

Berkeley's Residential Energy Conservation Ordinance (RECO)

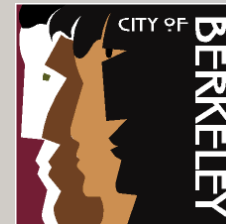
The Existing Ordinance
and

The Future of the Ordinance

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Sonoma County RECO Meeting
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Berkeley's Residential Energy Conservation Ordinance



ORIGINAL RECO, 1980

★ Purpose

- Improve the energy efficiency of housing stock at the point of sale and major renovation

★ Objectives

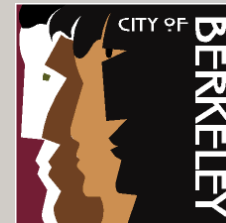
- Reduce energy use and GHG emissions
- Reduce housing operating expenses for homeowners and tenants
- Protect consumers from energy price increases
- Increase energy-related job market

★ Origin

- **1980** ordinance added to Title 19 of the Municipal Code - Buildings and Construction; updated 1992
 - *The wise and efficient use of energy is essential to the health, safety and public welfare of the people of the City of Berkeley*



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- **RECO Triggers**

- Point of sale or transfer (exemptions for inheritance, foreclosure, etc.)
- Major renovation (\$50,000 or more in project valuation)

- **Requirements**

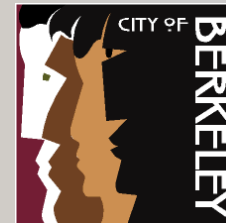
- Ten Prescriptive measures
 - Most measures affect **natural gas** consumption; natural gas prices are unregulated, hence more risk for consumers
- Agent, escrow company and seller responsible for completion of audit and paperwork; may be transferred to buyer once per property address
- Compliant (with verification agreement) until ordinance is modified

- ★ **Expenditure cap**

- .75% of sales price (\$750 for every \$100,000 of sale price)



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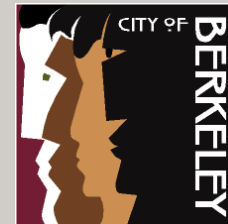


RECO Prescriptive Measures

Item	Requirement
Toilets	1.6 gal./flush toilet, or flow reduction devices
Showerheads	3.0 gal./min. flow rate
Faucets	2.75 gal./min. flow rate for kitchen and bathrooms
Water Heaters	Insulation wrap of R-12 value
Hot & Cold Water Piping	Insulate first two feet from water heater to R-3 value
Hot Water Piping in Pumped, Recirculating Heating Systems	Insulate all piping to R-3 value
Exterior Door Weather-Stripping	Permanently affixed weather-stripping, and door sweeps or door shoes
Furnace Duct Work	Seal duct joints, add insulation wrap to R-3
Fireplace Chimneys	Dampers, doors, or closures
Ceiling Insulation	Insulate to R-30 value
Common Area Lighting (multi-unit buildings only)	Replace incandescent with compact fluorescent lamps (CFL) of at least 25 lumens per watt



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★ Implementing RECO

★ Agent or Seller contacts the City to find out the RECO status of the property

- If energy measures are needed, owner hires or performs the work DIY
- Independent audit is done through a non-profit organization
- Properties passing the ordinance files forms with the City
- Properties failing must continue to complete work until they pass, or expenditure maximums are met.

Note that RECO measures must be maintained; they cannot transfer (sell) again unless all measures are still in place.





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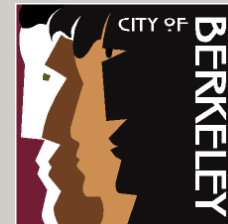


★ RECO in Context: *State and City milestones*

- ★ State Energy Code (1978; Title 24.6 – design)
- ★ Berkeley Commercial Energy Conservation Ordinance (CECO, 1979)
- ★ Berkeley Residential Energy Conservation Ordinance (RECO, 1980)
- ★ Low-income weatherization direct installation (1985)
- ★ California Energy Crises (2000 – 2001)
- ★ California Youth Energy Services (C-YES, 2000) (now regional; formerly Berkeley Youth Energy Services (B-YES))
- ★ Smart Lights small commercial lighting retrofit program (2002)
- ★ Green building program (commercial building consultation) (2003)
- ★ Statewide utility-funded programs and services (ongoing; all market sectors)
- ★ Measure G – Berkeley to reduce GHG emissions by 80% by 2050; applicable to all market sectors

