

DOCKETED

Docket Number:	19-BSTD-06
Project Title:	Local Ordinances Exceeding the 2019 Energy Code
TN #:	236872-2
Document Title:	Piedmont 2019 - First Ordinance Reading Staff Report
Description:	Staff Report prepared for the City of Piedmont First Reading of the Local Ordinances.
Filer:	Danuta Drozdowicz
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	2/22/2021 2:03:14 PM
Docketed Date:	2/22/2021

City of Piedmont
COUNCIL AGENDA REPORT

DATE: July 6, 2020

TO: Mayor and Council

FROM: Sara Lillevand, City Administrator

SUBJECT: Introduction and First Reading of Ordinance 750 N.S., Amending Chapter 8 of the City Code Regarding Requirements for Energy Efficiency Measures, Photovoltaic Systems, and All-Electric Construction in New or Existing Low-Rise Residential Buildings; Introduction and First reading of Ordinance 751 N.S. Amending Division 8.08 of the City Code to Include Requirements for the Preparation of a Home Energy Audit or Home Energy Score for Low-Rise Residential Buildings; and Consideration of a Resolution Adopting a Home Energy Assessment Policy.

RECOMMENDATION

1. Conduct a first reading of Ordinance 750 N.S. (Attachment 1, pages 17-24) amending Chapter 8 of the City Code regarding requirements for energy efficiency measures, photovoltaic systems, and all-electric construction in new or existing low-rise residential buildings; making required findings related to the climatic, geological and topographical conditions warranting more stringent local requirements; making required findings related the cost-effectiveness of the amendments; and determining that the actions are categorically exempt from CEQA.
2. Conduct a first reading of Ordinance 751 N.S. (Attachment 2, pages 25-27) amending Division 8.08 of the City Code to include requirements for the preparation of a Home Energy Audit or Home Energy Score for low-rise residential buildings, and determining that the action is categorically exempt from CEQA.
3. Adopt an Energy Assessment Policy (Attachment 3, page 29) for the submission of either a Home Energy Score or Home Energy Audit with an application for a design review permit, with the exception of expedited design review permits.

EXECUTIVE SUMMARY

Staff is recommending adoption of several local amendments to the California Code of Regulations, Title 24, Part 6 – the statewide Building Energy Efficiency Standards – listed below. If adopted, these amendments (known as “Reach Codes”) will help residents insulate their homes for greater energy efficiency and switch from natural gas to electric building appliances powered with renewable energy. Building insulation and electrification, in turn, will

help the Piedmont community meet its Climate Action Plan 2.0 emissions reduction and climate adaptation goals. The proposed Title 24 amendments will also decrease total building energy use in Piedmont, and community members will be able to meet all new requirements in a way that is cost-effective.

Proposed amendments are listed below and discussed in more detail on pages 7-9 of this report.

- Newly constructed low-rise residential buildings, including new detached accessory dwelling units (ADUs), must use all electric building appliances – for example, electric space and water heaters, electric ovens and stoves, and electric clothes dryers. Newly constructed low-rise residential buildings will be prohibited from being connected to natural gas service.
- Projects proposing an entire new upper level on a low-rise residential building, or that increase a low-rise residential building's total roof area by 30% or more, are required to install solar panels on their roof. The statewide Standards use a formula to determine how many solar panels must be installed on new residential buildings; the same formula will be used for this Reach Code.
- A housing renovation on a low-rise residential building, that costs \$25,000 or more, will require the applicant to choose one item from a list of energy efficient insulation or electrification fixes to include in the renovation. A housing renovation on a low-rise residential building that costs \$50,000 or more will require the applicant to choose two items from the list. Multiple items are cost-effective. Here is the list of 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
 - A package of high efficacy lighting and lighting controls for internal and external lights
 - Switch out gas furnace for a heat pump (or other energy efficient electric heating system)
 - Switch out gas water heater for a heat pump (or other energy efficient electric heating system)
 - Submit a report from a Home Energy Score or Home Energy Audit completed in the last five years. Follow one of the recommendations that came with the Score or Audit report, per approval by the Building Official.

In addition to these Reach Codes, staff is also recommending Council adopt other code amendments and a policy to help insulate and electrify Piedmont's low-rise residential buildings. Staff recommends requirements for the completion of a Home Energy Score or Home Energy Audit (homeowner's choice), as follows:

- At point of listing for sale of a property, unless the residential building was constructed in the past 10 years.

- When an application for design review permit (excluding expedited design review permit) is submitted, unless the residential building was constructed in the past 10 years.
- The Home Energy Score or Audit must be completed no more than five years prior to the date of listing for sale or application for design review permit.

Staff also recommend modifying the Electrical Code to include the following requirements:

- An application for an electrical panel upgrade must include capacity in the panel to accommodate future electrification of all appliances in the residence.
- An application for a kitchen renovation must include an appropriately sized electrical outlet at the location of all major kitchen appliances. The purpose of this outlet is to allow for future all-electric kitchen appliances.
- When doing a laundry area renovation, residents must supply an electrical outlet in the laundry area for an electric clothes dryer. The purpose of the new outlet is to allow for laundry appliance electrification.

All of these proposed Reach Codes and related ordinances only apply to low-rise residential buildings – a category that includes single-family dwellings, townhouses of two attached dwelling units, and multifamily housing at most three stories tall. Together, these types of buildings account for the vast majority of buildings in Piedmont. Staff may recommend similar new building standards for other residential and commercial buildings in the future.

BACKGROUND

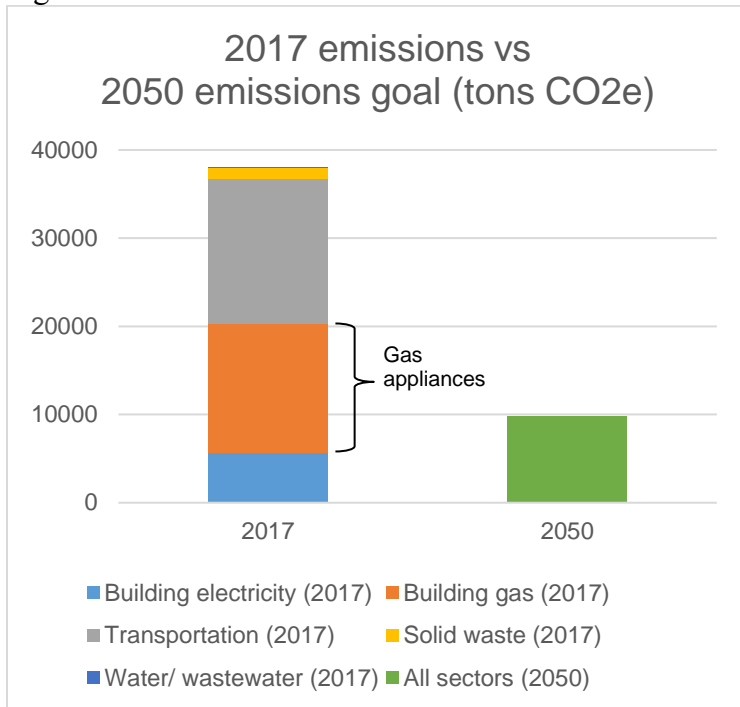
Piedmont’s Climate Action Plan and Greenhouse Gas Emissions

Piedmont’s Climate Action Plan (CAP) 2.0 calls for the community to reduce its annual in-territory emissions from the building, transportation, waste, and wastewater sectors, combined, from about 38,000 metric tons of CO₂e in 2017 to just 9,800 metric tons in 2050.

