

RICAPS

Regionally Integrated Climate Action Planning Suite

Multi-city Working Group Meeting
April 26, 2016

RICAPS technical assistance is available through the San Mateo County Energy Watch program, which is funded by California utility customers, administered by Pacific Gas and Electric Company (PG&E) under the auspices of the California Public Utilities Commission and with matching funds provided by C/CAG.

Agenda

1. Introductions		1:30 – 1:40 PM
2. Energy Ordinances – What ordinances are Bay Area cities and cities around the country implementing?	Ben Butterworth, DNV GL	1:40 – 2:00 PM
3. Update on BayREN Home Energy Score working group	Rachael Londer, SMC Office of Sustainability	2:00 – 2:15 PM
4. Home Energy Score and Asset Rating – How does it really work?	Billi Romain, City of Berkeley	2:15 – 2:35 PM
5. Updates and Wrap-up – Open Data Portal and Municipal GHG Inventories	Kim Springer, C/CAG Colin Spikes, Data Solutions Architect, Socrata Inc John Ridener, ISD, County of SM Ben Butterworth, DNV GL	2:35 – 3:00 PM

Berkeley: Building Energy Saving Ordinance (BESO)

Residential:

- Energy assessment at time of sale
 - Seller to complete or deferred to buyer
 - Two types of assessment available:
 - Home Energy Score
 - Energy Upgrade California
 - ~\$230 per assessment



Commercial + Multi-family:

- Buildings >25k sq. ft. report energy use annually
 - ENERGY STAR performance score
- All commercial receive energy assessments every 5-10 years + at time of sale
 - Report ENERGY STAR Performance Score every 5-10 years
 - Variety of free & low cost energy assessment services
 - \$0.05-\$0.20 per sq. ft. (e.g. ~\$6,000 for 50,000 sq. ft. building)



San Francisco: Existing Commercial Building Ordinance

All commercial buildings over 10,000 sq. ft.:

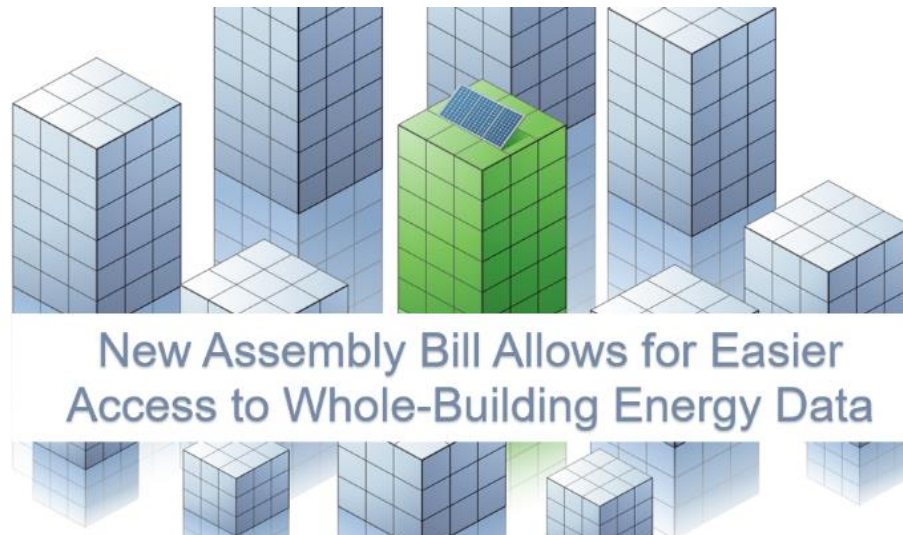
- Annual benchmarking + public disclosure of energy use
 - ENERGY STAR Portfolio Manager/Performance Score
- Energy audit or retrocommissioning every 5 years
 - Walk-through audit for buildings < 50,000 sq. ft.
 - More detailed energy survey & analysis for buildings > 50,000 sq. ft.



