



SEATTLE OFFICE OF  
**Sustainability & Environment**

# **Building Energy Program Updates:**

## **District Energy**

## **Building Energy Benchmarking**

## **Resource Conservation Management Plan**



# District Energy

# District Energy Status Report

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## First Hill:

*Corix, City, SHA,  
HMC, King County,  
Seattle Steam*

Sept 2012-Sept 2013

ROM Study of 6  
Alternatives  
(Corix analysis)

Feb 2014 – Aug 2014

Preferred Alternative  
Investment Grade Analysis  
(Corix analysis)

Dec 2013 – Mar 2014

Hydronic Heating  
System Cost Study

Nov 2012 – July 2013

District Energy  
Screening Study

Late 2014

Begin system build-out  
(pending analysis  
results)

## South Lake Union:

*Corix, City, Seattle  
Steam, Developers*

May 2013 – Jan 2014

Corix District Energy  
Investment Grade  
Analysis



# First Hill Opportunity

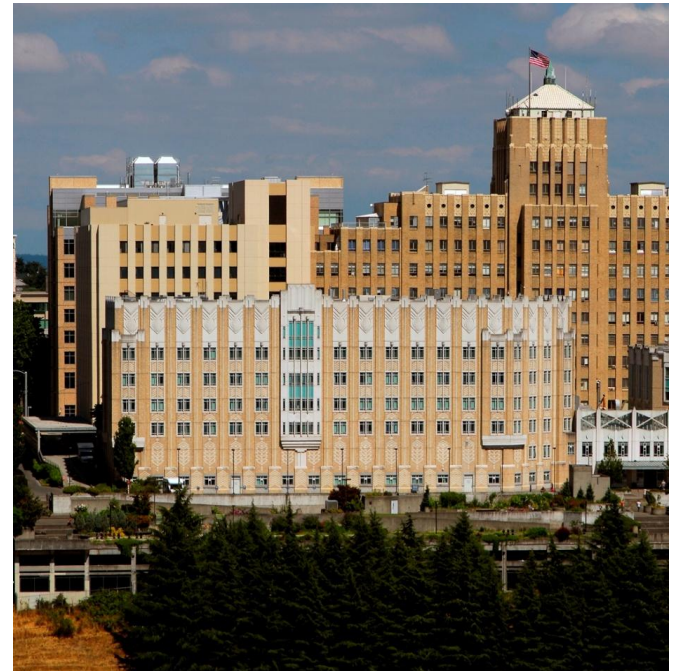
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- Waste heat from:
  - ❖ Sewer lines
  - ❖ Hospital
  - ❖ Energy sharing
- Next steps - pending Harborview Hall decision and hydronics study

