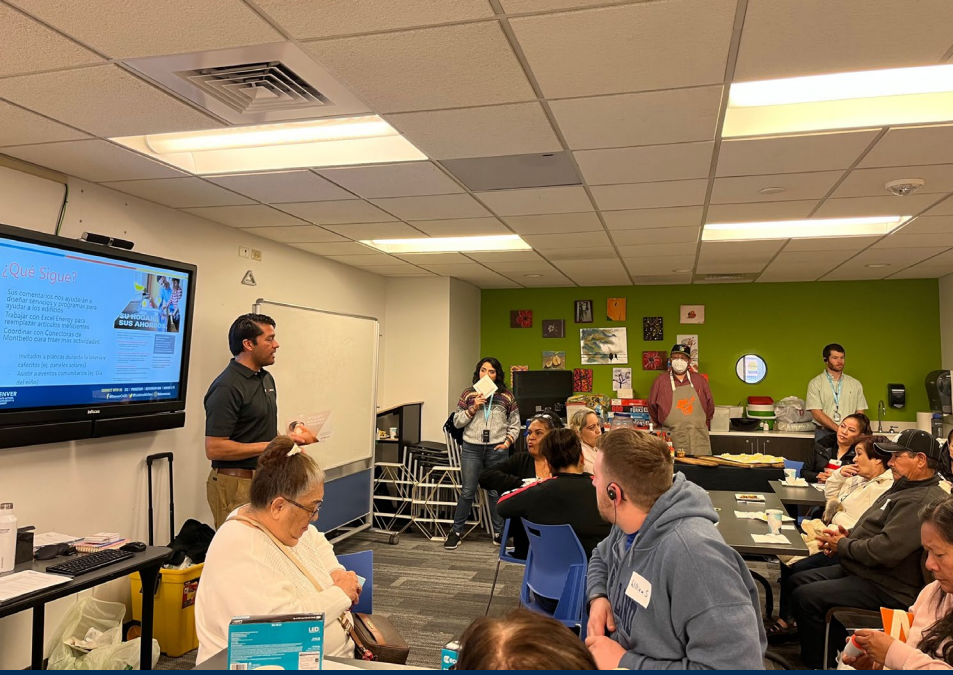


<b>DOCKETED</b>	
<b>Docket Number:</b>	24-BPS-01
<b>Project Title:</b>	Building Energy Performance Strategy Report
<b>TN #:</b>	258344
<b>Document Title:</b>	Presentation 3b - Energize Denver - Compliance Services for Equity Priority Buildings
<b>Description:</b>	N/A
<b>Filer:</b>	Gabriel Taylor
<b>Organization: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

