

City of Piedmont

# Building Decarbonization Policies

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BayREN Forum: Decarbonizing Bay Area Homes  
September 1, 2021





# Impetus for pursuing decarbonization policies

- Aligns with Climate Action Plan goals:
  - Reduce natural gas use in buildings
  - Switch to electric appliances
  - Increase local solar energy production
  - Raise awareness on cost-effective ways to improve home energy use
- Improves community health and safety
- Reduces greenhouse gas emissions

## Piedmont Climate Action Plan 2.0



*“Avoiding the worst hazards and costs of climate change requires **taking action now** to both reduce emissions and mitigate the impacts.”*

*--Climate Action Plan 2.0, 2018*





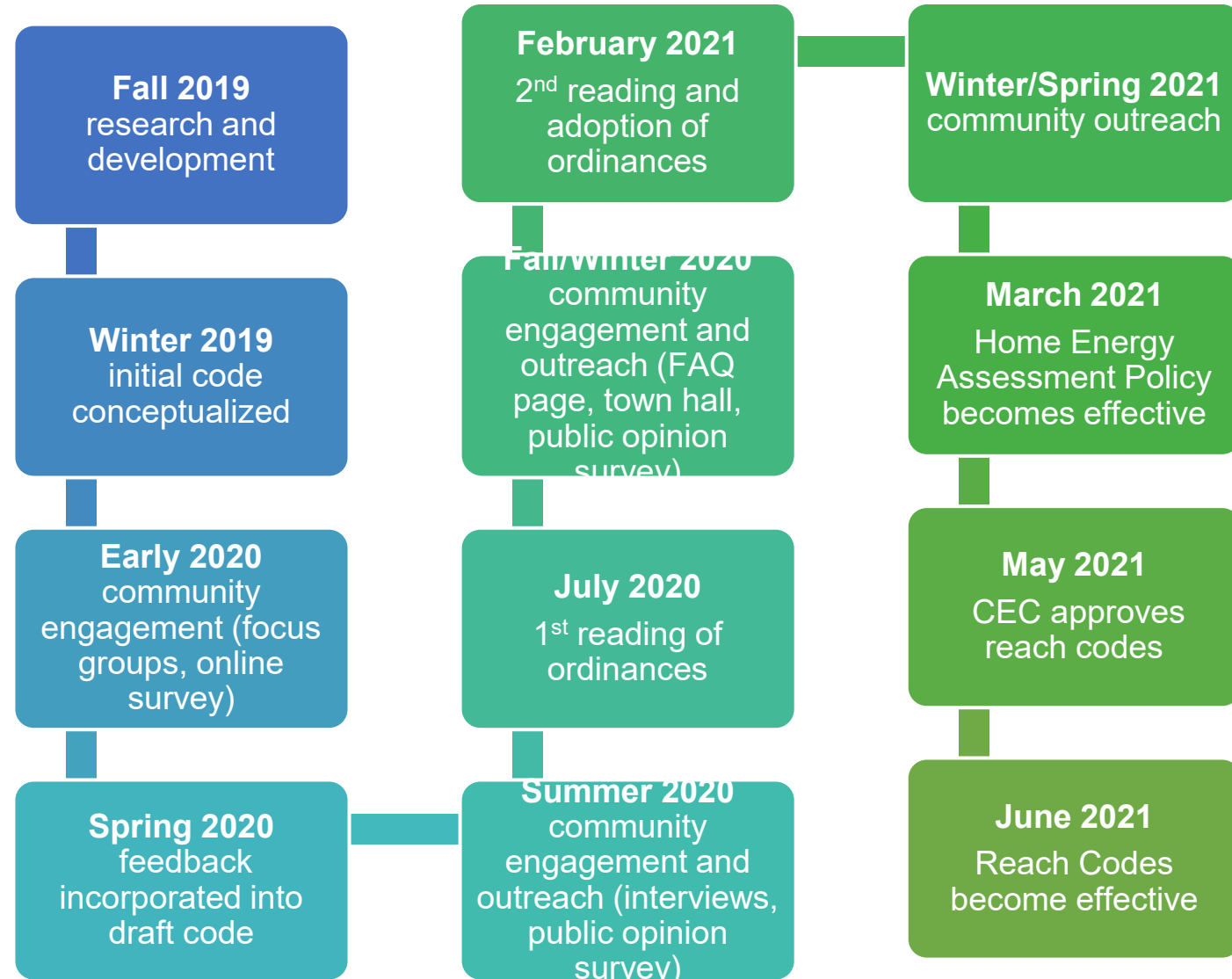
# Decarbonization policies: reach code & home energy assessment

