



# Proposed Energy Efficiency Ordinance for Commercial and Industrial (C&I) Buildings

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City Council Study Session  
May 12, 2015



# Questions for Council

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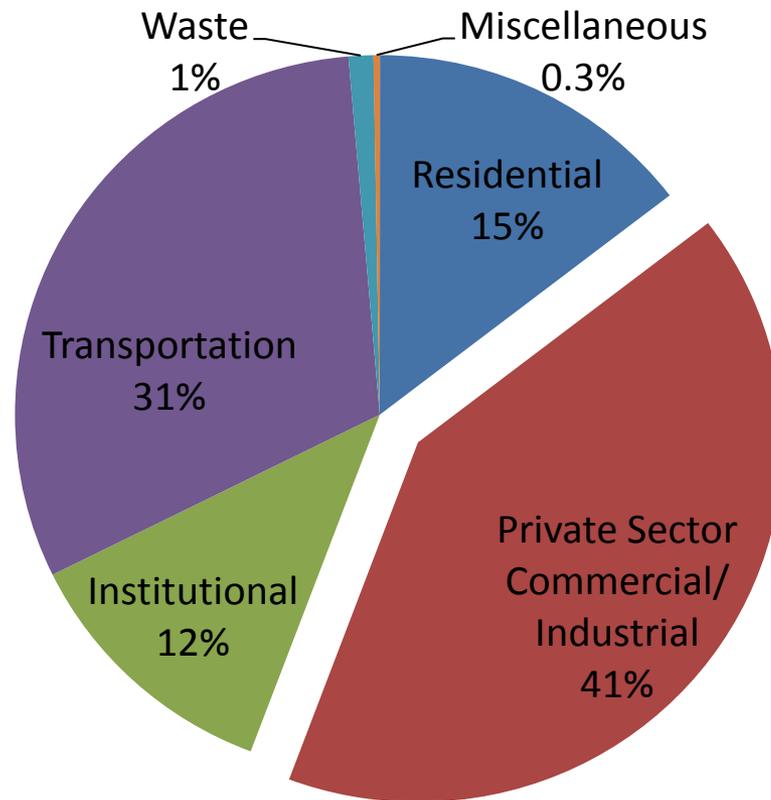


- Does council have feedback on the proposed requirements, buildings that would be affected, and timeline for compliance?
- Does council have any feedback on the options for public disclosure of building specific energy use?
- Does council have any feedback on the options for efficiency requirements?