## Yesler Terrace Redevelopment



## Harborview Medical Center





# South Lake Union Opportunity

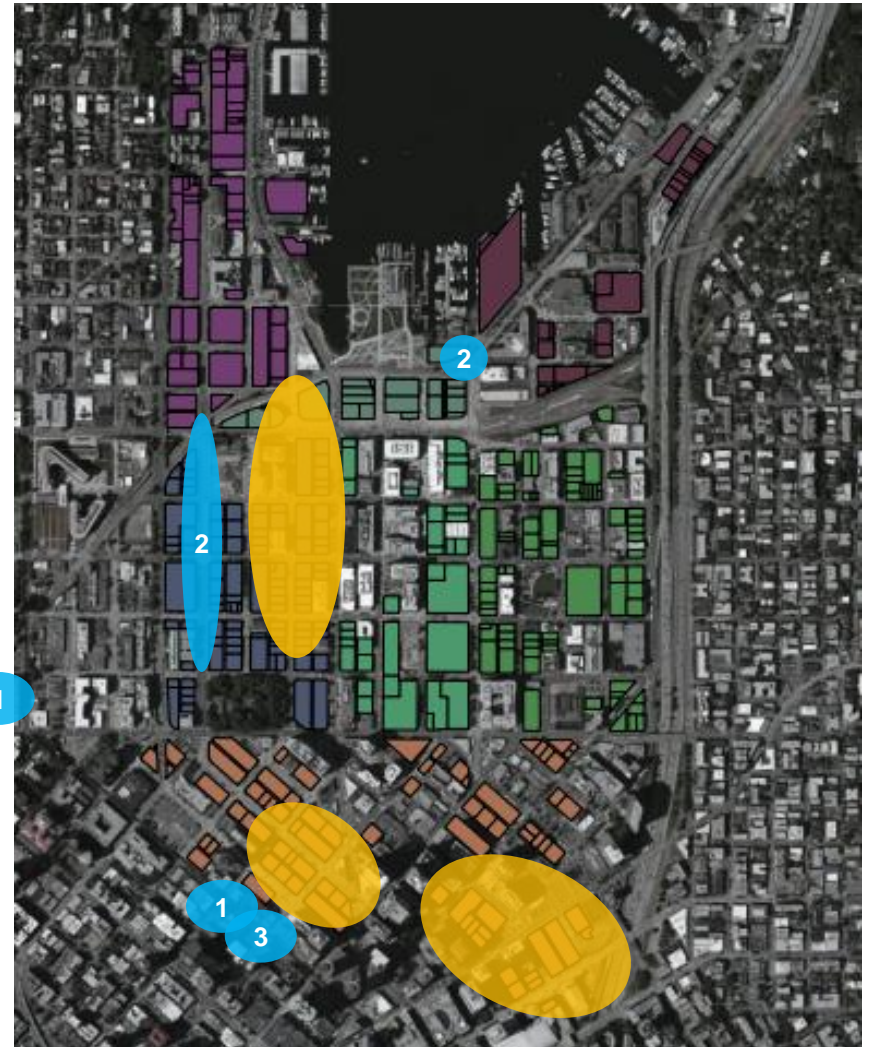


Initial Target Anchor Developments



Key Alternative Energy Sources

1. Data Centers
2. Sewer Heat Recovery
3. Seattle Steam line



# City Role and Strategy

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- ▶ Partner with DE utilities
- ▶ Provide leadership and vision
- ▶ Set policy and incentives
  - ▶ Facilitate system development at lowest cost
  - ▶ Incentives for district energy connections





