



SUMMER SUSTAINABILITY SERIES

- Presentation will begin shortly
- Session will be recorded
- Participants are muted
- Please be aware of Q&A at bottom of screen – ask your questions here
- We will address questions at various points in the session

www.chulavistaca.gov/clean



SUMMER SUSTAINABILITY SERIES

- September 2nd, 4 PM - Recycling 101- Are You Wish Cycling or Really Recycling?
- September 16th, 4 PM - Chula Vista's Zero Waste Plan
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MULTIFAMILY AND COMMERCIAL ENERGY BENCHMARKING AND CONSERVATION ORDINANCE

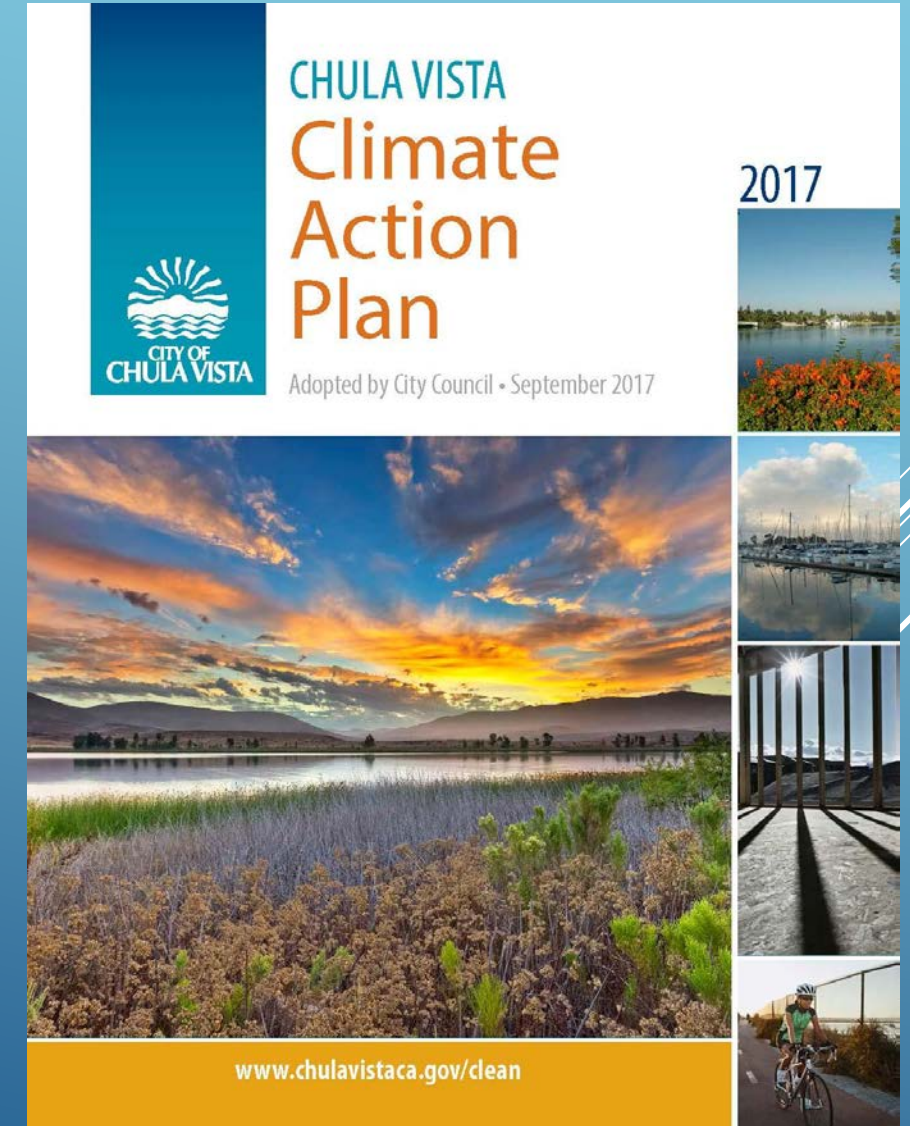


Barbara Locci

City of Chula Vista

2017 CHULA VISTA CLIMATE ACTION PLAN

- Adopted by City Council
- Calls for “building performance reporting and public disclosure” policies
- Set a target of retrofitting 20% of multifamily and commercial space to achieve 50% savings by 2035