- Piedmont is one of the first cities to adopt existing building reach codes
- In tandem with reach code, home energy assessment policy adopted requiring home energy score or audit at point of listing for sale
- Additional policy adopted requiring design review permit applications include an energy assessment





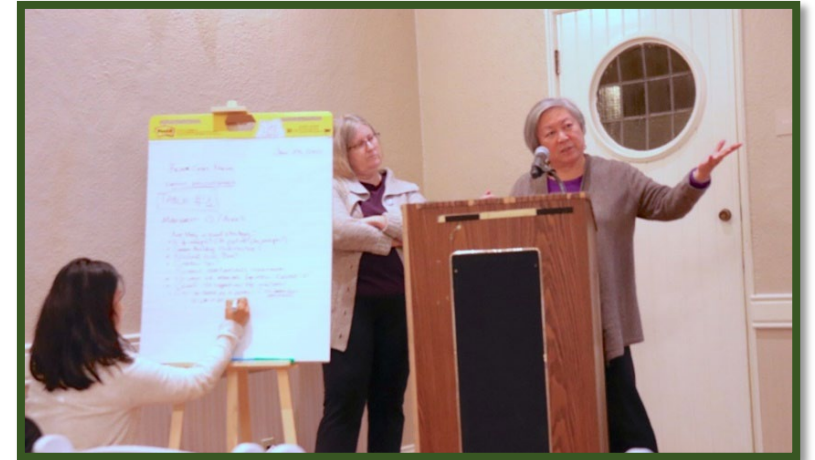
# Policy Development Process





# Public Engagement: Policy Development

- Goal: inform community about initial home energy assessment and reach code concepts and receive feedback
- Outreach efforts:
  - Community-wide survey
  - Focus groups
    - Building professionals
    - Contractors
    - Policymakers
    - Real estate agents
    - Residents
    - Utilities
    - City staff





# Public Engagement: Proposed Policies

- Goal: publicize and describe proposed Code amendments, better understand public response, & generate comments for City Council's consideration
- Outreach efforts:
  - Stakeholder interviews
  - Development of FAQs
  - Town Hall Meeting
  - Public opinion surveys

[REACH CODES: City to Answer Questions on Impacts to Piedmont Residents Sept. 3rd](#) Aug 29 2020

Thursday, Sept 3<sup>rd</sup> 6 pm Citizens May Ask a Question about the Proposed Climate Action Building Code Modifications, Reach Codes.

Sign in to the ZOOM platform (see instruction below) to follow the meeting.

To Ask a Question, click the "Raise Your Hand" button.

City Announcement:

City of Piedmont staff will host a virtual Town Hall on September 3<sup>rd</sup> at 6:00 p.m. to provide an opportunity for Piedmont residents to learn more about the proposed Reach Codes.

YouTube

Search



## Insulation & Electrification Renovation

0:01 / 14:20

Insulation & Electrification Renovation

36 views • Jun 25, 2020

LIKE DISLIKE SHARE SAVE





# Public Opinion Survey

Messages opposing the proposed reach codes

*Ranked by % Major Concern*

**(VULNERABLE)** Relying on electric appliances can leave homeowners vulnerable during power outages, which are taking place more and more in northern California.

**(IMPROVEMENTS)** This proposal is unfair to residents who have already taken steps to install insulation and energy efficiency improvements in their homes. They'll be asked to make additional costly upgrades if they renovate their home, when they've already spent more than most people to be energy efficient.

**(COST)** The Reach Codes would require changes to some home renovation projects, which may be too expensive for some property owners - especially during an economic downturn.

**(CONFUSING)** The Reach Codes are confusing for homeowners. It is unclear what the requirements are, what the cost impacts are, and which projects they apply to.

**(BUREAUCRACY)** Requiring these types of energy efficiency improvements is an example of government overreach, and will increase bureaucracy in City government.





