

# Energy Performance Benchmarking for the City of Seattle

IFMA Seattle Education Symposium  
March 11, 2010

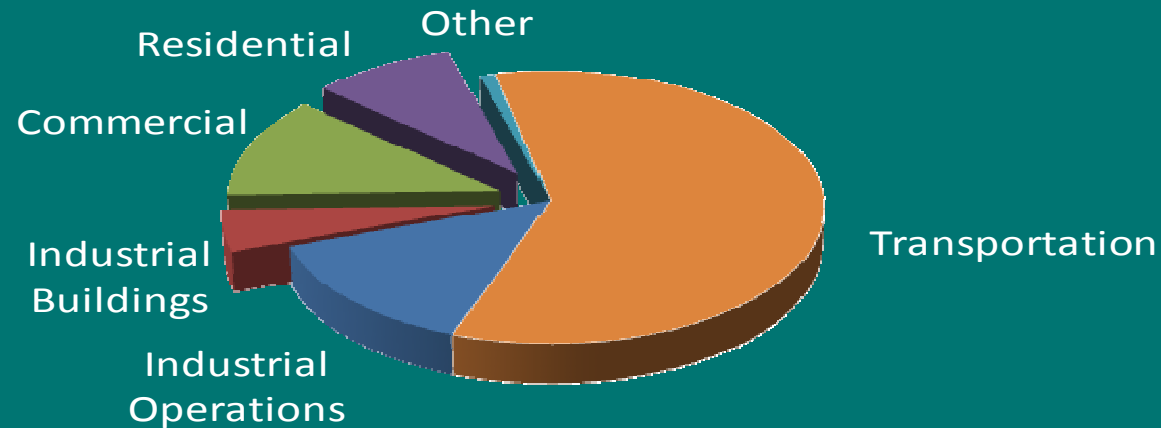




- Developing the disclosure policy
- What does it mean?
- Energy code changes
- Questions



- Transportation choices & compact communities
- Clean energy & efficient buildings
- Clean fuels and fleets
- Community mobilization



Buildings account for 26%  
of our carbon footprint



- Improve the energy efficiency of residential and commercial buildings
  - Improve energy efficiency in existing buildings by 20% by 2020
  - Improve energy efficiency in new buildings and major retrofits consistent with intent of the 2030 Challenge
- Create job opportunities in the green economy
- Save Seattle residents and businesses money on energy costs





- 50 stakeholders in 14 meetings July 2008 to Jan 2009 to provide feedback on policies the City could adopt to meet these goals
- New Buildings
- Existing Buildings
- Evaluation Criteria:
  - Energy Efficiency Potential
  - Economic Impacts
  - Cost of Implementation
  - Cost Effectiveness
  - Administrative Feasibility



