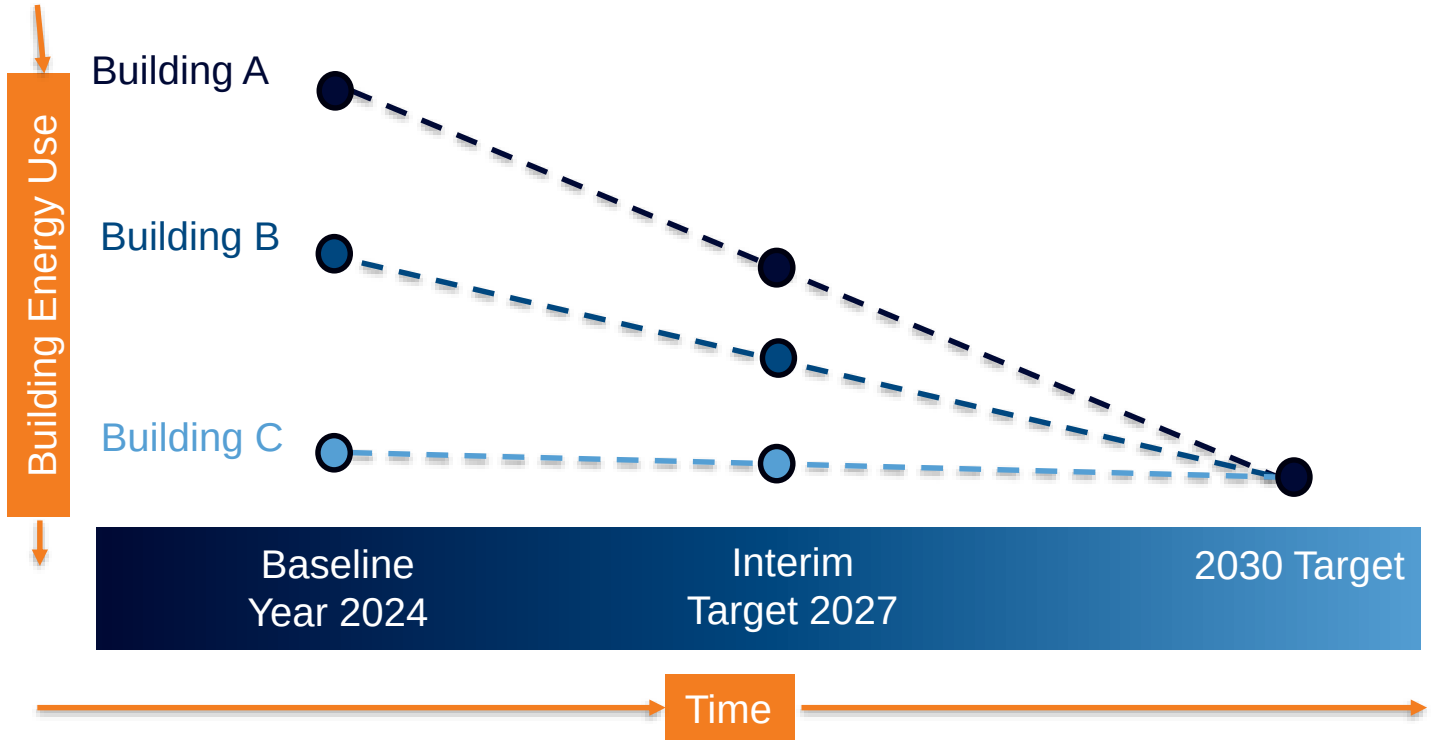
- Air quality
- Building occupancy
- Tenant retention
- Occupant productivity
- Economic growth
- Competitiveness

- 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

S in Practice at State and Federal Level

Federal Executive Order

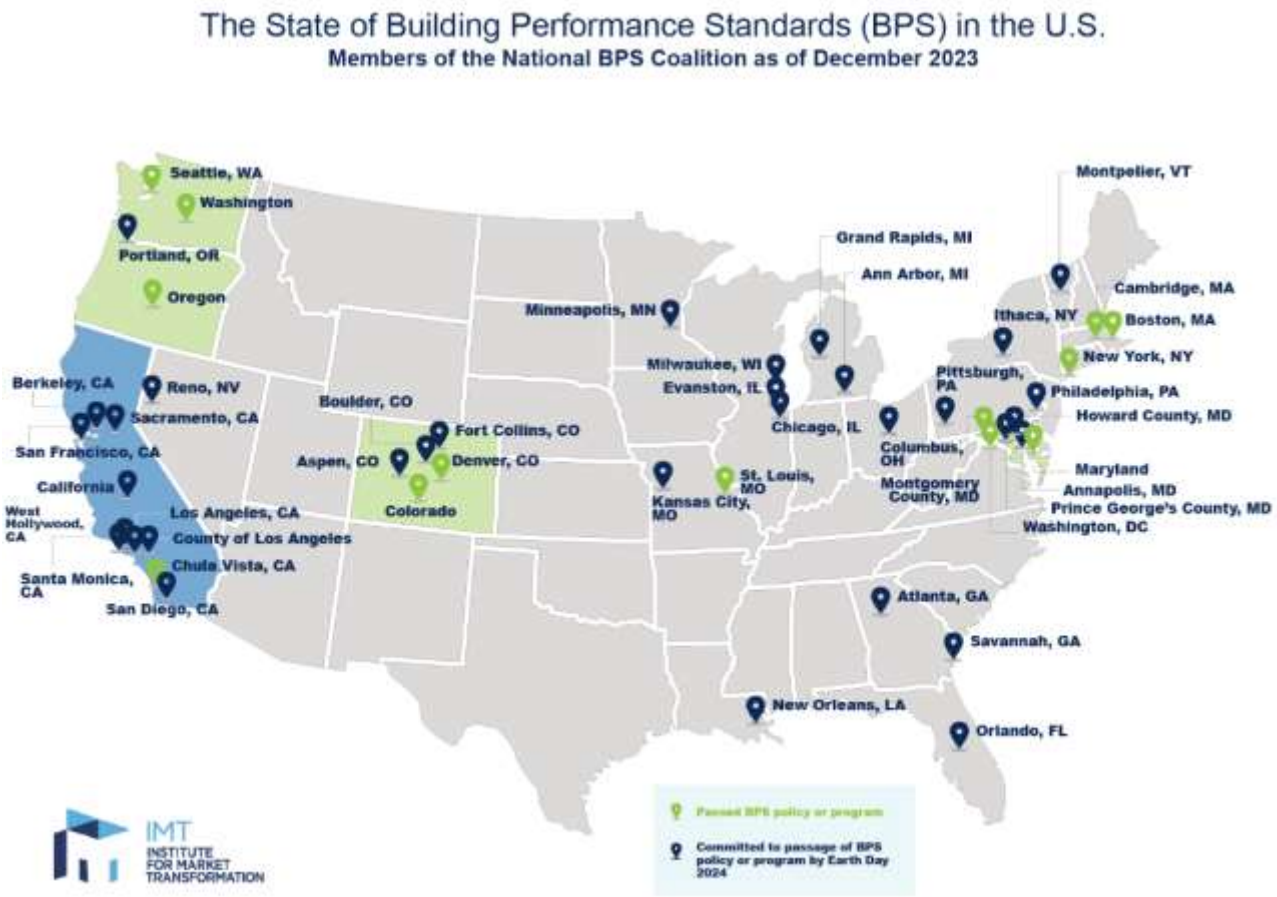
Net-zero emissions by 2045; 50% reduction in building emissions by 2032