BENCHMARKING AND DISCLOSURE

- Process of measuring a building's energy consumption
- Rating the building's performance
- Comparing performance with similar buildings
- Tracking progress over time
- Disclose energy performance rating to public
- Average building sees 2-3% improvement

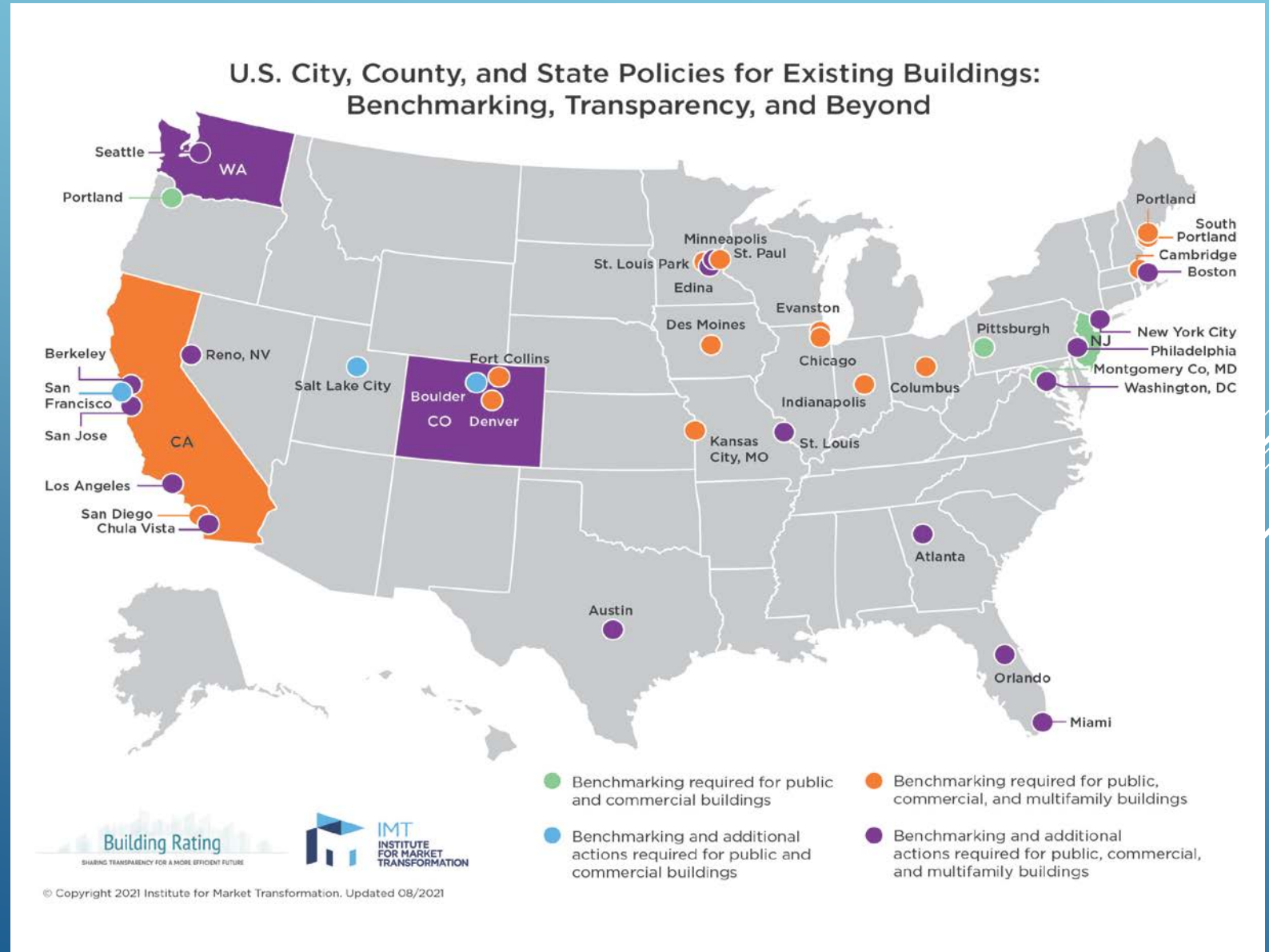
Philosophy: Measurement + Transparency = Energy Efficiency