# Public Opinion Survey

Messages in favor of the proposed reach codes

*Ranked by % Very Convincing*

**(IMPACT)** Over 40% of Piedmont's greenhouse gas emissions come from the use of natural gas appliances in private homes. The City will not be able to significantly reduce its greenhouse gas emissions unless it shifts to less natural gas use in homes.

**(REQUIREMENT)** The State requires that all electricity provided in California be generated by renewable sources by 2045. Piedmont is supporting residents in meeting this goal by adopting these changes to building codes.

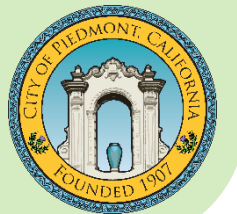
**(FINANCIAL RESOURCES)** There are several financial resources available to the public that provide rebates and incentives for making energy efficiency upgrades, thus reducing the financial impact of these changes to the building codes.

**(MOST EXPENSIVE)** Only the top 20% most expensive renovations would be required to adopt one of the energy efficiency options. Most renovations would not be impacted by these changes to the building codes.





# Decarbonization Policies





# Reach Codes

- Newly constructed residential buildings & new ADUs **must use all electric appliances**
- Residential buildings getting a new upper level, or increasing total roof area 30% or more, **required to install solar panels on the roof**
- Residential building renovations of \$25,000 or more required to include one item from a list of **insulation/electrification improvements**
  - Renovations of \$100,000 or more must include two items
- Electrical panel upgrade must include capacity to accommodate **future electrification** of all appliances
- Kitchen renovation must include **electrical outlets** at location of all major appliances
- Laundry area renovation must include outlet for a **future electric clothes dryer**





# Insulation and electrification improvements

## Insulation and Efficiency Items

- A package of attic insulation, air sealing, and duct sealing
- Floor insulation
- A package of low-flow fixtures and water heater/water piping insulation
- Switch out existing lights for high efficacy lights with motion sensors
- Submit a report from a Home Energy Score or Home Energy Audit completed in the last five years and follow one recommendation

## Electrification Items

- Switch out gas furnace for heat pump
- Switch out gas water heater for heat pump





# Exceptions incorporated into reach code based on public feedback

Circumstances allowing an exception by the Building Official:

- HES completed within 5 years, demonstrating a **minimum score of 7**
  - Modification to only the energy efficiency upgrade requirement
- If the unique features of the construction of the building, including existing heating and/or cooling systems, are **not configured for conversion** to forced air systems
- If the installation of the measures is **not commensurate with project's scope and budget** (measures exceed 20% of total project cost or require substantial construction in areas otherwise not part of project)

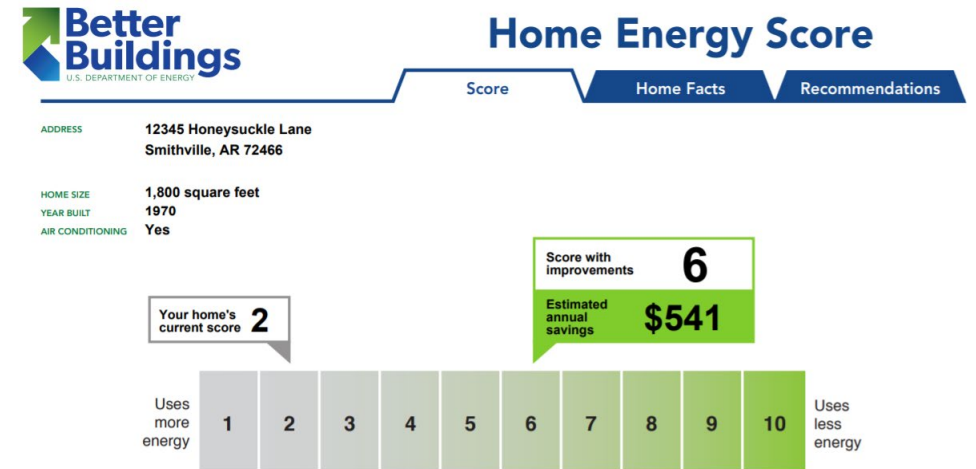




# Home Energy Assessment Policy

Requires submission of a Home Energy Score or Home Energy Audit report (homeowner's choice), completed within the past five years:

- At **point of listing** for sale of property, unless the home was constructed within the last 10 years



# Post-Adoption





# Implementation to-date

- Reach Codes
  - 8 ADU permit applications
  - 10 solar PV permits issued
  - 15+ renovation projects with project value \$25K or more
- Home Energy Assessment Policy
  - More than 20 HES received

U.S. DEPARTMENT OF ENERGY  
**Home Energy Score**  
Know your home. Know your Score.

