

DOCKETED	
Docket Number:	24-BPS-01
Project Title:	Building Energy Performance Strategy Report
TN #:	258344
Document Title:	Presentation 3b - Energize Denver - Compliance Services for Equity Priority Buildings
Description:	N/A
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Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	8/6/2024 3:13:01 PM
Docketed Date:	8/6/2024



Energize Denver: Compliance Services for Equity Priority Buildings

Putting the human touch in building decarbonization

Energize Denver Ordinance (Nov. 22, 2021)

Buildings 5,000 -24,999 SF

- Upgrade to LED Lighting or install/purchase renewables that covers 20% of total energy use.
- Navigation services pilot starting this summer to identify barriers and challenges

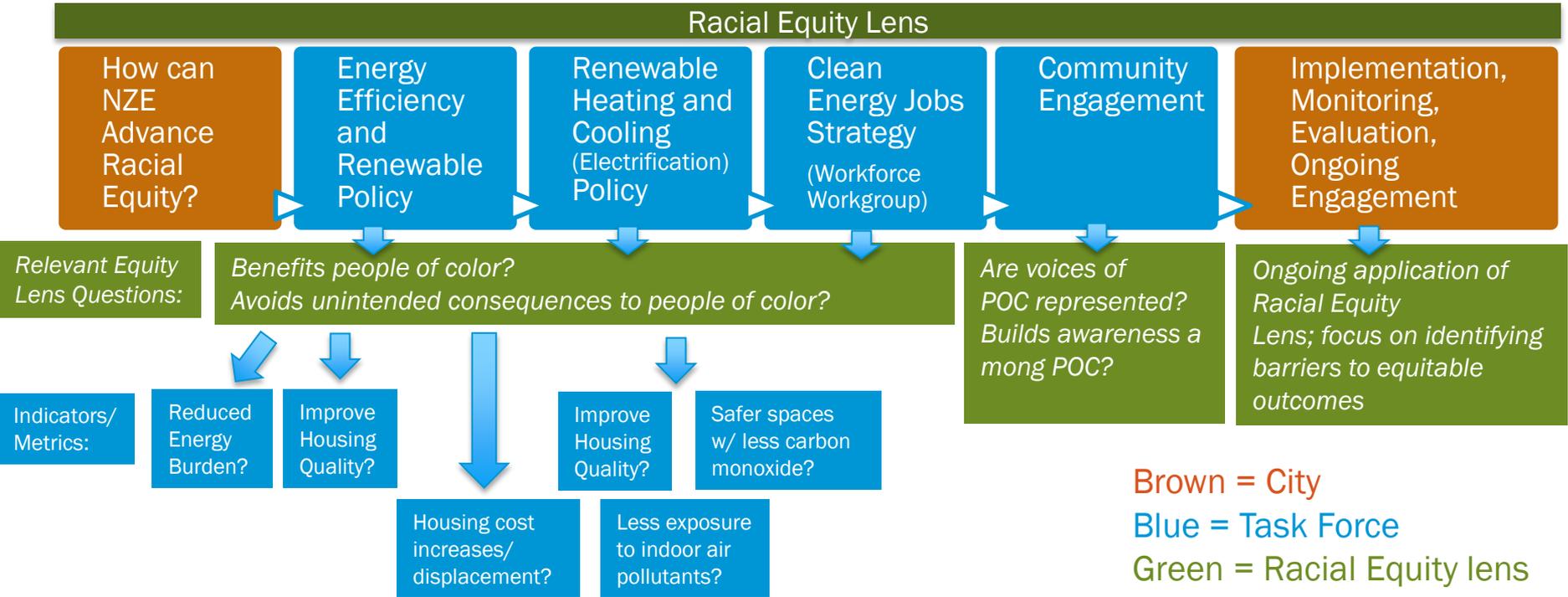
Buildings 25,000+ SF

- Annual benchmarking
- 2030 energy use intensity performance targets by building type

