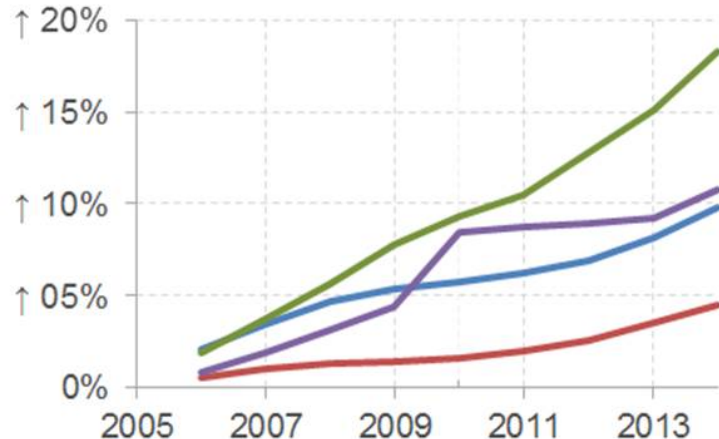


The factor driving commercial energy code compliance and advancement of code

- Population 168,000
 - Metro area was the 10th fastest growing population hub in the United States – 2015
 - Municipal Utility.
- Home to Colorado State University
 - 33,246 student enrollment – 2017 (10 straight years of record student enrollment (up to 2017))
 - Has goals to achieve carbon neutrality.
- Collaborative regional power supply partner.
- Engaged local businesses and community.
 - ClimateWise

City of Fort Collins Housing

vs 2005



- Population
- City Area
- Buildings | Single Family
- Buildings | Multifamily

*Commercial

2011-2017 permit increase of 36%
(not 36% of building stock)

2015 IECC- Plan to adopt 2018 I-codes in January 2019.

Local amendments to code unique to City of Fort Collins:

- All residential & commercial new construction requires air leakage test & commercial buildings must meet required 0.25 CFM75/sq ft enclosure area.
- Commercial buildings 15,000+ sq ft commissioned & report submitted to building department prior to C.O..
- Energy Assessments for buildings altering HVAC, Lighting, Exterior Walls, & Power.
- Specific HVAC design parameters.
- Building envelope insulation requirements (Table C402.1.3) mandatory.
- Additional occupant sensor and exterior lighting controls
- Electricity distribution design to accommodate metering.

“Things are only impossible until somebody does what another believes can’t be done” – *Tony Robbins*

The driver: *Climate Action Plan*

2017 update to GHG reduction goals:

- 20% below 2005 levels by 2020
- 80% below 2005 levels by 2030
- 100% below 2005 levels by 2050
(carbon neutral)



Environmental Indicators

Community Greenhouse Gas Inventory

2017

1.99 Million

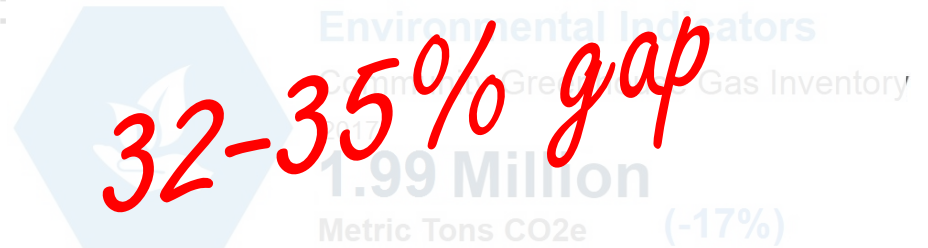
Metric Tons CO₂e **(-17%)**

“Things are only impossible until somebody does what another believes can’t be done” – *Tony Robbins*

When it gets *really* challenging:

2017 update to GHG reduction goals:

- 20% below 2005 levels by 2020
- 80% below 2005 levels by 2030
- 100% below 2005 levels by 2050
(carbon neutral)



“Things are only impossible until somebody does what another believes can’t be done” – *Tony Robbins*

The other driver: *City Energy Policy*

“The building sector is Fort Collins’ top energy consumer and contributor to greenhouse gas emissions.”