Commercial + Multi-family Energy Use Disclosure: Going Beyond AB

802

- **AB 802**
 - Mandates state-wide benchmarking + access to whole building data
 - Applies to all commercial + multi-family buildings over 50,000 sq. ft.
 - Effective January 1, 2017
- **Going Beyond AB 802**
 - Both Berkeley (>25,000 sq. ft.) and San Francisco (>10,000 sq. ft.) have lowered the threshold for mandatory benchmarking
 - Potential for similar ordinances in San Mateo County



Residential Policy Options for San Mateo County Cities/Towns

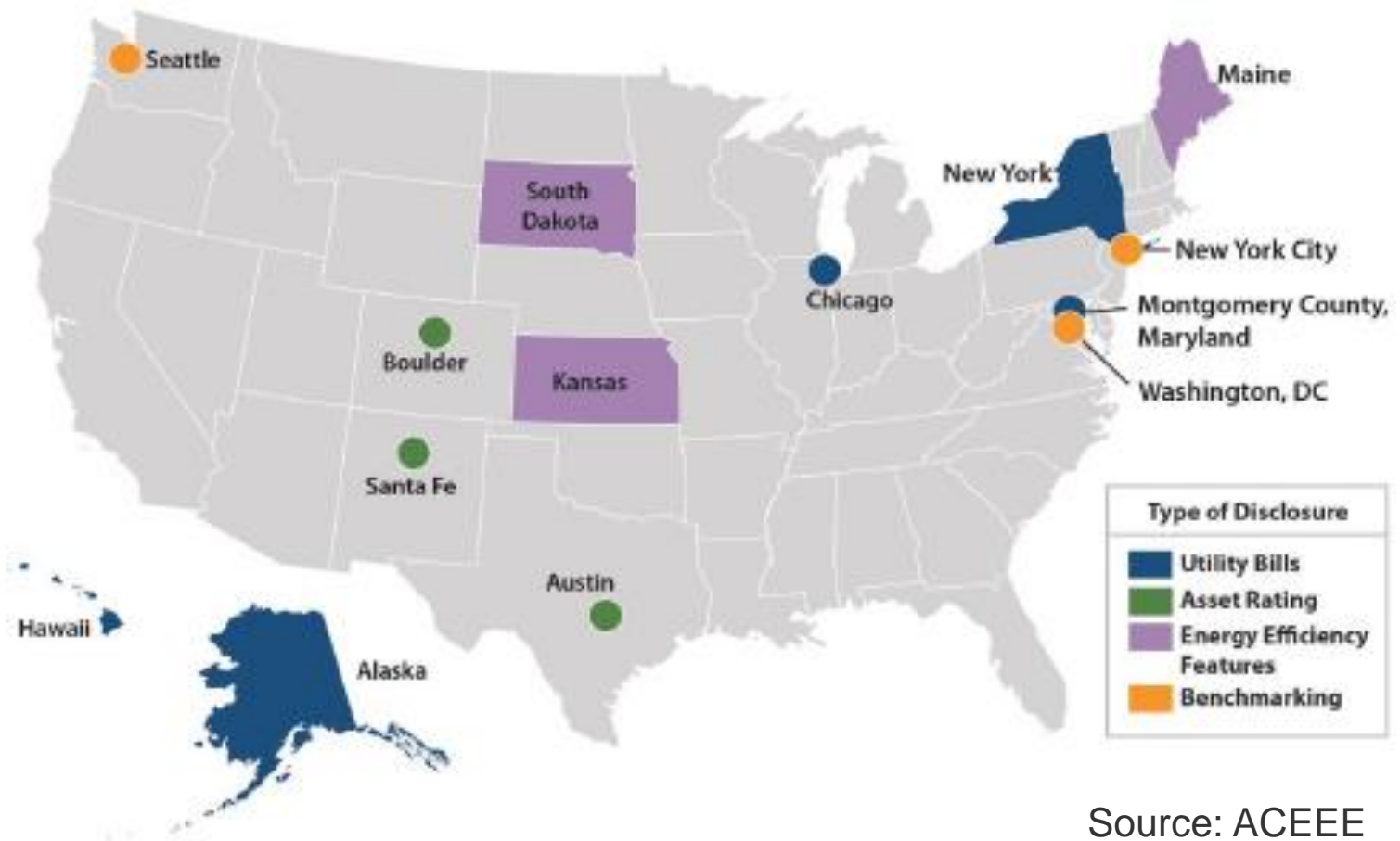
Approach	Notes
Promote voluntary programs	<ul style="list-style-type: none"> • Home Energy Score assessment currently available through BayREN • Potential to drive efficiency improvements through Energy Upgrade California • Drawbacks: Low participation rates, cost of assessment to homeowners
Mandate energy assessment and disclosure	<ul style="list-style-type: none"> • Berkeley's current Building Energy Saving Ordinance (BESO) • Point of sale, major renovation triggers • <i>Home Energy Score</i> or <i>Energy Upgrade California</i> assessment • Potential to drive efficiency improvements through Energy Upgrade California • Drawbacks: Moderate administrative burden to City, small cost to home seller/buyer, political opposition
Requires upgrades and building improvements	<ul style="list-style-type: none"> • Berkeley's old Residential Energy Conservation Ordinance (RECO) • Point of sale, major renovation triggers • Effective at driving efficiency improvements • Drawbacks: Expensive to administer and enforce, high cost of compliance, political opposition