# Building Energy Benchmarking & Reporting

# Benchmarking Overview

Commercial 50k sq. ft. or greater



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graph TD; A[Commercial 50k sq. ft. or greater] --> B[Multifamily 50k sq. ft. or greater]; B --> C[20-50K sq. ft. Commercial + Multifamily];
```

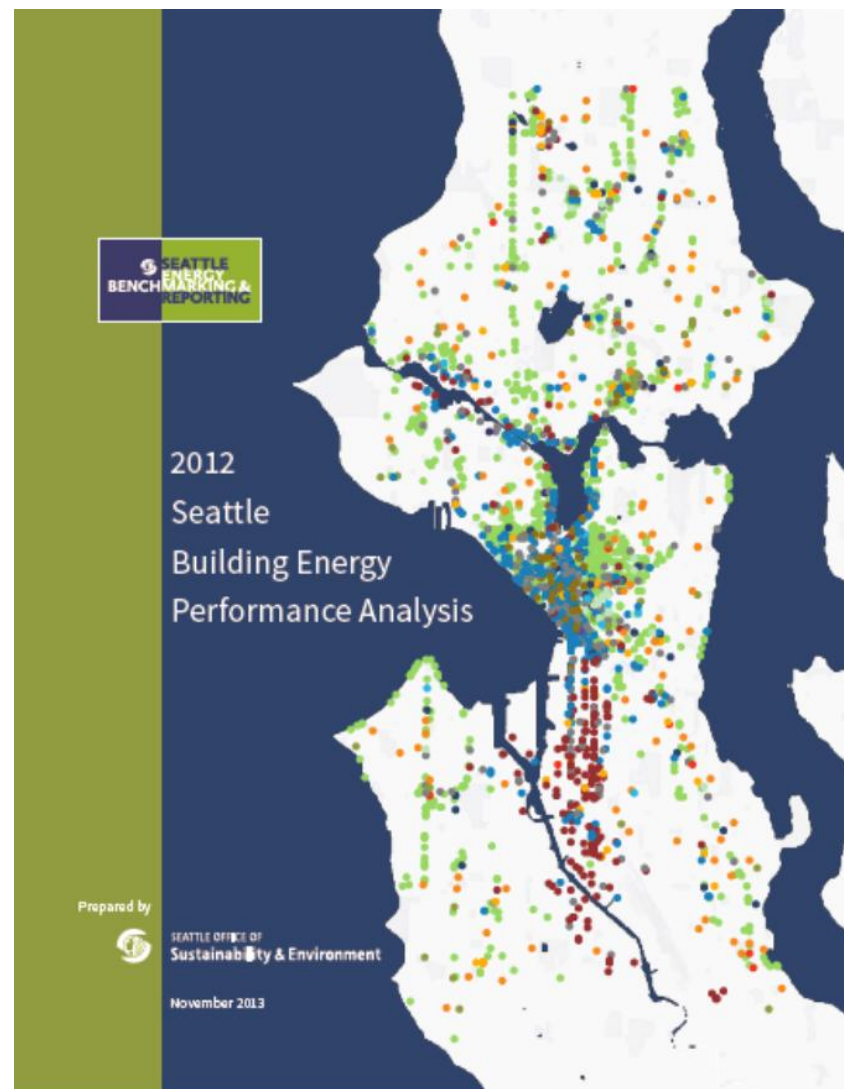
Multifamily 50k sq. ft. or greater

20-50K sq. ft. Commercial +  
Multifamily

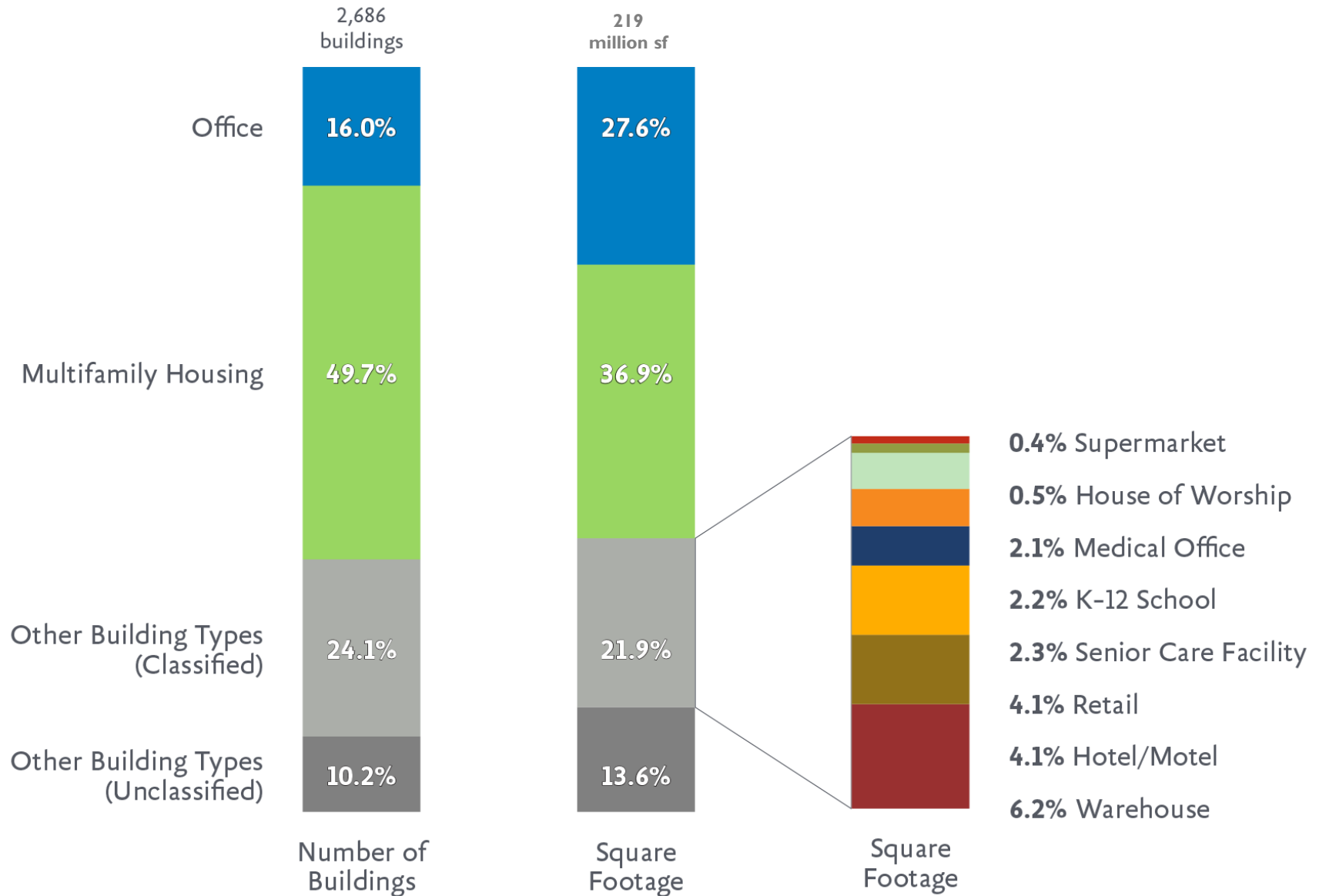


# 2012 Building Energy Analysis

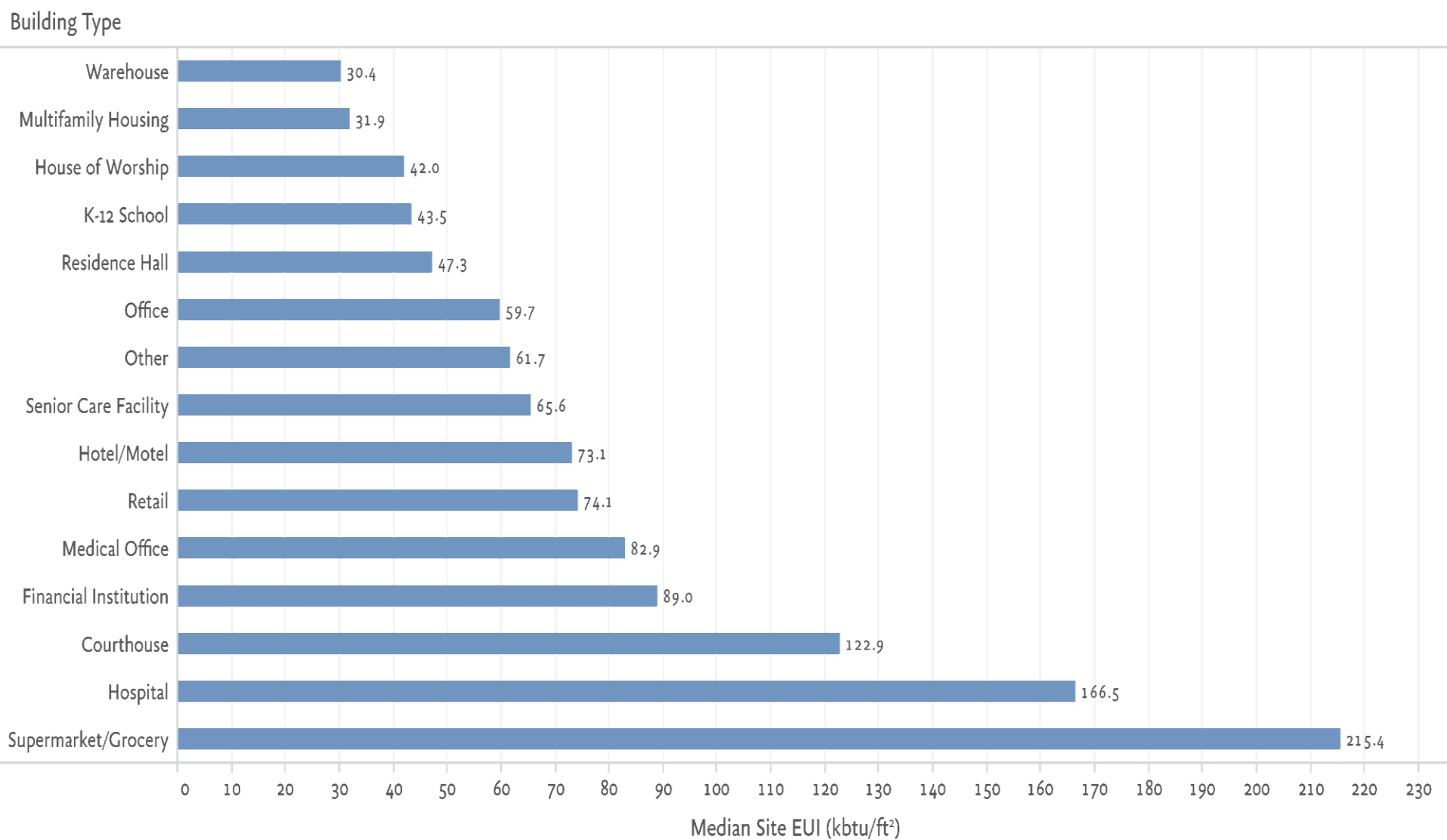