Electrification

- New construction is all-electric as of January 1, 2024
- In 2025 Building Code update, will require partial electrification of space and water heating upon system replacement, when cost effective

Task Force: Racial Equity Roadmap



Creation Process: Community is a Co-Designer



Outreach

Identify

Community
Engagement

Design

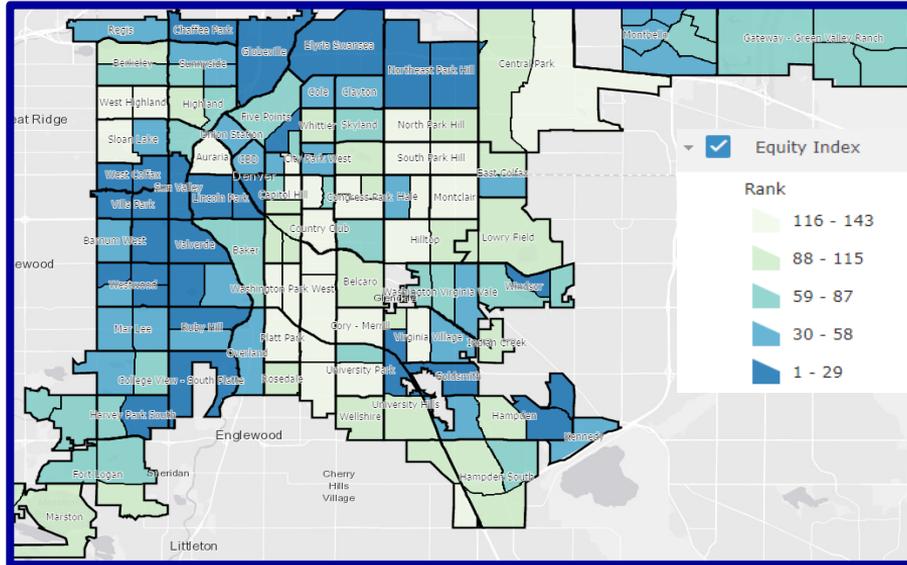
- Who they are
- Where they are

- Community Leaders + Tenants
- Building Owners
- Key Partners

- Services
- Incentives



Equity in Buildings and Homes



These buildings serve and house frontline communities with less access to resources, who may face more barriers adapting to a changing climate.



Equity Index: identifies and highlights environmental and socioeconomic indicators (utility burden, income stress, heat island, asthma rates, redlining, racial composition, etc.)

Criteria for Recruitment Identification

A building needs to meet **criteria A, B or C** plus one or more of the additional criteria to be potentially identified as and EPB:

- A. Market rate located in **NEST** neighborhoods with a high prioritization ranking on the EPB equity index
- B. Buildings with 30% **affordable housing** units
- C. Buildings with **human service** providers as tenants/owners responsible of HVAC systems
- D. Building has **significance** to the neighborhood, serving frontline community members (e.g., low-income, BIPOC, etc.)
- E. Building must be located in a census tract below the **Denver Median Income** and meet one of the following:
1) in a census tract with a high prioritization ranking on the equity index and 2) serving frontline communities.
- F. Building provides **affordable rents** (below 1/3 of the monthly Denver median income), e.g., NOAH
- G. Building operations align to **corporate social responsibility** (E.g., livable wages, health benefits to employees, hiring a local workforce, donating profit to charities or causes, etc.)

Note: While initially identified EPBs will be targeted, their ultimate classification will depend on their web-based sign-up application. Each building believed to be an Equity Priority Building will need to apply for this specific classification and be approved to receive the additional services.