ENERGY CONSERVATION / BUILDING PERFORMANCE ORDINANCES

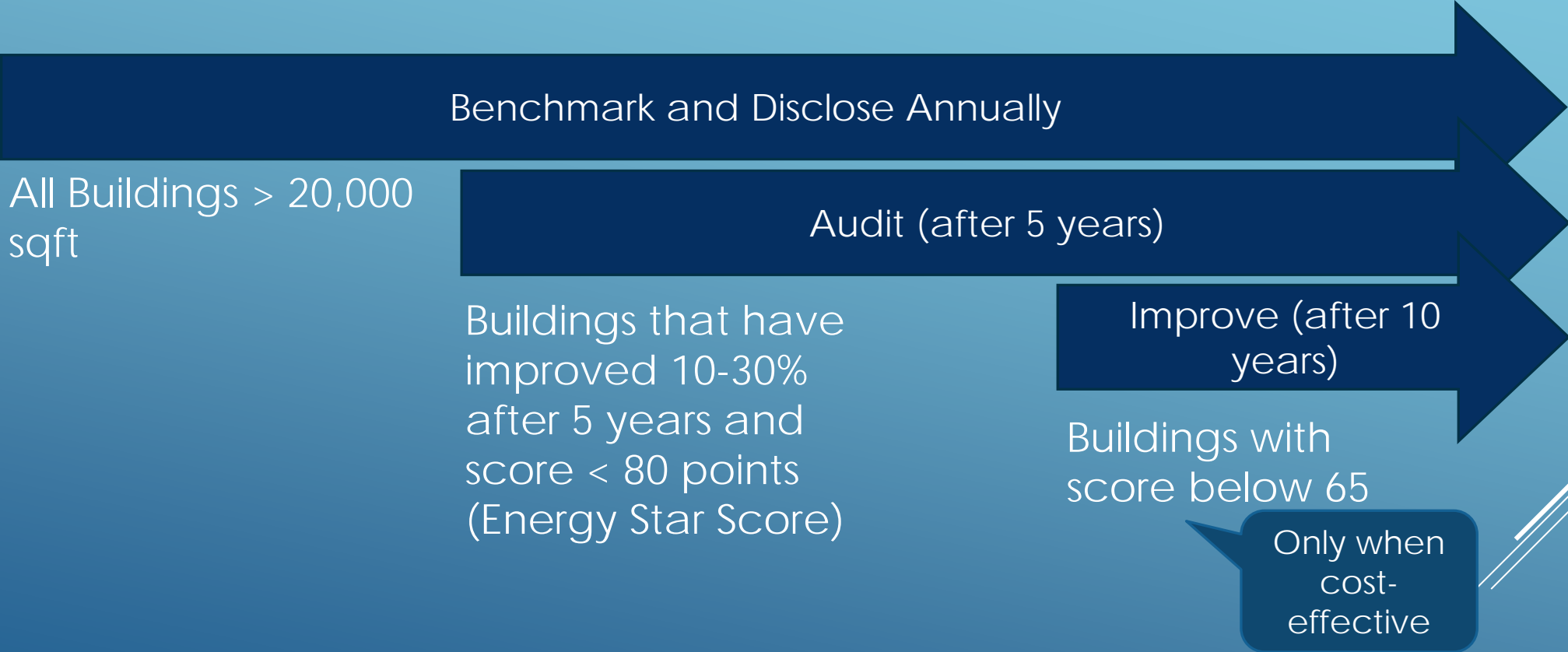
- Improves on Benchmarking-only policies
- Additional requirements if sufficient progress is not made
- Audits – Prioritize the energy efficiency investments with the best ROI
- Retro-commissioning – Low cost, immediate results
- Performance standards – Assure follow-up on audits

BUILDING BENCHMARKING ORDINANCES

- Have been adopted by more than 30 major US cities
- California AB802 already requires Benchmarking



CHULA VISTA PROGRAM DESIGN



MULTIFAMILY BUILDINGS

Benchmark and Disclose Annually

All Buildings > 20,000 sqft

Tenant Spaces (built pre-2006)