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



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

mmunity Contributors

Task Force	Technical Committee	Equity Engagement	BPS Experts	Community Voices
Industry Experts	Building Science Experts	Community-Based Organizations	Other Jurisdictions	Business Groups
	Experienced Consultant	Climate Equity Committee	Non-profit and Federal Groups	Environmental Groups
		Scoped Work		Boards and Commissions

Community contributors shaped BPS policy recommendations

uctural 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*

ernative Compliance Options

- **Alternate Pathways**
  - Caps
  - Renewables
  - Waivers
- **Adjustments**
  - Timeline
  - Target

Alternate pathways provide options for buildings that cannot meet EUI targets

ealth of Resources

Current
- C-Pace Epic Tool
- BETTER Tool
- Assessments (Utilities, Xcel)

Future
- Targeted, **whole-building assessment** with next steps and projected EUI impact

Technical Assistance

Current
- Inflation Reduction Act
- State dollars
- Local rebates

Future
- More rebates, incentives
- Potential federal grants
- CEO partnership

Funding

Financing

Current
- Beneficial financing structures (green lending options)

Future
- **City partnerships** to fill gaps
- Opportunity navigators

Education

Current
- Assessments
- Advising

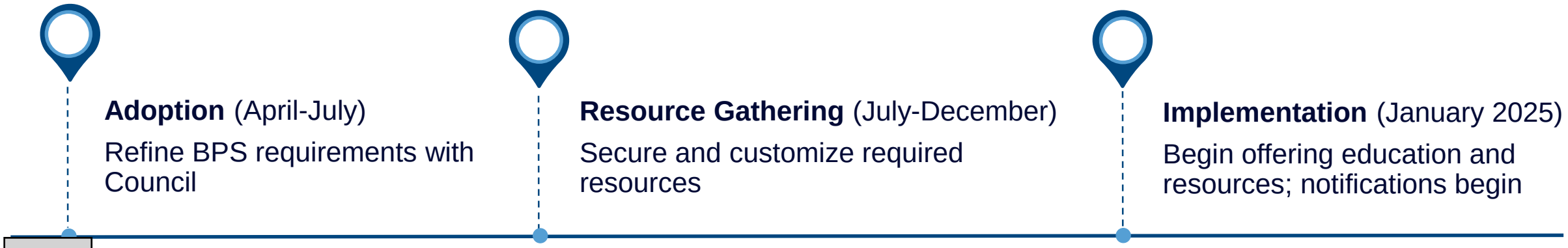
Future
- **Resource hub**
- Technical hub
- Financial hub
- BPS assessments
- Training Help Center support

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.



estions 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?

BPS Questions:

Katherine Bailey

Program Manager, Energy Services

Kbailey@fcgov.com

970-221-6818

Additional Context

Katherine Bailey

Program Manager, Energy Services

tential Customer Journey

Learn about requirement

Visit resource hub

Call City-sponsored Help Center with specific compliance questions

Get a professional assessment to learn about ways to comply

Find rebate and financing options through financial hub

Complete upgrades with local service provider

Confirm compliance through Building Hub website

sk Force

Representatives

- Multi-family housing
- Affordable housing
- Small business, building owner (South End)
- Service provider
- Commercial real estate (Waypoint, RPT)
- Sustainable Living Association
- DDA
- North Fort Collins Business Association
- Commercial building inspection
- City (David Suckling, Stu Reeve)

Objectives

- Provide critical perspectives
- Design an effective and implementable policy
- Build support
- Address social and racial inequities
- Create new partnerships

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

chnical Committee

Consultant and Expert Volunteers

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

hall Building Pathway

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

ernate Pathways - Caps

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

r Climate Future Council Roadmap

2023

- Develop Building Performance Standards
- Develop home energy listing requirements
- Adopt Economic Health Strategic Plan (including Circular Economy)*

2024

- Adopt Land Use Workstream 1*
- Sustainable Revenue - Franchise Fee*
- Adopt Building Performance Standards
- Develop energy code step towards net-zero carbon
- Adopt Water Efficiency Plan*
- Start contracted residential waste service including yard trimmings
- Allocate initial 2050 Tax funds for climate and transit*

2025

- Adopt Energy Code
- Adopt home listing requirements
- Adopt commercial/ industrial policy for yard trimmings*
- Adopt Land Use Workstream 2*

2026

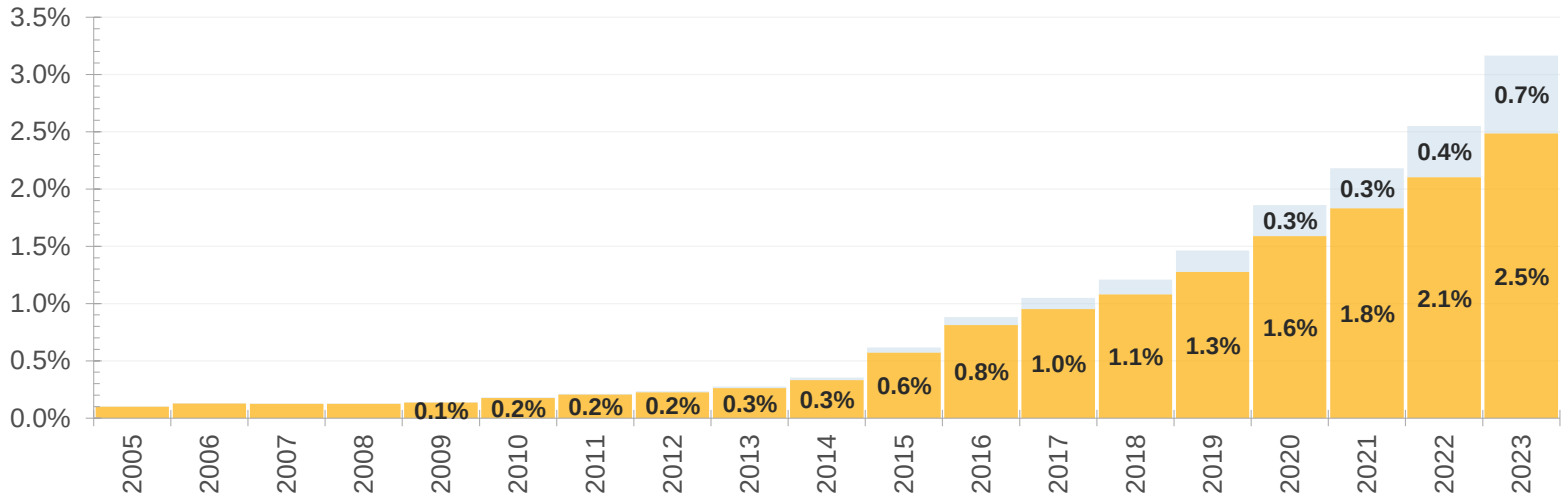
- Start Building Performance Standards
- Start West Elizabeth Bus Rapid Transit
- Start home energy listing requirements
- Start commercial/ industrial policy for yard trimmings*

OUR CLIMATE FUTURE

*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

newables

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)

st Benefit Study

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

st 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.

nalties

- 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

City of Fort Collins

April 23, 2024

WORK SESSION AGENDA ITEM SUMMARY

City Council

STAFF

Travis Storin, Chief Financial Officer
Ginny Sawyer, Lead Policy and Project Manager

SUBJECT FOR DISCUSSION

Community Capital Improvement Program (CCIP) and Street Maintenance 1/4-cent Tax Renewals.