Compliance Assistance Service Levels for Year 1 Pilot

Level 1

172 Bldgs. total

- Recruitment: Emails, Phone, mailings, onsite visits
- Assistance completing EPB application
- Assistance completing benchmarking and third-party data verification
- Review of all requirements for greater understanding

Level 2

117 Bldgs. total

- Identify target adjustment opportunities and target adjustment application
- Access to an online building portal to track energy performance and savings
- Virtual ASHRAE Level 1 Energy Assessment
- Assistance completing alternate compliance applications

Level 3

16 Bldgs.

- Onsite ASHRAE Level 2 Energy Audit
- Assistance with draft scopes of work for retrofit plans and bids
- Assistance in reviewing vendor bids and choosing a contractor
- Assistance in finding financial resources to complete upgrades

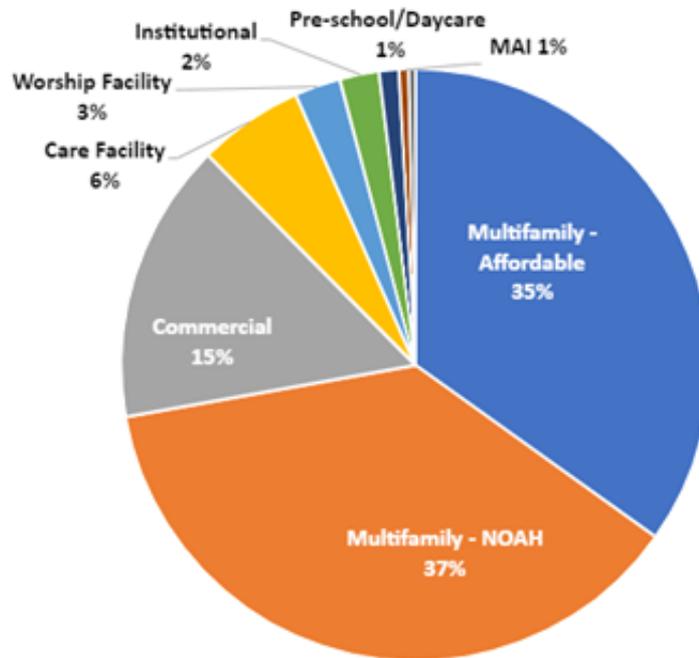


Year 1 Focus

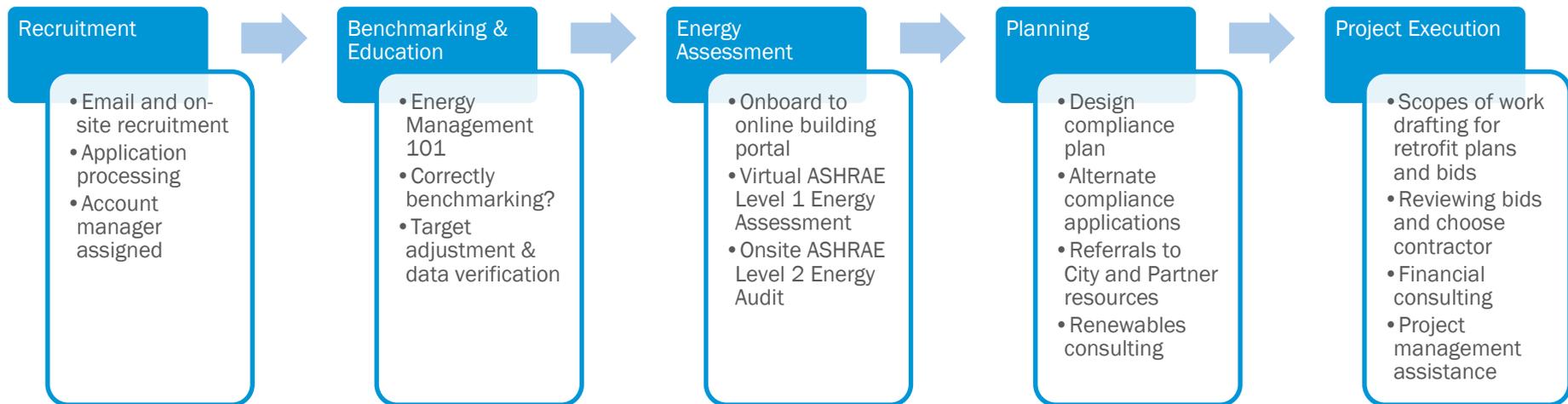
- “Never Benchmarked” in-person outreach
- Buildings are properly benchmarked and have sound EUI targets
- Educational programming:
 - Funding
 - Energy efficiency before electrification
- Educate vendors + bilingual contractors
- Educate on how complying with BPS can address bottom-line building solutions

