

Funding Equitable Decarbonization in Berkeley

September 21, 2022



Agenda

- City of Berkeley's Context + Climate Goals
- Residential Funding Gap Analysis - Project Overview
- Ground-truthing with AEA
- Residential Funding Gap Analysis - Project Findings
- Berkeley's Next Steps

Berkeley's Context + Climate Goals

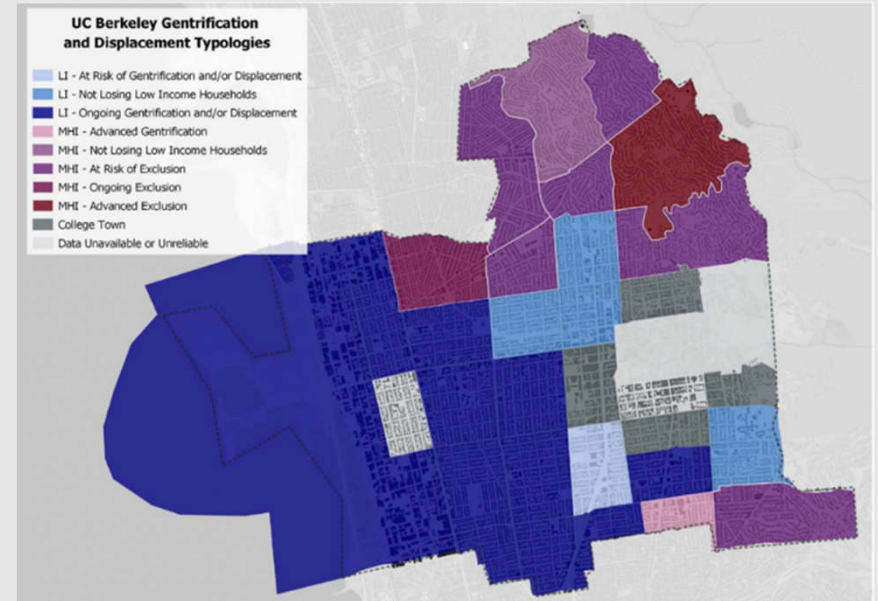


Berkeley's Context + Climate Goals

Building Policies & Goals

- 2006: 80x50 goal
- 2009: Climate Action Plan
- 2015: Energy disclosure requirement
- 2018: Fossil Fuel-Free Berkeley
- 2019: Prohibit natural gas in new construction
- 2021: Berkeley Existing Building Electrification Strategy

Displacement and gentrification already underway in Berkeley, particularly in communities of color



Questions?