# Climate Commitment Goal

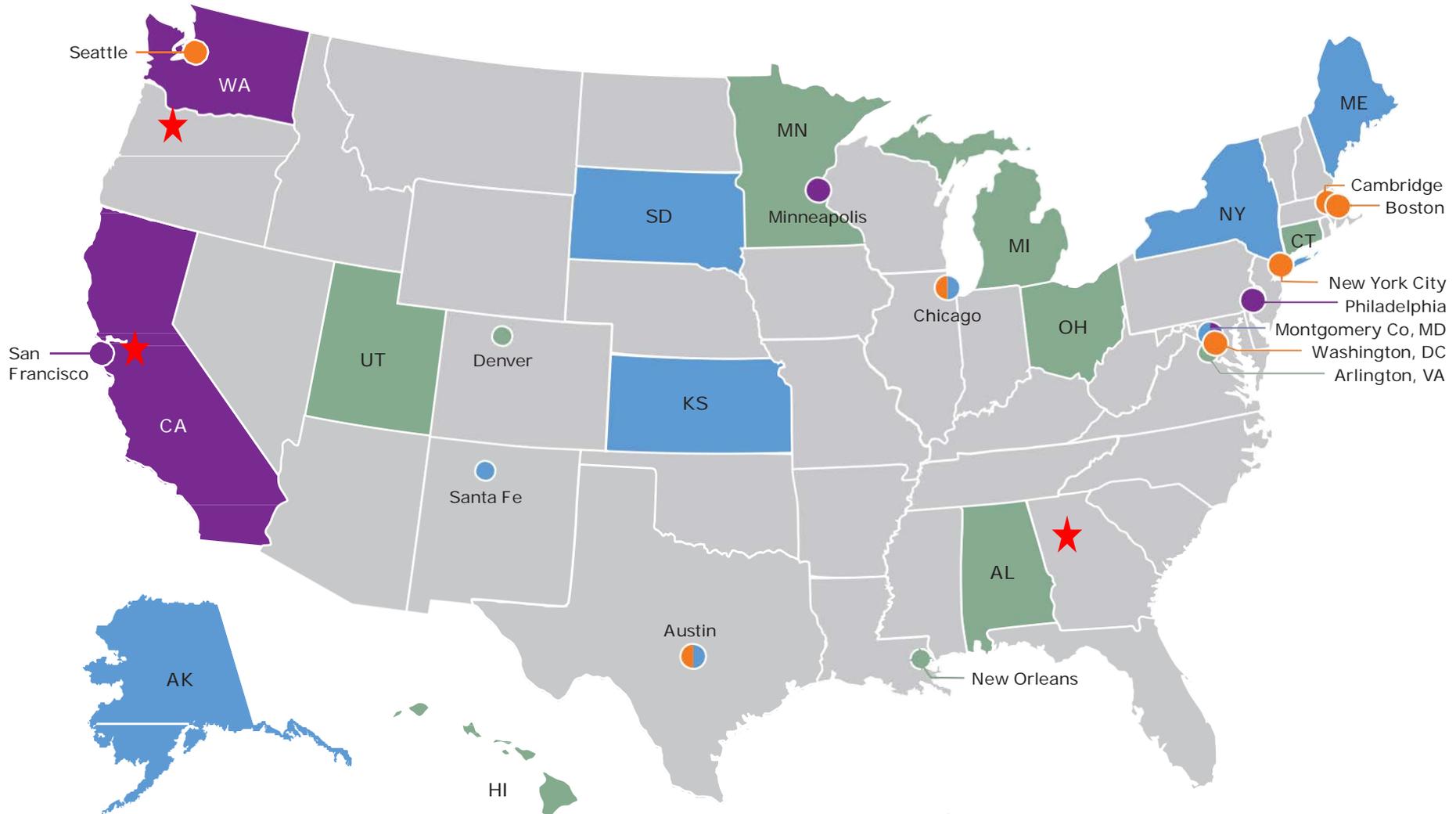


**Reduce GHG Emissions by 80% by 2050**



**2012 Greenhouse Gas (GHG) Inventory**

# U.S. Building Benchmarking and Transparency Policies



- ★ Commercial policy Apr-May 2015
- Commercial policy adopted
- Commercial & multifamily policy adopted
- Public buildings benchmarked
- Single-family transparency adopted



# Key Definitions



## Commercial buildings:

- any structure encompassing non-residential uses (excludes multi-family units)

## Industrial buildings:

- any structure with a primary use of assemblage, processing, or manufacturing **OR**
- the majority of its energy usage coming from process loads

# Key Definitions



“Rating” - measuring and comparing energy performance metrics

“Reporting” - providing the energy use and associated metrics to the parties required by the proposed ordinance

“Disclosure” – disseminating the reported energy use information to the public

# Metrics



**Energy Use Intensity (EUI) = a building's total energy use per square foot (sf) per year**



**ENERGY  
USE  
INTENSITY**



**Lower EUI =  
Better  
Performance**

total annual  
energy use  
(kBtu)



total  
square feet  
(sf)



Energy Use  
Intensity  
(kBtu/sf/year)



**Higher ENERGY  
STAR Score =  
Better Performance**

**ENERGY STAR Score = 1 to 100**

# Rating & Reporting: The Basics



## What do building owners have to do to Rate & Report?

1. Collect whole building energy use data
2. Enter or import data into EPA's ENERGY STAR Portfolio Manager (ESPM) Online Tool
3. Share ESPM data with City of Boulder

## What kind of information will a building owner receive?

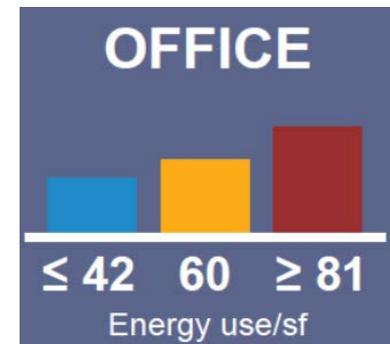
### Sample Data



Your Building's EUI:

77

kBtu/sf



# How will this differ for Industrial?



## Process for Building Owners

1. Collect whole building energy use *and productivity* data
2. Enter or import data into EPA's ENERGY STAR *Energy Tracking spreadsheet* Tool
3. *Email summary report* to the City of Boulder

## Metrics

- Energy Productivity (vs EUI)
- Different tool to get ENERGY STAR Score

## Additional Support

- Dedicated education and training
- Support from Colorado Industrial Energy Challenge (CIEC)

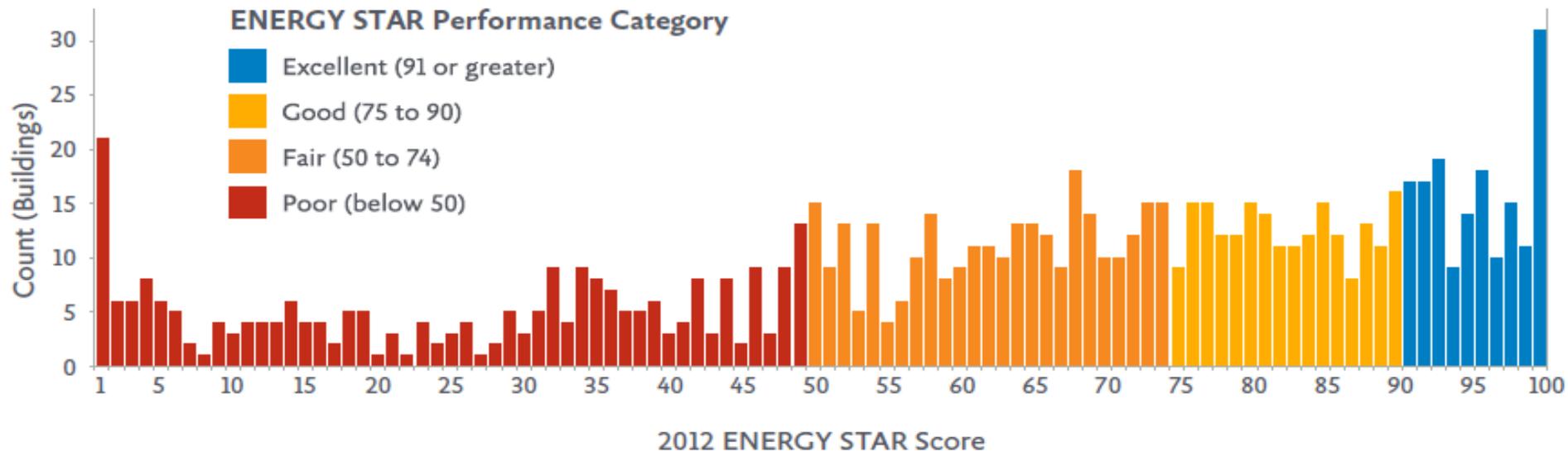
# Objectives



- ✓ **Improve** the quality of Boulder's commercial building stock
- ✓ **Realize** cost effective efficiency opportunities
- ✓ **Increase** awareness of building energy performance metrics
- ✓ **Inform** design of future programs and services
- ✓ **Drive** market transformation

**RAISE UP** Low Performers

**REWARD** High Performers



# Public Process/Community Engagement



2010-2012

Peer networking, consultant studies

2012-2013

Rating & Reporting Pilot Program

Oct 2014 – Jan 2015

Working Group

Feb – Apr 2015

Business Group Outreach

Mar 18, 2015

& Early June 2015

Webinars for all affected building owners

**BoulderBuildingPerformance.com**

# Proposed Requirements

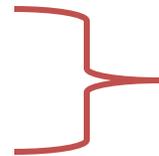


## *What would be required?*

Commercial and industrial building owners would be required to;

1. rate and report the energy use of their buildings,
2. implement certain energy efficiency actions.