Equity Priority Buildings Recruitment

	Buildings (3/1/24)	Buildings (6/1/24)
Potential EPBs identified	494	554
Enrolled in the Compliance Program	162	226
Onsite visits for recruitment (so far)	183	183
ASHRAE level 2 audits completed (so far)	18	24



EPB Compliance Assistance Journey Expansion



Vida (Equity Priority Building)

Energy Performance Strategy

Address: 1151 Colorado Blvd
Building Type: Multifamily Housing
Year Built: 1965
Market Value: \$10,728,000 (Assessor)

Size: 35,422 sq ft
Latest Energy Use Intensity (EUI): 76.3
2030 Target EUI: 44.2

Step 1: No target adjustment needed

Step 2: Possible options with good payback

Improvements	Implementation Cost with Rebates (\$)	Annual Energy Cost Savings	Post-Implementation EUI
1. Replace Water Fixtures with Low Flow Fixtures	\$13,750	\$1,013	73.6
2. Revise Setpoints on Existing Domestic Hot Water System Prior to Cental Plant Replacement	\$1,000	\$1,563	69.5
3. Update Remaining Interior Lighting to LED & Install Occupancy/Motion Sensors on Hall Lights	\$1,250	\$1,775	69
4. Renewables (on-site)	\$147,000	\$16,026	59.4
TOTAL	\$163,000	\$20,377	59.4

Payback:
8 years

\$101K
energy savings
by 2030

Total
Rebates:
\$17,500



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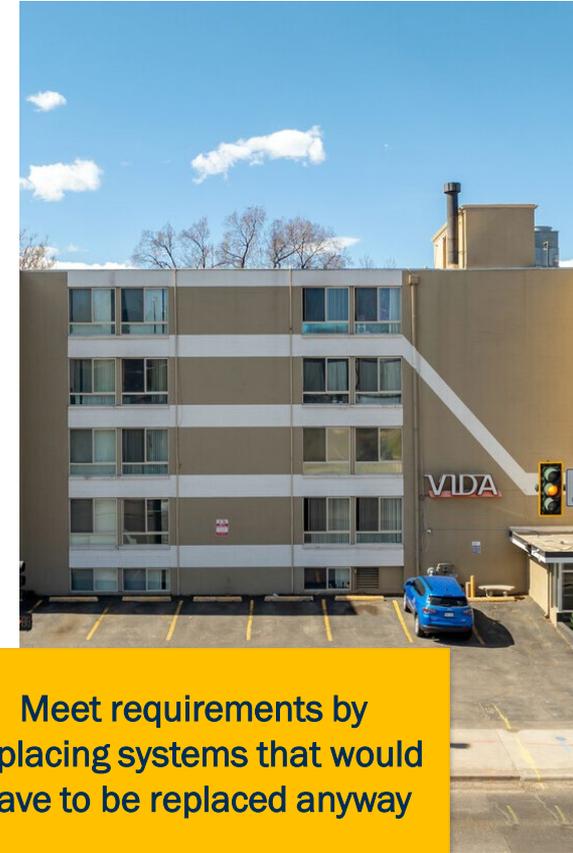
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2030 Target EUI: 44.2

Step 3: meet compliance requirements by performing already necessary system replacements

Improvements	Implementation Cost with Rebates (\$)	Estimated Replacement Date	Post-Implementation EUI
1. Replace Boiler Plant with Condensing Boilers & Install Reverse-Indirect Domestic Hot Water	\$310,000	2029	42.8