- Analysis of 2012 building energy use information submitted by building owners as part of energy benchmarking requirement
- Data from more than 2,600 commercial and multi-family buildings, 219 million sq. ft.
- Represents 80% of buildings required to report



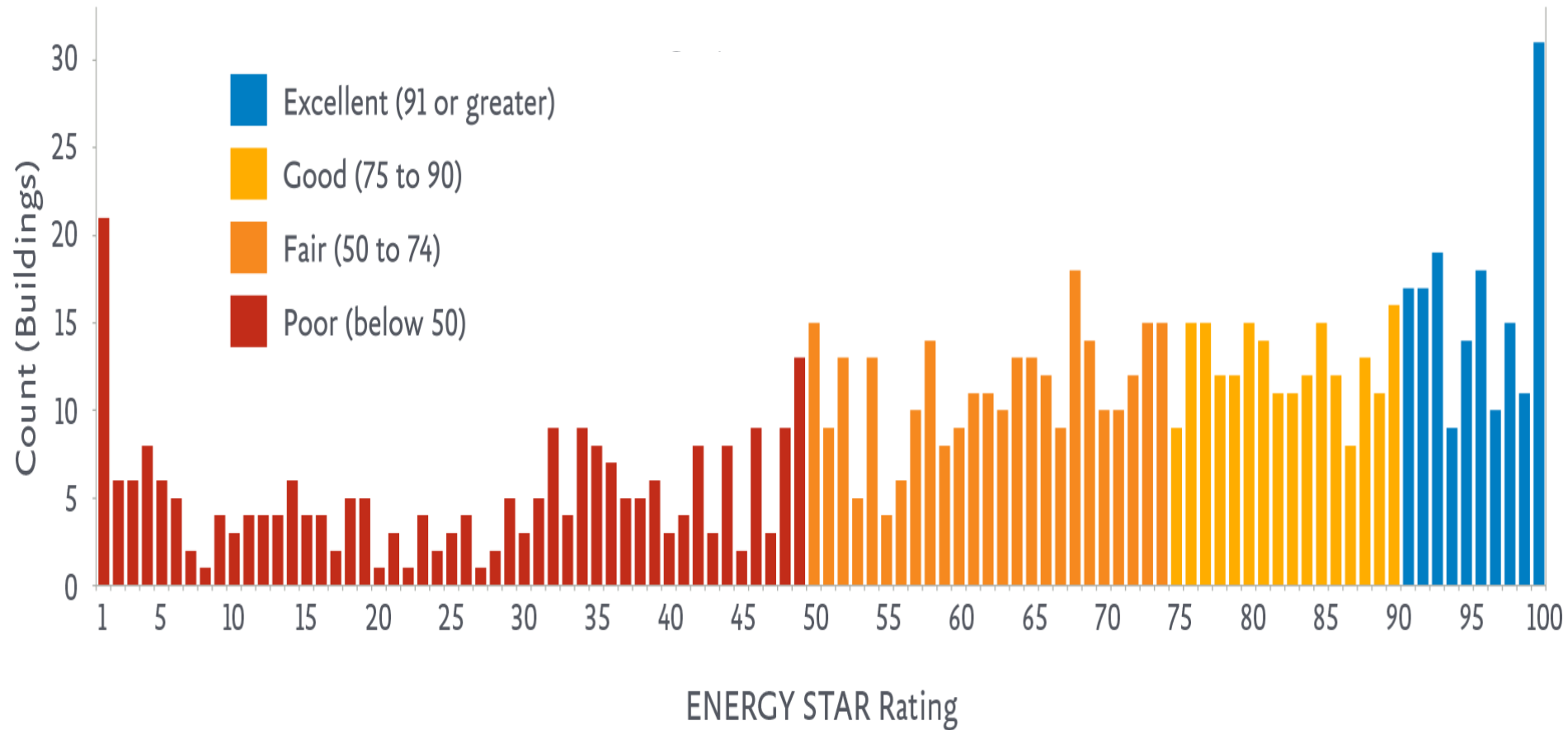
# Building Types



# Median Site EUIs



# Seattle Building Performance

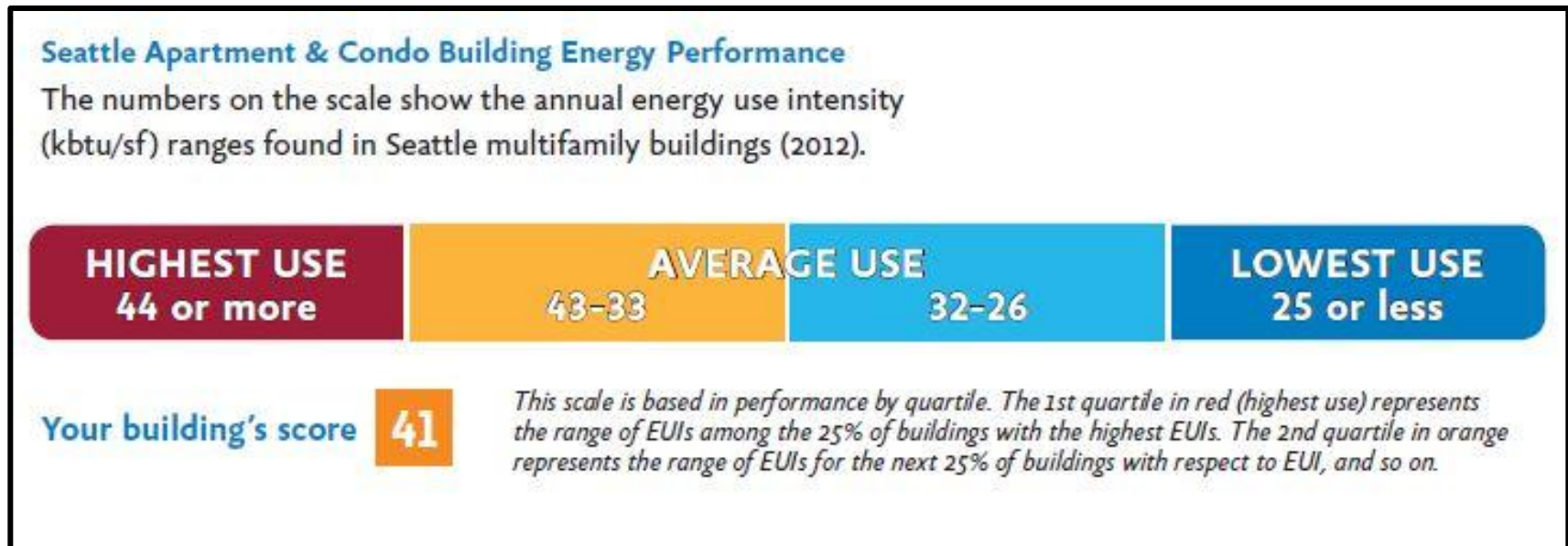


- Benchmarking data is valid. Even with owners self-reporting, analysis didn't find any widespread errors or biases, and office building energy data resembled other statically validated data.
