



Proposed Building Performance Ordinance

City Council
September 29, 2015

www.BoulderBuildingPerformance.com

Meeting Purpose

Second reading of the “Building Performance Ordinance”

Summarize benefits and main components of ordinance

Present key aspects of the implementation plan

Public Hearing and Council Feedback

Who Benefits?



Community
Members



Business Tenants



Building Owners



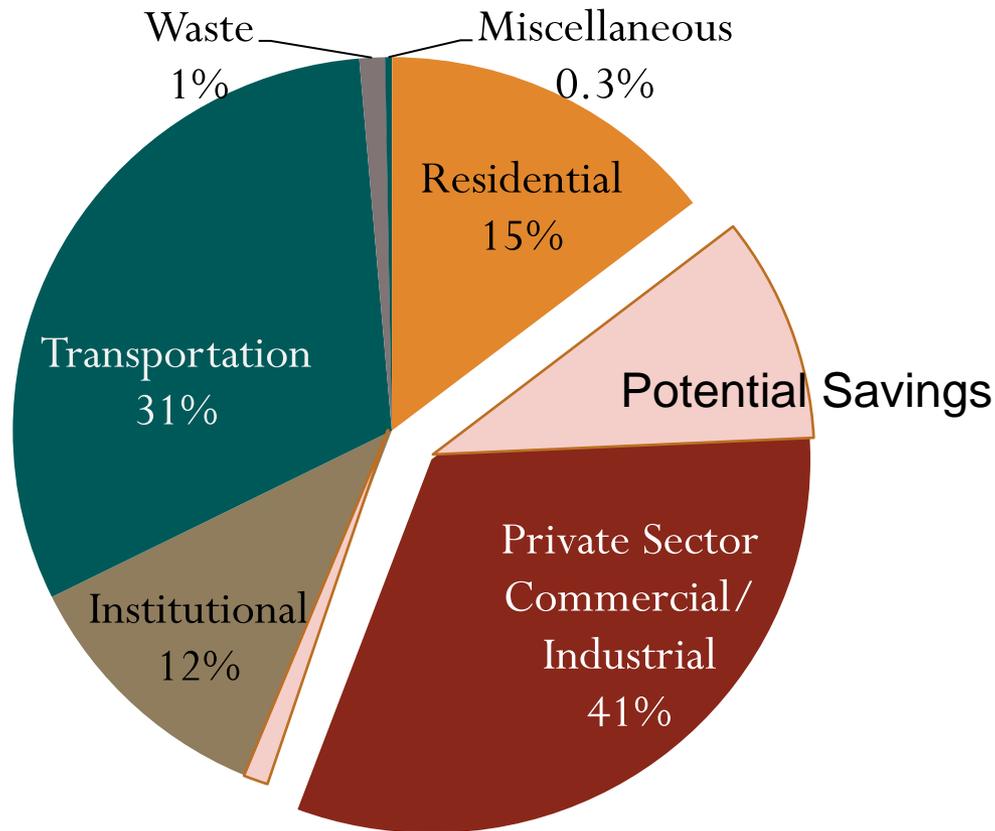
Policymakers

Objectives

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

Climate Commitment

Reduce GHG Emissions 80% by 2050



**~10% reduction
in total GHG
Emissions**

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

March 2015

Webinar and mailing for all affected building owners

June - Aug 2015

Large Industrial Outreach and Split Incentive Workshop

Defining Key Terms

RATING & REPORTING (R&R)

Measuring and comparing building energy performance metrics

Providing energy use and associated metrics to the city and tenants of the building

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

“Payback” - the amount of time it takes for savings in operating costs (energy and maintenance) to pay back the initial capital investment (less any rebates)

Overview: Building Performance Ordinance

1. Rate and Report building energy use, and
2. Implement certain energy efficiency actions.

Energy use info would be publically disclosed after a 2 year grace period.