	<b>SINGLE-FAMILY</b>	<b>MULTI-FAMILY</b>	<b>COMMERCIAL</b>
<b>Disclosure</b> Historical Energy Use Performance Rating Performance Checklist	<u>Maximum Conservation Potential</u> Performance Rating Performance Checklist <u>Easiest to Implement</u> Performance Checklist Historical Energy Disclosure <u>Stakeholders' Preference</u> Performance Rating	<u>Maximum Conservation Potential</u> Performance Rating <u>Easiest to Implement</u> Historical Energy Disclosure <u>Stakeholders' Preference</u> Performance Checklist	<u>Maximum Conservation Potential</u> Performance Rating <u>Easiest to Implement</u> Historical Energy Disclosure <u>Stakeholders' Preference</u> Performance Rating
<b>Financing</b> Low-interest Loans Private Financing Pool Public Financing Pool - LID Public Financing Pool - Bond Sale Energy Efficiency Mortgages	<u>Maximum Conservation Potential</u> Energy Efficiency Mortgages <u>Easiest to Implement</u> Low-interest Loans (but expensive) Bond Sale <u>Stakeholders' Preference</u> All, especially Low-interest Loans and Mortgages	<u>Maximum Conservation Potential</u> [All Similarly Beneficial] <u>Easiest to Implement</u> Low-interest Loans (but expensive) Bond Sale <u>Stakeholders' Preference</u> All	<u>Maximum Conservation Potential</u> [All Similarly Beneficial] <u>Easiest to Implement</u> Low-interest Loans (but expensive) Bond Sale <u>Stakeholders' Preference</u> All, especially Private Financing
<b>Incentives</b> Energy Efficiency Tax Credit Energy Efficiency Feebate Add-on to Property Taxes On-bill Financing	<u>Maximum Conservation Potential</u> Energy Efficiency Feebate <u>Easiest to Implement</u> Add-on to Property Taxes <u>Stakeholders' Preference</u> On-bill Financing Energy Efficiency Tax Credit	<u>Maximum Conservation Potential</u> Energy Efficiency Feebate <u>Easiest to Implement</u> Add-on to Property Taxes <u>Stakeholders' Preference</u> Energy Efficiency Tax Credit Add-on to Property Taxes	<u>Maximum Conservation Potential</u> Energy Efficiency Feebate <u>Easiest to Implement</u> Add-on to Property Taxes <u>Stakeholders' Preference</u> Energy Efficiency Tax Credit Modified Efficiency Fee-bate
<b>Upgrades</b> Performance Requirement Prescriptive Requirement	<u>Maximum Conservation Potential</u> Performance Requirement Prescriptive Requirement <u>Easiest to Implement</u> Prescriptive Requirement <u>Stakeholders' Preference</u> [None - general (but not universal) opposition]	<u>Maximum Conservation Potential</u> Performance Requirement <u>Easiest to Implement</u> Performance Requirement <u>Stakeholders' Preference</u> [None - general (but not universal) opposition]	<u>Maximum Conservation Potential</u> Performance Requirement <u>Easiest to Implement</u> Performance Requirement <u>Stakeholders' Preference</u> [None - general (but not universal) opposition]



ORDINANCE 123226

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AN ORDINANCE relating to energy conservation; requiring owners of nonresidential and multi-family buildings to measure and disclose energy efficiency performance, and adding a new Chapter 22.920 to Title 22 of the Seattle Municipal Code.

WHEREAS, the City established a goal of achieving a 20% improvement in energy performance of existing buildings by 2020, as compared to 2005 levels; and