- Many Seattle buildings are more energy efficient than the national average. 41% of eligible buildings reported an energy star score of 75 or greater (meaning the building scored higher than 75% of similar buildings nationwide).
- Older buildings can be energy efficient too. Seattle's oldest buildings (pre-1950) are not necessarily highest energy users. Office building energy performance was lowest in 1960-1980 buildings.
- There is room for improvement. If the worse performing buildings improved energy performance just to the Seattle average, buildings would save 25% in energy use and \$55 million on utility bills.



# Next Steps – Informing the Market

- Communicate directly with owners about their building performance relative to peers and energy efficiency potential.
- Connect building owners to utility incentives and other resources to help them upgrade their buildings.





# Resource Conservation Management Plan

# Resource Conservation Management Plan



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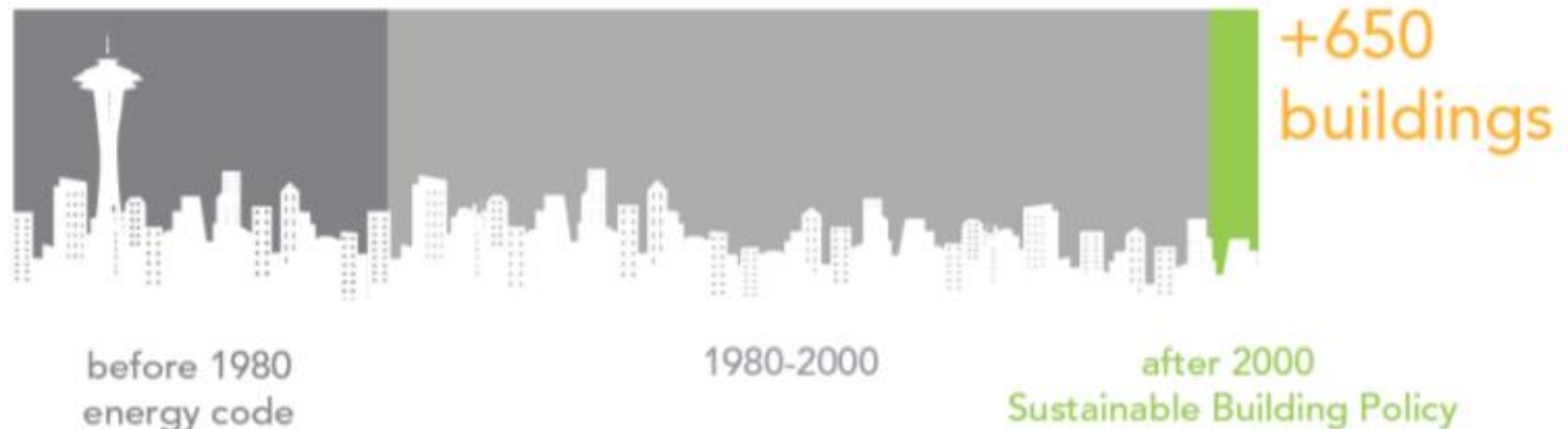
## Goal

20% reduction in energy use by 2020