- Install cost-effective one-time prescriptive upgrades where applicable
 - LED Lighting
 - Low-Flow Water Fixtures
 - Duct Sealing
 - Attic Insulation

Common Areas (if building has with significant common load)

Audit (after 5 years)

Buildings that have improved 10-30% after 5 years and score < 80 points (Energy Star Score)

Improve (after 10 years)

Buildings with score below 65 points

Only when cost-effective

ORDINANCE COMPARISON

City/State	Adopted	Covers Multifamily	Min. Building Size (sqft)	Bench-marking	Public Disclosure	Audit Req.	Minimum Performance Standard
New York City	2009; 2019	✓	25,000	✓	✓	✓	✓
San Francisco	2011		10,000	✓	✓	✓	
Washington DC	2012; 2018	✓	10,000	✓	✓	✓	✓
State of California	2015	✓	50,000	✓	✓		
Los Angeles	2015	✓	20,000	✓	✓	✓	
St. Louis	2017; 2020	✓	50,000	✓		✓	✓
San Jose	2018	✓	20,000	✓	✓	✓	
Chula Vista	2021	✓	20,000	✓	✓	✓	✓

CHULA VISTA'S REQUIREMENTS

Commercial Building Requirements

	Who	What	When
Benchmark	All	Submit energy data	Annually from 2022
Disclose	All	Provide benchmarking report to current and prospective owners and tenants	Starting 2022
Audit	Buildings with ENERGY STAR score below 80 that do not meet performance targets after 5 years of benchmarking (10-30% energy use reduction)	Conduct an ASHRAE Level I Audit (including retro-commissioning where appropriate)	Every 5 years, beginning 2023 through 2028
Improve	Building with ENERGY STAR score below 65 that do not meet minimum improvement requirements after 10 years of benchmarking (10-15% energy use reduction)	Implement cost-effective measures identified in the audit in order to reduce energy consumption at least 10-15%	Every 10 years, beginning 2028-2032

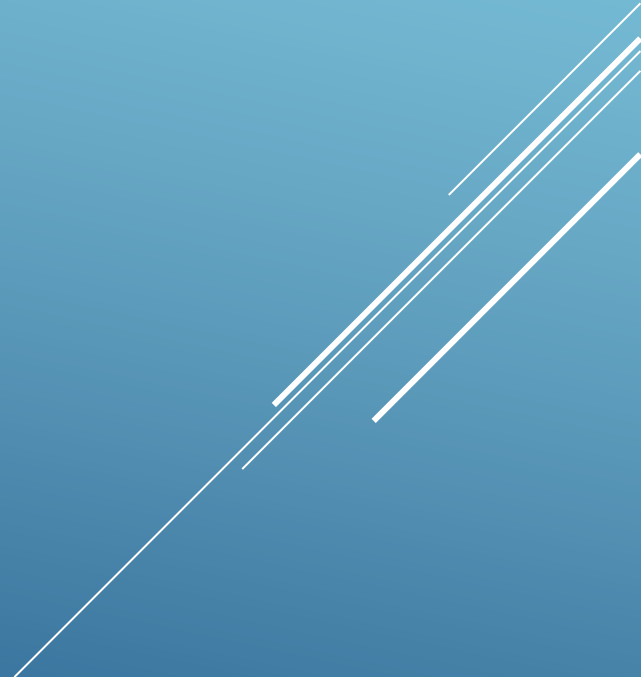
Questions?

Barbara Locci

Conservation Specialist

blocci@chulavistaca.gov

benchmark@chulavistaca.gov





ENERGY STAR for Buildings Overview

Katy Hatcher
US EPA



- 275,000 buildings last year
- Nearly 25% of all floorspace
- 37 state & local benchmarking policies
- One foreign government (Canada)

Management Tool



Assess whole building energy and water consumption, plus waste



Track green power purchase



Share/report data with others



Track changes in energy, water, greenhouse gas emissions, and cost over time



Create custom reports



Apply for ENERGY STAR certification

Hundreds of metrics, including:



Energy use
Source, site,
weather
normalized,
demand



Water use
Water use
intensity,
Water Score
(for Multifamily)