Commercial/Multi-family Policy Options for San Mateo County

Approach	Notes
Promote voluntary programs	<ul style="list-style-type: none"> • Energy Star Performance Scores free to commercial buildings <ul style="list-style-type: none"> • Energy Star certification if score >75 • Potential to drive efficiency improvements through Energy Upgrade California • Drawbacks: Low participation rates, certification cost to businesses
Mandate energy disclosure	<ul style="list-style-type: none"> • Berkeley's current Building Energy Saving Ordinance (BESO) + San Francisco's Existing Commercial Building Ordinance • Require buildings to generate Energy Star Performance Score every X years or at time of sale • Potential to drive efficiency improvements through Energy Upgrade California, etc. • Drawbacks: Moderate administrative burden to city, small administrative burden to business owners, political opposition
Mandate energy assessment	<ul style="list-style-type: none"> • Berkeley's current Building Energy Saving Ordinance (BESO) + San Francisco's Existing Commercial Building Ordinance • Require energy assessment every X years depending on building size • Potential to drive efficiency improvements through Energy Upgrade California, etc. • Drawbacks: Moderate administrative burden to City, small cost to business owners, political opposition

What policies are other cities

Figure ES-1. U.S. Residential Energy Disclosure Policies



Source: ACEEE

What policies are other cities implementing?

- **Boulder, CO**

- *SmartRegs* ordinance mandating baseline energy efficiency requirement for all rental properties
- *BuildSmart* residential green building code requires Home Energy Rating System (HERS) index score for new construction and renovation



- **Austin, TX**

- Energy Conservation Audit and Disclosure (ECAD) ordinance requires energy audits and disclosures for all buildings
 - Residential: Prior to sale
 - Commercial: Annually
 - Multi-family: When building turns 10 years old



- **Seattle, WA**

- Energy Benchmarking and Reporting Program requires owners of non-residential + multi-family buildings >20 k sq. ft. to track energy performance annually



Bay Area Regional Energy Network (BayREN)

- 1) Zero Net Energy (ZNE) policy resources for San Mateo County jurisdictions
- 2) Regional update on the Residential Energy Assessment & Disclosure (READ) policy and Home Energy Score (HES)

Contact: Rachael Londer

rlonder@smcgov.org

(650) 363-4077

Building Energy Saving Ordinance (BESO): Home Energy Score

BESO for Berkeley Homes

- Home Energy Score assessment prior to sale
- Exemption for High Performance Homes
- Rebates and financing for upgrades
- Deferrals to Buyers
- HES Rebates for early compliance
 - Total of 75 rebates up to \$200





Department of Planning and Development
Office of Energy and Sustainable Development

March 29, 2016 – Version 3.5

BESO Application Submittal w/Payment Invoice:

Email BESO@cityofberkeley.info

Or Mail to

City of Berkeley – Permit Service Center

2120 Milvia Street, Berkeley, CA 94704

Please download and save this form to your computer prior to filling it out. If you fill it out online, content may not be saved to the form.