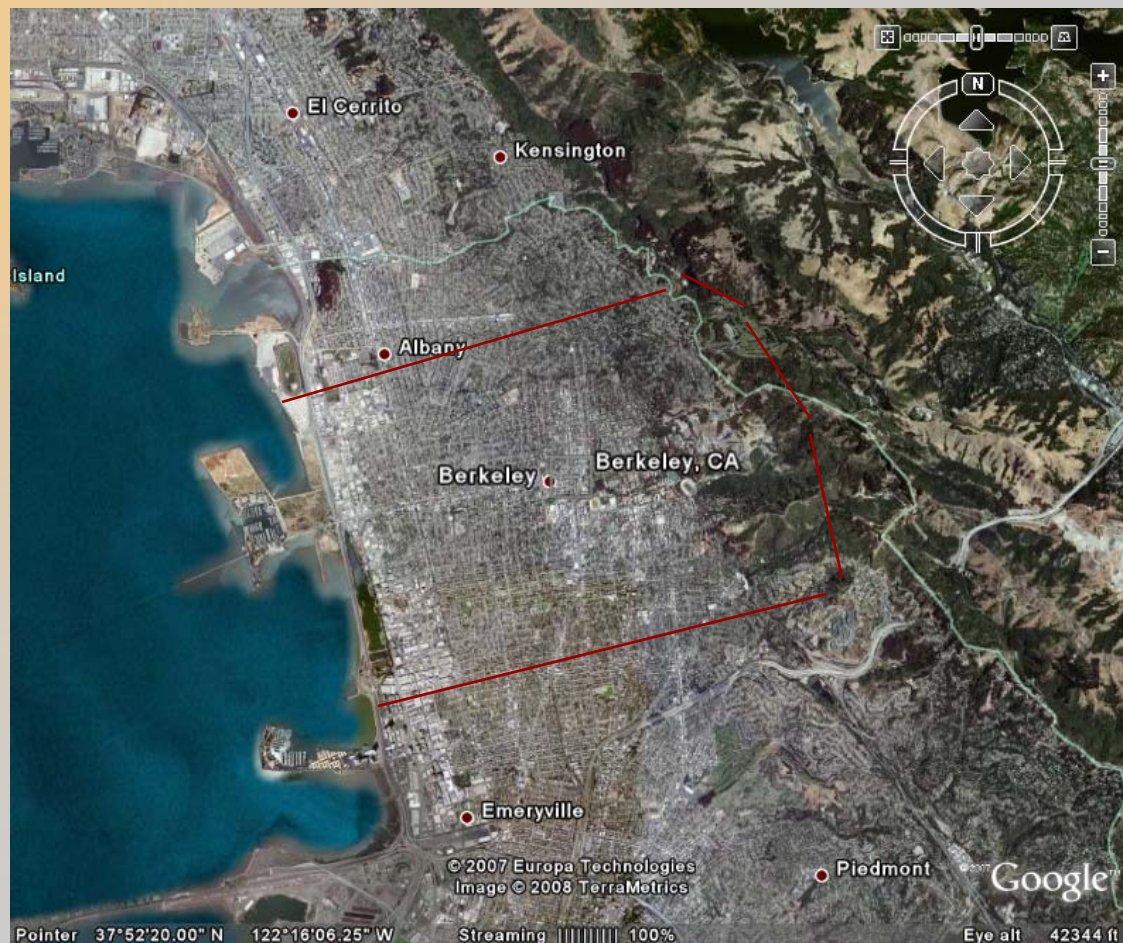


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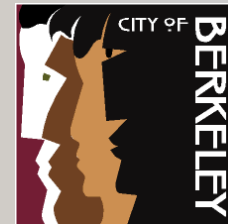
★ Coastal Climate

- Zone 3
- No HERS testing required under Title 24.6 in this Zone
- Proportionally larger amount of population than central valley climate zones, wasting natural gas through leaky buildings and untested ducts.





• *Berkeley's Residential Energy Conservation Ordinance*



★ Berkeley Real Estate Market

- ☀ ~ 102,700 population
- ☀ ~ 45,000 occupied units
- ☀ 28,000+ rental units
- ☀ ~20%+ of single family units turned over at least once since 1996

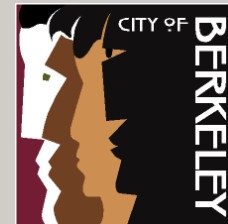
★ Current Annual Activity

- ☀ ~564 buildings sold
- ☀ ~674 housing units (1.5%)