Natural gas appliances in buildings are among the biggest obstacles to meeting this emissions reduction goal. Many of Piedmont’s houses are old and large, requiring greater energy use on heating and cooling, and most use appliances powered with natural gas. As a result, Piedmont currently emits over 12,000 metric tons of CO₂e just from natural gas use in buildings each year – more than our total emissions goal for 2050 – with most of these emissions coming from natural gas furnaces and water heaters (Figure 1, below).

The CAP 2.0 also calls for the community to “[take action now] to... mitigate the impacts” of climate change. Recent incidents indicate that one of the near-future impacts Piedmont’s residents will experience from climate change are periodic Public Safety Power Shutoff (PSPS) events.

Figure 1: Piedmont’s 2017 emissions vs 2050 CAP 2.0 emissions goal



To meet its Climate Action Plan goal of reducing emissions, Piedmont residents will need to insulate their homes better, switch out natural gas appliances for electric appliances, and get the electricity for those appliances from renewable sources – either from East Bay Community Energy’s Renewable 100 plan or from personal solar photovoltaic (PV) systems. Additionally, to prepare for power outages, without emitting carbon, residents can install electric building appliances and install solar panels and batteries; this will allow buildings to maintain power for moderate periods of time even if electricity is shut off from the grid.

Building construction or renovations are ideal times to improve building insulation or electrification, or to install solar panels. For this reason, City staff recommends amendments to Piedmont’s building codes – especially its Building Energy Efficiency Standards – as one potential method to facilitate insulation, building electrification, and solar panel installation.

Reach Codes

The California Code of Regulations, Title 24, Part 6, the Building Energy Efficiency Standards set statewide requirements concerning how insulated buildings must be, how much energy buildings can use, and how energy efficient their appliances – such as furnaces and water heaters – must be. Every three years, the California Energy Commission (CEC) updates the statewide Building Energy Efficiency Standards to further reduce building energy use and increase solar panel installation.

The CEC is encouraging local jurisdictions to pass local amendments to the statewide Standards, referred to as “Reach Codes” – both to help local jurisdictions reduce their communities’ carbon

footprint and to generate new ideas the CEC may implement statewide in future code cycles. “Reach Codes” must further reduce building energy use relative to the statewide Standards, and local jurisdictions must consider the “cost-effectiveness” of the Reach Codes – whether the proposed Codes save money for homeowners and/or for the market – as part of the adoption process.

City staff did extensive research, worked with partners such as East Bay Community Energy, and conducted extensive outreach to arrive at our list of Reach Codes. More information about the Code drafting and outreach process is included below.

Code drafting and public engagement.

In fall 2019, City staff worked with East Bay Community Energy (EBCE) and with EBCE’s consultants for Reach Codes, TRC, to draft Reach Codes that would help Piedmont meet its Climate Action Plan goals, increase building energy efficiency, and be cost-effective for residents. Following an extensive research process, staff arrived at the following preliminary list:

- New low-rise residential buildings must be built with all-electric appliances.
- Single-family residential homes building a new upper level must install solar panels.
 - If simultaneously replacing a water heater, a heat pump water heater must be installed.
- Single-family residential homes replacing a furnace and air-conditioning unit must install a heat pump space heater as a replacement.
 - If simultaneously replacing a water heater, a heat pump water heater must be installed.

In January and February 2020, staff took these initial ideas to the Piedmont community for feedback. Staff consulted with firm FM3 to create a survey to evaluate residents’ opinions on potential Reach Codes. The survey was sent out to multiple City email lists and uploaded to the city website. 186 people participated. Between January 29th and February 26th, staff also held five “focus group” style public engagement meetings to inform residents and business owners about the initial Reach Code concepts and receive community feedback.

About half of survey respondents supported the initial code ideas. Generally, survey respondents preferred the City give monetary incentives rather than change building standards, and many residents expressed concerns about cost, about having to adopt particular technologies, and about having their economic choices restricted.

Focus group attendees were generally more favorable to Reach Codes than survey respondents, supporting new building standards in theory and supporting the all-electric new construction and solar installation draft Reach Code. Many even suggested the solar installation requirements be altered to require more houses to install solar panels. On the other hand, attendees argued the city should adopt a more flexible approach to reducing building gas use: namely, giving residents multiple electrification and insulation options and allowing residents to choose the option they

judged best for their situation. Summaries of the initial Reach Code survey and the Reach Code forums are provided by hyperlink at the end of this document.

Following the survey and initial public engagement meetings, staff worked with EBCE, with their Reach Code consultant, and with PG&E's cost effectiveness team – led by Misti Bruceri and Associates – to revise the initial Reach Code concepts in response to residents' and businesses' concerns. Staff formulated the following revised list of draft Reach Code concepts:

- New low-rise residential buildings and detached ADUs must be all-electric.
- If a low-rise residential building gets a new upper level, or a roof area increase of 30% or more, it must get solar panels.
- If a low-rise residential building gets a renovation with a valuation between \$25,000 and \$100,000, the renovation must include one item from a list of insulation and electrification options. Construction valued at over \$100,000 must choose two of the options.

Staff worked with EBCE's and PG&E's cost effectiveness teams to make sure these new requirements can be met in ways that are cost-effective. March 2019, February 2020, and June 2020 Low Rise Residential Reach Code Cost Effectiveness Studies – prepared by Frontier Energy, Inc. and Misti Bruceri & Associates, LLC, funded by California utility ratepayers, and submitted to the California Energy Commission – found that the proposed all-electric new construction and solar installation draft Codes are cost-effective. These studies also found that all the insulation list items, and the high efficacy lighting list item, are cost-effective as well.

Staff also recommends the adoption of related requirements for the preparation and submission of either a Home Energy Score or Home Energy Audit. When a home is listed for sale the Score or Audit would be part of the disclosure packet to potential buyers. The Score or Audit must be submitted with an application for design review permit (excluding expedited design review permit). Only one such Score or Audit must be completed within a 5-year period. These regulations are not Reach Codes, but staff recommends their adoption because they will help Piedmont meet its Climate Action Plan 2.0 goals for greenhouse gas emissions reductions by the years 2030 and 2050.

A supplemental round of public engagement followed the development of reach codes recommend for adoption. The intent was to publicize and describe the proposed Code amendments, to better understand public response, and to generate comments for Council's consideration. For this effort staff interviewed several residents with expertise in the field of building energy use about their thoughts on the draft Reach Codes. The interviews were videotaped and are available on the City website (see the list of supplemental documents at the end of this report).

June 2020 Survey

Staff also commissioned consulting firm FM3 to design and carry out a representative survey of Piedmont's residents (n=400, margin of error 4.9%), to ascertain residents' opinions about the new draft Reach Codes, as well as other climate initiatives. The survey asked respondents

whether they supported the city revising its building codes to encourage less use of natural gas in buildings; 66% of respondents supported the idea, while only 28% opposed the idea.

The survey also asked respondents about the specific Reach Codes and other code amendments proposed in this staff report. Depending on the measure, between 55 and 68% of respondents supported each measure; only 24 to 38% opposed each measure.