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 (January 31, 2014)*

Changes Since 1st Reading

- 1) Adjusted dates for first reporting requirements
- 2) Added exemption for financial hardship
- 3) Clarified that energy data will be aggregated across the large industrial campuses before being reported
- 4) Made exemption language consistent across all sections

Proposed Requirements

TYPICAL C&I BUILDINGS

- ✓ **Annually Rate and Report**
- ✓ **One Time Lighting Upgrades**

Every 10 years:

- ✓ **Energy Assessments**
- ✓ **Retrocommissioning (RCx)**
(implement measures with payback < 2 years)

INDUSTRIAL CAMPUSES

- ✓ **Annually Report *aggregate* energy data**
- ✓ **One Time Lighting Upgrades**

Every 10 years:

- ✓ **Energy Assessments**
(implement measures with payback < 1 year)

Compliance Schedule

Start Year

2016 Buildings > 50,000 sf
New Buildings >10,000 sf
City Buildings > 5,000 sf
Large Industrial Campuses

2018 Buildings > 30,000 sf

2020 Buildings > 20,000 sf

Rating and Reporting

↓ 3 yrs

Energy Assessments

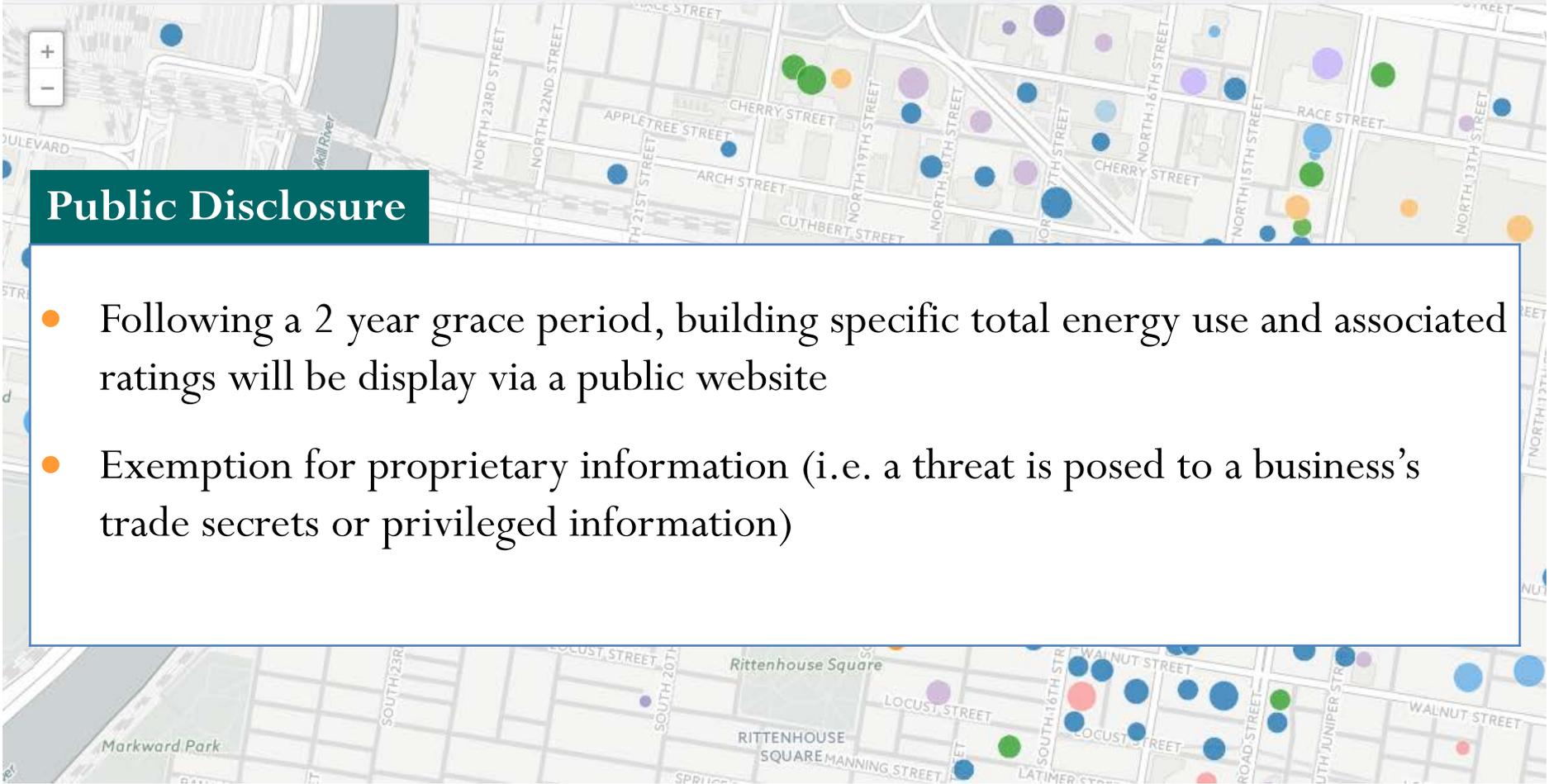
↓ 2 yrs

Lighting and RCx

↓ 2 yrs

Implement cost effective
RCx Measures

Public Disclosure



Public Disclosure