EXECUTIVE SUMMARY

The purpose of this item is to update Council on Council Finance Committee and other discussions and progress related to the renewal of both the Street Maintenance and the Community Capital taxes.

GENERAL DIRECTION SOUGHT AND SPECIFIC QUESTIONS TO BE ANSWERED

1. What questions or concerns do Councilmembers have regarding possible extension of the term of the SMP tax to 20 years or into perpetuity?
2. What questions or suggestions do Councilmembers have for developing a future CCIP package for consideration?
3. Do Councilmembers support taking the CCIP renewal in 2025?

BACKGROUND / DISCUSSION

The City has a 40+ year history of utilizing voter approved sales tax initiatives to fund major capital projects and to achieve and maintain an extensive transportation system. Starting in 1973, with a 7-year, one-cent tax that helped fund the Downtown Library, the Lincoln Center, City Hall, Mulberry Pool and other improvements, residents have continued to support sales tax capital programs to create the city we enjoy today.

The current initiatives, CCIP and the Street Maintenance Program (SMP), will expire on December 31, 2025. With only one annual election opportunity (November), staff had recommended seeking these tax renewals in 2024. Both programs are a dedicated ¼- cent sales tax which equated to 25 cents on a $100 purchase. Over the 10-year program (2016-2025) each ¼-cent is estimated to generate approximately $80.0 million for community-wide investments.

Staff continues to recommend referring the SMP in 2024 (including considering a 20-year term). However, after considering the timeline on a number of possible projects staff would like to discuss the possible advantages of referring the CCIP in 2025. Advantages include a longer timeline for public engagement and time for further conversation and outcomes on upcoming feasibility studies and project plans, including the site plan for the Hughes property and feasibility of both a bike park and additional pickleball facilities.

Street Maintenance Program (SMP)

The SMP is intended to provide preventative maintenance to prolong the life of our streets. Streets are evaluated through visual inspection and testing and analysis that leads to a Pavement Condition Index (PCI) rating from excellent to poor. The Street Maintenance Program improves concrete curb, gutter and sidewalk; constructs handicap access ramps; repairs deteriorating asphalt; and reconstructs, overlays or slurry seals existing streets. With current funding levels, the SMP anticipates performing street maintenance treatments on approximately 40 to 50 miles of streets per year.

The SMP dedicated tax passed in 2005 and 2015 with significant support. Based on past support, the recognized on-going need, and Council consideration staff is seeking direction on considering a 20-year tax term. Securing funding over a longer term, even at less than needed amounts, helps provide stability going forward.

Community Capital Improvement (CCIP)

The capital improvement taxes have historically utilized about half of the funding for engineering and transportation needs, including pedestrian and bicycling improvements and arterial intersection improvements, with the other half being dedicated to “new” amenities and facilities. In the 2015-2025 package two additional program buckets were added: Nature in the City and Affordable Housing.

Elements of a Successful CCIP Package

Council had previously asked for staff to consider past learnings from previous CCIP efforts. The City of Fort Collins has had a successful track record of referring (and getting approval) of capital improvement dedicated taxes. The last two measures passed with 80% voter approval. Staff attributes this success to:

- Advancing projects from Master Plans that have been informed by community input.
- Ensuring the items put forth represent community desires and priorities across broad geography, types of services, and personal passions. (See attached map for current program projects/locations.)
- Utilizing community engagement to prioritize projects and programming.

There have also been lessons learned over time to mitigate risks, including:

- Adjusting for inflation and adding on years of operation and maintenance until a program/facility is established.
- Balancing flexibility and specificity to ensure voters get what the ballot promised while allowing for measured leeway to take advantage of unforeseen opportunities (grants, development, etc.).
- Avoiding singular projects that would absorb a majority of the funding.
- Solidifying a plan far enough in advance of referral to ensure adequate budgeting analysis and community awareness.

Potential Projects

Staff have begun reviewing adopted plans for potential project candidates and developing more detailed project narratives and costing details for all potential projects. Based on timeline decisions, staff would dedicate a future work session to fully exploring and discussing project details. These early meetings have generated the following ideas:

Transportation/Engineering:

- Arterial Improvements

- Bike Infrastructure
- Sidewalk/ADA Improvements
- Bus Stop Improvements and Bus Replacement
- Howes (street conversions)

Other Funds:

- Affordable Housing
- Nature in the City
- Active Mode Infrastructure

Capital Projects:

- Car Barn Advancement (Trolley Barn: Cherry and Howes)
- Park Improvements (Martinez Park)
- New Downtown Parks Shop
- Transfort Maintenance Site
- Lincoln Center Upgrades (catering Kitchen)
- Composting Facility
- Trail Strategic Plan Components
- River Masterplan (another reach)
- Laporte Avenue Re-design
- Children's Garden Renovation
- Mulberry Pool Replacement
- Pickleball Expansion
- Mountain Biking Facility (site TBD)

Council Timeline

Currently the project team has scheduled Council work sessions on April 23 and June 11 with a ballot referral at the August 20 regular meeting. Staff recommends maintaining this schedule for the SMP initiative. If there is direction to pursue a 2025 timeline for CCIP, an updated timeline has been included in the PowerPoint.

NEXT STEPS

- Continued CCIP project development and refinement.
- Council Work Sessions and Finance Committee Meetings