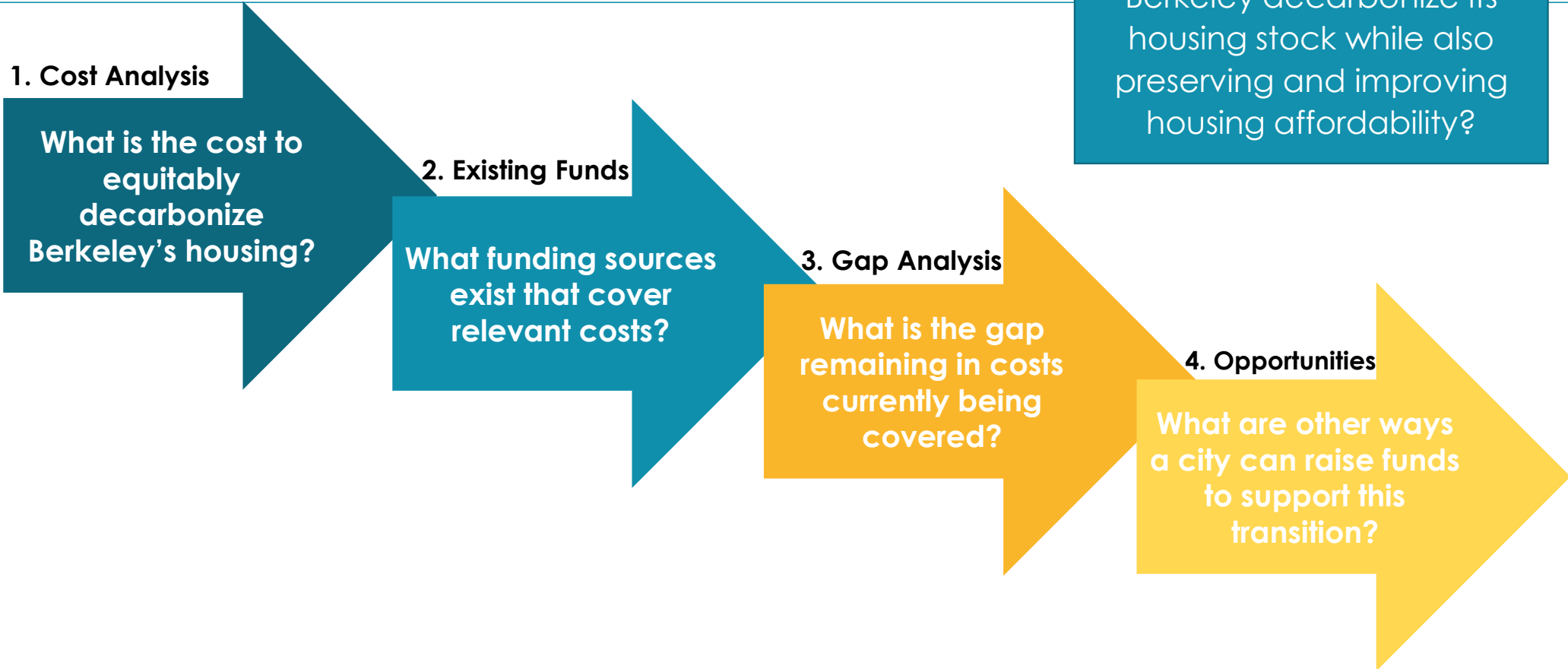


Residential Funding Gap Analysis

Project Overview



Overview of Project Phases



Questions?



Ground-truthing with AEA



Key Implementation Issues

- Construction and retrofit challenges
- Building stock challenges
- Layering funding streams

Questions?



Residential Funding Gap Analysis

Project Findings



Phase 1: Total Cost Modeling | Results

Total upfront costs range from \$2 - \$2.5 billion to decarbonize all of Berkeley's residential buildings by 2045.

Total Costs – Baseline Deployment Rate
(nominal 2022 \$ millions, rounded)

Retrofit Scenario	Single Family Homes	Duplexes	3-4 Unit Buildings	Low Rise MF	Mid Rise MF	Total Costs
Full Electrification	\$ 510	\$ 185	\$ 185	\$ 360	\$ 90	\$ 1,330
Energy Efficiency	\$ 85	\$ 35	\$ 30	\$ 50	\$ 15	\$ 215
Electric Readiness	\$ 120	\$ 70	\$ 85	\$ 135	\$ 35	\$ 445
Health & Safety	\$ 80	\$ 45	\$ 50	\$ 85	\$ 20	\$ 280
Total	\$ 795	\$ 335	\$ 350	\$ 630	\$ 160	\$ 2,270

Phase 2: Existing Funding | Key Takeaways

- There are **many funding sources for energy efficiency and electrification** retrofits in the Bay Area.
- **Significantly fewer sources of funding exist for health and safety repairs.**
- There is **no funding to upgrade knob and tube wiring.**
- There are many **moderate-income households*** in CA who may not be able to afford the costs of retrofits to their homes, yet they are also not eligible for many low-income programs.



*Moderate income is defined in this analysis as households making more than the federal poverty line (\$50,000 for a family of 4 in Berkeley) but less than the area median income (\$104,000 for a family of 4 in Berkeley).