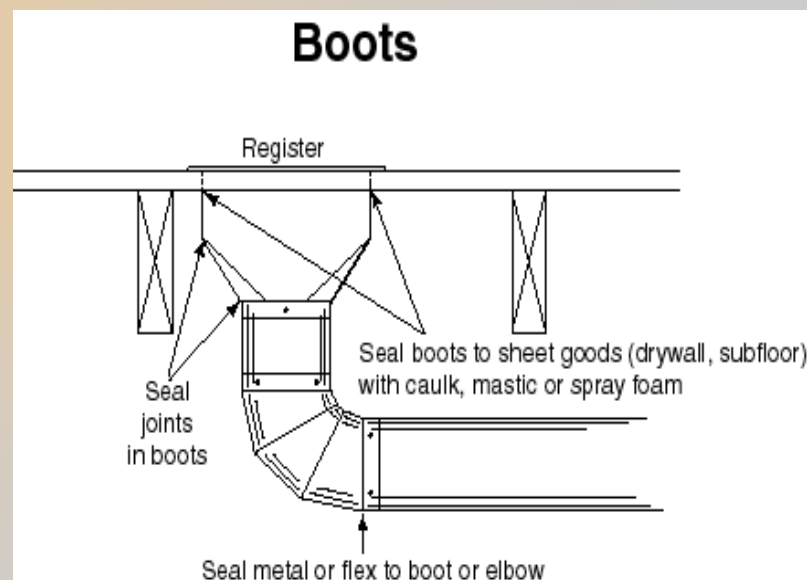


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RECO Measures Most Commonly Failed

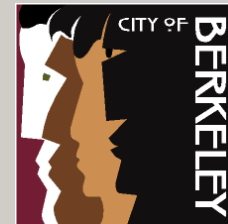
- **Attic insulation** (pre-existing R11, not enough R-value, or missing coverage)
- **Door weatherstrip** (often overlooked on back doors)
- **Duct sealing**; usually insulated over so it is difficult to assess quality of sealing



Note that these are important natural gas measures.



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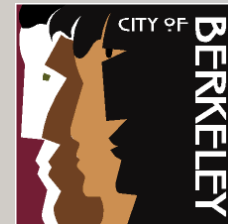
★ The Future for RECO

- Amendment to the Performance-Based requirement at point of sale, remodel and new construction
- What would this look like?





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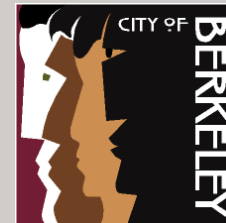
Objectives of the New RECO Amendment

- ★ Consumer protection against high energy consumption
 - Building-specific information
 - Funds held in escrow
 - Opportunities for buyer to pursue compliance after the sale
- ★ Buyer has a bigger stake in the performance of the house
- ★ Linked to separate renovation procedure





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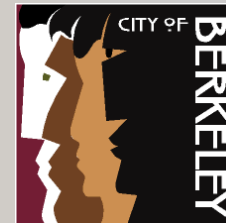


Considerations for New RECO

- ★ State Energy Code (Title 24– design code ONLY – no performance requirements yet.
- ★ New HERS II standards – based on building's current performance
- ★ Housing stock and market (single- or multi-family; rental property, etc.)
- ★ Climate change and adaptable measures
- ★ Triggers: point of sale or remodels
- ★ Disclosure (i.e., rating), installation or both
- ★ Performance vs. prescriptive
- ★ Expenditure caps and exemptions
- ★ Seller funds, but buyer has responsibility for compliance
- ★ Multifamily component
 - ★ Price caps
 - ★ Utility sub-meters for units vs. single-metered building
- ★ Infrastructure
 - ★ Real estate industry
 - ★ Energy services and installations
 - ★ Inspections/Performance Tests
 - ★ Administration and enforcement



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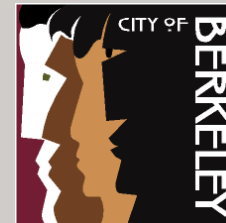
Possible Approaches

- ★ Progressive Packages implemented during each RECO event (sale or remodel) designed to avoid “Lost Opportunities”
 - ★ Package #1: NGAT testing, Air Sealing, attic, wall and floor insulation, duct test & seal; showerheads and aerators
 - ★ Test-out for Performance, verified by independent 3rd party (Green Elements, Home Performance with Energy Star, HERS II, etc.)
 - ★ For MF, complete Package #1 up to spending limit, plus leveraged with any other Utility rebates, tax credits, etc.
 - ★ Package #2: Major Systems upgrade (Water heater/Furnace combined heat and DHW) Clothes washer, etc. Appliances with Energy Star minimums; Storm windows
 - ★ Package #3: Windows or solar thermal or PV

Note: *Exemptions are only granted for involuntary transfers (foreclosure, inheritance, condemned building, fire, etc.)*