- Portfolio wide – 10 million square feet
- 2008 Baseline

## Impact

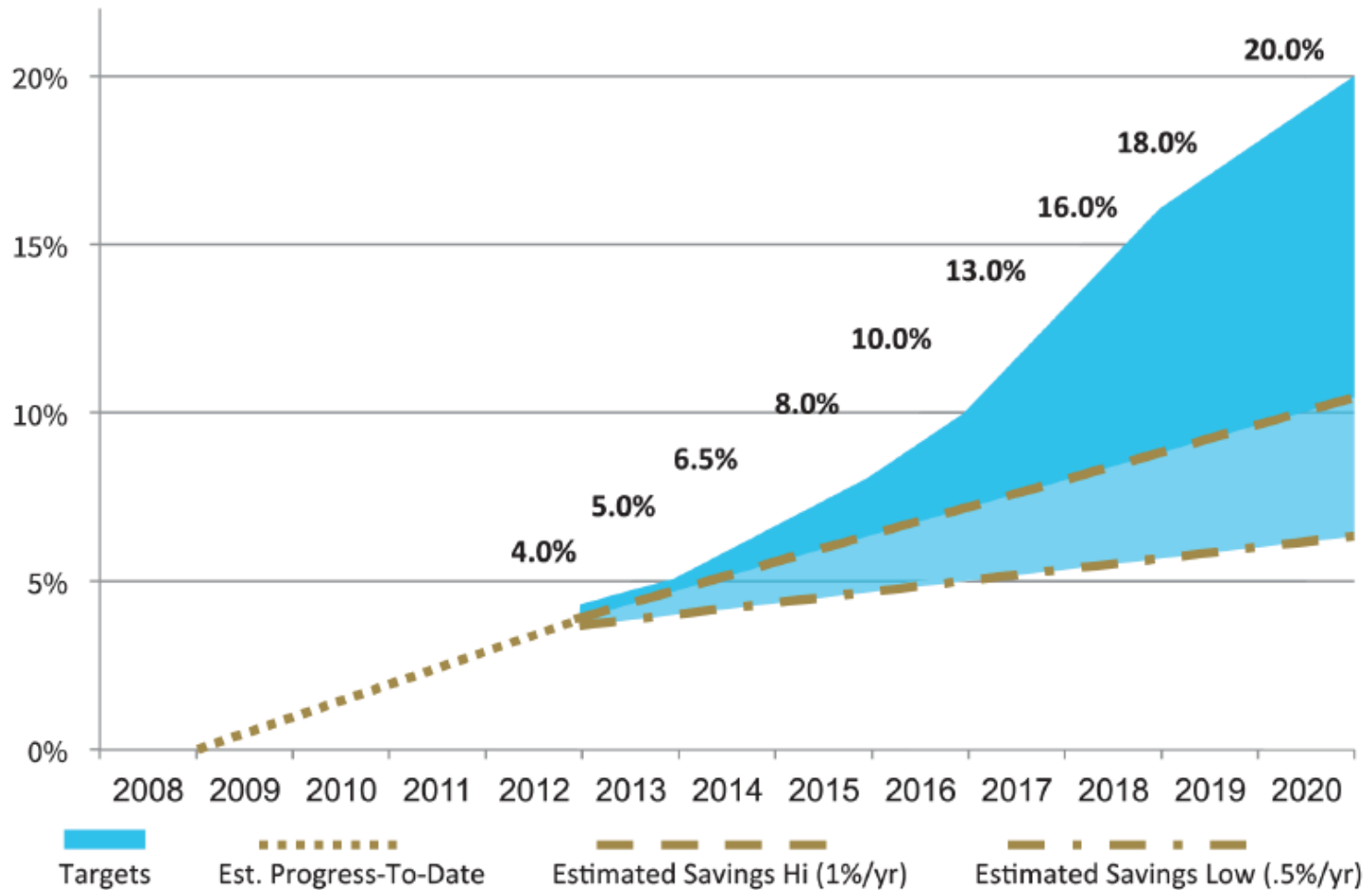
20% energy savings = \$2.75 million annual utility savings



# Why a Citywide Plan?



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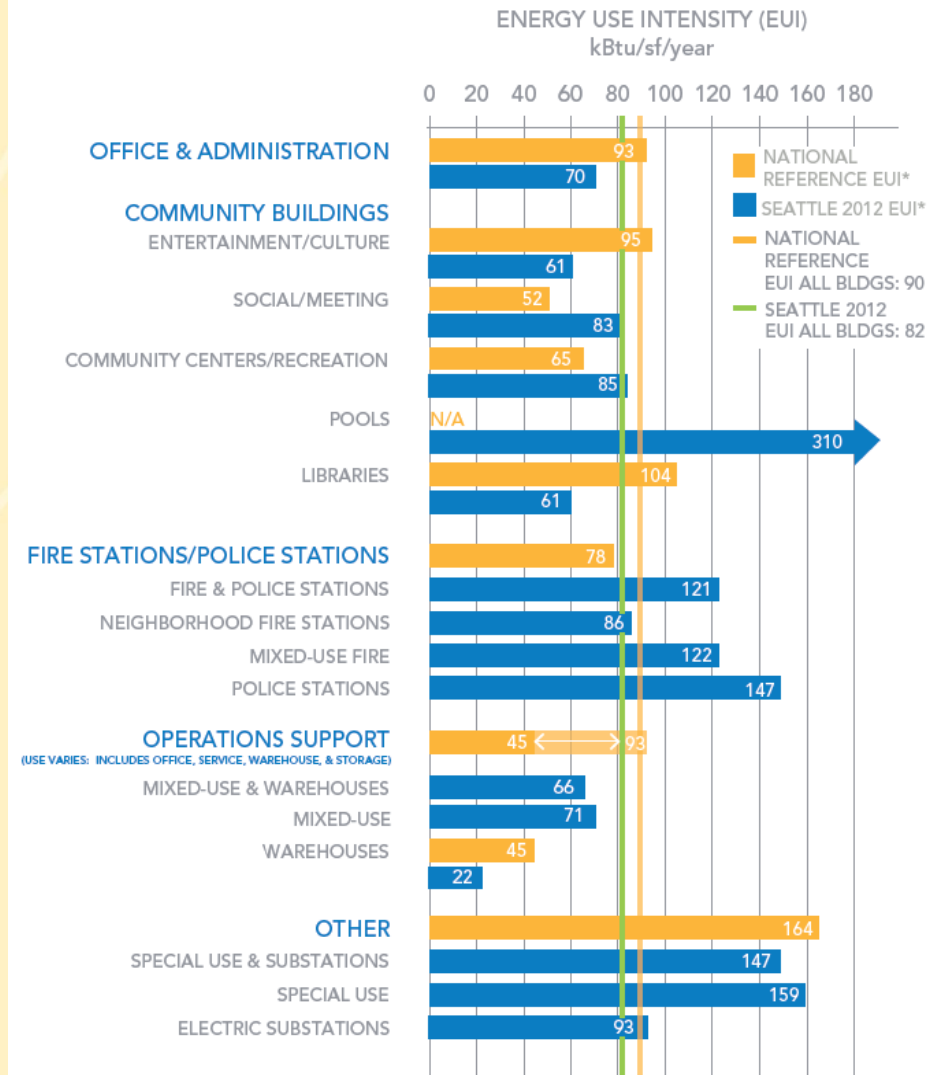
*Annual Cumulative Energy Use Reduction Targets Compared to Baseline*

# RCMP - Three Part Strategy



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1. Measurement & tracking of energy performance
2. Improved operations & maintenance
3. Capital investment in energy efficiency





# RCMP Actions in 2014



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## ➤ Measurement & Tracking

- Benchmark all City buildings over 10,000 sq. ft.
- Create centralized resource accounting system

## ➤ Operations & Maintenance

- Building energy assessments of 30 city facilities
- Develop O&M protocols
- Implement O&M improvements based on previous building assessments

## ➤ Capital Investments

- Develop package of energy efficiency projects for 2015-2016 capital investment
- Apply for state grant funds to support 2014 capital projects.