- Following a 2 year grace period, building specific total energy use and associated ratings will be display via a public website
- Exemption for proprietary information (i.e. a threat is posed to a business's trade secrets or privileged information)

Proposed Exemptions

Rating and Reporting:

- Less than one year of energy use data
- Unconditioned and unlit buildings

Energy Efficiency:

- Current ENERGY STAR Certification
- Current LEED for Existing Buildings Certification
- A demonstrated pattern of significant and consistent improvements in energy efficiency or greenhouse gas emissions
- Others upon review and request

Existing advising services and rebates

PACE

Partners
for a Clean
Environment



 Energy Efficiency/Renewable Energy

 Waste Reduction

 Water Conservation

 Employee Transportation Options

FREE R&R assistance

FREE Level I Energy Assessments



Financial Impact to Building Owners

Requirements	Up Front Costs	Simple Payback
Annual Rating & Reporting	\$500-\$2,400 per building OR 4-8 hours staff time OR FREE with PACE	< 1 year
Energy Assessments (every 10 years)	FREE PACE Level I audit (buildings smaller than 50,000 sf) Level II: \$0.16-0.42 per sf	Varies
Retrocommissioning (every 10 years)	\$0.11-0.35 per sf	0.5 – 2.5 years
Lighting Upgrades (one time)	\$0.10-0.20 per sf	3-4 years