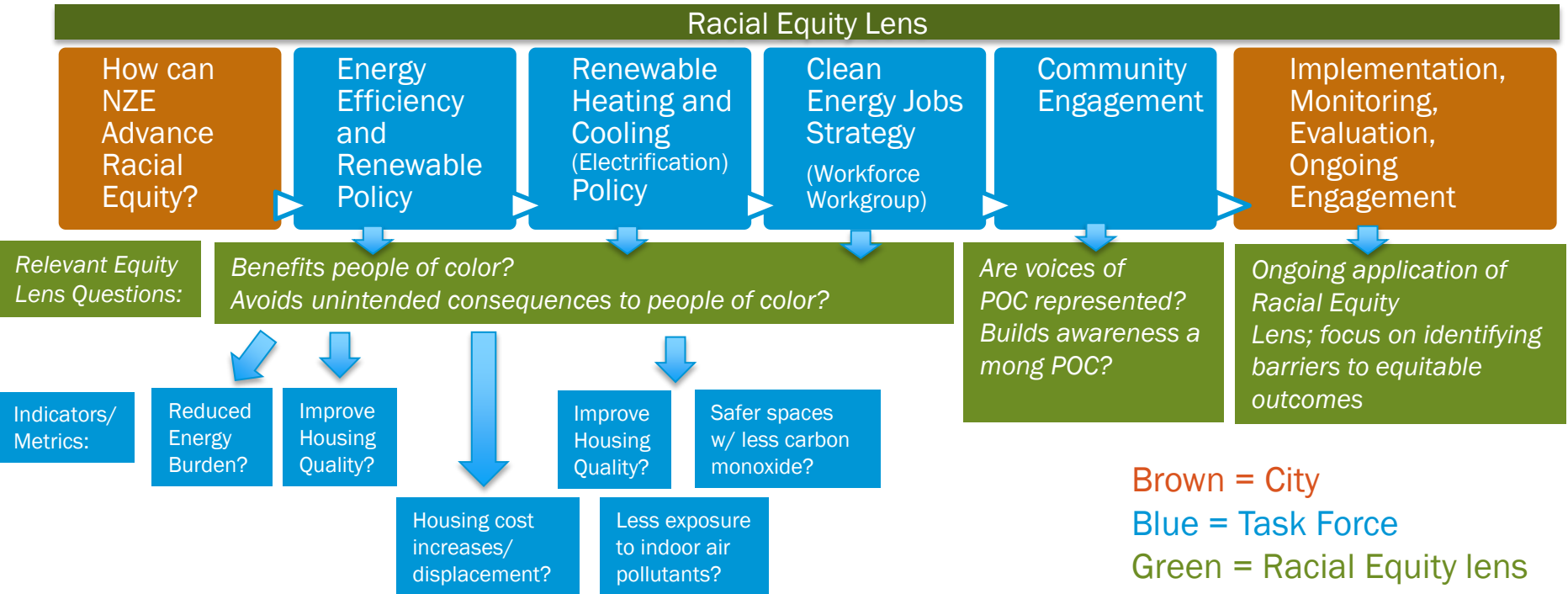
## Buildings 25,000+ SF

- 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

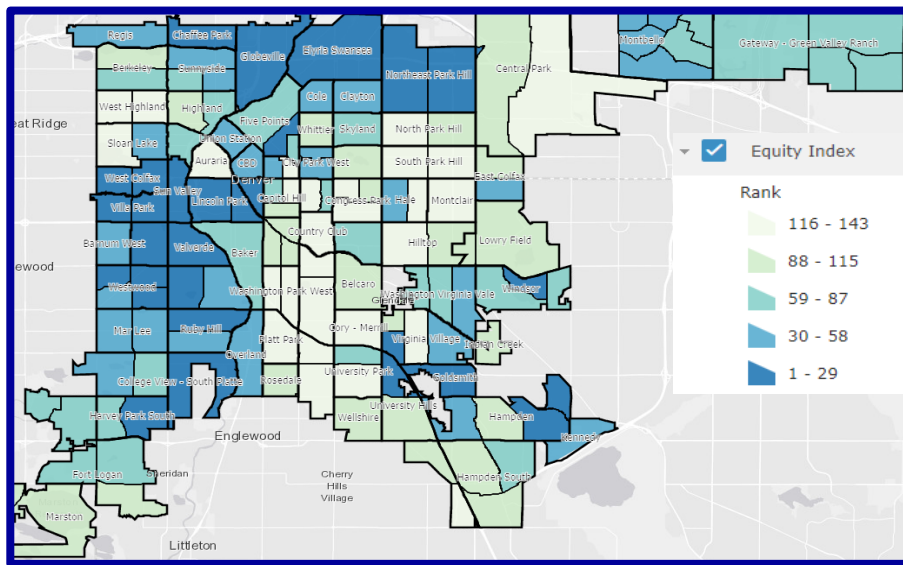
- Who they are
- Where they are

- 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



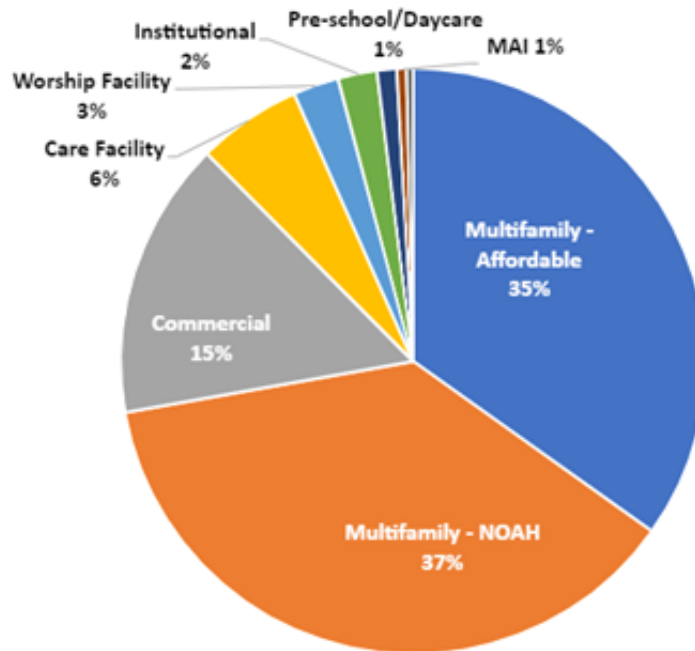


## Year 1 Focus

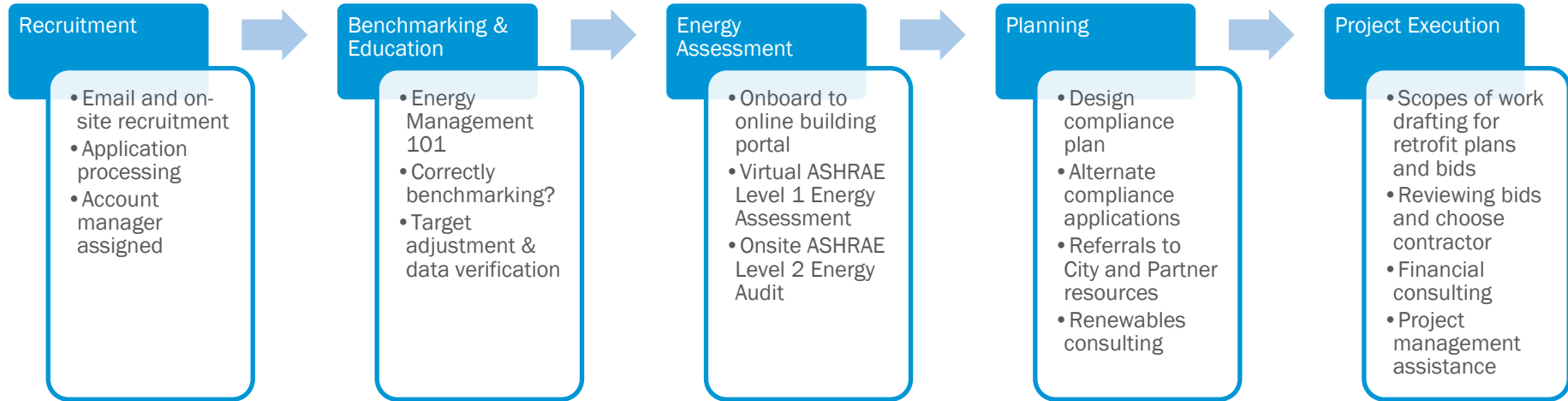
- “Never Benchmarked” in-person outreach
- Buildings are properly benchmarked and have sound EUI targets
- Educational programming:
  - Funding
  - Energy efficiency before electrification
- Educate vendors + bilingual contractors
- Educate on how complying with BPS can address bottom-line building solutions

# 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
<b>TOTAL</b>	<b>\$163,000</b>	<b>\$20,377</b>	<b>59.4</b>