- ❖ Buildings Covered by Ordinance
- ❖ Compliance Timeline
- ❖ Public Disclosure
- ❖ Efficiency Requirements
- ❖ Exemptions



Did not have clear agreement among stakeholders

# Buildings Covered by Ordinance

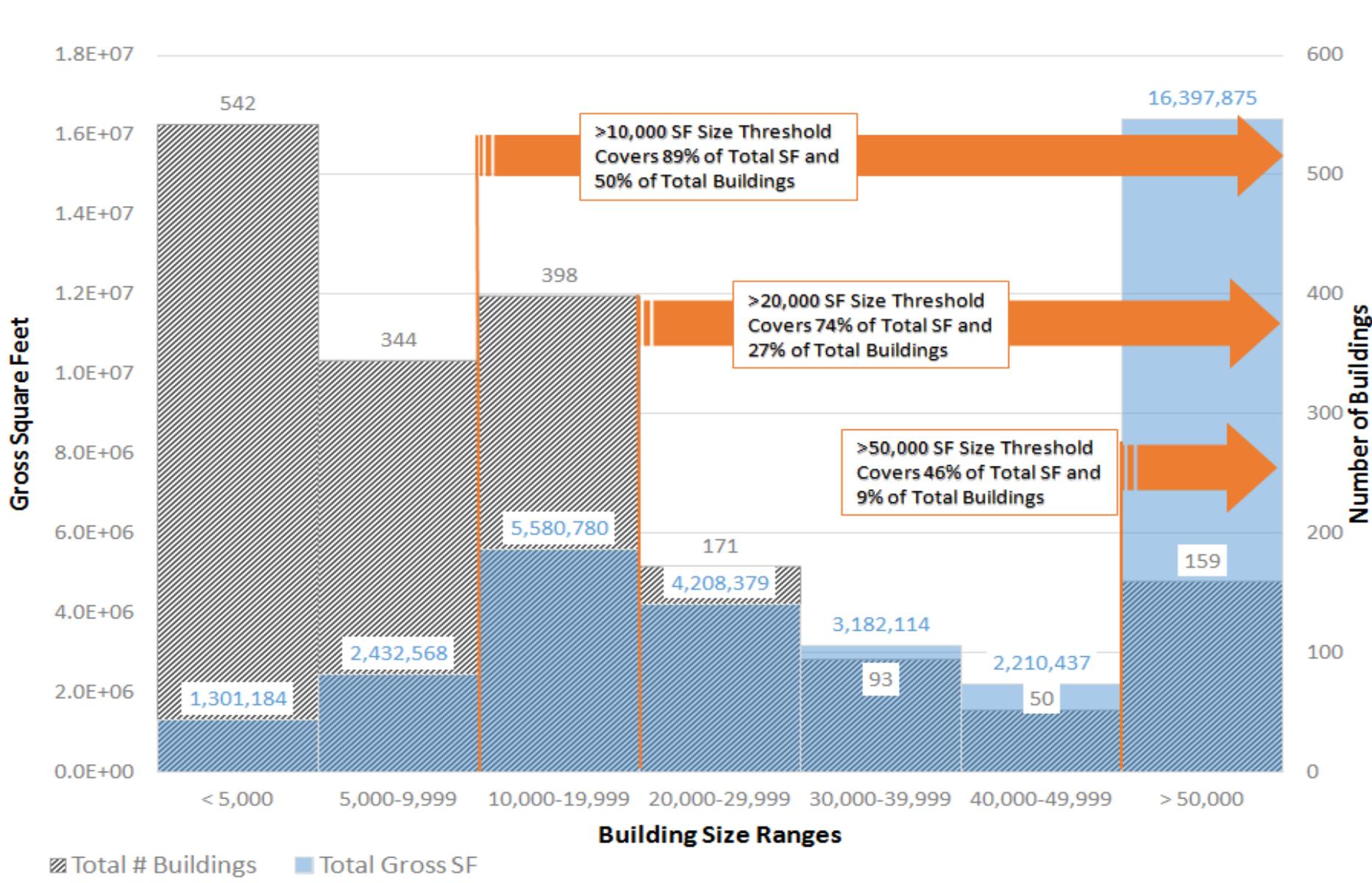


## Proposed Scope

- Private sector C&I buildings: > 20,000 sf
- City owned buildings > 5,000 sf
- Newly built\* C&I buildings > 10,000 sf

*\* Any buildings permitted since the last energy code update went into effect on January 31, 2014.*

# What percentage of private sector and city-owned C&I building floor area would be covered by this ordinance?



# Compliance Timeline



**Recommendation:** Start with subset of buildings - fine tune systems and procedures before phasing in smaller buildings and efficiency requirements.