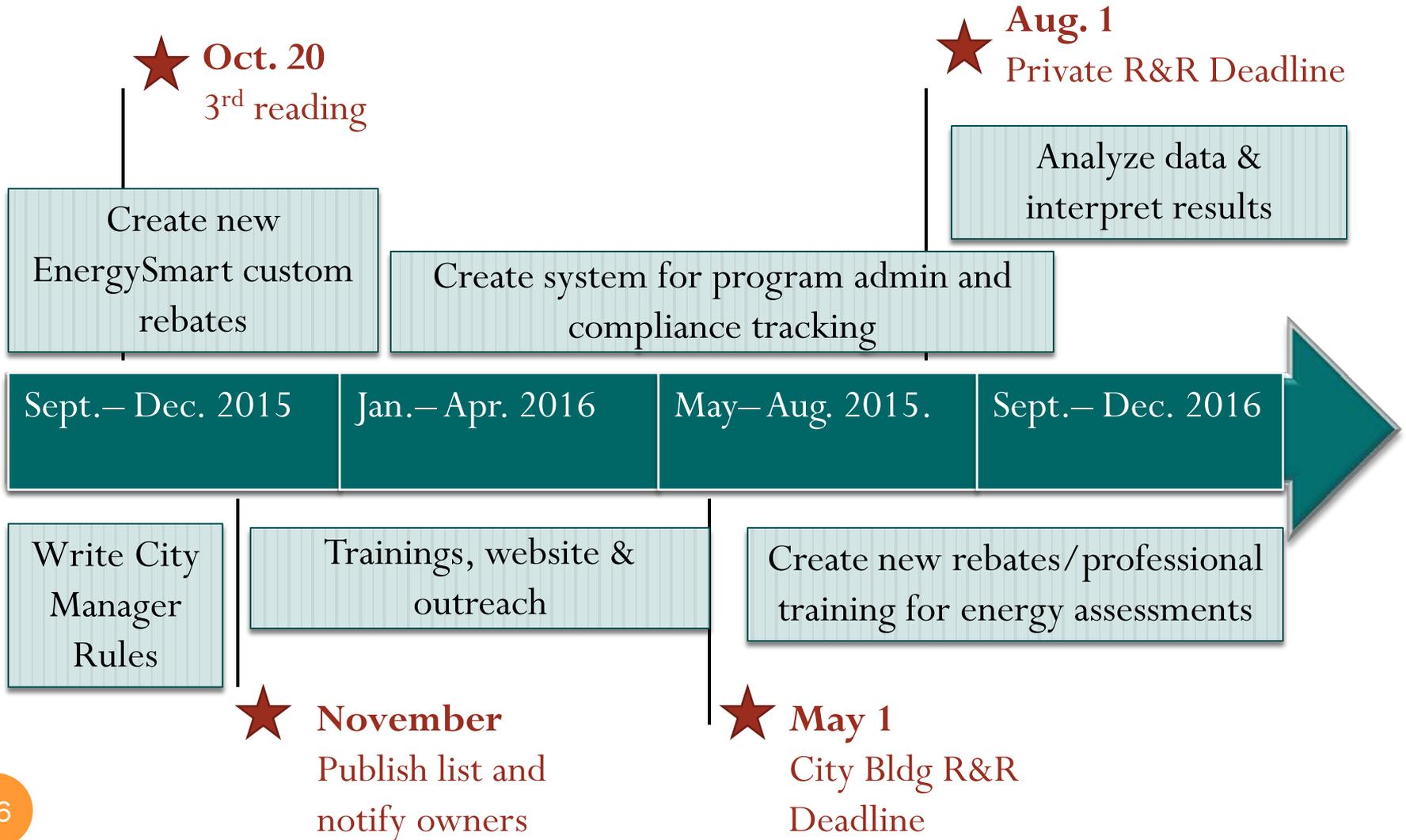
Budget: On-going Program Costs

Personnel and Program Administration	\$ 150,000
Outreach, Education and Training	\$ 30,000
Early adopter rebates for Energy Assessments	\$ 150,000
TOTAL	\$330,000
+ New custom rebates under EnergySmart Budget	\$ 150,000

~10% of the annual Climate Action Plan (CAP) Tax Budget will go to program administration.

Implementation Plan

★ Milestones



Boulder Building Performance

- Questions?
- Public Hearing
- Council Discussion

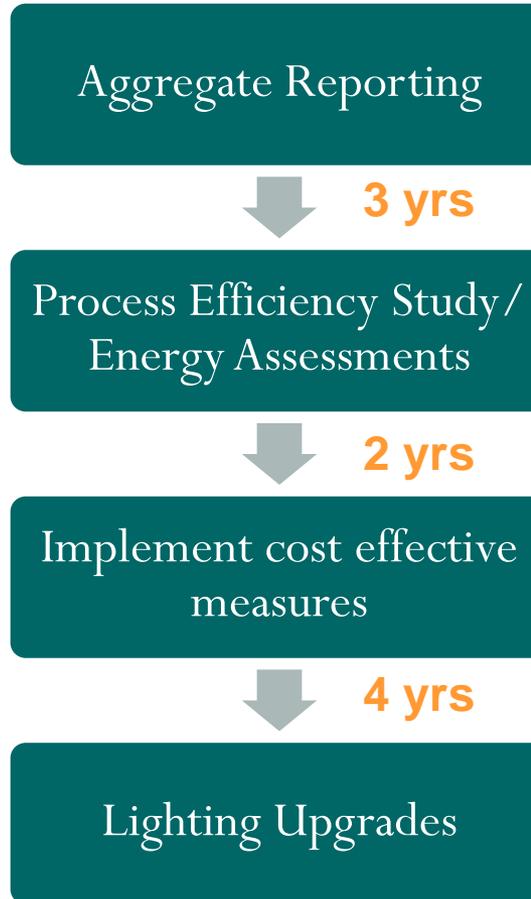
Reference Slides

Agenda

- Context, Objectives and Public Process
- Proposed Requirements and Compliance Schedule
- Implementation Plan