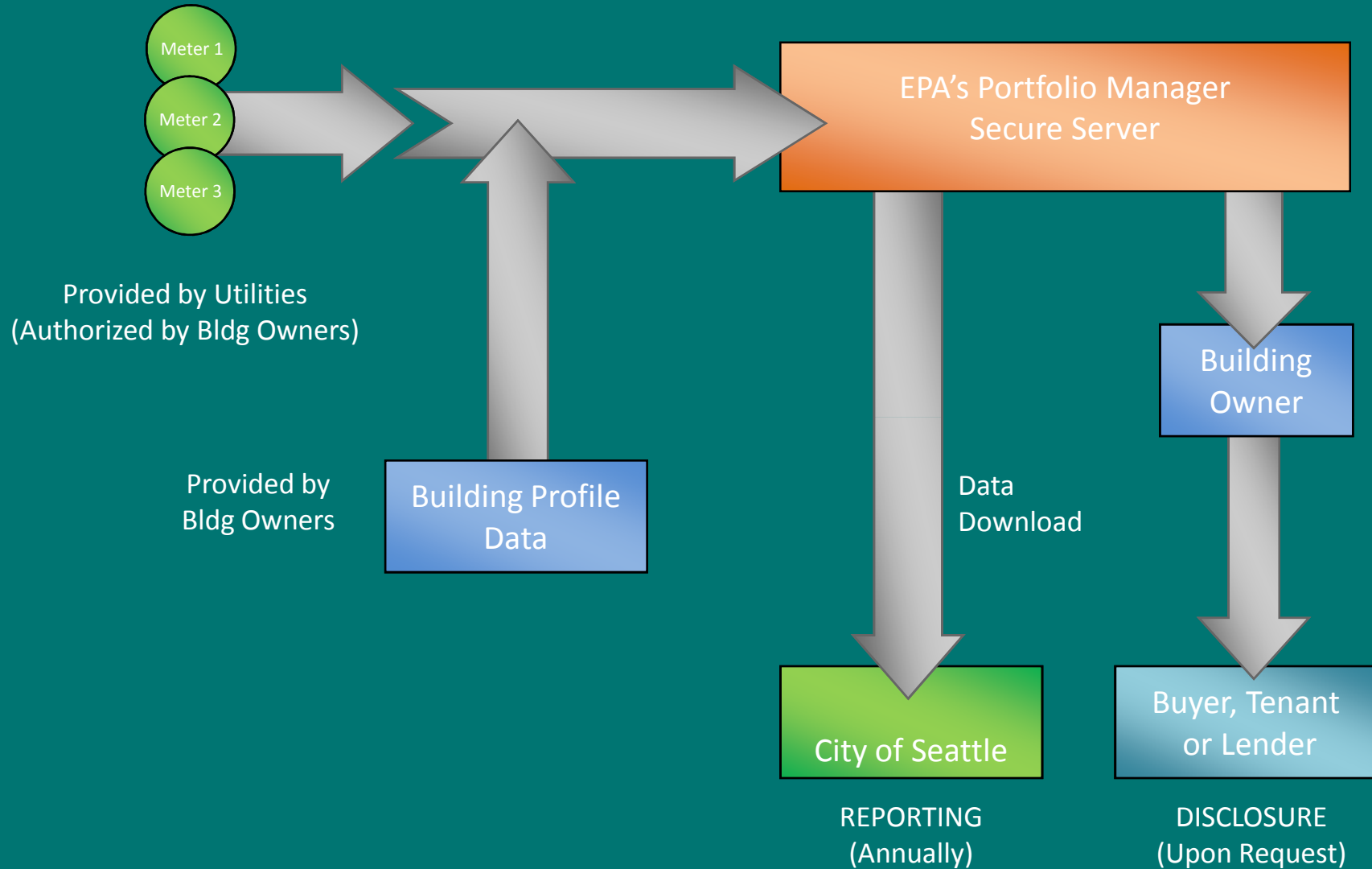
WHEREAS, the City has adopted nationally-leading energy codes in order to achieve high levels of efficiency in new construction and major renovations; and

WHEREAS, in order to have a significant impact on community-wide energy use in the coming decades, it is imperative that efficiency savings be achieved in buildings constructed prior to the adoption of current energy codes; and

WHEREAS, cost-effective energy efficiency improvements are proven to increase housing affordability and lower business operating costs; and

WHEREAS, Seattle City Light has a proven record of implementing energy conservation as a strategy to avoid the need for additional electric generating capacity; and

WHEREAS, a Green Building Task Force was established in July 2008 to identify and recommend programs to implement cost-effective energy efficiency retrofits and upgrades to Seattle homes and buildings; NOW, THEREFORE,





### Site Energy Use Summary

Electricity (kBtu)	123,458
Natural Gas (kBtu) <sup>3</sup>	123,458
<b>Total Energy (kBtu)</b>	<b>246,912</b>

### Energy Intensity<sup>4</sup>

Site (kBtu/ft <sup>2</sup> -yr)	6.3
Source (kBtu/ft <sup>2</sup> -yr)	19.5

### Emissions (based on site energy use)

CO <sub>2</sub> (1000lbs/yr)	263
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Based on actual "whole – building" energy performance data

Normalizes for factors that affect energy use intensity:

- Climate/weather
- Size
- Occupancy



## STATEMENT OF ENERGY PERFORMANCE

OMB No. 2060-0347

Sample Facility

Building ID: 123456

For 12-month Period Ending: October 31, 2005<sup>1</sup>

Date SEP becomes ineligible: February 28, 2008

Date SEP Generated: November 10, 2005

#### Facility Being Labeled

Sample Facility  
1234 Main Street  
Springfield, VA, 10000

#### Facility Owner

Sample Owner  
4567 Peach Ave.  
Springfield, VA 10000  
555-555-5555

#### Primary Contact for this Facility

Jane Smith  
7890 Columbia Way  
Springfield, VA 10000  
555-555-5555  
jsmith@jsmith.com

Year Built: 1999

Gross Building Area (ft<sup>2</sup>): 20,000

Energy Performance Rating<sup>2</sup> (1-100): 80

#### Facility Space Use Summary

Space Type	Area (ft <sup>2</sup> )	Occupants	Operating Hours	Number of PCs
Garage	5,000	2	40	0
Office (General)	15,000	40	40	40

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**Professional Engineer Stamp**  
I certify that the information contained within this statement is accurate and in accordance with the PE Guidelines.