## Proposed Phasing Strategy:

Existing Buildings > 50K sf New Buildings >10K sf City Buildings > 5K sf	> 30K sf	> 20K sf
<u>2016</u> : Require rating and reporting (R&R)	<u>2018</u> : R&R	<u>2020</u> : R&R
<u>2019</u> or later: Efficiency requirements	<u>2021</u> or later: Efficiency requirements	<u>2023</u> or later: Efficiency requirements

# Reporting & Public Disclosure



**Reporting:** Building owners would be required to report total energy use and other energy performance metrics to the city and to their tenants.

## What metrics would be disclosed to the public?

- Option 3A: Building Specific Public Disclosure\* **(Recommended)**
- Option 3B: Limited Public Disclosure (Compliance Status + Aggregate Data)

*\* 2 year grace period before building specific data is published*

# Reporting & Public Disclosure



- Option 3B: Limited Public Disclosure (Compliance Status + Aggregate Data)

Type of Building	2012 Annual Energy Use Intensity (Site EUI in kbtu/sf)					EPA ENERGY STAR (Median)
	Median	Lowest Use (1st Quartile)	Medium- Low (2nd Quartile)	Medium- High (3rd Quartile)	Highest Use (4th Quartile)	
Multifamily	31.9	≤ 25	26 - 32	33 - 43	≥ 44	NA
Office	59.8	≤ 42	43 - 60	61 - 80	≥ 81	75
K-12 School	43.5	≤ 36	37 - 43	44 - 55	≥ 56	72
Retail	74.1	≤ 42	43 - 74	75 - 106	≥ 107	68
Hotel/Motel	73.1	≤ 53	53 - 73	74 - 97	≥ 98	68
Grocery	215.4	≤ 202	203 - 215	216 - 269	≥ 270	59
Hospital	166.5	≤ 122	123 - 167	168 - 206	≥ 207	67

# Reporting & Public Disclosure



- Option 3A: Building Specific Public Disclosure (**Recommended**)

Building Information		Building Performance					
Address	Property Floor Area (Buildings and Parking) (ft <sup>2</sup> )	Electricity Use (kBtu)	Natural Gas Use (kBtu)	ENERGY STAR Score	Site EUI (kBtu/ft <sup>2</sup> )	Source EUI (kBtu/ft <sup>2</sup> )	Total GHG Emissions (MtCO <sub>2</sub> e)
1924 W Olney Ave.	757,521	61,617,356	6,394,249	99	849.5	2,469.2	7,995
9801 Frankford Avenue	62,000	162,661,197	8,811,112	93	757.4	2,210.1	21,832
3400 N. Broad Street	155,228	18,290,057	22,115,596	16	323.3	644.0	3,503
3440 N. Broad Street	129,260	17,966,207	40,195	46	323.2	514.7	6,436
3500 N Broad Street	485,000	16,699,836	71,788,580	Not Available	320.6	463.1	5,925
1121 W. MONTGOMERY AVENUE	421,938	29,807,048	2,159	34	319.8	617.5	7,299
3307 N. Broad St.	169,976	15,246,713	7,864,771	25	308.6	749.6	2,348

<http://visualization.phillybuildingbenchmarking.com/#/map>



# Efficiency Requirements



Option 4A	<ul style="list-style-type: none"><li>• Various Prescriptive Requirements (<b>Not Recommended</b>)</li></ul>
Option 4B	<ul style="list-style-type: none"><li>• Energy Assessment with No Required Action</li></ul>
Option 4C	<ul style="list-style-type: none"><li>• Energy Assessments with Limited Required Action (only lighting and retro-commissioning)</li></ul>
Option 4D	<ul style="list-style-type: none"><li>• Energy Assessments with Custom Required Action (based on what is deemed cost effective in the energy assessment)</li></ul>
Option 4E	<ul style="list-style-type: none"><li>• Whole Building Performance Standards (<b>Requires Longer Phasing Strategy</b>)</li></ul>

# Potential GHG Reductions



2005 GHG Emissions = 1.8 million metric tons CO<sub>2</sub> (MTCO<sub>2</sub>)

2005 GHG Emissions for private sector and city owned C&I buildings = 565,000 MTCO<sub>2</sub>

	Estimated Annual GHG Savings (MTCO <sub>2</sub> /yr)	Emissions Savings for Private Sector & City Owned C&I Buildings
Rating & Reporting	~33,000 – 38,000	~6-7%
Efficiency	30,000 – 125,000 (varies with options)	~5-22%
Total	33,000 – 163,000	6-29%

**2-9% savings in total GHG Emissions**

# Proposed Exemptions



## Rating and Reporting:

- Buildings with less than one year of energy use data
- Unconditioned and unlit buildings
- Proven financial hardship
- Proprietary business information (exempt from public disclosure)

## Energy Efficiency:

- Current ENERGY STAR Certification
- Current LEED for Existing Buildings
- Buildings that have had a recent energy assessment and implemented efficiency actions
- Proven financial hardship

# Implementation Considerations



<b>Proposed Training and Support</b>	<ul style="list-style-type: none"><li>• Website</li><li>• A help-call center</li><li>• Green lease templates and advising</li><li>• Trainings</li><li>• EnergySmart advisors</li><li>• Colorado Industrial Energy Challenge (CIEC)</li></ul>
<b>Proposed Incentives</b>	<ul style="list-style-type: none"><li>• Early Adopter Incentive</li><li>• New EnergySmart Rebates for custom measures</li></ul>
<b>Budget Implications</b>	<ul style="list-style-type: none"><li>• At least one FTE or contract out the program administration</li><li>• Ongoing costs: \$280,000 - \$440,000 per year</li></ul>

# How will tenants be impacted?



**Rating & Reporting:** Tenants will be required to give building owners access to their energy bills

## **Energy Assessments and Required Efficiency**

- Access to spaces
- Energy Costs and Up Front Costs
- Required measures may fall under the tenant's jurisdiction (i.e. retail lighting).