ATTACHMENTS

1. Map of Current CCIP Project Locations
2. Approved Council Finance Committee Minutes (Excerpt)
3. Presentation

CCIP-FUNDED CAPITAL PROJECTS ACROSS FORT COLLINS

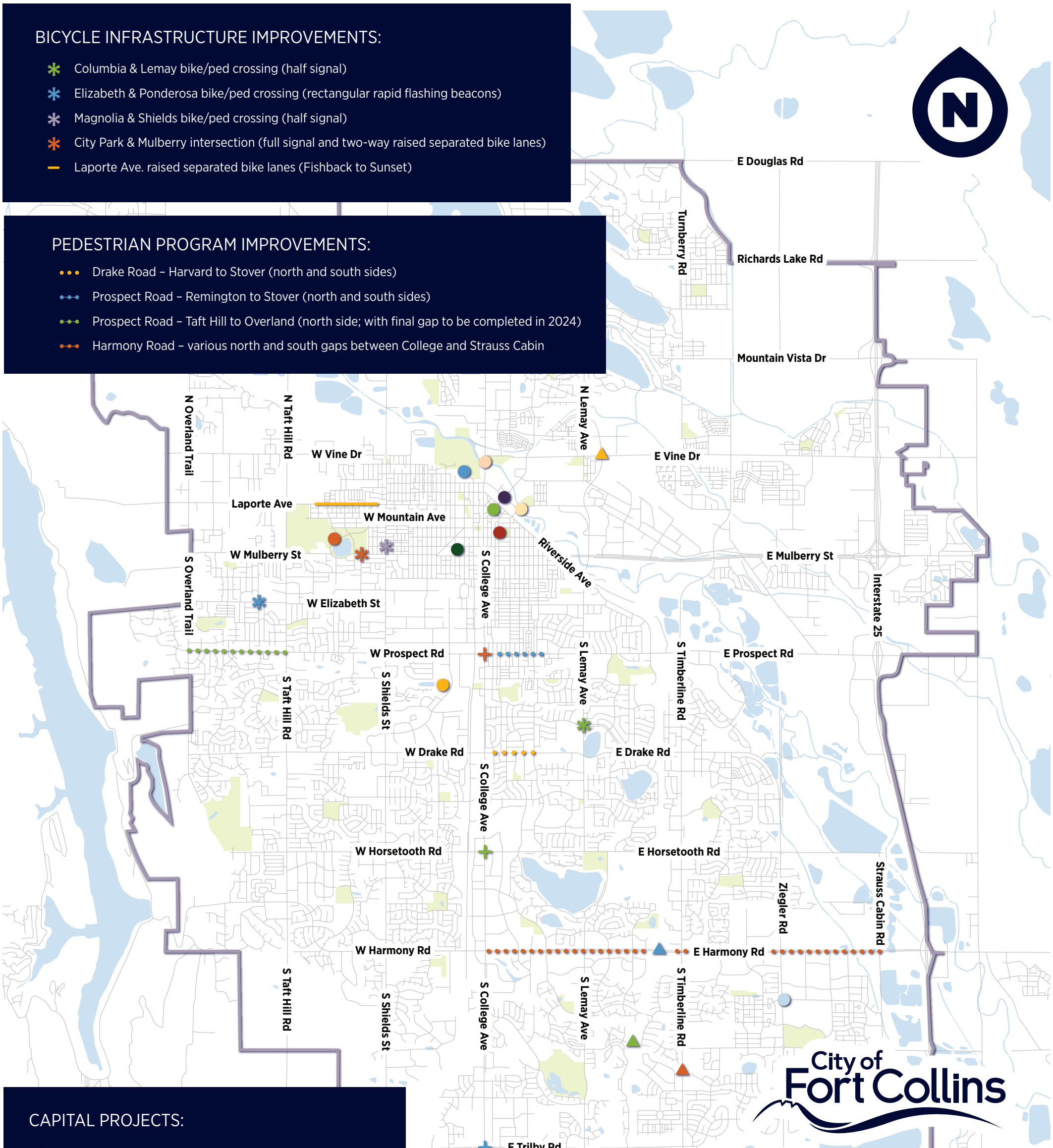
2016-2025

BICYCLE INFRASTRUCTURE IMPROVEMENTS:

- Columbia & Lemay bike/ped crossing (half signal)
- Elizabeth & Ponderosa bike/ped crossing (rectangular rapid flashing beacons)
- Magnolia & Shields bike/ped crossing (half signal)
- City Park & Mulberry intersection (full signal and two-way raised separated bike lanes)
- Laporte Ave. raised separated bike lanes (Fishback to Sunset)

PEDESTRIAN PROGRAM IMPROVEMENTS:

- Drake Road – Harvard to Stover (north and south sides)
- Prospect Road – Remington to Stover (north and south sides)
- Prospect Road – Taft Hill to Overland (north side; with final gap to be completed in 2024)
- Harmony Road – various north and south gaps between College and Strauss Cabin



CAPITAL PROJECTS:

- Carnegie Building Renovation
- Club Tico Renovation
- Downtown Poudre River Enhancements Whitewater Park
- Gardens on Spring Creek Visitors Center
- Lincoln Avenue Bridge
- Lincoln Center Upgrades
- Linden Street Renovation
- Lee Martinez Park Improvements
- Southeast Community Center
- Willow Street Improvements

- Growth Management Area

BIKE/PED GRADE-SEPARATED CROSSINGS:

- Timberline and Mail Creek Ditch underpass
- Vine and Lemay underpass
- Siphon overpass (construction in 2024)
- Harmony and Power Trail underpass (construction in 2025)

ARTERIAL INTERSECTION IMPROVEMENTS:

- College and Prospect
- College and Horsetooth
- College and Trilby

City of Fort Collins

Finance Administration
215 N. Mason
2nd Floor
PO Box 580
Fort Collins, CO 80522

970.221.6788
970.221.6782 - fax
fcgov.com

Council Finance Committee Hybrid Meeting
CIC Room / Zoom
March 20, 2024
4:30- 7:00 pm

Council Attendees:	Emily Francis, Kelly Ohlson, Tricia Canonico, Mayor Jeni Arndt via phone
Staff:	Kelly DiMartino, Tyler Marr, Travis Storin, Dean Klingner, Leann Williams, Victoria Shaw Denzel Maxwell, Lawrence Pollack, Ginny Sawyer, Adelle McDaniel, Brad Buckman, Brian Hergott, Brian Tholl, Cortney Geary, Dave Lenz, Jeff Rochford, Jill Wuertz, Zack Mozer, Tyler Stamey, Terri Runyan, SeonAh Kendall, Ryan Malarky, Peggy Streeter, Nina Bodenhamer, Monica Martinez, Mallory Gallegos, Lockie Woods, Jacob Castillo, Cortney Geary, Julia Feder, Chief Bergsten, Patti Forsythe, Chris Martinez, Carolyn Koontz
Others:	Bill Salmon, PFA Board Member

Meeting called to order at 4:30 pm

Approval of minutes from February 23rd, 2024, Council Finance Committee Meeting.
Kelly Ohlson moved for approval of the minutes as presented. Emily Francis seconded the motion.
The minutes were approved unanimously via roll call by; Emily Francis, Kelly Ohlson.

A. CCIP & Streets Maintenance Tax Renewals

Travis Storin, Chief Financial Officer
Ginny Sawyer, Policy & Project Manager

EXECUTIVE SUMMARY
Staff provided the full Council an overview of the history, use, and timelines of both the Street Maintenance Program (SMP) and the Community Capital Improvement Program (CCIP) taxes at the February 13, 2024 regular meeting. That meeting outlined the meeting cadence associated with referring these renewals to the November 2024 ballot. Multiple meetings with the Council Finance Committee (CFC) were included.

This first meeting of the CFC will focus on any questions the committee may have, the term of the SMP tax, and the process of developing a CCIP project list.

GENERAL DIRECTION SOUGHT AND SPECIFIC QUESTIONS TO BE ANSWERED
What questions or concerns do CFC committee members have regarding possible extension of the term of the SMP tax to 15 or 20 years?

What questions or suggestions do CFC committee members have for developing a future CCIP project package for consideration?

Do CFC committee members support considering taking the CCIP renewal in 2025?