Application for Compliance Building Energy Saving Ordinance (BESO)

Building Information:

Date		
Primary Building Address		Zip
Secondary Address or Street Number Range (if applicable)		
Estimated Gross Floor Area (ft ²) <i>*Note: Buildings 25,000 ft² and over or 600 ft² and under are exempt at time of sale*</i>		
Number of Residential Dwelling Units (if more than one)		
Building Type (check one)	<input type="checkbox"/> House (1 to 4 dwelling units) <input type="checkbox"/> Multifamily <input type="checkbox"/> Commercial <input type="checkbox"/> Mixed Use	

Applicant Information *(Compliance forms will be sent to email provided here, unless otherwise noted):*

Applicant Type (check one)	<input type="checkbox"/> Owner / Buyer <input type="checkbox"/> Seller <input type="checkbox"/> Other (please specify) _____
Applicant Name	
Phone	
Email	

Compliance Options *(check one – for other deferrals, such as hardship, email BESO@cityofberkeley.info):*

☐ **Time of Sale Deferral to Buyer** – Submit application and filing fee of \$48 to receive BESO deferral Form C.
(Form C must be signed by buyer and included with property transfer documents at close of escrow)
Provide anticipated date of sale: _____

☐ **Energy Assessment Report Submission** – Hire an assessor appropriate for your building type from the [Registered Energy Assessor List](#) on the BESO website, then submit BESO application and filing fee to receive BESO compliance Form A.

Building Owner Name (if different from applicant)		
Building Owner Phone		Owner email

☐ **High Performance Exemption** – Submit application and documented evidence of high performance (no filing fee) to receive BESO compliance Form A. (Note: \$79 filing fee still required for a High Performance Home Energy Score of 9 or more)

☐ **Exempt Sale** – Units within a larger building (such as an individually owned attached condo) are exempt at time of sale. Submit application (no filing fee) to receive appropriate BESO compliance form. (Please include whole building address range and size on this application, not just pertaining to particular unit.)

☐ **Deferral for New Construction or Completed Extensive Renovation** (Extensive Renovation must include replacement of all energy-related equipment and at least half of the building envelope). Submit application (no filing fee) to receive BESO deferral Form D.
Provide project completion date of new construction or extensive renovation _____ (must be within 10 years)

For additional information, please visit www.cityofberkeley.info/BESO
You can also email the BESO Team at BESO@cityofberkeley.info, or call (510) 981-7465

BESO Registered Home Energy Assessors for Houses (1-4 unit residential buildings)

BESO Home Energy Assessments must be performed by a Registered Home Energy Assessor on this list at the time of the assessment. The City of Berkeley does not endorse or warrant any specific Registered Energy Assessor. The selection of a Registered Energy Assessor is left to the discretion of the property owner. For 2-4 unit buildings, townhome-style buildings may use any assessors listed on this page, however stacked units or those which share a back wall must use an Energy Upgrade California contractor. For more details, please see [Assessment Requirements Summary](#).

Contact Information				Services and Qualifications	
Company & Assessors	Address	Phone	Email/Website	Independent*	Other Services and Qualifications**
Covenant & Assoc. Alysia O'Neal Andre O'Neal	Serving Multiple Bay Area Locations	(510) 833-0398	covenergy@yahoo.com	No	Energy Upgrade California Contractor
Homewise Inspections, Inc. David Venable	4338 Fruitvale Ave. Oakland, CA 94602	(510) 531-8443	david@homewiseinspectionsinc.com www.homewiseinspectionsinc.com	Yes	Certified Home Inspector
Jay Marlette's Home Inspections Jay Marlette	1563 Solano Ave. #416 Berkeley, CA 94707	(510) 847-2171	jay@houseman.org www.houseman.org	Yes	Certified Home Inspector
Star Inspection Group, Inc. Bill Londagin	3139 Lynde St. Oakland, CA 94601	(510) 482-8016	info@stargroup.com www.stargroup.com	Yes	Certified Home Inspector
Hassler Heating & Air Conditioning Tanzeel Raza Keith Jenkins Rashaan Whitney	1537 S 56th St. El Cerrito, CA 94530	(510) 848-3030	info@hasslerheating.com www.hasslerheating.com	No	Energy Upgrade California Contractor
Fine Structure Home Inspections Bruce MacDermott	2801 Ashby Ave. Berkeley, CA 94705	(510) 851-1707	bruce.macdermott@pillartopost.com www.berkeleyinspections.pillartopost.com/home	Yes	Certified Home Inspector