**Coordination is Key!:** Owners will be required to provide tenants with a copy of the energy assessment report and encouraged to coordinate energy upgrades through green leasing.

# Estimated Costs and Savings



Requirements	Frequency	Up Front Costs – Building Owner	Simple Payback
<b>Rating &amp; Reporting</b>	Every year	\$500-\$2,400 per building OR 4-8 hours staff time	< 1 year
<b>Energy Assessments</b>	Every 10 years	\$0.12-0.25 per sf <i>~0.2% of a building's annual operating expense</i>	Varies
<b>Lighting Upgrades</b>	Every 10 years	\$0.10-0.20 per sf	3-4 years
<b>Retro-commissioning or Building Tune-Up</b>	Every 10 years	\$0.13-0.45 per sf	0.5 – 2.5 years

# Next Steps



Ordinance Presented to  
Council: **July-August 2015**

Publish List of Buildings for  
2016: **November 2015**

Compliance Begins for  
largest buildings: **May 2016**

# Questions for Council

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- Does council have feedback on the proposed requirements, buildings that would be affected, and timeline for compliance?
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# DISCUSSION AND Q&A





# SLIDES FOR REFERENCE

# Efficiency Requirements



	Maximizes GHG Reductions	Minimizes Cost Impact to Building Owners	Minimizes Complexity for Requirements	Is Desirable to Building Owners	Minimizes Cost/Administrative Impact to City
Option 4A					
Option 4B					
Option 4C					
Option 4D					
Option 4E		Unknown			
<b>KEY</b>					
	= Fully achieves goal				= Fails to achieve goal

# Case Study: DC Office Building

Investing in Better Buildings



One Franklin Square  
Washington, DC



- ❖ Owners thought the building was efficient....until they benchmarked
- ❖ First 3 years: reduced energy costs by 13% with no capital costs
- ❖ After realizing these savings, they pursued additional projects and saved even more
- ❖ Current ENERGY STAR score = 89

- Built in 1989
- 12 stories
- 590,000 sf
- Office and retail

## Savings Up Close:

- Operational changes.

Project Cost	\$0
Annual Savings	2,100,000 kWh
Payback	Immediate

- Added variable frequency drives throughout building.

Project Cost	197,500 (spread over 9 years)
Annual Savings	\$92,500
Payback	< 2.5 years

- Installed LED lighting in garage.

Project Cost	\$50,400
Annual Savings	\$10,853
Payback	< 5 years



# Potential Savings: Seattle

Investing in Better Buildings

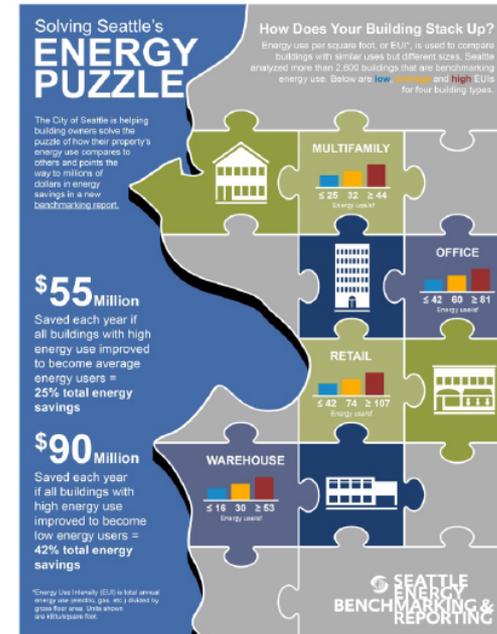


**\$55 million**

saved each year if all buildings with high energy use improved to become average energy users  
= **25% total energy savings.**

**\$90 million**

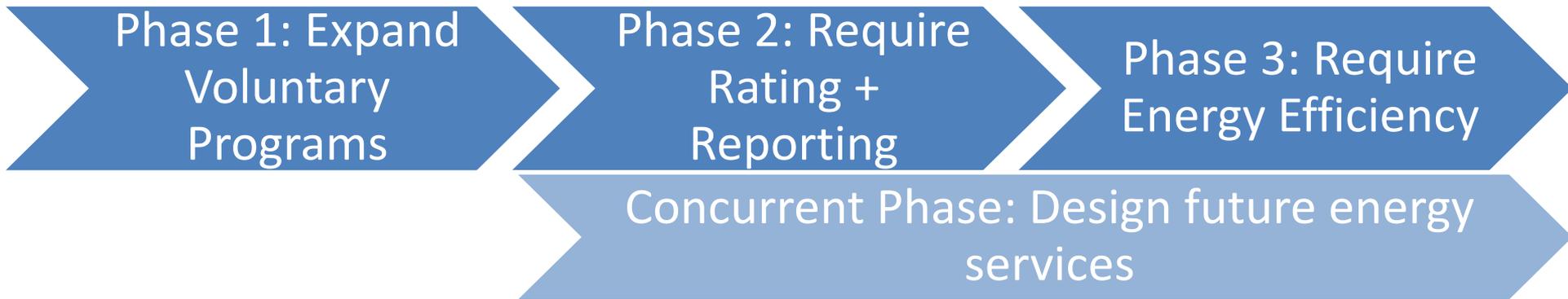
saved each year if all buildings with high energy use improved to become low energy users  
= **40% total energy savings.**



**Initial Estimates:** If Boulder brought all buildings up to be average energy users, total GHG emissions would be reduced by **~ 10%** and save **~\$24 Million/year.**