As the survey was administered to a representative sample of Piedmont's residents, the survey results suggest that an appreciable majority of residents support both the overall idea of revising building codes to transition off of natural gas appliances and the individual code amendments proposed in this staff report. A more detailed summary of survey results can be found in the Supplemental and Referenced Documents section.

SUMMARY OF PROPOSED CODE REVISIONS AND NEW POLICY

Piedmont City Code Section 8.02.060, 2019 California Electrical Code – Amendments, is proposed to be revised to include the following amendments to the 2019 California Electrical Code:

- Subsection 210.52 Dwelling Unit Receptacle Outlets, is amended to require that electrical outlets for cooking appliances be installed in kitchens, and electrical outlets for clothes dryers be installed in laundry areas when those areas in existing low-rise residential buildings are being renovated.
- Section 220.83, Existing Dwelling Unit, is amended to require that when an electrical panel is being replaced with an upgrade, the upgraded panel must include space in the panel to accommodate future electrification of all appliances in the residence.

Piedmont City Code Section 8.02.070, currently reserved, is proposed to be amended to provide Piedmont's local amendments to the 2019 California Energy Code, which include the following amendments:

- 2019 California Energy Code sections 100.0, 100.1(b), 140.1, 150.0 are amended to require that all newly constructed low-rise residential buildings be an All-Electric Building, with no natural gas or propane plumbing installed at the building. This regulation will also apply to newly-constructed detached accessory dwelling units.
- 2019 California Energy Code section 150.2 is amended to require that an existing low-rise residential buildings undergoing an addition of an entirely new upper level or increase the building's total roof area by 30% or more be constructed with a rooftop solar photovoltaic energy system.

Piedmont City Code division 8.08 Disclosures, is proposed to be amended to require the completion of a Home Energy Score or Home Energy Audit (homeowner's choice) upon the sale of Low-Rise Residential property, unless a Home Energy Score or Audit has been completed and submitted within the last five years. Additionally, the City Code would be updated to ensure that

disclosures required by the City occur at the same time as other real property disclosures are made for residential property transactions. The ordinance would also clarify that disclosures are not required for certain types of transactions which are normally excluded from disclosure requirements under state law (including tax lien and foreclosure sales, probate sales and other sales by judicial order, and transactions involving government entities).

Home Energy Assessment Policy

In addition to the amendments to the Building Code, staff recommends establishing a City policy requiring the submission of either a Home Energy Score or Home Energy Audit with an application for a design review permit, with the exception of applications for expedited design review permit (see Attachment 3, page 29). The Score or Audit will need to be prepared within five years prior to application submission. Similar to the intent for the recommended amendment to Building Code division 8.08 requiring the inclusion of a Home Energy Score or Home Energy audit with the disclosure packet for the sale of real property, the purpose behind the inclusion of a Score or Audit with the materials required for a design review permit application is to provide property owners with information on the energy use of their home and how that might be improved, either in their current plans or in future projects.

Developed by the U.S. Department of Energy and its national laboratories, a Home Energy Score is a report prepared by a certified Home Energy Score Assessor that provides homeowners, buyers, and renters directly comparable and credible information about a home's energy use. The Assessor provides a visual inspection that doesn't include the use of diagnostic testing equipment. Its purpose is to assess the general energy performance of an existing home, including:

- Building envelope features (windows, doors, insulation, ducts) and ages.
- Heating, cooling and ventilation equipment types, characteristics and ages.
- Appliance and lighting characteristics.
- Comfort complaints.
- Visible moisture issues.
- Visible health and safety issues.

A Home Energy Audit is prepared by a Building Performance Institute, Inc. (BPI) certified Building Analyst to identify and prioritize proposed treatments for improving a home's energy use. It results in a detailed report resulting from a whole-house evaluation, including diagnostic testing using specialized equipment such as a blower door test, duct leakage tester, combustion analyzer and infrared camera. These tests are done to determine:

- The location and number of air leaks in the building envelope.
- How much leakage is occurring from HVAC distribution ducts.
- How effective is the insulation inside walls and ceilings.
- Any existing or potential combustion safety issues.

The preparation of a Score or Audit prior to developing and submitting plans to renovate or expand a residence provides the property owner with the opportunity to consider energy reduction measures that might easily be incorporated into the plans. Should the information lead to action, the resulting energy reduction measures could be expected to improve the comfort of

the home, improve indoor air quality, reduce long-term operational costs, reduce energy consumption and lower greenhouse gas emissions.

CONSISTENCY WITH GENERAL PLAN AND CLIMATE ACTION PLAN 2.0

Adoption of the recommended ordinances and policy is consistent with general priorities and specific objectives discussed in the City’s General Plan and Climate Action Plan 2.0.

General Plan

Natural Resources and Sustainability Element

The Natural Resources and Sustainability Element of the General Plan states that “sustainability is one of the overarching goals of this General Plan” and that emissions reduction is a key component of sustainability. The element outlines multiple “ways Piedmont will reduce its carbon footprint... during the years ahead” which are consistent with the proposed ordinances:

- Making Piedmont buildings “ ‘Green Buildings,’ which incorporate recycled materials, advanced energy and water conservation systems, and are designed through a process that considers not only a building’s function but also its use of natural resources, its impact on the environment, and the well-being of its occupants.”
 - Element states installing motion sensors for lighting, and installing solar panels, can help make buildings “green buildings”.
 - Element notes: “In the future, amendments to the building code and other locally-sponsored initiatives may be considered” to “require greener construction.”
- Increasing building “energy efficiency,” including by increasing the use of solar power in Piedmont and by “exploring home energy retrofit and energy-efficient lighting installation measures.”

The Natural Resources and Sustainability Element also establishes the following specific goals and policies, which are consistent with the proposed ordinances.

- *Goal 16: Sustainable Development* -- Encourage building and construction practices that minimize environmental impacts and natural resource consumption.
 - *Policy 16.2: Green Building* -- Support the use of green building methods in new construction and rehabilitation projects, including both public agency projects and private projects undertaken by homeowners.
 - *Action 16.B: Building Code Amendments* -- Regularly evaluate any obstacles to green building construction in Piedmont. Periodically amend the building code to incorporate green building principles, respond to changes in state law which promote green building, and match the steps being taken by nearby Alameda County cities to encourage green construction.
- *Goal 17: Resource Conservation* -- Conserve non-renewable resources for future generations through solid waste reduction and energy management.
 - *Policy 17.3: Alternative Energy Sources* -- Encourage the use of alternative energy sources, such as solar power and wind energy, by Piedmont residents.

Environmental Hazards Element

The Environmental Hazards Element of the General Plan notes that greenhouse gas emissions cause climate change, which is in turn connected with natural hazards, and that “in 2015, the

three largest sources of GHG [greenhouse gas] emissions in Piedmont were building electricity use, natural gas use for space and water heating, and petroleum-fueled personal vehicle use.”

The goal of the Environmental Hazards Element of the General Plan is “to minimize future loss of life, injury, and property damage resulting from natural hazards.” Reducing the use of natural gas addresses the concerns about hazards in multiple ways. Severe seismic events could damage gas mains and cause leakage and/or explosions. The use of natural gas in buildings can be a hazard to the health and safety of occupants. Greenhouse gas emissions resulting from the use of natural gas contributes to the effects of climate change, the detrimental impact on human health and safety is established elsewhere in this report.

Climate Action Plan 2.0.