Compliance Schedule for Large Industrial Campuses

Start Year: 2016



Reporting & Public Disclosure

Building Information		Building Performance					
Address	Property Floor Area (Buildings and Parking) (ft ²)	Electricity Use (kBtu)	Natural Gas Use (kBtu)	ENERGY STAR Score	Site EUI (kBtu/ft ²)	Source EUI (kBtu/ft ²)	Total GHG Emissions (MtCO ₂ 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>

Metrics

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



**ENERGY
USE
INTENSITY**

total annual
energy use
(kBtu)



total
square feet
(sf)



Energy Use
Intensity
(kBtu/sf/year)



**Lower EUI =
Better
Performance**



**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

LOWEST USE
42 or less

MEDIUM-LOW
43-60

MEDIUM-HIGH
61-80

HIGHEST USE
81 or more

Your Building's EUI:

77

kBtu/sf

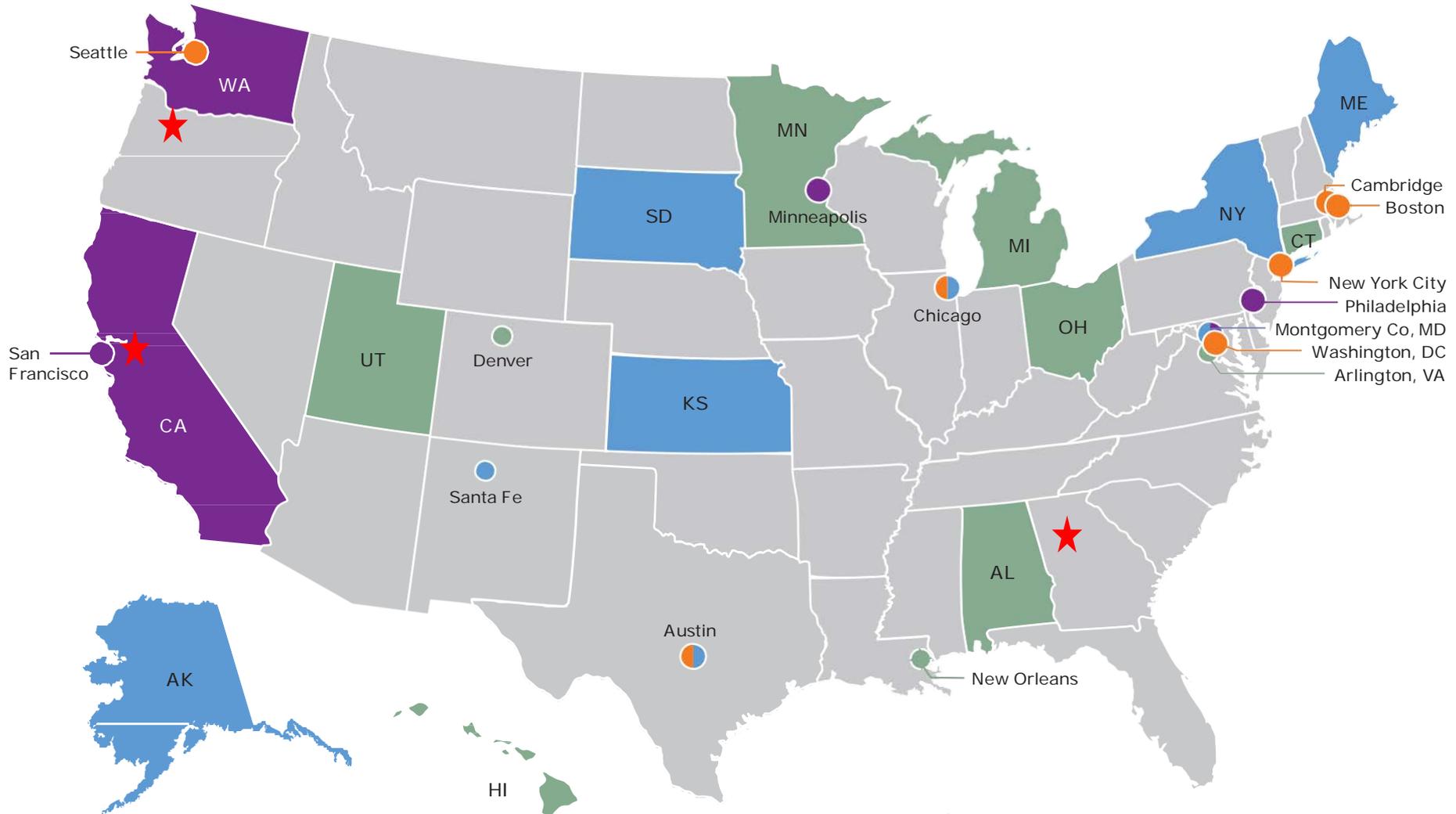
OFFICE



≤ 42 60 ≥ 81

Energy use/sf

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



Efficiency Requirements

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

Potential GHG Reductions

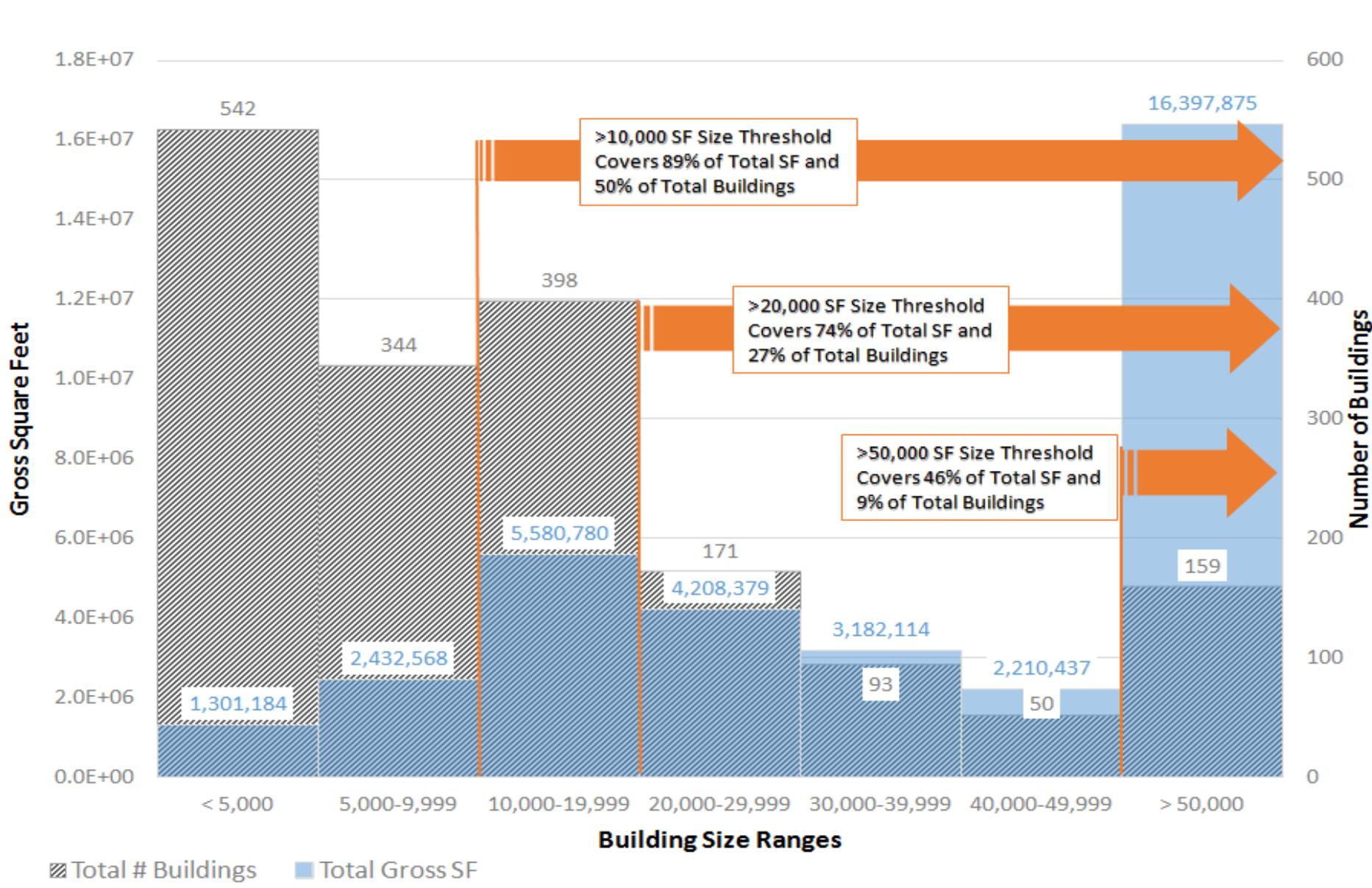
2005 GHG Emissions = 1.8 million metric tons CO₂ (MTCO₂)