# Phased Approach for C&I



## Why not voluntary only?

- Mandatory policies impact 4-16x the amount of floor area
- Widespread adoption

# Boulder's Private Sector Commercial Buildings



Size Category (SQFT)	Total SQFT	Number of Buildings	% of Total SQFT	% Total Number of Buildings
<1,000	17,077	22	0.1%	1.4%
1,000-4,999	1,094,660	371	3.4%	24.2%
5,000-9,999	2,268,112	318	7.0%	20.7%
10,000-19,999	5,276,787	375	16.3%	24.4%
20,000-29,999	4,088,380	166	12.6%	10.8%
30,000-39,999	2,986,804	87	9.2%	5.7%
40,000-49,999	2,210,437	50	6.8%	3.3%
50,000 and above	14,529,366	147	44.7%	9.6%
<b>TOTAL</b>	<b>32,471,623</b>	<b>1,536</b>		

Building Type	Bldgs (#)	Bldgs (%)	Rentable Area (SQFT)	Rentable Area (%)	Avg Bldg SQFT
Flex	161	10.5%	5,470,144	16.8%	33,976 sqft
Industrial	247	16.1%	6,053,035	18.6%	24,506 sqft
Commercial	1,128	73.4%	20,948,444	64.5%	18,571 sqft
Total	1,536		32,471,623		

Source: CoStar, 10/10/2014

Includes: Existing Properties Only

DOES NOT INCLUDE: Multi-Family

# Community Benefit



## WHO WILL THIS BENEFIT?

**COMMUNITY  
MEMBERS**



Reduces overall GHG emissions

**C&I BUILDING  
TENANTS**



Improves the quality of the building stock and reduces utility costs

**C&I BUILDING  
OWNERS**



Improves the asset value of the building stock and reduces utility costs

**C&I BUILDING  
OWNERS**



Recognizes high performing buildings and gives competitive advantage

# Why Not Voluntary Only?



Mandatory policies impact 4-16x the amount of floor area compared to voluntary

	Type	Program/Policy	Buildings included	Floor area included (mil sq ft)
Boston	Voluntary	Challenge for Sustainability (2009-2013)	97	27
	Mandatory	Building Energy Reporting and Disclosure Ordinance (2013)	1,600	250
Minneapolis	Voluntary	BOMA of Greater Minneapolis Kilowatt Crackdown (2012)	80	25
	Mandatory	Commercial Building Rating and Disclosure Ordinance (2013)	625	110
Seattle	Voluntary	Seattle Kilowatt Crackdown (2009)	53	18
	Mandatory	Council Bill 116731 (2010)	3,600	295

Adapted from analysis by:  
Eric Mackres  
Local Policy Manager, ACEEE  
202-507-4038, [emackres@aceee.org](mailto:emackres@aceee.org)

# Enforcement

Investing in Better Buildings



City	Fines (typically 30-45 days after written notice, if not addressed)	Compliance Rate (%)
Austin	Up to \$500 (Class C misdemeanor), \$2,000 (if criminal negligence)	76% for Tier 1
Boston	\$200 per day (>50,000 sf) \$75 per day (35,000-49,999 sf)	pending
Cambridge	\$300/day fine after 1st written warning	pending
Chicago	\$100 for the first violation \$25/day that the violation continues	pending
District of Columbia	\$100/day	83%
Minneapolis	Daily fine TBD, pursuant to Chapter 2 and the schedule of civil fines	pending
NYC	\$500 for 1 <sup>st</sup> violation \$500/quarter with a maximum of \$2,000 for continued violations.	75%
Philadelphia	\$300 fine for the 1st 30 days, and then \$100/day	90%
San Francisco	\$100 /day, up to a maximum of \$2,500 per violation (≥25,000 sf) \$50 /day, up to a maximum of \$1,500 per violation (<25,000 sf)	79%
Seattle	\$1,000/quarter, \$4,000 per year (≥50,000 SF or greater) \$500/quarter, \$2,000 per year (20,000 to 49,999 SF) +Disclosure Request violation: \$150 fine, \$500 fine for subsequent violations	93%



City of Boulder

City	Building Size, Type
Austin	Commercial buildings >10 years old
Boston	All public, government, multifamily, and private non-residential buildings
Cambridge	Municipal buildings over 10,000 sf, Non-residential buildings over 25,000 sf
Chicago	Municipal and commercial buildings 50,000 – 250,000 sf Residential buildings 50,000 – 250,000 sf
District of Columbia	Public/Government Buildings $\geq 10,000$ sf Non-Residential and Multi-Family $\geq 50,000$ sf
Minneapolis	Public/gov't buildings $\geq 25,000$ sf Non-Residential Buildings $\geq 50,000$ sf
NYC	Public/Government Buildings $\geq 10,000$ sf Non-Residential and Multi-Family $\geq 50,000$ sf
Philadelphia	Public/Gov't, Non-Residential $\geq 50,000$ sf
San Francisco	All private sector nonresidential buildings $\geq 10,000$ sf
Seattle	Multifamily and non-residential buildings $\geq 20,000$ sf