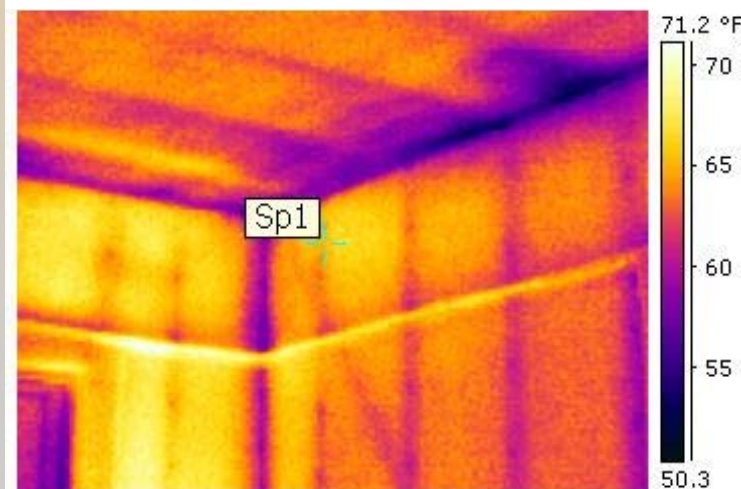
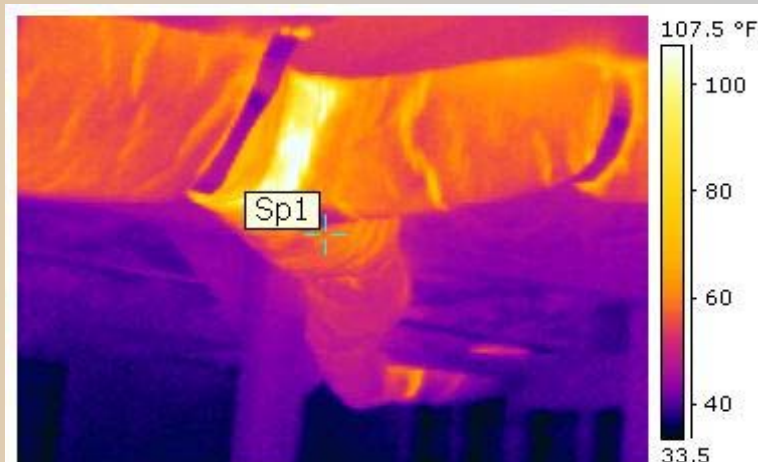
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★ Emphasis on Performance of Measures giving a blended payback

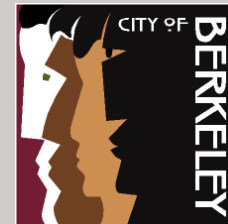
★ *Example:* Seal and insulate ducts, air seal & insulate attic, crawlspace & walls, caulk plumbing penetrations, etc.

- Total leak reduction usually exceeds energy benefit of a new high-efficiency furnace, PLUS has the non-energy benefits of providing greater thermal comfort and improved indoor air quality
- Cost is generally comparable to new high-efficiency furnace and new appliances
- Remember: insulation is permanent & won't need replacing in 12 years



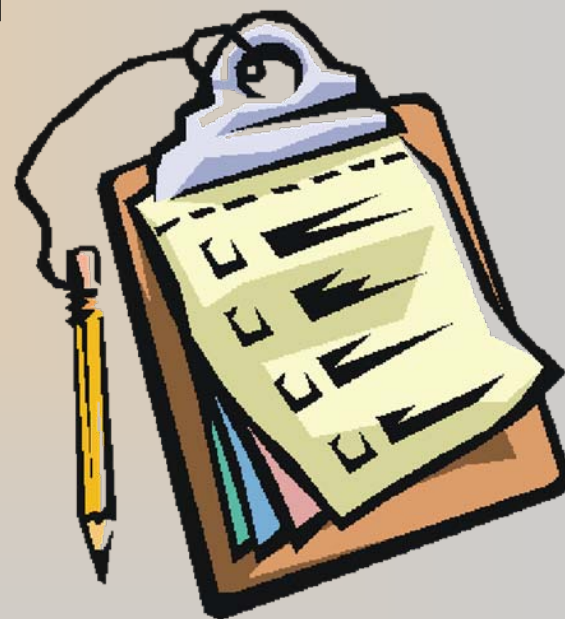


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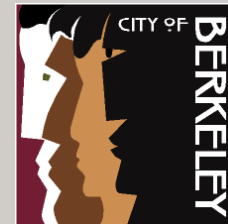
★ Future RECO Wish List

- Energy Measurement and Verification to verify savings, and future sale disclosure
 - Getting energy use data for each property
 - Linking efficiency measures with renewable (solar thermal and electric, and wind energy)





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- ★ Questions?
- ★ www.CityofBerkeley.info
- ★ 510-981-7435

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