**Waste &
Materials**
Waste intensity,
diversion rate

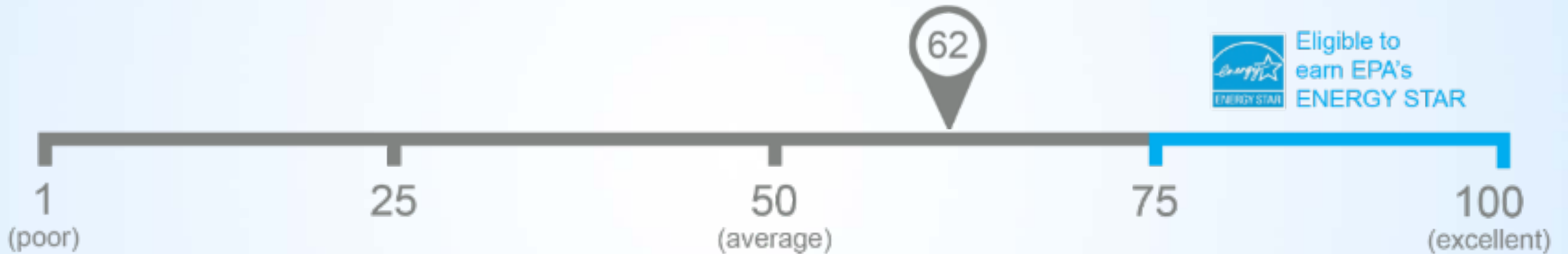


**1-100
ENERGY
STAR score**



**GHG
emissions**
Indirect,
direct, total,
avoided

The 1-100 ENERGY STAR Score

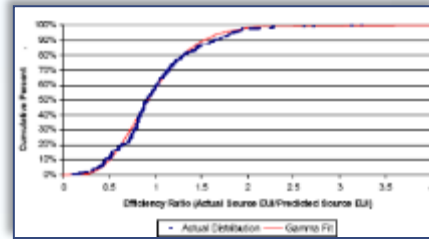


One simple number
understood by ALL stakeholders.

Developing a 1 – 100 ENERGY STAR Score



Nationally representative survey

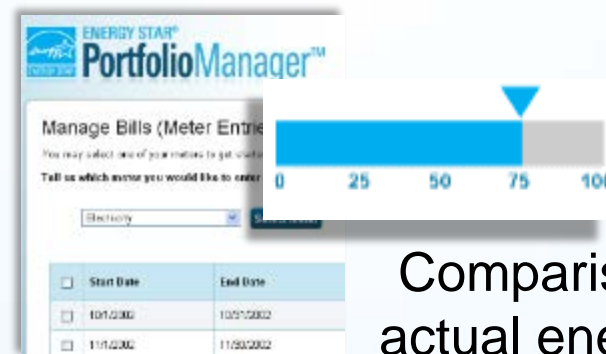


Data analysis

Descriptive Statistics for Variables in Final Regression Model				
Variable	Full Name	Mean	Minimum	Maximum
SrcEUI	Source Energy per Square Foot	198.4	19.62	1133
LNsqFt	Natural Log of Square foot	9.535	8.517	13.82
PCDen	Number of Computers per 1000 ft2	2.231	0.0273	11.11
LNWkHrs	Natural Log of Weekly Operating Hours	3.972	3.611	5.124
LNWkrDen	Natural Log of Number of Workers per 1000 ft2	0.5616	-3.882	2.651
HDDxPH	Heating Degree Days x Percent Heated	4411	0.0000	9277
CDDxPC	Cooling Degree Days x Percent Cooled	1157	0.0000	5204

Note:
 - Statistics are computed over the filtered data set (n=498 observations).
 - Values are weighted by the CBECs variable ADJWTS.
 - The mean values are used to center variables for the regression.