*Independent Energy Assessors provide assessments only, they do not provide upgrade services.

**[Energy Upgrade California Rebate Program](#) Contractors are authorized to provide services that access rebates up to \$6,500 plus financing.



Building Energy Saving Ordinance (BESO)

Certificate of Compliance – Form A

This building is
COMPLIANT with
BESO and Approved
for Sale.

City of Berkeley
BMC Chapter 19.81

Building Address	2415 MCKINLEY AVE
BESO Building Use Type	House
Number of Residential Dwelling Units	1

Registered Energy Assessor Company	Hassler Heating and Air Conditioning
Registered Energy Assessor Name	Tanzeel Raza
Assessment Completion Date	4/4/2016
Assessment Type	Home Energy Score
Home Energy Score (1 = most energy use, 10 = least energy use)	4

Date of Issuance	4/13/2016
Next Energy Report Due	not required

For additional information, please visit www.cityofberkeley.info/BESO
or email the BESO Team at BESO@cityofberkeley.info

Building ID 8963
Application ID 11756

Form v1.3 – January 4, 2016



Home Energy Score

Score

Home Facts

ADDRESS

2120 Milvia

HOME SIZE

826 square feet

YEAR BUILT

1911

AIR CONDITIONING

No

Your home's
current score **4**

Uses
more
energy

1

2

3

4

5

6

7

8

9

10

Uses
less
energy

Learn more at homeenergyscore.gov



The **Home Energy Score** is a national rating system developed by the U.S. Department of Energy. The Score reflects the energy efficiency of a home based on the home's structure and heating, cooling, and hot water systems. The **Home Facts** provide details about the current structure and systems. **Recommendations** show how to improve the energy efficiency of the home to achieve a higher score and save money.

OFFICIAL ASSESSMENT | Assessor ID CA-SWST-0021 | Assessed on Apr 08, 2016 | Label ID# 110934 | v2015



Home Energy Score

Score

Home Facts

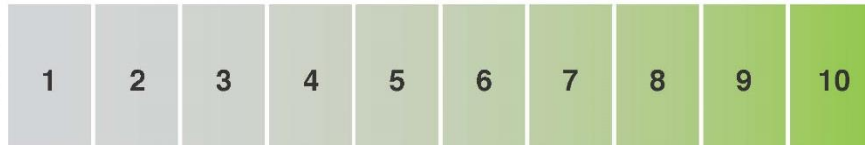
ADDRESS

Berkeley, CA 94703

HOME SIZE 826 square feet
YEAR BUILT 1911
AIR CONDITIONING No

Your home's
current score **4**

Uses
more
energy



Uses
less
energy

Learn more at homeenergyscore.gov



The **Home Energy Score** is a national rating system developed by the U.S. Department of Energy. The Score reflects the energy efficiency of a home based on the home's structure and heating, cooling, and hot water systems. The **Home Facts** provide details about the current structure and systems. **Recommendations** show how to improve the energy efficiency of the home to achieve a higher score and save money.