2005 GHG Emissions for private sector and city owned C&I buildings = 565,000 MTCO₂

	Estimated Annual GHG Savings (MTCO ₂ /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

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



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

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			
KEY					
	= Fully achieves goal				= Fails to achieve goal

Case Study: DC Office Building



One Franklin Square
Washington, DC

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

- ❖ 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

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

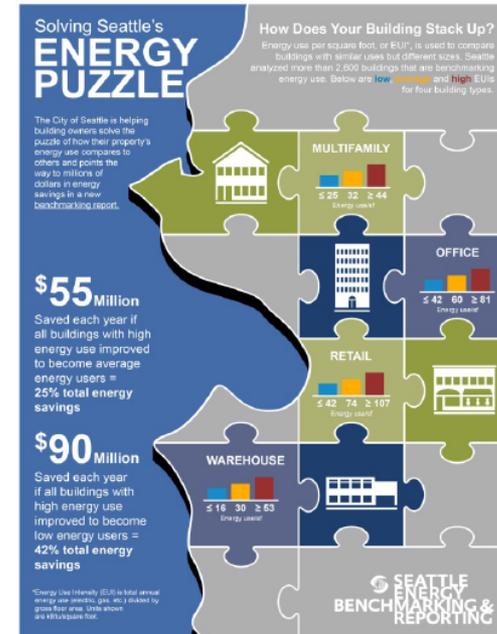
Potential Savings: Seattle

\$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

Phase 1: Expand
Voluntary
Programs

Phase 2: Require
Rating +
Reporting

Phase 3: Require
Energy Efficiency

Concurrent Phase: Design future energy
services

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%
TOTAL	32,471,623	1,536		

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

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

Enforcement

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 st 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 ($\geq 25,000$ sf) \$50 /day, up to a maximum of \$1,500 per violation ($< 25,000$ sf)	79%
Seattle	\$1,000/quarter, \$4,000 per year ($\geq 50,000$ 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	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 (%)
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
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District of Columbia	\$100/day	83%
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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	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 ² , G, T, B, L ³	✓	✓	✓	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.