Statistical modeling



Comparison between actual energy data and the modeled estimate

The 1-100 ENERGY STAR Score

Number of staffed hospital beds

Percent cooled

Occupancy

Cooking facilities

Number of residential living units

Percent heated

Weekly operating hours

Energy usage data

Gross floor area

Cooling degree days

Heating degree days

Number of MRI machines

Number of workers on main shift

Number of walk-in refrigerators

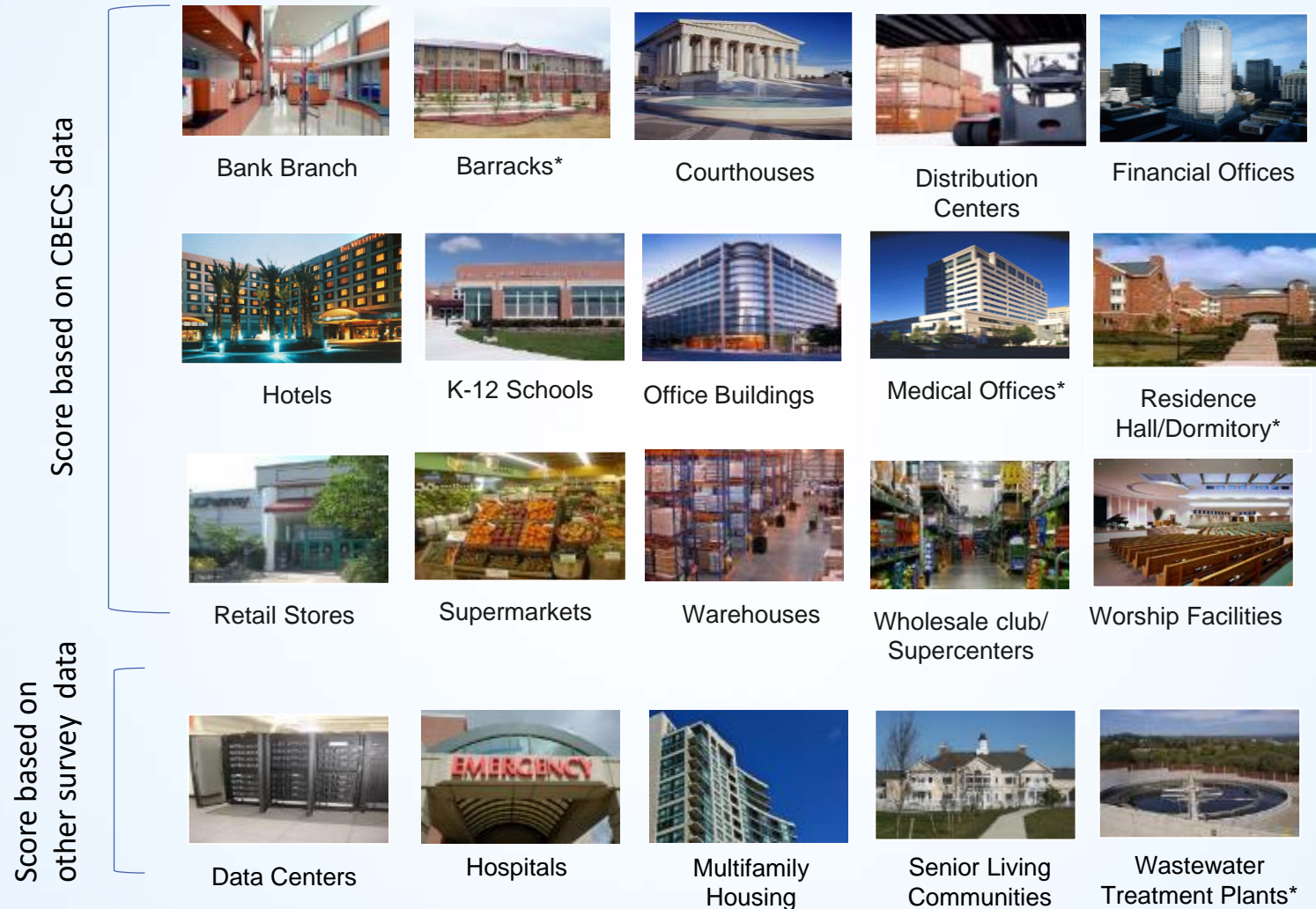
Number of computers

Number of commercial washing machines

Maximum resident capacity

Number of cash registers

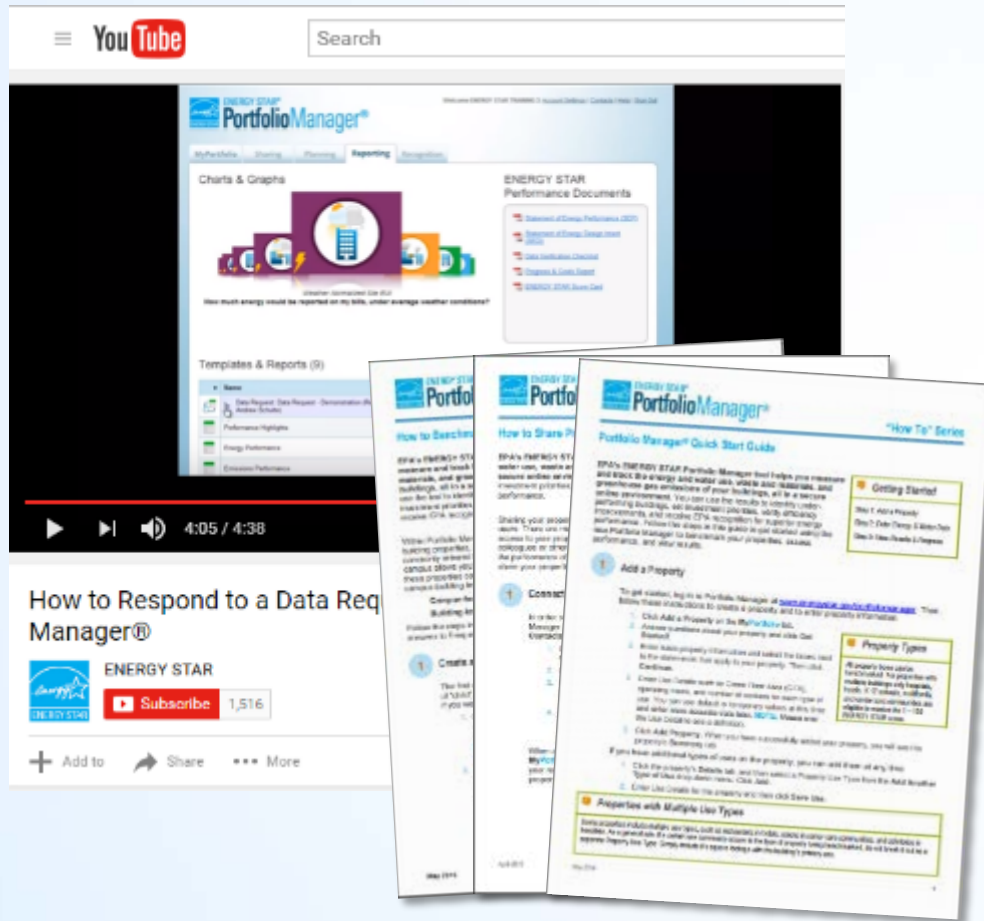
Property types with 1-100 ENERGY STAR scores



ENERGY STAR Recognition



Portfolio Manager Training



- Weekly live webinars
- 3-7 minute training videos on YouTube
- Step-by-step training guides, FAQs, and technical reference documents



786 Third LLC

Case Study



Building Specifics

- Outpatient Doctors office
- 3801 SF (Not eligible to receive an ENERGY STAR Score)
- Remodeled 2012
 - Many Energy Efficiency upgrades installed
 - Including a 21kW PV array
- LEED Gold Certified-July 2021
 - Required energy benchmarking
 - Additional energy efficiency upgrades performed

Energy Efficiency Upgrades

2012 upgrades

- 21kW solar array
- LED lighting
- Smart thermostats
- “Flick” Light Switches

Upgrades during LEED certification

- Replaced older HVAC unit
- Additional LED upgrades-> T-8 LED replacement
- Completed audits including an ASHREA level 1



ENERGY STAR Data

MyPortfolio | Sharing | Reporting | Recognition

786 Third



786 Third Avenue, Chula Vista, CA 91910 | [Map It](#)
Portfolio Manager Property ID: 6595017
Year Built: 2012
[Edit](#)

Not currently eligible for ENERGY STAR Certification

[Change Metric](#)

Weather Normalized Source EUI (kBtu/ft²) Why not score?