BACKGROUND/DISCUSSION
The City of Fort Collins has a 40+ year history of utilizing voter approved sales tax initiatives to fund major capital projects and to achieve and maintain an extensive transportation system. Starting in 1973, with a 7-year, one-cent tax that helped fund the Downtown Library, the Lincoln Center, City Hall, Mulberry Pool and other improvements, residents have continued to support sales tax capital programs to create the city we enjoy today.

The current initiatives, CCIP and the SMP, will expire on December 31, 2025. With only one annual election opportunity (November), staff had recommended seeking these tax renewals in 2024. Both programs are a dedicated ¼- cent sales tax which equated to 25 cents on a $100 purchase. Over the 10-year program (2016-2025) each ¼-cent is estimated to generate approximately $80.0 million for community-wide investments.

Staff continues to recommend referring the SMP in 2024, however, after considering the timeline on a number of possible projects staff would like to discuss the possible advantages of referring the CCIP in 2025. Advantages include a longer timeline for public engagement and time for further conversation and decisions on waste shed projects, the site plan for the Hughes property, and additional feasibility of both a bike park and additional pickleball facilities.

Elements of a Successful CCIP Package
The City of Fort Collins has had a successful track record of referring (and getting approval) of capital improvement dedicated taxes. The last two measures passed with 80% voter approval. Staff attributes this success to:

- Advancing projects from Master Plans that have been informed by community input.
- The items put forth represent community desires and priorities across broad geography, types of services, and personal passions.
- Community engagement helps to prioritize projects and programming.

There have also been lessons learned over time to mitigate risks, including:
- Adjusting for inflation and adding on years of operation and maintenance until a program/facility is established.
- Balancing flexibility and specificity to ensure voters get what the ballot promised while allowing for measured leeway to take advantage of unforeseen opportunities (grants, development, etc.)
- Avoiding singular projects that would absorb a majority of the funding.
- Solidifying a plan far enough in advance of referral to ensure adequate budgeting analysis and community awareness.

Next Steps
Based on CFC discussion and suggestions, staff will outline future agenda content and an engagement plan for public outreach.

Future Council engagement includes:

April 23 work session: Bring CFC recommendations of referral dates, SMP tax term. Review of engagement plan.

May CFC meeting: Confirm SMP referral actions. Start CCIP package development.

June 11 work session: Confirm SMP referral details. Consider CCIP progress.

July 16 work session: TBD

August 20 regular meeting: Refer ballot language for any 2024 measures.

GENERAL DIRECTION SOUGHT AND SPECIFIC QUESTIONS TO BE ANSWERED

What questions or concerns do CFC committee members have regarding possible extension of the term of the SMP tax to 15 or 20 years?

What questions or suggestions do CFC committee members have for developing a future CCIP project package for consideration?

Do CFC committee members support considering taking the CCIP renewal in 2025?

Discussion / Next Steps

Tricia Canonico: For the time being, I don't know if I would want Hughes to play a part here because it has been so dividing for our community. We saw that with the large emitter fee as an example, some of our community members not wanting to support that tax.
Do we know when the county is looking at putting the childcare tax on the ballot this year?

Kelly DiMartino; I think they are – there is a group and they call themselves the sandbox, which includes all of the interested parties. They have come together and I think they are getting close.

Tricia Canonico; I support moving it out to 2025 as it sounds like there may be too many competing tax measures on the ballot.

Emily Francis; I agree with Tricia. Hughes – not knowing what it is and the engagement around it - I would be worried about the timeline and just adding it in. I think 2025 makes sense. I think the things that we have heard support for like the bike park and pickleball, larger ideas could go on there. The childcare and then also under the Council priority of operationalizing housing sustainable funding is one of the things to look at and so, how would that play into potential funding and a tax?

Ginny Sawyer; a separate initiative or within a bucket in CCIP?

Emily Francis; I would say that to date, CCIP funding for affordable housing has not been sufficient.
I was also looking at some of the capital type projects like Linden Street and thinking about council's priority of adaptive reuse in community hubs in neighborhoods. One of the big barriers to redeveloping that has been

funding –and bringing those up to current standards – funding has been a huge barrier to get anything updated. Is there a way for CCIP to rejuvenate those neighborhood hubs that have not been updated for some time?

Travis Storin; when we talk about the engineering bucket that Ginny was referring to. We look at that as a viable way to address that piece. It is a very good question on housing. What could more CCIP funding do there relative to the $4M over 10 years that we put in, which, when you think about the sustainable funding conversation last year now years later it sounds pretty scant

Emily Francis; I think it would be worth bringing in the affordable housing providers. Seeing what the gap is and what the city's responsibility is and if this is appropriate.

Kelly Ohlson; I think street maintenance would pass if we put it into perpetuity. I don't care if it is 20 or 25. A minimum of 20 – I would be fine with 25 – people like their streets maintained. Kelly Ohlson; I will support whatever the full Council comes up - 20 or 25. Regarding Hughes, it is all over the map – more than two sides to that particular issue.

Travis Storin; we know it is a council priority to have a site plan.

Ginny Sawyer; full site plan - soft trail and trail connections to the site –

Early Idea List

City of Fort Collins

Transportation/Engineering:

- Arterial improvements
- Bike infrastructure
- Sidewalk/ADA improvements
- Bus stop improvements and bus replacement
- Howes (street conversions)

Other Funds:

- Affordable Housing
- Nature in the City
- Active Mode Infrastructure

Capital Projects:

- Civic Center advancement
- Car (Trolley) Barn advancement
- Park Improvements (Martinez)
- Downtown Parks Shop
- Transfort maintenance site
- Lincoln Center (catering kitchen)
- Composting facility
- Trail strategic plan components
- River masterplan (another reach)
- LaPorte Avenue re-design
- Children's Garden renovation
- Mountain biking facility, site TBD
- Mulberry Pool Replacement
- Pickleball expansion

10

Slide #10 above

Kelly Ohlson; a composting facility - should be solid waste – might be things that are a higher priority. I think it was a little broader on the list. I can't argue with your logic of 2025 to get it right even though if we put something on the ballot – it might be as refined. Citizens group is renewing by the imitative method the natural areas tax in 2025- so this would be on the ballot too. I think they are complementary and not contradictory. You can build a positive momentum to put it in a framework. In 2014 which was not a pretty election cycle for

things like this, the county tax, open space renewal – approximately 90% of districts in Fort Collins voted for natural areas. I just want people to have all of the information. In 1997, there were 3 taxes including street maintenance and we combined them all together and they passed overwhelmingly. I think your logic is sound.

Tricia Canonico; one question on street maintenance – are we going to hamstring ourselves by extending it too far or can we add to it to allow for a gradual increase in the tax, so it continues to be adequate?

Travis Storin; so, you are surfacing what I think is going to be a very interesting staff discussion. When we talk about perpetuity, in some respects, it could feel limiting if we don't think the current tax is going to meet the needs. There might actually still be an argument to stick with 20 which would allow us to reevaluate the toolkit-to determine if we need a different amount or different taxation. I think we are going to have a very lively debate on that question.

Tricia Canonico; are we looking at the amount that we are going after?