City	Date Effective	Phasing/Timing based on Building Type & Size Thresholds
Austin	June 2011	Commercial buildings >10 years must report annually: June 2012: ≥75,000 sf (Tier 1) June 2013: ≥30,000 and <75,000 sf (Tier 2) June 2014: ≥10,000 and <30,000 sf (Tier 3)
Boston	May 2014	All public, government, multifamily, and private non-residential buildings: June 2013: ALL Public/Gov't Buildings Sept 2014: Non Residential ≥ 50,000 sf, May 2015: Multifamily ≥50 units or 50,000 sf May 2016: Non-Residential ≥ 35,000 sf, May 2017: Multifamily ≥35 units or 35,000 sf
Cambridge	Dec 2014	Oct 2014: Municipal buildings over 10,000 sf May 2015: Non-residential buildings over 50,000 sf and Multi-family residential buildings 50+units May 2016: Non-residential buildings over 25,000 sf
Chicago	June 2014	June 1, 2014: Municipal and commercial buildings ≥ 250,000 sf June 1, 2015: Municipal and commercial buildings 50,000 – 250,000 sf June 1, 2015: Residential buildings ≥ 250,000 sf June 1, 2016: Residential buildings 50,000 – 250,000 sf
District of Columbia	April 2013	Public/Government Buildings: April 2010: ≥10,000 sf Non-Residential and Multi-Family:: April 2013: ≥ 100,000 sf April 2014: ≥ 50,000 sf
Minneapolis	May 2014	Public/gov't buildings: May 2013: ≥ 25,000 sf Non-Residential Buildings: May 2014: ≥ 100,000 sf May 2015: ≥ 50,000 sf
NYC	August 2011	Public/Government Buildings: May 2010: ≥10,000 sf Non-Residential and Multi-Family:: May 2011: ≥ 50,000 sf
Philadelphia	Oct 2013	Public/Gov't, Non-Residential: June 2014: ≥ 50,000 sf
San Francisco	Oct 2011	All private sector nonresidential buildings: Oct 2011: ≥50,000 sf Apr 2012: ≥25,000 sf Apr 2013: ≥10,000 sf
Seattle	Oct 2011	Multifamily and non-residential buildings: April 2013: ≥20,000 sf

City	Enforcement - Fines (typically 30-45 days after written notice, if not addressed)	Compliance Rate (%)
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City	Disclosed to?	Building Info	EUI	GHG	Other Disclosed Info
Austin	B, T, G				Energy rating calculation disclosed to relevant parties in real estate transactions.
Boston	P, G	✓	✓	✓	Energy Star rating, and where available, water consumption per square foot
Cambridge	P, G	✓			Will disclose info online, specifics tbd
Chicago	P, G				Energy consumption and performance scores
District of Columbia	P, G	✓	✓	✓	Property id, address, owner, property type, year built, Energy Star Score, floor area, electricity use, natural gas use, district steam use, other fuel use (based on actual data available on WDC website)
Minneapolis	P, G	✓	✓	✓	water use and energy performance score, where applicable,
NYC	P, G	✓	✓	✓	Weather normalized source EUI, Indoor water intensity, Energy Star Score, floor area
Philadelphia	P, G,B,L	✓	✓		
San Francisco	P <sup>2</sup> , G, T, B, L <sup>3</sup>	✓	✓	✓	Aggregate data disclosed only - weather normalized source EUI, Indoor water intensity, Energy Star Score, floor area
Seattle	B, G, T, L		✓		No public disclosure required., must report EUI and EnergySTAR scores to tenants, leasees, and potential buyers.

<sup>1</sup> P = public, G = government, B = buyers, T = tenants, L = leasers & lenders

<sup>2</sup> Discloses summary of compliance, but not building energy use

<sup>3</sup> CA's statewide initiative, AB 1103, requires buildings to disclose energy performance at point of transaction

City	Efficiency Requirements	Efficiency Details
Austin	Audits & mandatory upgrades for multifamily buildings, voluntary actions for commercial	The Austin City Council has set the following voluntary goals based on EnergySTAR ratings: 75 or higher - No action necessary 63-74 - Raise the score to at least 75 42-62- Raise the score by 20% Below 42- Raise the score to 50
Boston	energy audits	Buildings registering poor energy, emissions, and water performance--and not demonstrating improvement--will be required to undertake energy assessments or audits every five years.
Cambridge	Referring to net zero task force and other resources	The City is considering options to require energy performance improvement actions of buildings that do not meet a minimum level of performance
NYC	ASHRAE level II audits & RCx, public building audits & upgrades	
San Francisco	Yes, ASHRAE level I or II audits every 5 years (with retroCx as an alternative)	Building owners must file a Confirmation of Energy Audit online. Audits must be completed by a qualified Energy Professional. Large facilities and buildings with complex systems are encouraged to consider retrocommissioning as an alternative to meet the audit requirement. Audits completed since 2008 may be used.
Seattle	No	Not required, but they do provide links to rebates and assistance available for energy efficiency ( <a href="http://www.seattle.gov/environment/buildings-and-energy/energy-benchmarking-and-reporting/save-energy---save-energy">http://www.seattle.gov/environment/buildings-and-energy/energy-benchmarking-and-reporting/save-energy---save-energy</a> )

# Process for mixed-use buildings

Investing in Better Buildings



- Min. gross floor area (sf or %) that must be commercial
- EPA's Portfolio Manager guidelines
- ENERGY STAR rating requirements
  - >50% of gross floor area (GFA) must be one eligible space type
  - If >50% of a space is retail, not eligible
  - Cannot exceed 10% of total GFA for “other” category
  - Cannot exceed 10% of total GFA for multifamily housing





# **ENERGY STAR PORTFOLIO MANAGER AND DATA CHALLENGES**

# ENERGY STAR Portfolio Manager

- EPA's FREE on-line energy and water use tracking tool
- Register to use the site
- Hierarchy of entries (one building or a portfolio)
- Input specific metrics, per building
  - Energy use data
  - Operational /occupancy details
- Generates a report with building metrics
- Generates a nationally-recognized (1-100) energy use score for eligible building uses/sizes
- A third party can enter or view (share) metrics



# ENERGY STAR Portfolio Manager

Choose Account Name carefully - It can't be changed.

i.e., Business Legal Name [-City] if more than one in area.