**Professional Engineer**  
License Number: 0000001  
State: VA  
John Doe  
1234 Vineyard Lane  
Springfield, VA 10000  
555-555-7788

#### Indoor Environment Criteria<sup>5</sup>

Indoor air pollutants controlled?	Yes
Adequate ventilation provided?	Yes
Thermal conditions met?	Yes
Adequate illumination provided?	Yes

#### Notes:

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Natural Gas values in units of volume (e.g. cubic feet) are converted to kBtu with adjustments made for elevation based on Facility zip code.
4. Values represent energy intensity, annualized to a 365 day calendar.
5. Based on meeting ASHRAE Standard 62-1999 for indoor air quality, ASHRAE Standard 55-1992 for thermal comfort, and IESNA Lighting Handbook for lighting quality.



Tracking Number: SEP20060101000001234

The government estimates the average time needed to fill out this form is 5 hours (includes the time for entering energy data, PE facility inspection, and notarizing the SEP) and welcomes suggestions for reducing this level of effort. Send comments (referencing OMB control number) to the Director, Collection Strategies Division, U.S., EPA (2622T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460.

EPA Form: 5900-16



Sector	Requirements
<b>Large Multi-Family</b>	<ul style="list-style-type: none"><li>▪ Mandatory disclosure of Energy Star Portfolio Manager benchmarking data</li><li>▪ Reported through EPA secure server</li></ul>
<b>Properties <math>\geq</math> 5 Units</b> 5,760 Buildings 93,800 Units	<ul style="list-style-type: none"><li>▪ By Apr 1, 2012 and annually thereafter</li></ul>
<b>Commercial/ Institutional</b>	<ul style="list-style-type: none"><li>▪ Mandatory disclosure of Energy Star Portfolio Manager benchmarking data and rating</li><li>▪ Reported through EPA secure server</li></ul>
<b>Properties &gt; 50,000 SF</b> 680 Buildings, 104 million SF	<ul style="list-style-type: none"><li>▪ By Apr 1, 2011 and annually thereafter</li></ul>
<b>Properties 10,000 to 50,000 SF</b> 2,330 Buildings, 49 million SF	<ul style="list-style-type: none"><li>▪ By Apr 1, 2012 and annually thereafter</li></ul>



- Seattle Resolution 30280 directs DPD and Seattle City Light to “propose to the City Council...amendments to the Seattle Energy Code...to achieve up to 20% enhanced energy efficiency beyond the current version of ASHRAE/IESNA Standard 90.1” (Standard 90.1-2007)

url: <http://seattle.gov/dpd/energy>



### WA State Energy Code plus...

- Improvements to building envelope  
(continuous air barrier, exterior shading, bldg orientation)
- Higher mechanical equipment efficiencies
- Lower lighting power densities
- New renewable energy requirements  
(provide approx 2.8% of total energy consumption)
- Revised sub-metering requirements  
(information at system/tenant level)



- Feb 8 to Mar 29 – public comment period
- Apr – CCAB provides recommendations
- Apr/May – DPD considers recommendations and forwards ordinance to the Mayor
- Jun/Jul – City Council consideration and approval
- 60 days later – new code takes effect

*Building a better Seattle.*



**Questions?**

**Jayson Antonoff**

City of Seattle

Department of Planning and Development

Energy / Climate Change Policy Advisor

[jayson.antonoff@seattle.gov](mailto:jayson.antonoff@seattle.gov)

206.386.9791

[www.seattle.gov/dpd/Planning/CityGreenBuilding](http://www.seattle.gov/dpd/Planning/CityGreenBuilding)