1. Improve performance of new buildings
2. Improve performance of existing buildings and process energy use

- **Current Tracker**
 - **Savings calculations from compliance measures**
 - **% discount applied for level of non-compliance**
- **Personal tracker**
 - **% projects impacted deemed to be compliant**
- **Energy Code Compliance study** (underway)
 - **City Energy Project and 5 cities compliance rates (64%-75%)**
- **Energy Use Intensity** – on level of electric use

- Resources
- Trainings
 - Building community
 - Building department staff
- Enforcement
 - Approved plans
 - Engage Building Inspectors (eyes and ears)
- Benchmarking existing building stock over 20k sq ft
 - Energy Star Portfolio Manager



Accessibility Requirements (Chapter 11):

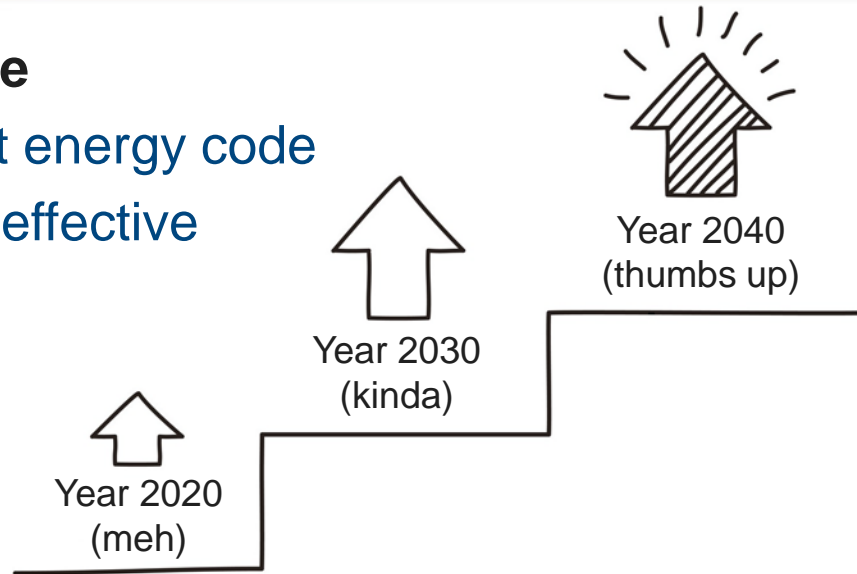
-Per section 1101.2, the building and facilities shall be designed and constructed to be accessible in accordance with ICC/ANSI A117.1-2009 2017

An Air Tightness Test is required on the addition per 2015 IECC Amended Section C402.5.

COV	SUMMITS	PAF	700 CEF
PROJECT NO:	SS PHA		
DRAWN BY:	AF / M	3/20/	4/05/

Improved code compliance

- Long term thinking is that energy code compliance is more cost effective



- Current incentive programs like our 'Efficiency Works' – expensive
 - Fixing buildings that are less efficient

- **Improve compliance citywide**
- **Advance code - Performance based** – learn from what works

ie:

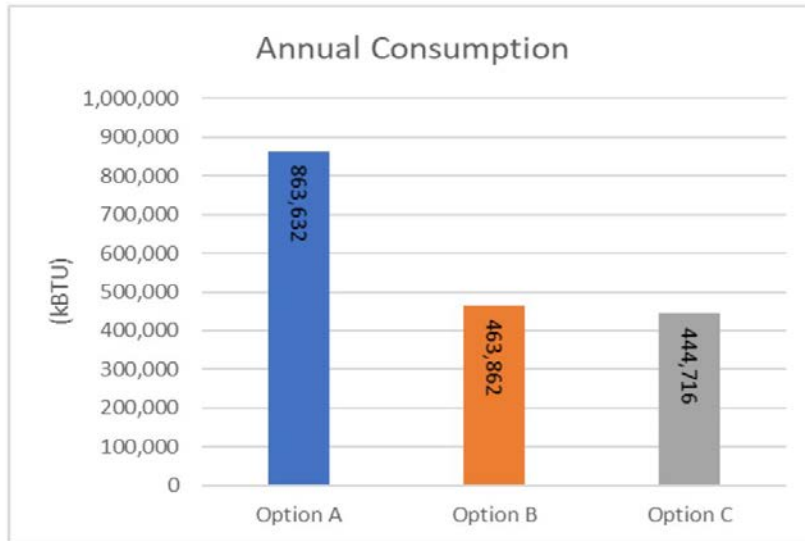


Figure 1: Design Options Annual Energy Use

Option **A**: Basis of design

Option **B**: High infiltration rate corrected

Option **C**: Corrected infiltration, existing HVAC replaced w/ hot water unit heaters fed by HE boiler

- **Lead by example**
 - Utilities admin building - LEED Platinum V4
- **Advance code** – continue to be progressive
 - British Columbia Energy Step Codes
<https://energystepcode.ca>
- **Net Zero Energy** – year 2027*ish*

Questions?

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