The Climate Action Plan (CAP) 2.0 calls for the Piedmont community to reduce its in-territory emissions 40% relative to its 2005 baseline by 2030 and 80% relative to the 2005 baseline by 2050. The CAP 2.0 identifies building energy as one of the main sources of emissions that must be addressed to meet this goal, devoting an entire chapter to “Buildings and Energy Use.” The following goals, objectives, measures, and actions listed in the “Buildings and Energy Use” chapter are consistent with the recommended ordinances:

2030 Goal: Source 100% of electricity from renewable sources, increase efficiency of electricity use, reduce natural gas consumption by 50% below 2005 baseline.

2050 Pathway to Success: Maximize efficiency through appliances and behavior, 100% renewable electricity, maximize building efficiency, and eliminate natural gas use by switching to electric appliances.

Objective BE-1: Reduce Residential Building Energy Use

- *Measure BE-1.2:* Reduce Electricity and Natural Gas Consumption
 - *Action BE-1.2E:* At point of replacement, consider requiring the installation of energy conserving appliances and fixtures, such as on-demand tankless water heaters, Energy Star appliances, and LED lightbulbs.
- *Measure BE-1.3:* Switch from natural gas to electric appliances, coupled with renewable energy
 - *Action BE-1.3C:* Consider requiring electric appliances for new construction.

Objective BE-3: Increase Renewable Energy to 100% by 2030

- *Measure BE-3.2:* Install On-Site Renewable Energy
 - *Action BE-3.2E:* Develop a reach code to phase-out electric service panels below a 200-amp capacity at time of upgrade.

Objective BE-6: Investigate Infrastructure Upgrades and New Technology

- *Measure BE-6.1:* Explore Deep Decarbonization Infrastructure
 - *Action BE-6.1C:* Reduce the need for new natural gas lines through phasing out natural gas appliances in new construction and existing building replacements.

Beyond specific policy goals, the Climate Action Plan 2.0 makes several statements – concerning steps Piedmont needs to take to meet the 2030 and 2050 CAP emissions goals – which are consistent with the recommended ordinances:

- “The combination of the age of Piedmont homes, their size, and the low rates of new home construction mean Piedmont will have to aggressively pursue energy efficiency upgrades for existing homes to meet its climate goals.”
- “Fuel switching from natural gas to electricity is a viable path towards zero carbon buildings, especially when coupled with on-site renewable energy and/or low-carbon grid power.”
- “Adoption of on-site renewable energy would help the Piedmont community dramatically reduce its GHG emissions, while also providing residents and business owners with a number of other benefits.”
- “To meet carbon neutrality by 2050, natural gas infrastructure installed now may need to be retired for electrification before the end of its useful life. This represents an unnecessary cost. Natural gas equipment and infrastructure will become ‘stranded assets,’ so making the switch earlier rather than later is ideal.”

Staff recommends adopting the proposed reach codes, which would be adopted within an existing state framework of de-carbonization. Notably, other local agency and utility decisions are being made that already assume ongoing work to achieve building de-carbonization, including state directives to go carbon-neutral by 2045 under Governor’s Executive Order No. B-55-18 and CPUC orders and direction to utility providers to require that energy procurement meet demand assuming building de-carbonization efforts. As a result, staff are not anticipating the need for any new electrical infrastructure beyond that already anticipated due to the adoption of the reach codes.

FISCAL IMPACT

The amendments to the 2019 California Energy Code and other provisions of the Building Standards Code are not anticipated to have any fiscal impact on the City. The estimated cost of a Home Energy Score ranges from \$150 to \$500 depending on the size of the home. The estimated cost of a Home Energy Audit ranges from \$400 to \$1,000, depending on the size of the home.

THE ENVIRONMENTAL BENEFITS OF BUILDING DECARBONIZATION

The recommended Reach Codes are necessary to protect the environment. When fossil fuels – including natural gas – are burned to produce energy, gaseous carbon molecules (“greenhouse gases”) are emitted into the atmosphere, increasing the atmosphere’s greenhouse effect; the increased greenhouse effect, in turn, increases global average temperature. Increases in average global temperature cause damage to local environments.

As attested in Piedmont’s Climate Action Plan 2.0, Piedmont’s buildings are largely outfitted with appliances that are powered by burning natural gas. These appliances emit greenhouse gases, contributing to climate change and, through climate change, causing environmental degradation.

The recommended Reach Codes would have three primary impacts. First, the Reach Codes will insulate buildings, decreasing total energy use. Second, the Codes will replace natural gas appliances with electric appliances, most of which would be powered by East Bay Community Energy's 100% Renewable electricity plan – in effect, replacing building energy generation from natural gas with energy generation from renewable sources. Third, the Codes will facilitate the installation and use of home solar photovoltaic arrays.

In summary, the recommended Reach Codes will decrease total building energy use in Piedmont, while substituting natural gas appliances with electric appliances powered by renewable sources.

Lower total demand for building energy use will mean less natural gas use and, consequently, lower greenhouse gas emissions. Additionally, energy generation from renewable wind and/or solar power has far lower total greenhouse gas emissions than does energy generation from natural gas.

The recommended Reach Codes would therefore cause Piedmont buildings to emit fewer greenhouse gases, protecting the environment from climate change. (Sources used for this determination can be found at the back of this report.)

CEQA

The adoption of the ordinance is not a project under the requirements of the California Environmental Quality Act, together with related State CEQA Guidelines (collectively, "CEQA") because it has no potential for resulting in a physical change to the environment. In the event that this Ordinance is found to be a project under CEQA, it is subject to the CEQA exemption contained in CEQA Guidelines section 15061(b)(3) because it can be seen with certainty to have no possibility that the action approved may have a significant effect on the environment. CEQA applies only to actions which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA. In this circumstance, the proposed action would have no or only a de minimis effect on the environment.

Additionally, this Ordinance is also exempt under Section 15308 of the CEQA Guidelines—Actions by Regulatory Agencies for Protection of the Environment, because it is a regulatory action taken by local ordinance to assure the maintenance, restoration, enhancement, or protection of the environment.

REVIEW BY CITY ATTORNEY

The proposed modifications to the City Code, the ordinances and the CEQA determinations have been reviewed and approved by the City Attorney.

CONCLUSION, COUNCIL ACTION AND NEXT STEPS

The recommended code revisions and ordinances will help residents reduce their natural gas use, transition to renewable electricity as a building energy source, and prepare for future power outages. Should the Council approve a first reading of the recommended ordinance on July 6, 2020, a second reading could occur as soon as July 20, 2020.

- Any approved amendments to Title 24, Part VI (“Reach Codes”) must be submitted to the California Energy Commission for certification. That process is expected to take about three months from the date City staff submits the amendments to the CEC shortly after a second reading of the ordinance. Once the CEC approves the “Reach Code” amendments City staff will file all the amendments to the California Electrical Code and the California Energy Code for certification. The code amendments under Ordinance 750 N.S. can go into effect upon this filing.
- The code amendments to City Code division 8.08, Disclosures, under Ordinance 751 N.S. do not need certification by the State. Therefore, the code amendments would become effective 30 days after a second reading.
- City policies are adopted by resolution. Therefore, if Council approves the proposed Energy Assessment Policy for the inclusion of a Home Energy Score or Audit with applications for design review permit, the policy would go into effect immediately.