The screenshot shows the ENERGY STAR Portfolio Manager website. At the top left is the ENERGY STAR logo. To its right is a search bar and social media icons for Facebook, Twitter, YouTube, and a blog. Below the logo are navigation links: "energy efficient products", "energy savings at home", "energy efficient new homes", and "energy strategies for buildings & plants". On the right side, there are links for "ABOUT ENERGY STAR" and "PARTNER RESOURCES". A breadcrumb trail reads: "Home » Buildings & Plants » Owners and managers » Existing buildings » Use Portfolio Manager". A "portfolio manager login" link is circled in orange in the top right navigation area. Below the breadcrumb trail is a horizontal menu with categories: "Owners and managers", "Service providers", "Program administrators", "Tools and Resources", and "Training". Under "Tools and Resources", there are sub-links for "Existing buildings", "Commercial new construction", "Industrial energy management", and "Small business". The main content area is titled "Use Portfolio Manager" and contains several sections: "IN THIS SECTION" with a list of links; "Learn the benefits"; "Get started"; "Use Portfolio Manager" (highlighted in blue) with a sub-section "The new ENERGY STAR Portfolio Manager"; "How Portfolio Manager helps you save"; "The benchmarking starter kit"; "Identify your property type"; "Enter data into Portfolio Manager"; "The data quality checker"; "How Portfolio Manager calculates metrics"; "Interpret your results"; "Verify and document your savings"; "Share and request data"; "Updates to ENERGY STAR scores with CBECS data"; "Save energy"; "Find financing"; "Earn recognition"; "Communicate your success"; and "Resources for your property type". The "Use Portfolio Manager" section contains text explaining the tool's purpose and benefits. Below this is a "Not sure if Portfolio Manager is for you? It is!" section, followed by "Join the rest of the industry." and "It's only growing." sections. On the right side, there are two promotional images: one for "VOTE on Portfolio Manager Enhancements!" and another for "Discover the new and improved Portfolio Manager today." with a "SIGN UP" button. Below the "SIGN UP" button is a "Current Portfolio Manager Users" section with a login form containing fields for "username" and "password", a "Forgot password?" link, and a "LOG IN" button. The "VOTE" and "Discover the new and improved" sections are also circled in orange.

# Data Points



- Basic
- Characteristics of each space (vary by use)
- Utility Bill Data (12 months minimum)



PUBLIC SERVICE COMPANY OF COLORADO  
 P O BOX 840  
 DENVER, CO. 80201  
 (800) 895-4999 Español: (800) 687-8778

Page 1 of 2

Customer Name	Service Address	Account No.	Date Due	Amount Due
			Jun 30, 2011	\$147.40
<b>Account Activity</b>				
Date of Bill	Jun 15, 2011	Previous Balance		\$129.18
Number of Payments Received	1	Total Payments		<del>(\$129.18)</del>
Number of Days in Billing Period	32	Balance Forward		\$0.00
Statement Number		+ Current Bill		<u>\$147.40</u>
Premise Number		<b>Current Balance</b>		<b>\$147.40</b>
<b>Electric Service - Account Summary</b>				
Invoice Number		Residential General		
Meter No		Non-Summer	489.94 kWh x 0.046040	\$22.56
Rate	R	Residential General	Summer Tier 1*	\$10.07
Days in Bill Period	32		Summer Tier 2*	\$14.61
			162.31 kWh x 0.090000	

# ESPM Data Inputs Per Building

## Three ways to input data

1. Manual entry for one building
2. Spreadsheet upload (multiple properties possible)
3. Web Services – exchanges data with ESPM

Free PACE  
Assistance Available



# ESPM Challenges



- Energy use data can be cumbersome to obtain
- Utility metering complexities
- Not all buildings can get a 1-100 rating or score



# Whole-Building Data Access



- Regulated Colorado utilities subject to data access and privacy rules
- Boulder's rating + reporting pilot found it challenging to obtain data
- Xcel Energy participating in DOE Better Buildings



# Commercial Building Energy Rating + Reporting Pilot Program



Attachment A

City of Boulder



## Commercial Building Energy Rating & Reporting Pilot Program Report

Prepared by McKinstry



BOULDER, COLORADO  
26 FEBRUARY 2013



## Consultant's Recommendations:

- ✓ Support a voluntary rating + reporting program
- ✓ Investigate better ways to access whole building energy data
- ✓ Provide education and training
- ✓ Investigate installing sub-meters and potentially offsetting some of the cost of purchase and installation
- ✓ Target larger buildings (45% of the commercial sf is found in buildings >50,000 sf)
- ✓ Consider implementing prescriptive energy standards
- ✓ Continue to work with both building owners and tenants (partnering with programs such as *EnergySmart*) to gather energy data and develop new incentive or regulatory programs

# C&I Rating +Reporting Ordinances

Investing in Better Buildings



City	Effective Date	Gov't/ Private Sector	Disclosure	Energy Efficiency?
Austin	June 2011	10K SF+	Buyers (B), Tenants (T)	Assessments
Boston	May 2014	All/35K SF+	Public	Assessments
Cambridge	Dec 2014	25K SF+	Public	---
Chicago	June 2014	50K SF+	Public	---
District of Columbia	April 2013	10K/ 50K SF+	Public	---
Minneapolis	May 2014	25K/ 50K SF+	Public	---
NYC	Aug 2011	10K/ 50K SF+	Public	Assessments, RetroCx, Lighting, Sub-metering
Philadelphia	Oct 2013	50K SF+	Public, B, Lenders & Leasers (L)	---
San Francisco	Oct 2011	10K SF+	Public <sup>1</sup> , B, T, L <sup>2</sup>	Assessments, RetroCx
Seattle	Oct 2011	10K SF+	B, T, L	---

<sup>1</sup> Discloses summary of compliance, but not building energy use

<sup>2</sup> CA's statewide initiative, AB 1103, requires buildings to disclose energy performance at point of transaction