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RECOMMENDED HOME ENERGY IMPROVEMENTS

BUILDING & CUSTOMER INFORMATION			
CUSTOMER NAME	BUYER or SELLER Buyer	PHONE NUMBER (206) 218-5318	
	55	CITY/STATE/ZIP Berkeley, CA	
# ATTACHED DWELLING UNITS (1-4) 1	UNIT #/NAME (IF MULTIPLE UNITS) 2415	CONDITIONED FLOOR AREA (SQ. FT.) 826	HISTORIC STRUCTURE (Y/N) N
HOME ENERGY SCORE INFORMATION			
SCORE ID 110934	CURRENT HOME ENERGY SCORE (1-10) 4	HOME ENERGY SCORE ASSESSOR NAME Tanzeel Raza	
ASSESSMENT DATE 04/04/2016	ASSESSMENT COST (EXCLUDING FILING FEE) \$300	HOME ENERGY SCORE ASSESSOR NUMBER CA-SWST-0021	



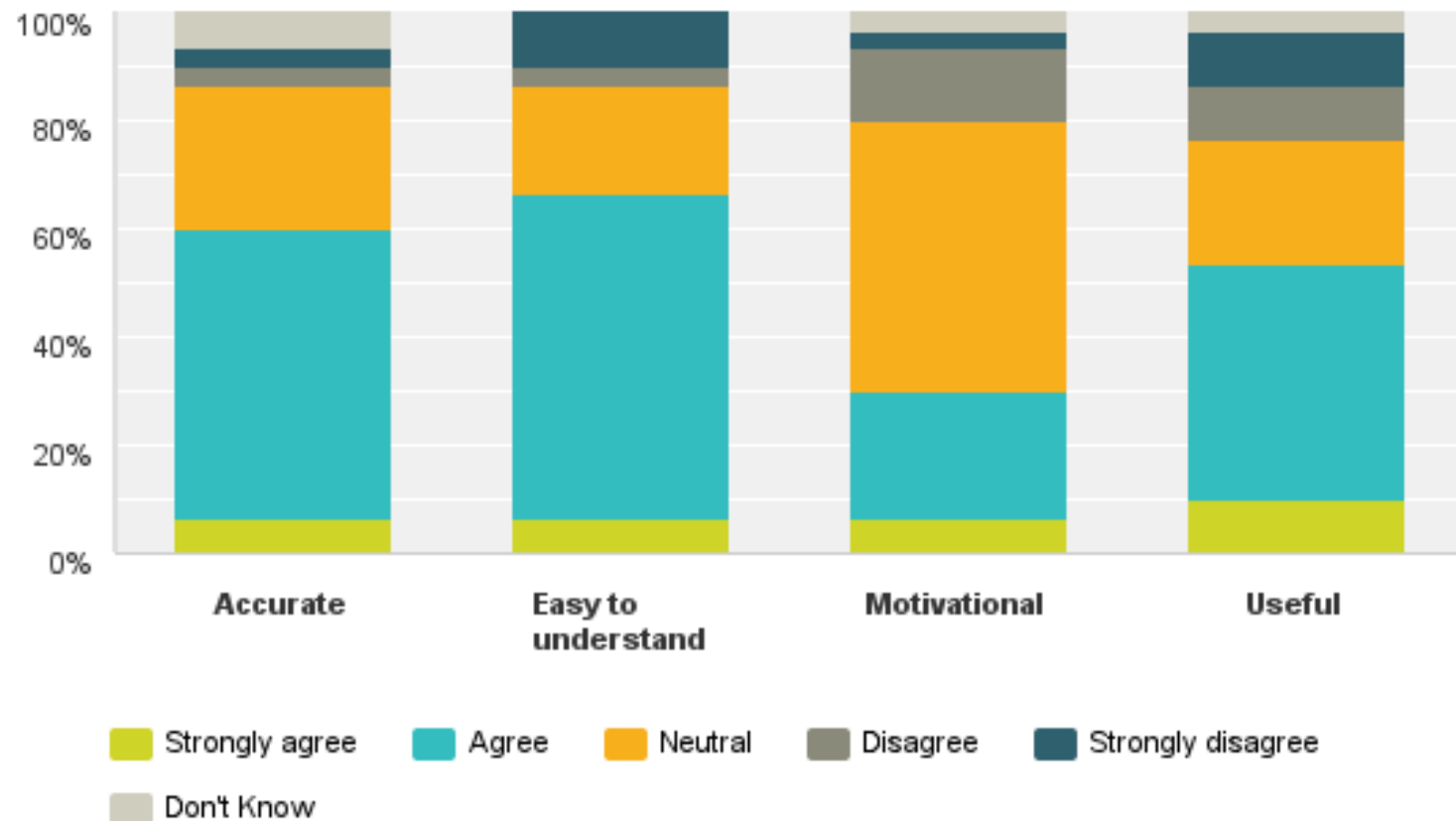
Improve your home's efficiency with the recommended energy efficiency measures below. Projects may earn rebates **ranging from \$1,000 to \$6,500**. For free independent expert advice regarding recommendations, Energy Upgrade California® programs and financing opportunities, contact a **Home Upgrade Advisor** at 866-878-6008, advisor@bayren.org or visit bayareenergyupgrade.org.