Travis Storin; on staff – we are a bit reluctant in practical terms, whether going for over ¼ cent would be advisable. A big part of that is the TABOR language. When we go with ¼ cent, we get to say 'without raising taxes'. If we went with a nickel more, it says will you approve this tax increase?

Meeting adjourned

April 23, 2024

Community Capital Improvement Program and Street Maintenance ¼-cent Tax Renewals

Council Work Session

Travis Storin - Chief Financial Officer
Ginny Sawyer - Lead Policy and Project Manager

ection Sought

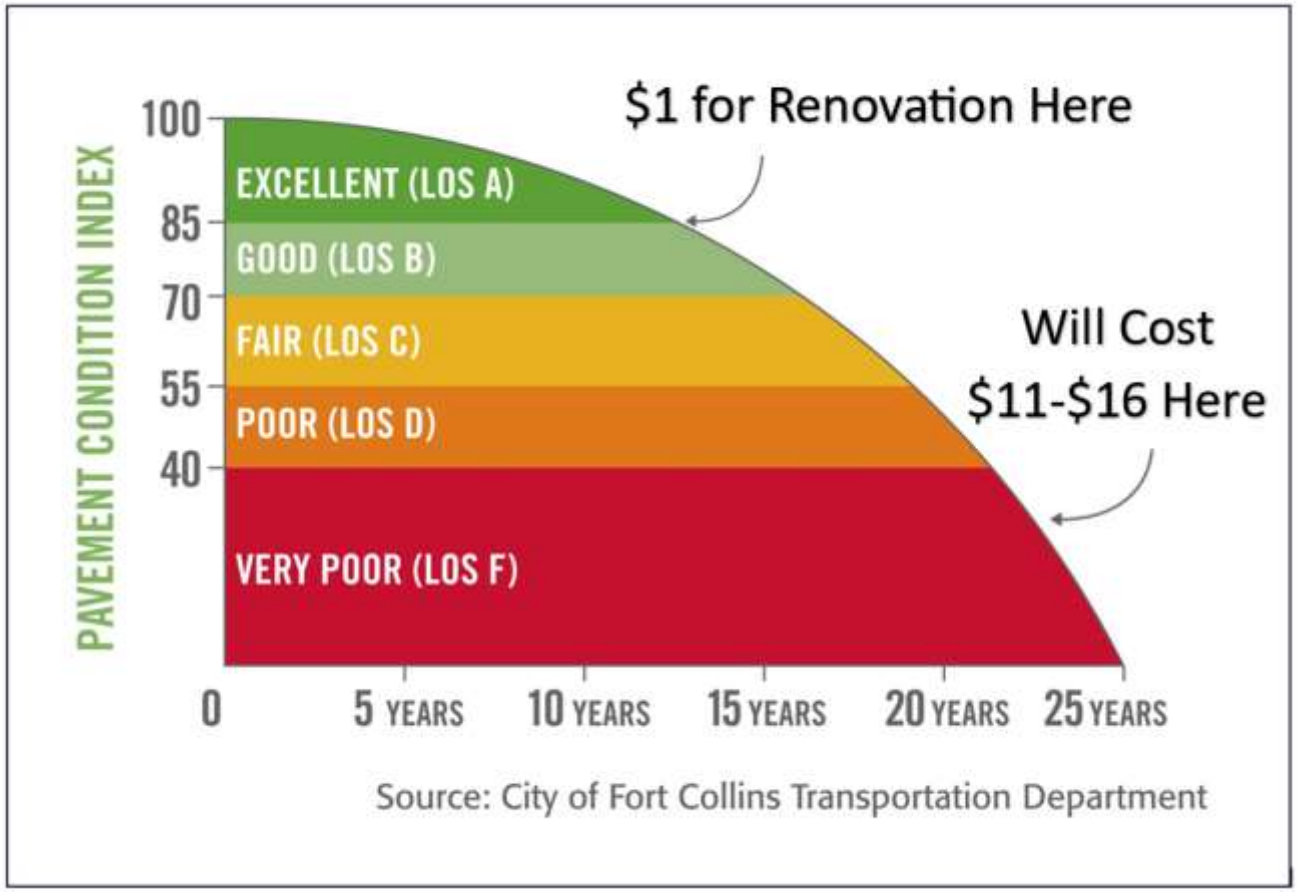
01 What questions or concerns do Councilmembers have regarding possible extension of the term of the SMP tax to 20 years or into perpetuity?