¹ P = public, G = government, B = buyers, T = tenants, L = leasers & lenders

² Discloses summary of compliance, but not building energy use

³ 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 (http://www.seattle.gov/environment/buildings-and-energy/energy-benchmarking-and-reporting/save-energy---save-energy)

Process for mixed-use 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 green in the top right navigation area. Below the breadcrumb is a horizontal menu with categories: "Owners and managers", "Service providers", "Program administrators", "Tools and Resources", and "Training". Under "Existing buildings", there are sub-links for "Commercial new construction", "Industrial energy management", and "Small business". A sidebar on the left lists various resources under the heading "IN THIS SECTION", including "Learn the benefits", "Get started", "Use Portfolio Manager", "Save energy", "Find financing", "Earn recognition", "Communicate your success", and "Resources for your property type". The main content area features a section titled "Use Portfolio Manager" with a sub-heading "Use Portfolio Manager". The text explains that you can't manage what you don't measure and that EPA created ENERGY STAR Portfolio Manager to measure and track energy and water consumption, as well as greenhouse gas emissions. It also includes a section "Not sure if Portfolio Manager is for you? It is!" and "Join the rest of the industry." Below this is a section "It's only growing." To the right of the main content, there are two smaller images: one showing a "VOTE on Portfolio Manager Enhancements!" poll and another showing a "SIGN UP" button and a login form for "Current Portfolio Manager Users". The login form includes fields for "username" and "password", a "LOG IN" button, and a link for "Forgot password?".

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

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Customer Name	Service Address	Account No.	Date Due Jun 30, 2011	Amount Due \$147.40
Account Activity				
Date of Bill	Jun 15, 2011	Previous Balance		\$129.18
Number of Payments Received	1	Total Payments		(\$129.18)
Number of Days in Billing Period	32	Balance Forward		\$0.00
Statement Number		+ Current Bill		<u>\$147.40</u>
Premise Number		Current Balance		\$147.40
Electric Service - Account Summary				
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**



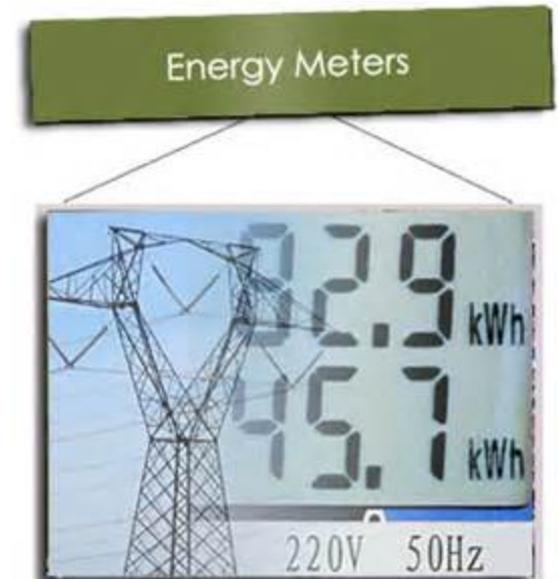
ESPM Challenges

- 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

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 ¹ , B, T, L ²	Assessments, RetroCx
Seattle	Oct 2011	10K SF+	B, T, L	---

¹ Discloses summary of compliance, but not building energy use

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

Discussion: Rating & Reporting

Metrics

- Total Energy Use
- Energy Use Intensity (EUI)
- ENERGY STAR Score
- Energy Productivity

Tools

- EPA ENERGY STAR Portfolio Manager
- EPA's ENERGY STAR Energy Tracking Tool
- EPA's ENERGY STAR Energy Performance Indicators (EPIs)

Discussion Questions:

- Does your company or organization have energy or climate goals you must reach?
- Does your company currently track energy use by building?
- What metrics should be reported to the city, and disclosed to the public?
- Public Disclosure and Exemptions for proprietary information
- Additional support needed? Concerns?

Discussion: Efficiency Requirements

Every 10 years:

- Energy Assessments
- Lighting Upgrades
- Retrocommissioning (RCx)

Discussion Questions:

- Energy Assessments – is this a practice you already do?
 - can these be performed by in house energy management staff?
- Any anticipated issues with future required lighting upgrades and RCx?
 - per your lease arrangements, who would pay for lighting upgrades?