By: Kevin Jackson, Director of Planning & Building
 Craig Griffin, Chief Building Official
 Justin Szasz, Climate Action Fellow

ATTACHMENTS

	<u>Pages</u>	
1	17-24	Ordinance No. 750 N.S., amending Chapter 8 of the City Code regarding requirements for energy efficiency measures, photovoltaic systems, and all-electric construction in new or existing low-rise residential buildings
2	25-27	Ordinance No. 751 N.S., amending Division 8.08 of the City Code to include requirements for the preparation of a Home Energy Audit or Home Energy Score for low-rise residential buildings
3	29	Energy Assessment Policy

Supplemental and Referenced Documents

Public Engagement Summaries

- A summary of the results of the February-March 2020 Reach Code survey is available at: https://piedmont.ca.gov/UserFiles/Servers/Server_13659739/File/Government/Departments/Planning%20Division/Reach_Codes/Survey_Results_Summary.pdf
- A summary of the January & February 2020 Reach Code public outreach meetings is available at:

https://piedmont.ca.gov/UserFiles/Servers/Server_13659739/File/Government/Departments/Planning%20Division/Reach_Codes/Public_Outreach_Events.pdf

- Interviews staff conducted with residents concerning the following draft Reach Codes are available in video format at the urls posted below:
 - All-electric new construction
 - Granicus - https://piedmont.granicus.com/MediaPlayer.php?view_id=3&clip_id=2173
 - YouTube - <https://youtu.be/Pn5NfuxO1y8>
 - Solar installation
 - Granicus - https://piedmont.granicus.com/MediaPlayer.php?view_id=3&clip_id=2176
 - YouTube - <https://youtu.be/60jNrjoUQDY>
 - Insulation and electrification at point of renovation
 - Granicus - https://piedmont.granicus.com/MediaPlayer.php?view_id=3&clip_id=2175
 - YouTube - <https://youtu.be/xnCw25gPPcE>
- A summary of the results of the June 2020 Reach Code survey is available at: https://piedmont.ca.gov/UserFiles/Servers/Server_13659739/File/Government/Departments/Planning%20Division/Reach_Codes/Emissions_Reduction_Survey_Results.pdf

Cost-Effectiveness Studies

- *Cost-Effectiveness Study: Low-Rise Residential* (published March 2019), which finds that all-electric new construction is cost-effective, is available at: https://piedmont.ca.gov/UserFiles/Servers/Server_13659739/File/Government/Departments/Planning%20Division/Reach_Codes/Cost_Effectiveness_Study.pdf
- *2019 Cost-Effectiveness Study: Existing Low-Rise Residential Building Efficiency Upgrade* (published February 2020), which finds that the insulation list items and high efficacy internal lights with motion sensors are cost-effective, is available at: https://piedmont.ca.gov/UserFiles/Servers/Server_13659739/File/Government/Departments/Planning%20Division/Reach_Codes/Residential_Building_Efficiency_Upgrade.pdf
- *2019 Cost-Effectiveness Study: Low-Rise Residential Addendum – Cost Effectiveness Study for the City of Piedmont Requiring Photovoltaic (PV) Systems and Exterior Lighting Controls on Residential Additions* (published June 2020), which finds that solar panel installation and high efficacy external lights with motion sensors are cost-effective, is available at: https://piedmont.ca.gov/UserFiles/Servers/Server_13659739/File/Government/Departments/Planning_Division/Reach_Codes/Cost_Effectiveness_Study_Lighting_Addendum.pdf

City of Piedmont Climate Action Plan 2.0 is available at: https://piedmont.ca.gov/Climate_Action_Plan

Piedmont City Code Chapter 8, Building, Construction and Fire Prevention is available at: https://piedmont.ca.gov/UserFiles/Servers/Server_13659739/File/Government/City%20Charter%20&%20Code/Chapter%208.pdf
https://piedmont.ca.gov/UserFiles/Servers/Server_13659739/File/Government/City%20Charter%20&%20Code/Chapter%208.pdf

The City of Piedmont General Plan is available at: https://piedmont.ca.gov/General_Plan

Sources for determination of Reach Codes' environmental effects:

Heath, G. (n.d.). Life Cycle Assessment Harmonization. *NREL*. Retrieved from <https://www.nrel.gov/analysis/life-cycle-assessment.html>

Hoegh-Guldberg, O., Jacob, D., Bindi, M., Brown, S., Camilloni, I., Diedhiou, A., ... & Hijioka, Y. (2018). Impacts of 1.5 C global warming on natural and human systems. *Global warming of 1.5° C. An IPCC Special Report*. Retrieved from https://www.ipcc.ch/site/assets/uploads/sites/2/2019/02/SR15_Chapter3_Low_Res.pdf

Oreskes, N. (2004). The scientific consensus on climate change. *Science*, 306(5702), 1686-1686. Retrieved from <https://science.sciencemag.org/content/306/5702/1686/tab-pdf>

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ORDINANCE NO. 750 N.S.

AN ORDINANCE AMENDING CHAPTER 8 OF THE CITY CODE REGARDING
REQUIREMENTS FOR ENERGY EFFICIENCY MEASURES, PHOTOVOLTAIC
SYSTEMS, AND ALL-ELECTRIC CONSTRUCTION IN NEW OR EXISTING LOW-
RISE RESIDENTIAL BUILDINGS.

The City Council of the City of Piedmont hereby ordains as follows:

SECTION 1. PURPOSE AND INTENT

It is the purpose and intent of the City Council of the City of Piedmont in adopting this Ordinance to expressly enact local amendments to Energy Code Sections 100.0, 100.1, 140.1, 150.0 and 150.1, and Electrical Code Sections 210.52 and 220.83 of the 2019 California Building Code applicable to new construction and additions and alterations to existing buildings to provide standards for new and renovated buildings to improve community health and safety while reducing greenhouse gas emissions.

SECTION 2. FINDINGS

Pursuant to Sections 17922, 17958, 17958.5, and 17958.7 of the California Health and Safety Code, the City may make amendments to the provisions of the 2019 California Electrical Code and the 2019 California Energy Code which are reasonably necessary to protect the health, welfare and safety to the residents of Piedmont because of local climatic, geological and topographical conditions.

The City Council hereby makes the following findings with respect to local geological, topographical, and climatic conditions relating to the amendments to the California Building Standards Code for which such findings are required:

- A. The San Francisco Bay area region is densely populated and located in an area of high seismic activities. The City is bounded by the Hayward and San Andreas faults capable of producing major earthquakes; and
- B. Concern for fire-life safety associated with gas appliances and associated piping located in the ground and in the buildings increase the risk of explosion or fire if there is a structural failure due to a seismic event considering the increasing density of buildings in the region; and
- C. Severe seismic events could disrupt communications, damage gas mains, cause extensive electrical hazards, and place extreme demands on the limited resources of the Fire Department resulting to meet the fire and life safety needs of the community; and
- D. Solar infrastructure on buildings reduces the need for pipelines and electrical transmission lines; and
- E. The local geographic, topographic, and climatic conditions pose an increase hazard in acceleration, spread, magnitude and severity of potential fires in the