02 What questions or suggestions do Councilmembers have for developing a future CCIP project package for consideration?

03 Do Councilmembers support considering taking the CCIP renewal in 2025?

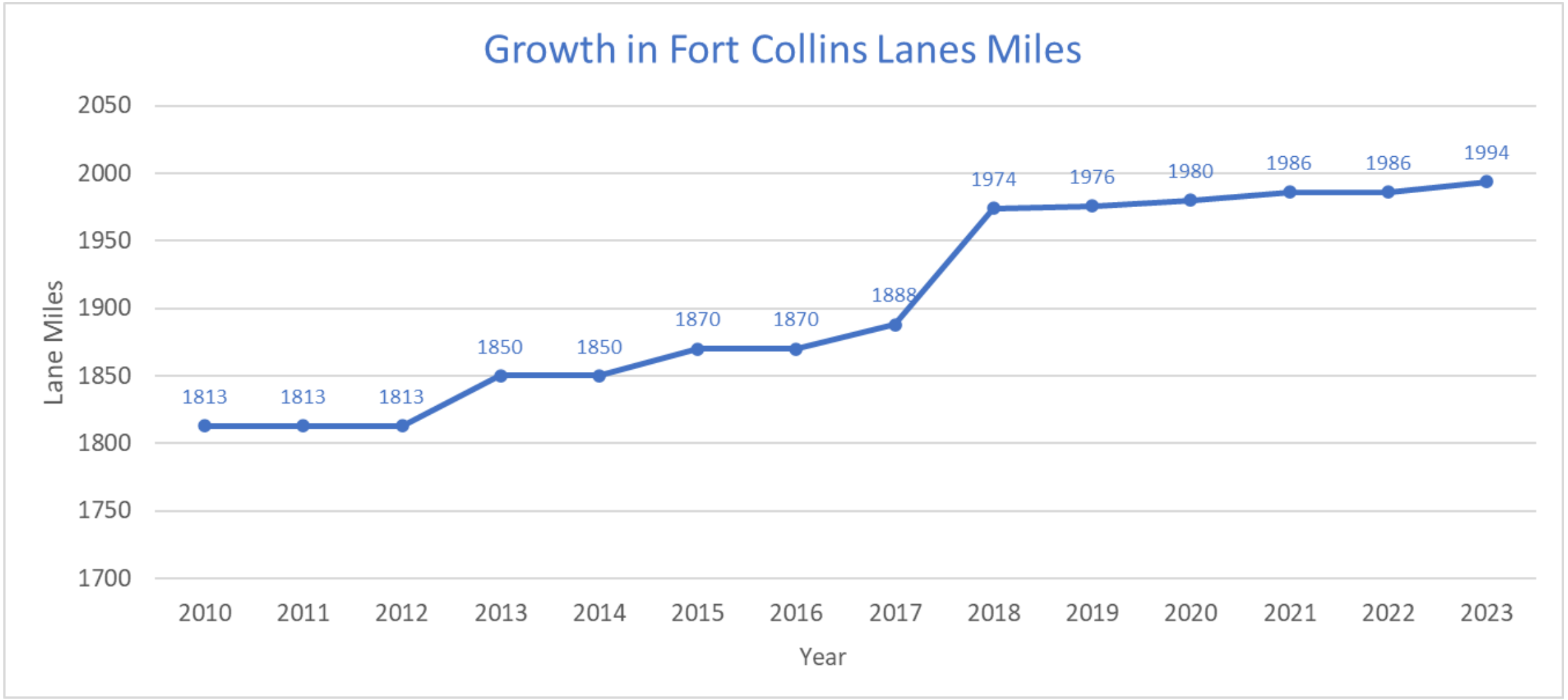
Streets Maintenance Program

eet Maintenance

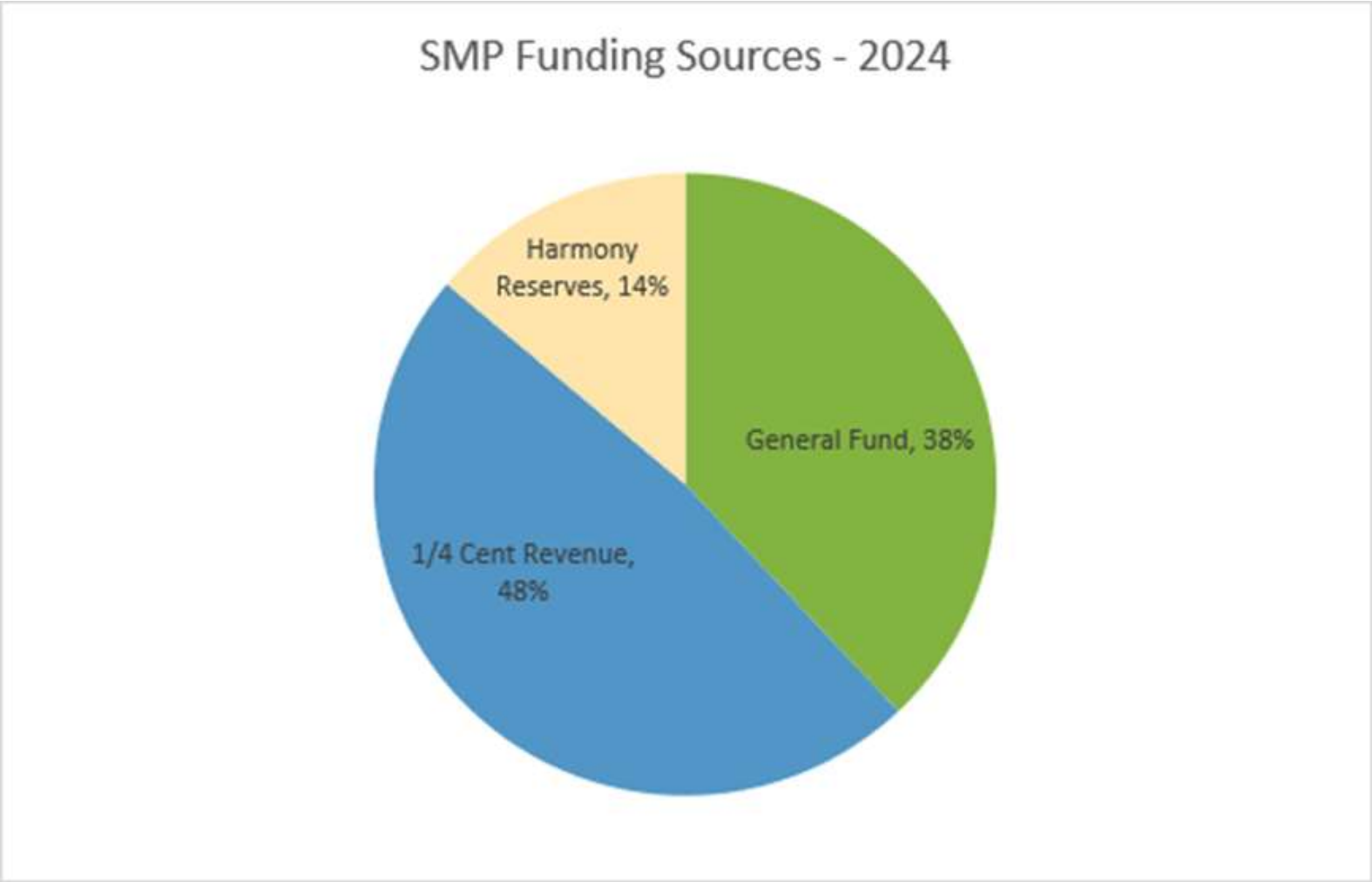


- Streets system is one of our largest and most costly investments.
- City strives for level B service.
- Repair and preventative maintenance on our streets extends the street life and saves money in the long run.

adway Assets



eet Maintenance Program (SMP)

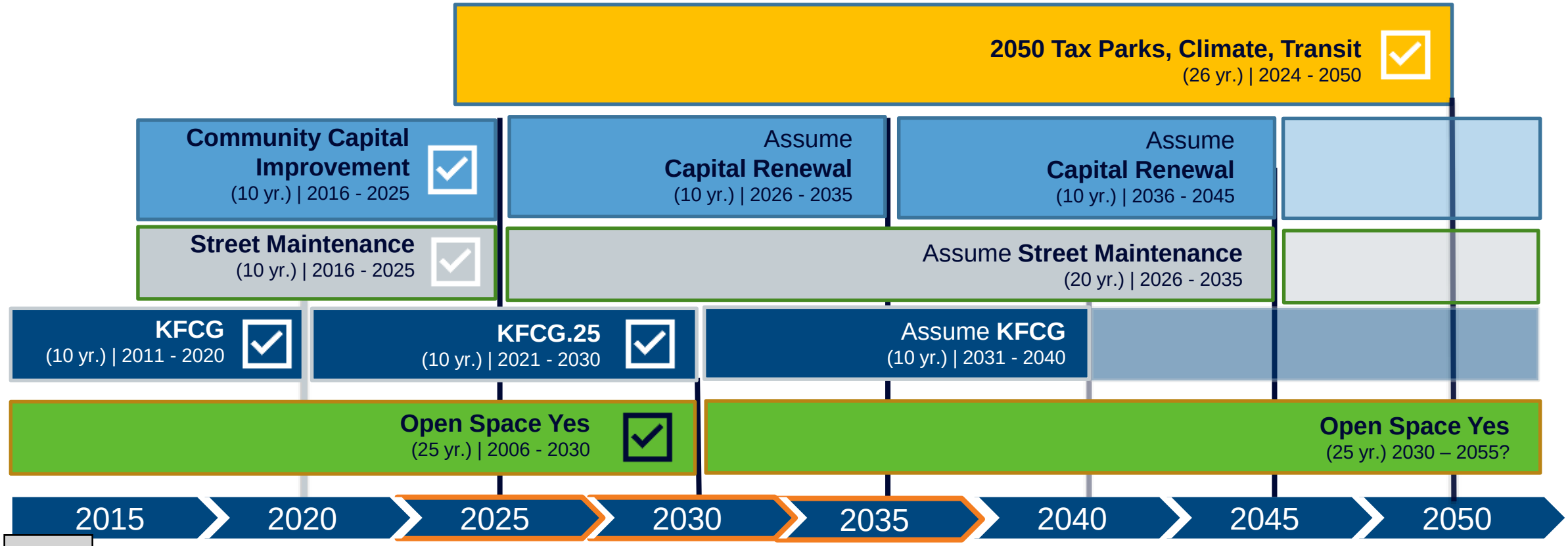


Current practice is to address the road system wholistically: bridges, streets, and traffic.
This is intended to provide efficiencies by increasing collaboration and supporting strategic project planning.