Meet requirements by replacing systems that would have to be replaced anyway

Osage (Equity Priority Building)

Performance Compliance Strategy

Address: 1175 Osage
Building Type: Office
Market Value: \$7,537,200 (Assessor)

Size: 25,216
Latest Energy Use Intensity (EUI): 92.4
2030 Target EUI: 49.5

Step 1: Target adjustment complete. Windows replacement underway that brings them to ~EUI of 87

Step 2: Options listed in their energy audit with good payback

Improvements	Implementation Cost (\$)	Annual Energy Cost Savings	Post- Implementation EUI
1. Implement Heating Hot Water Supply Temperature Reset Control Strategy	\$1,600	\$2,653	82.6
2. Optimize Rooftop Unit Economizers	\$4,027	\$4,492	78.8
3. Implement Rooftop Unit Discharge Air Temperature Reset Control Strategy	\$3,200	\$3,353	76
4. Install Low-Flow Bathroom Sink Aerators	\$460	\$188	75.3
5. Install Lighting Occupancy Sensors	\$5,727	\$1,585	73.9
6. Install DHW Circulation Pump Timeclock	\$902	\$167	73.6
7. Schedule Restroom Exhaust Fans	\$902	\$149	73.5
8. Install Rooftop Unit Supply Fan Variable Frequency Drives	\$18,454	\$2,716	71.2
9. LED Lighting Retrofit	\$47,525	\$6,475	65.7
TOTAL	\$82,797	\$21,778	65.7



**Payback:
3.8 years**

**\$261k
energy savings
by 2030**

Osage (Equity Priority Building)

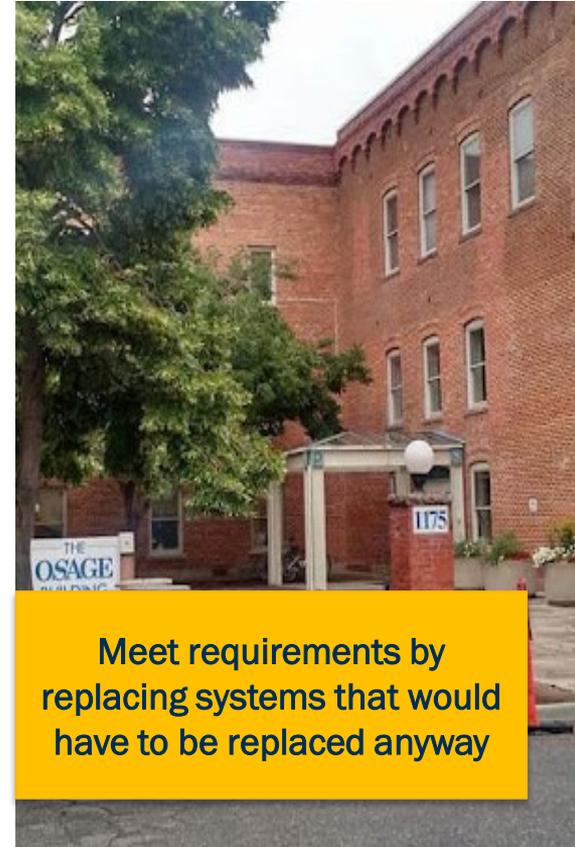
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Step 3: meet compliance requirements by performing already necessary system replacements

Improvements	Implementation Cost (\$)	Estimated Replacement Date	Post-Implementation EUI
1. Replace Rooftop Units	\$285,000	2026	60.9
2. Replace Boiler with Condensing Boiler	\$240,000	2029	45.7
TOTAL	\$525,000		45.7



Meet requirements by replacing systems that would have to be replaced anyway

Take Aways

Humanize data + beyond traditional energy efficiency first

Long-term relationship with owners is important and meaningful

Provide assistance in figuring out solutions for building owners + tenants