- City, and may cause a delayed response from emergency responders, allowing further growth of the fire; and
- F. Over the next century, increasing levels of atmospheric greenhouse gas concentrates are expected to result in global temperature increases, and based on scientific literature and studies are likely to cause a variety of local changes, including extreme weather conditions, sea level rise, more frequent heat waves and extended period of drought. Local geographic, topographic and climatic conditions include risk of the following:
- a. Fires. Piedmont is a hillside community and most of the structures are single-family dwellings built on sloping terrain. The 1991 Oakland/Berkeley Hills fire had a devastating impact on those communities in the fire zone which experienced significant loss of life and property. The fire zone of this event crossed into the Piedmont city limits but did not damage any structures. Piedmont has the same climatic and topographical conditions as those areas affected by the nearby 1991 fire. In most areas of Piedmont, the dwelling units are located in close proximity to one another and in many cases are less than 8 feet apart. Fires can easily spread from house-to-house and are more readily spread upslope in the direction of prevailing winds. As referenced by CalFire's Fire and Resource Assessment Program (FRAP), Wildland Urban Interface Map, all of Piedmont is within or immediately adjacent to an Interface or Influence Zone. All areas of Piedmont are located in a Wildland-Urban Interface (WUI) zone, which allows for heightened construction and regulatory standards to mitigate the spread of wildfires. In addition, wildfires located outside the area in 2018 and 2019 created a blanket of toxic smoke over the City, causing the worst air quality on record by the Bay Area Air Quality Management District for two consecutive weeks; and
 - b. Landslides. Extreme storms as a result of climate change increases the chance of rainfall-induced landslide; fire and drought may kill vegetation in the City's WUI zone increasing runoff and potential for landslide; and
 - c. Heat: Increased heat as a result of climate change can have a local impact on the health, safety and welfare of the City's population, especially those without resources to purchase air conditioning, the elderly, disabled, or those with children; and
- G. Failure to address and substantially reduce greenhouse gas emissions creates an increased risk to the health, safety and welfare of the City residents, the City Council considers and adopts as findings the analysis contained in the staff report; and
- H. Amendments to the California Codes have been adopted in the past by the City Council based on specific findings of local geographic, topographic and climatic conditions; and the City Council hereby reaffirms such findings and confirms that the facts on which such findings were based continue to exist; and

- I. The provisions of this Ordinance establish more restrictive standards than the California Building Standards Code which will better serve to prevent or minimize structural damage and other impacts resulting from such local conditions; and

The City Council hereby also makes the additional following findings with respect to cost effectiveness of any amendments to the California Codes for which such findings are required:

- A. A March 15, 2019 study prepared by Frontier Energy, Inc. and Misti Bruceri & Associates, LLC, funded by California utility ratepayers, and submitted to the California Energy Commission – “Cost-effectiveness Study: Low Rise Residential” – found the proposed all-electric new construction amendment to the Building Energy Efficiency Standards to be cost-effective.
- B. A February 6, 2020 study prepared by Frontier Energy, Inc. and Misti Bruceri & Associates, LLC, funded by California utility ratepayers, and submitted to the California Energy Commission – “2019 Cost-Effectiveness Study: Existing Low-Rise Residential Building Efficiency Upgrade” – found the proposed list items related to insulation are cost effective. This study also found that a requirement for non-high efficacy internal lights be replaced with high efficacy internal lights, with motion sensors, was cost-effective.
- C. A June 19, 2020 Addendum to the original study for low-rise residential buildings, prepared by Frontier Energy, Inc. and Misti Bruceri & Associates, LLC, funded by California utility ratepayers, and submitted to the California Energy Commission, found that the proposed solar installation requirement, and the proposed external lighting element to the lighting electrification list item, were also cost-effective.
- D. Based on the foregoing studies, staff reports, and testimony of staff, the Ordinance’s amendments to the Building Energy Efficiency Standards are cost-effective; and
- E. The Department of Energy sets the minimum efficiency standards for equipment and appliances; none of the provisions in this Ordinance change minimum efficiency standards or regulations for covered products under the Energy Policy and Conservation Act, and therefore this Ordinance is not preempted by federal appliance regulations; and
- F. This Ordinance’s amendments to the Building Energy Efficiency standards will require buildings to achieve increased energy reductions.

SECTION 3. AMENDMENT TO SECTION 8.02.060

The following subsections are hereby added to Section 8.02.060 of the Piedmont City Code.

- “B. Subsection 210.52(F) Laundry Areas. Section 210.52(F) is replaced in its entirety as follows:

“(F) Laundry Areas. In dwelling units, at least one receptacle outlet shall be installed in areas designated for the installation of laundry equipment. At least one 120/240v, 30 ampere circuit shall be installed within 6 feet of appliance location in accordance with Section 210.50(C).

Exception No. 1: A receptacle for laundry equipment shall not be required in a dwelling unit of a multifamily building where laundry facilities are provided on the premises for use by all building occupants.

Exception No. 2: A receptacle for laundry equipment shall not be required in other than one-family dwellings where laundry facilities are not to be installed or permitted.”

C. Section 210.52 Dwelling Unit Receptacle Outlets. Section 210.52 is amended to add the subsection:

“(J) Kitchen Cooking Appliances. At least one 240v 50 ampere circuit shall be installed within 6 ft. of the appliance location, in accordance with Section 210.50(C).”

D. Section 220.83 Existing Dwelling Unit. Section 220.83 is replaced in its entirety as follows:

“220.83 Existing Dwelling Unit. This section shall be used to determine if the existing service or feeder is of sufficient capacity to serve additional loads. Where the dwelling unit is served by a 120/240-volt or 208Y/120-volt, 3-wire service, calculate the total load in accordance with Section 220.83(B).

(A) Where Additional Air Conditioning Equipment or Electric Space-Heating Equipment Is Not to Be Installed. *This section is deleted in its entirety.*

(B) Where Additional Air Conditioning Equipment or Electric Space Heating Equipment Is to Be Installed. The following percentages shall be used for existing and additional new loads. The larger connected load of air-conditioning or space-heating, but not both, shall be used.

Load	Percent of Load
Air-conditioning equipment	100
Central electric space heating	100
Less than four separately controlled space-heating units	100
First 8 kVA of all other loads	100
Remainder of all other loads	40

Other loads shall include the following:

- (1) General lighting and general-use receptacles at 33 volt-amperes/m² or 3 volt-amperes/ft² as determined by 220.12

- (2) 1500 volt-amperes for each 2-wire, 20-ampere small appliance branch circuit and each laundry branch circuit covered in 210.11(C)(1) and (C)(2)
- (3) The nameplate rating of the following:
 - a. All appliances that are fastened in place, permanently connected, or located to be on a specific circuit
 - b. Wall-mounted ovens, counter-mounted cooking units
 - c. Water heaters
- (4) One 30 ampere circuit for clothes dryers per Section 210.52(F)
- (5) One 50 ampere circuit for induction range per Section 210.52 (J).””

SECTION 4. AMENDMENT TO SECTION 8.02.070

Section 8.02.070 of the Piedmont City Code is hereby amended in its entirety to read as follows:

“8.02.070 2019 California Energy Code – Amendments

This section amends the 2019 California Energy Code as adopted in Section 8.02.010, as set forth below.

A. Section 100.0 – Scope. Section 100.0(e)(2)(D) is amended to add a new subsection section (ii) as follows:

“(ii) New construction low-rise residential buildings shall be an All-Electric Building or All Electric Design as defined in Section 100.1(b).”