Phase 3: Gap Analysis | Total Net Costs

All building types face a significant gap in funding for decarbonization upgrades, with a range of \$22,000 to \$40,000 per unit.

Total Gap in Costs Covered by Existing Programs (rounded)

	Single Family Homes		Duplex		3-4 Unit		Low-Rise Multifamily		Mid-Rise Multifamily	
	Low-Income	Market	Low-Income	Market	Low-Income	Market	Low-Income	Market	Low-Income	Market
Full Electrification	\$ 26,400	\$ 26,400	\$ 25,000	\$ 25,000	\$ 38,400	\$ 38,400	\$ 112,000	\$ 112,000	\$ 357,100	\$ 357,100
Energy Efficiency	\$ -	\$ 2,700	\$ -	\$ 1,700	\$ -	\$ 1,900	\$ 3,800	\$ 13,800	\$ 31,800	\$ 66,800
Electric Readiness	\$ 5,300	\$ 5,300	\$ 10,100	\$ 10,100	\$ 19,400	\$ 19,400	\$ 50,400	\$ 50,400	\$ 158,900	\$ 159,000
Health & Safety	\$ 9,000	\$ 900	\$ 10,600	\$ 1,300	\$ 18,200	\$ 1,900	\$ 40,000	\$ 7,000	\$ 140,000	\$ 24,500
Total Gap per Building	\$ 40,700	\$ 35,300	\$ 45,700	\$ 38,100	\$ 76,000	\$ 61,600	\$ 206,200	\$ 183,200	\$ 687,800	\$ 607,400
Avg Gap per Unit	\$ 40,700	\$ 35,300	\$ 22,850	\$ 19,050	\$ 25,333	\$ 20,533	\$ 25,775	\$ 22,900	\$ 24,564	\$ 21,693

Project Overview | Key Takeaways

- The total cost to decarbonize all of Berkeley's 27,073 residential buildings by 2045 is expected to **range from \$2 - \$2.5 billion**.
- **The funding gap across all building types ranges from \$22,000 to \$40,000 per housing unit**, with LI households facing higher gaps.
- **The biggest gaps in funding are for electric readiness and health & safety retrofits.**
- **Moderate-income households* face unique funding challenges** because they are not eligible for many low-income programs but are likely unable to afford the full cost of retrofits.



*Moderate income is defined as households making above 200% of the federal poverty line and below 80% of average median income.

Questions?



Berkeley's Next Steps



Key Takeaways

- **Decarbonization funding remains insufficient for LMI households.**
 - Low-income households still face a significant funding gap, and can not be expected to take out loans to finance
 - Flexible solutions are needed to address the funding gap for moderate-income households
- **Dedicated funding streams are needed for health and safety make ready investments, including electrical upgrades and repairs, to enable decarbonization to move forward.**
- **City funds can be raised to achieve some portion of equitable decarbonization, but likely will not fill entire funding gap.**



City of Berkeley's Next Steps

Category	Recommended Actions
Learn from pilot projects	Implement Climate Equity Fund and Just Transition pilot projects to highlight opportunities and challenges for layering funding and creating high-road labor standards
Continue to collaborate regionally	Leverage BayREN and High Road Training Partnership to scale programs at the regional level
Advocate for alignment with health & safety upgrades	Advocate for current and future programs to align around workforce standards, and create accessibility and ease of layering funding for the consumer and contractor
Design affordable financing and funding models	Collaborate with CCA, utilities, CPUC, for low-to-no cost financing options including Inclusive Utility Investment Programs for decarbonization upgrades, with accessible and affordable options for low-income customers that do not increase debt.
Identify future funding	Pursue additional grants to meet funding gaps, and secure flexible funding for upgrades that might not be covered by existing programs
Ongoing community engagement	Continue to build relationships and engage with organizations serving low-income and disadvantaged communities

Questions?



Thank you!