RECOMMENDED MEASURE	RECOMMENDATION DETAILS	GENERALLY RECOMMENDED IF
<input checked="" type="checkbox"/> Attic Insulation & Air Sealing	Insulation ≥R-30 (≥R-38 in climate zones 1 & 11-16)	Existing average ≤R-11 and accessible attic exists
<input checked="" type="checkbox"/> Wall Insulation	Insulate ≥R-13	Existing =R-0
<input checked="" type="checkbox"/> Floor Insulation	Insulate ≥R-19	Existing =R-0 and accessible crawlspace exists
<input checked="" type="checkbox"/> Whole Building Air Sealing	≥15% leakage reduction from vintage table defaults	Homeowner experiences drafts
Duct Repair	Repair may include sealing, insulating, or replacement. See Additional Comments for more information.	Visual inspection reveals duct leakage
<input checked="" type="checkbox"/> Central Gas Furnace	≥92% AFUE	Unit ≥15 years old and AFUE ≤80%
Central Air Conditioner	≥15 SEER / 12.7 EER	Unit ≥15 years old and SEER ≤10
<input checked="" type="checkbox"/> Gas Storage Water Heater	EF ≥0.67	Natural gas unit ≥10 years old
Gas On-Demand Water Heater	EF ≥0.82	Customer requests tankless
Natural Gas Wall Heater or Ductless Heat Pump	≥70% AFUE (wall heater) ≥8.5 HSPF / ≥15 SEER (heat pump)	Unit ≥15 years old
<input checked="" type="checkbox"/> Fireplace Door and/or Damper	Sealing fireplace	Not existing
Pool Pump	Variable speed	Single speed

ADDITIONAL RECOMMENDATIONS, COMMENTS, INCENTIVES, FINANCING, & SAFETY OBSERVATIONS
No attic, ceiling is below top floor, normally would recommend drill and fill insulation but top floor is different address.
Recommend wall and sub-floor insulation. Crawl has knob&tube so a C-10 electrical test is recommended.
Primary heating is floor furnace, house is slightly over 800sqft, would recommend duct-less heat-pump. Windows are all single pane
There also a non functioning gas insert, quite old has asbestos like material wrapped around frame. (Most likely asbestos tape)
Plumbing and wiring penetrations in the crawlspace. Air sealing recommended. Water heater is quite old. Tank-less high efficient unit recommended
Exhaust fan recommended for bathroom. Tank water located in house, open to main body for CVA.

Q6 The Home Energy Score is:

Answered: 30 Skipped: 2



For More information

Contact

Billi Romain, Sustainability Program Manager

City of Berkeley

510-981-7432

BRomain@CityofBerkeley.info

www.cityofberkeley.info/BESO

2015 Government Operations GHG Inventories Update

- 2015 Government Operations Inventories Timeline
 - Mid-April: Notify DNV GL of interest
 - Early May: Data collection templates distributed to interested towns/cities
 - May-June: Data collection + organization
 - Late June: Inventories finalized + check-in during June RICAPS meeting

Towns/Cities that have expressed interest in completing Government Operations Inventory	
Belmont	Menlo Park
Brisbane	Millbrae
Burlingame	Portola Valley
Colma	Redwood City
Daly City	San Carlos
Foster City	San Mateo
Half Moon Bay	South San Francisco