B. Section 100.1(b) – All Occupancies – General Provisions. Section 100.0(b) is amended to include the following definition:

“**ALL-ELECTRIC BUILDING** or **ALL-ELETRIC DESIGN** is a building or building design that uses a permanent supply of electricity as the only source of energy for space conditioning (including heating and cooling), water heating (including pools and spas), cooking appliances, and clothes drying appliances, and has no natural gas or propane plumbing installed at the building.”

C. Section 140.1 – Performance Approach: Energy Budgets. Section 140.1 is amended to add the following sentence after the first paragraph:

“A newly constructed All-Electric Building complies with the performance approach if the energy budget calculated for the Proposed Design Building under Subsection (b) is no greater than the energy budget calculated for the Standard Design Building under Subsection (a).”

D. Section 150.0 – Mandatory Features and Devices. Section 150.0 is amended to replace the introductory sentence and note in their entirety as follows:

“Low-rise residential buildings shall comply with the applicable requirements of Sections 150(a) through 150(s).

NOTE: The requirements of Sections 150.0 (a) through (s) apply to newly constructed buildings. Sections 150.2(a) and 150.2(b) specify which requirements of Sections 150.0(a) through 150.0(r) also apply to additions or alterations.”

E. Section 150.0(e) – Installation of fireplaces, decorative gas appliances and gas logs. Section 150.0(e) is amended to add the following sentence to the beginning of the section:

“In any low rise residential building required to be an All-Electric Building or All Electric Design under this code, fireplaces shall be electric, not fueled by Fuel Gas.”

F. Section 150.0(h) – Space-conditioning equipment. Section 150.0(h) is amended to add the following sentence to the beginning of the section:

“In any low rise residential building required to be an All-Electric Building or All Electric Design under this code, construction space-conditioning equipment shall be electric, not fueled by Fuel Gas.”

G. Section 150.0(n) – Water heating system. Section 150.0(n) is amended to add the following sentence to the beginning of the subsection:

“In any low rise residential building required to be an All-Electric Building or All Electric Design under this code, heating systems and equipment shall be electric, not fueled by Fuel Gas.”

H. Section 150.0(s) – Clothes Drying and Cooking Appliances. Section 150.0 is amended to add a new subsection (s):

“(s) **Clothes Dryers and Cooking Appliances.**

1. Clothes Dryers. Clothes dryers shall be electric, not fueled by Fuel Gas.
2. Cooking Appliances. Cooking appliances shall be electric, not fueled by Fuel Gas.”

I. Subsection 150.2(a) – Additions. Section 150.2(a) is amended to add the following language after the first sentence:

“Requirements for installation of all-electric water heating systems, space conditioning equipment, fireplaces and decorative gas appliances, and clothes drying appliances, and cooking appliances as specified for new construction in Sections 150.0(e), 150.0(h), 150.0(n), and 150.0(s) do not apply to additions.”

J. Section 150.2(a) – Additions. Section 150.2(a) is amended to replace Exception 7 in its entirety as follows:

“Exception 7 to Section 150.2(a): Photovoltaic systems, as specified in Section 150.1(c)14, are not required for additions, except that additions of an entirely new upper level or that increase the building’s total roof area by thirty percent (30%) or more shall meet the photovoltaic requirements of Section 150.1(c)14.”

K. Section 150.2(b) – Alterations. Section 150.2(b) is amended to add the following language after the first sentence:

“Requirements for installation of all-electric water heating systems, space conditioning equipment, fireplaces and decorative gas appliances, and clothes drying appliances, and cooking appliances as specified for new construction in Sections 150.0(e), 150.0(h), 150.0(n), and 150.0(s) do not apply to alterations.””

SECTION 5. CALIFORNIA ENVIRONMENTAL QUALITY ACT

The City Council finds that the adoption of this Ordinance is not a project under the requirements of the California Environmental Quality Act, together with related State CEQA Guidelines (collectively, “CEQA”) because it has no potential for resulting in a physical change to the environment. In the event that this Ordinance is found to be a project under CEQA, it is subject to the CEQA exemption contained in CEQA Guidelines section 15061(b)(3) because it can be seen with certainty to have no possibility that the action approved may have a significant effect on the environment. CEQA applies only to actions which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA. In this circumstance, the proposed action would have no or only a de minimis effect on the environment. The Ordinance is also exempt from CEQA under CEQA Guidelines section 15308, because it is a regulatory action for the protection of the environment. The foregoing determination is made by the City Council in its independent judgment. Staff shall prepare and file a notice of exemption in accordance with this determination and the requirements of CEQA.

SECTION 6. SEVERABILITY

The provisions of this Ordinance are severable and if any provision, clause, sentence, word or part of it is held illegal, invalid, unconstitutional, or inapplicable to any person or circumstances, the illegality, invalidity, unconstitutionality, or inapplicability will not affect or impair any of the remaining provisions, clauses, sentences, sections, words or parts of the Ordinance or their applicability to other persons or circumstances.

SECTION 7. POSTING, FILING, AND EFFECTIVE DATE

This Ordinance shall be posted at City Hall after its second reading by the City Council for at least 30 days and shall become effective after the approval of such amendments by the California Energy Commission. The City Clerk shall cause a copy of this Ordinance to be filed with the California Energy Commission and the California Building Standards Commission in the manner required by law.

[End of Ordinance]

ORDINANCE NO. 751 N.S.

AN ORDINANCE AMENDING DIVISION 8.08 OF THE CITY CODE TO INCLUDE REQUIREMENTS FOR THE PREPARATION OF A HOME ENERGY AUDIT OR HOME ENERGY SCORE FOR LOW-RISE RESIDENTIAL BUILDINGS.

The City Council of the City of Piedmont hereby ordains as follows:

SECTION 1. PURPOSE AND INTENT

It is the purpose and intent of the City Council of the City of Piedmont in adopting this Ordinance to provide prospective buyers of residential properties important information regarding the energy use, and the costs associated with that energy use, of the building(s) offered for sale. In addition, the information provided will assist the purchaser in determining how best to improve a home's energy use in order to reduce long term expenses and greenhouse gas emissions, a goal of the City of Piedmont Climate Action Plan.

SECTION 2. FINDINGS

The City Council hereby makes the following findings in association with the adoption of this ordinance:

- A. The receipt of a Home Energy Score or Home Energy Audit will assist homeowners in their efforts to reduce their home's energy use and any greenhouse gas emissions from fossil fuels used to generate that energy;
- B. Over the next century, increasing levels of atmospheric greenhouse gas concentrates are expected to result in global temperature increases, causing a variety of local changes, including extreme weather conditions, sea level rise, more frequent heat waves and extended period of drought; and
- C. Failure to address and substantially reduce greenhouse gas emissions creates an increased risk to the health, safety and welfare of the City residents, the City Council considers and adopts as findings the analysis contained in the staff report.

SECTION 3. AMENDMENT TO SECTION 8.08.010

Section 8.08.010 Property Records, of the Piedmont City Code is hereby amended in its entirety to read as follows:

“8.08.010 Property records.

- A. Purpose. The purpose of this section is to fairly notify future property owners of important requirements concerning property in the city. Furthermore, the City has determined that prospective buyers of residential properties should be provided with important information regarding the energy use, and the costs associated with that energy use, of the building(s) offered for sale. In addition,

the information provided will assist the purchaser in determining how best to improve a home's energy use in order to reduce long term expenses and greenhouse gas emissions, a goal of the City of Piedmont Climate Action Plan.