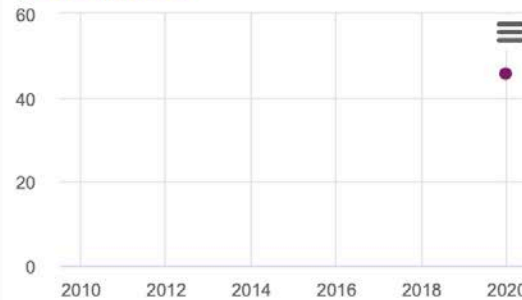
Current: 40.1
(67.01% lower than median.)

Baseline: 43.2
(64.52% lower than median.)

Summary | Details | Energy | Water | Waste & Materials | Goals | Design

Source EUI Trend (kBtu/ft²)

[Change Metric](#)



(Chart current as of 08/09/2021 09:33 AM PDT)

[Refresh Chart](#)

[Change Metrics](#)
[Change Time Periods](#)

Metrics Summary

Metric	Dec 2020 (Energy Baseline)	May 2021 (Energy Current)	Change
ENERGY STAR Score (1-100)	Not Available	Not Available	N/A
Source EUI (kBtu/ft²)	45.7	42.6	-3.10 (-6.80%)
Site EUI (kBtu/ft²)	33.9	31.5	-2.40 (-7.10%)
Energy Cost (\$)	Not Available	Not Available	N/A
Total GHG Emissions Intensity (kgCO2e/ft²)	0.4	0.4	0.00 (0.00%)
Water Use (All Water Sources) (kgal)	Not Available	Not Available	N/A
Total Waste (Disposed and Diverted) (Tons)	Not Available	Not Available	N/A

Energy Data

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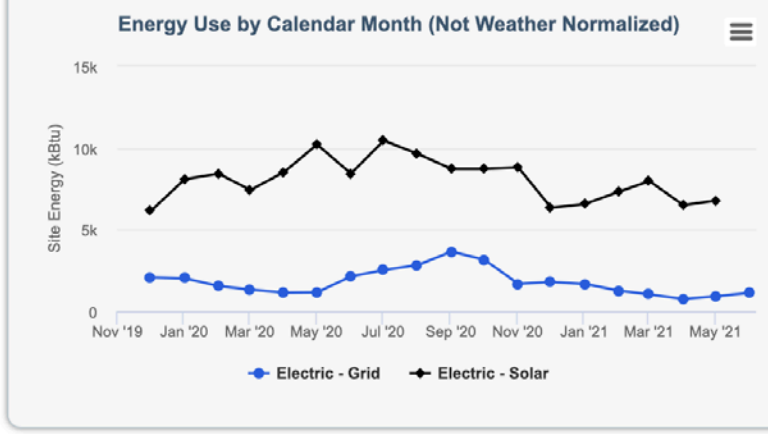
Meter Summary

5 Energy Meters Total
 5 - Used to Compute Metrics

[Add A Meter](#)

Current Energy Date
 May 31, 2021

[Enter Your Bills](#)



Five Ways to Enter Bill Data

- Manual ([Instructions here](#))
- Use our [simple spreadsheet](#) (on the bottom of each meter's Manage Bills page) to upload or Copy/Paste
- Use our [complex spreadsheet](#) (multiple meters + multiple properties)
- [Hire an organization](#) to electronically enter your data
- See if your [utility offers this service](#)

[Export Data by Calendar Month](#)

Meters - Used to Compute Metrics (5) [Add A Meter](#)

[Change Meter Selections](#)
[View as a Diagram](#)

Name Meter ID	Energy Type	Most Recent Bill Date	In Use? (Inactive Date)
06417130-D 52112336	Electric - Grid	07/09/2021	Yes
06417131-C 52112333	Electric - Grid	07/09/2021	Yes
06417132-B 52112331	Electric - Grid	07/09/2021	Yes
06417133-A 52112332	Electric - Grid	07/09/2021	Yes
Solar Generation Meter 49153616	Electric - Solar	06/01/2021	Yes

Your Property is: [Edit](#)

- A Single Building
- Part of a Building
- A Campus of Multiple Buildings

You Are Tracking: [Edit](#)

Thank you.
Any
Questions?

- My information:
 - Robert Carr
 - Robert.Carr1307@gmail.com
 - www.Robertcarrconsultants.com



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