**HOME PROFILE**

LOCATION:  
Piedmont, CA, 94611

YEAR BUILT:  
1914

HEATED FLOOR AREA:  
2620 sq. ft.

NUMBER OF BEDROOMS:  
5

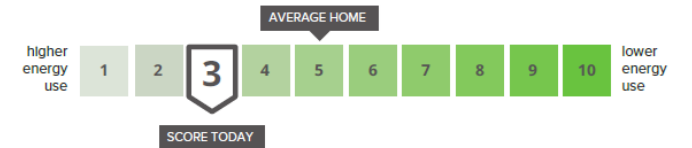
**ASSESSMENT**

ASSESSMENT DATE:  
2/18/2021

**THIS HOME'S HOME ENERGY SCORE**  
3 out of 10

**THIS HOME'S ESTIMATED ENERGY COSTS**  
\$2627 per year

## Home Energy Score details



Official Assessment | ID#333617

Home Energy Score is an easy way to see how energy efficient this home is compared to other homes. A higher score is better. This report also contains ways you can make your home more efficient and more comfortable.

## How much energy is this home likely to use?

Electric	8586 kWh/year	\$1769
Natural Gas	611 therms/year	\$858

TOTAL ESTIMATED ENERGY COSTS PER YEAR \$2627





# Post-adoption outreach

- Goal: publicize and describe Code amendments, tailored to various audiences (homeowners, real estate agents, contractors, City staff)
- Outreach efforts:
  - Informing real estate agents
  - Hosting comprehensive City website page
  - Distributing information to local media outlets and in City publications
  - Providing list of vendors, BayREN incentives and rebates
  - Partnering with community groups
  - Developing internal checklists and evaluation tools

## PIEDMONT REACH CODES GET THE FACTS!

The proposed Piedmont "reach codes" are amendments to city codes that aim to reduce natural gas use in homes to help Piedmont reduce greenhouse gas emissions (GHG) and do its part to address climate change. The reach code improvements also will help homeowners save money in many cases.



The city's climate goals are to reduce greenhouse gas emissions by **40% by 2030 and 80% by 2050** (from a 2005 baseline). In Piedmont, a large percentage of emissions come from natural gas appliances in homes.

### WHEN REACH CODES APPLY

These are the most substantial situations in which the reach codes would apply.

- Newly houses, including detached accessory dwelling units, must use all-electric appliances.
- Second-story additions or projects increasing the roof area by 30% or more will be required to install solar panels on the roof.
- Home renovations of \$25,000 or more will have to choose one improvement from a menu of options.
- Home renovations of \$100,000 or more will have to choose two improvements.

### WHEN REACH CODES DO NOT APPLY

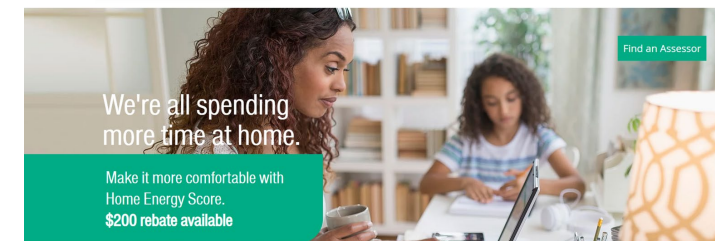
- Projects under \$25,000.
- This includes most furnace replacements, landscape projects, window replacements, bathroom renovations under \$25,000, and seismic upgrades.

### REACH CODE COSTS

Here are rough cost estimates for the menu of improvements that would be required by reach codes. Projects of \$25k+ require one improvement; \$100k+ require two.

Insulate hot water piping + low flow fixtures + water heater blanket.....	\$1,200
Weather stripping + duct sealing.....	\$1,200
LED lights + vacancy sensors.....	\$200
R-19 floor insulation.....	\$1,500
R-38 attic insulation + duct sealing + air sealing /weather stripping.....	\$2,500
Replace gas water heater with heat pump unit.....	\$4,500*
Replace gas furnace with heat pump unit.....	\$15k-\$20k*

\*Rebates available but not included here.







# Contact

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