k Renewals Over Time

Long-term Look at Possible **Tax Renewals**

MULTIPLE ASSUMPTIONS



Community Capital Improvement (CCIP)

pital Tax - Historic

Approximately half of revenue used for engineering/transportation related activities and half used for new capital amenities

Current Engineering/Transportation-Type Funds

- Arterial Intersection Improvements $6.0 M
- Bicycle Infrastructure Improvements $5.0 M
- Bike/Ped Grade Separated Crossing Fund $6.0 M
- Bus Stop Improvements $1.0 M
- Pedestrian Sidewalk / ADA-Compliance $14.0 M
- Transfort Bus Fleet Replacement $2.0 M

New Fund Buckets

- Affordable Housing Fund $4.0 M
- Nature in the City $3.0 M

Current Capital-Type Projects

- Lincoln Ave. Bridge $5.3 M
- Linden St. Renovation $3.0 M
- SE Community Center w. Pool $14.0 M
- Gardens on Spring Creek Visitor's Center $2.0 M
- Willow Street Improvements $3.5 M
- Carnegie Bldg. Renovation $1.0 M
- ~~City Park Train $350K~~
- Club Tico Renovation $250k
- Downtown Poudre River Enhancements Whitewater Park $4.0 M

pital Tax – Lessons Learned

The last two measures passed with 80% voter approval

Helpful to…

- Advance projects from Master Plans that have been informed by community input.
- Ensure items put forth represent community desires and priorities across broad geography, types of services, and personal passions.
- Utilize community engagement to help prioritize projects and programming.

Have learned to…

- Adjust for inflation and add on years of operation and maintenance.
- Balance flexibility and specificity to ensure voters get what the ballot promised while allowing flexibility to take advantage of unforeseen opportunities (grants, development, etc.)
- Avoid singular projects that would absorb a majority of the funding.
- Solidify a plan far enough in advance of referral to ensure adequate budgeting analysis and community awareness.

rly Idea List

Transportation/Engineering:

- Arterial improvements
- Bike infrastructure
- Sidewalk/ADA improvements
- Bus stop improvements and bus replacement
- Howes (street conversions)

Other Funds:

- Affordable Housing
- Nature in the City
- Active Mode Infrastructure

Capital Projects:

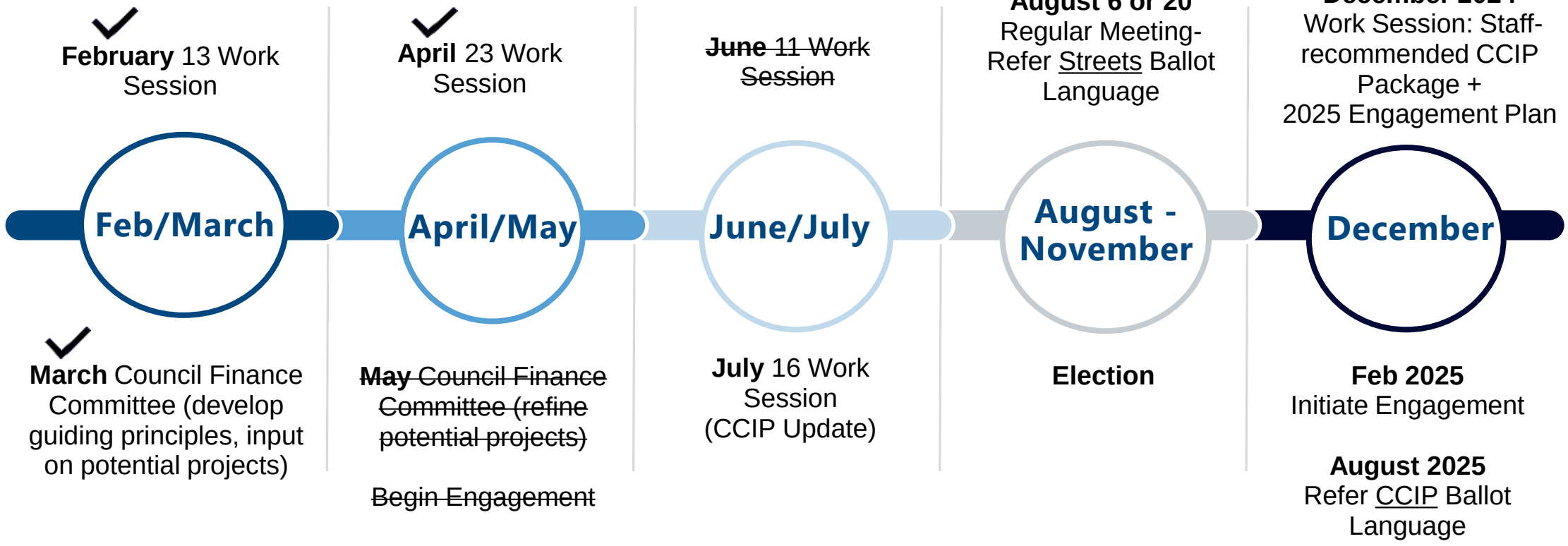
- Civic Center advancement
- Car (Trolley) Barn advancement
- Park Improvements (Martinez)
- Downtown Parks Shop (Advances Civic Center masterplan)
- Transfort maintenance site
- Lincoln Center (catering kitchen)
- Composting facility
- Trail strategic plan components
- River masterplan (another reach)
- LaPorte Avenue re-design
- Children's Garden renovation
- Mountain biking facility, site TBD
- Mulberry Pool Replacement
- Pickleball expansion

25 CCIP

- Provides additional time to develop and seek feedback on a project list.
- Provides more time ahead of referral for outreach and education.
- Allows additional time for potential project development and feasibility and project plans such as Hughes property use and pickleball facilities.
- Less risk to current budget if measure does not pass.

Timeline and Next Steps

24-2025 Timeline



ection Sought

01 What questions or concerns do Councilmembers have regarding possible extension of the term of the SMP tax to 20 years or into perpetuity?

02 What questions or suggestions do Councilmembers have for developing a future CCIP project package for consideration?

03 Do Councilmembers support considering taking the CCIP renewal in 2025?

k Renewals Over Time

Long-term Look at Possible **Tax Renewals**

ASSUMES **10 YEAR** TERMS