**Payback:**  
**8 years**

**\$101K**  
**energy savings**  
**by 2030**

**Total**  
**Rebates:**  
**\$17,500**



# Vida (Equity Priority Building)

## Energy Performance Strategy

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**Market Value:** \$10,728,000 (Assessor)

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**Latest Energy Use Intensity (EUI):** 76.3  
**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
<b>TOTAL</b>	<b>\$82,797</b>	<b>\$21,778</b>	<b>65.7</b>

**Payback:  
3.8 years**

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



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# Osage (Equity Priority Building)

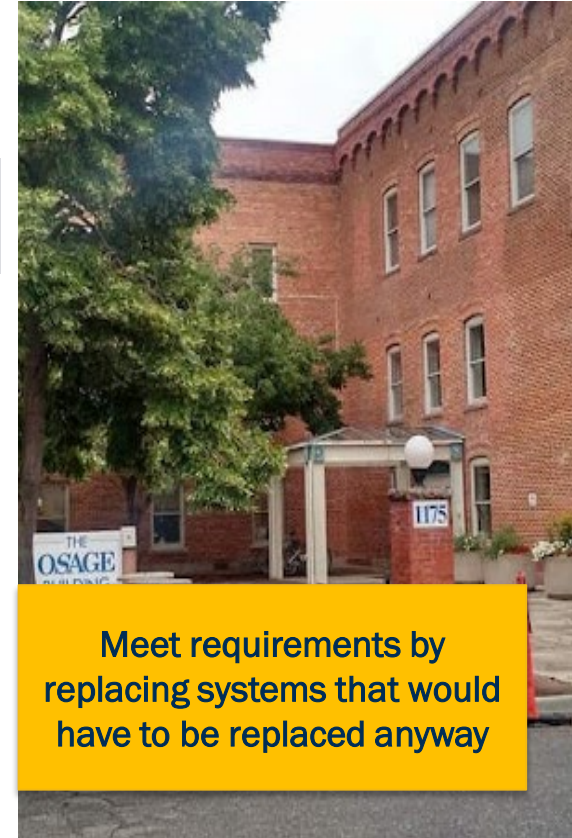
## Performance Compliance Strategy

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**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 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
<b>TOTAL</b>	<b>\$525,000</b>		<b>45.7</b>



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