- B. Required Information. Each person who sells or transfers an interest in real property located in the City of Piedmont must provide the following information to a prospective buyer:
1. A property records search provided by the Planning & Building Department for a nominal fee established by the City Council. This report shall show the building permit history for the property, including which improvements have been approved.
 2. A disclosure statement prepared by the Planning & Building Director.
 3. For any low-rise residential building, either a Home Energy Score or a Home Energy Audit prepared no more than five years prior to the date the property is advertised or listed for sale, unless the home was constructed within ten years prior to the date of such advertising or listing.
- C. Timing of Disclosure. For any sale, transfer, or other transaction of a residential property that is subject to a disclosure requirements under Civil Code section 1102, et seq., the additional information required to be provided to the purchaser by this section shall be provided at the time such disclosures are made, and for all transactions not subject to a disclosure requirements under Civil Code section 1102, et seq., such additional information shall be provided not less than 10 days before close of escrow.
- D. Exemption. The requirements specified in this section shall not apply to those sales or transfers listed in Civil Code section 1102.2, subdivisions (a) through (j), and subdivision (l).
- E. Definitions. In this section, the following words shall be given the below meanings:
- Home Energy Audit* means a detailed report resulting from a whole-house evaluation, including diagnostic testing using specialized equipment, prepared by a Building Performance Institute, Inc. (BPI) certified Building Analyst to identify and prioritize proposed treatments for improving a home's energy use.
- Home Energy Score*, means a score and associated report, using the metrics developed by the U.S. Department of Energy and its national laboratories, prepared by a certified Home Energy Score Assessor that provides

homeowners, buyers, and renters directly comparable and credible information about a home's energy use.

Low-rise Residential Building means a building, other than a hotel/motel that is Occupancy Group: R-2, multifamily, with three habitable stories or less; or R-3, single family; or *U*-building located on a residential site.”

SECTION 4. CALIFORNIA ENVIRONMENTAL QUALITY ACT

The City Council finds that the adoption of this Ordinance is not a project under the requirements of the California Environmental Quality Act, together with related State CEQA Guidelines (collectively, “CEQA”) because it has no potential for resulting in a physical change to the environment. In the event that this Ordinance is found to be a project under CEQA, it is subject to the CEQA exemption contained in CEQA Guidelines section 15061(b)(3) because it can be seen with certainty to have no possibility that the action approved may have a significant effect on the environment. CEQA applies only to actions which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA. In this circumstance, the proposed action would have no or only a de minimis effect on the environment. The Ordinance is also exempt from CEQA under CEQA Guidelines section 15308, because it is a regulatory action for the protection of the environment. The foregoing determination is made by the City Council in its independent judgment.

SECTION 5. SEVERABILITY

The provisions of this Ordinance are severable and if any provision, clause, sentence, word or part of it is held illegal, invalid, unconstitutional, or inapplicable to any person or circumstances, the illegality, invalidity, unconstitutionality, or inapplicability will not affect or impair any of the remaining provisions, clauses, sentences, sections, words or parts of the Ordinance or their applicability to other persons or circumstances.

SECTION 6. POSTING, FILING, AND EFFECTIVE DATE

This Ordinance shall be posted at City Hall after its second reading by the City Council for at least 30 days and shall become effective 30 days after the second reading.

[End of Ordinance]

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CITY OF PIEDMONT
Policy & Procedure

Policy # _____
Section: Planning & Building

SUBJECT: Energy Assessments

Policy

It is the policy of the City of Piedmont to require an energy assessment to be conducted for projects which require design review permits and which may have an energy impact, and to require such assessment to be submitted with an application for a design review permit. This policy is intended to enable the property owner to make knowledgeable decisions on how best to incorporate measures into their construction project that reduce energy consumption, increase comfort in the home, improve indoor air quality, and reduce the building's greenhouse gas emissions.

Procedure

The Director shall require that design review permit applications include an energy assessment, in the form of either a Home Energy Score or a Home Energy Audit. The energy assessment must be prepared not more than five years prior to the date the design review permit application is initially submitted. The Director shall require the submission of the energy assessment pursuant to authority under City Code section 17.66.050 and shall cause all applicable lists related to development application requirements (including those maintained in accordance with Government Code section 65940) to be updated to include the requirements of this Policy.

For purposes of this Policy:

Home Energy Audit means a detailed report resulting from a whole-house evaluation, including diagnostic testing using specialized equipment, prepared by a Building Performance Institute, Inc. (BPI) certified Building Analyst to identify and prioritize proposed treatments for improving a home's energy use.

Home Energy Score, means a score and associated report, using the metrics developed by the U.S. Department of Energy and its national laboratories, prepared by a certified Home Energy Score Assessor that provides homeowners, buyers, and renters directly comparable and credible information about a home's energy use.

Exceptions

An energy assessment shall not be required under the following circumstances:

1. The residential building was constructed within the past ten years;
2. The application is for minor modification; or
3. When determined to be unnecessary by the Director of Planning and Building because the proposed alteration(s) are unrelated to the building's energy use.

INITIATED: Planning & Building Department

APPROVED:

**Item #7 – Reach Codes - 1st Reading of Ords. 750 & 751 & Energy Assessment Policy
Correspondence Received before 2:00 p.m. on Monday, July 6, 2020**

We are very supportive of the City's efforts to reduce Piedmont's energy and carbon footprint. The proposed implementation plan, however, seems to need some focus in order to meet its goals.

In particular, the requirement to invoke new rules for renovations valued at \$25K is overwhelmingly burdensome unless it is made more nuanced to consider current energy utilization.

Our situation, which is shared by a number of our neighbors, is illustrative.

- The plan does not address a waiver for permits/improvements > \$25K that are for the sake of installation of solar roof panels. This improvement, which significantly reduces the carbon footprint, should clearly be exempt. Note that any reduction in electricity utilization from the grid reduces the need for natural gas- or coal-generation of electricity, thus obviously reducing the carbon footprint. Somehow, this sort of improvement should be "credited" to Piedmont's "reach"
- Similarly, homes that have already implemented solar panels should be evaluated differently from homes that still have this opportunity, or those that, by virtue of their geography, have no opportunity for solar generation of electricity. Such consideration might apply whenever a roof is replaced.
- There should be some adjustment for current energy utilization, by home and number of residents. Homes with energy utilization below some target, perhaps in the lowest half or quartile of utilization in the city, represent a much smaller potential for "reach" than higher utilizers. To require the same additional costly replacements in low-utilizing homes as in high-utilizing homes represents a high burden of expense per unit of carbon saved and is unfair to those of us who have already begun managing our utilization.
- In the same vein, many of us have eliminated incandescent lighting, substituted LED lighting, insulated our attics, caulked our windows, and installed ultra efficient gas furnaces, etc. To require us to remove brand new, efficient gas appliances that were thoughtfully purchased to reduce carbon utilization will be a significant financial burden to energy-conscious homeowners and will have minimal impact on Piedmont's numbers.
- My family, similar to others, has within the last 2 years replaced our 40 year old gas furnace with a new 97% efficient gas furnace, and has replaced our 10 year old conventional gas water heater (which required continuous heating of a 50 gallon tank) with an on-demand gas water heater which is much more efficient. To ignore these types of improvements, made prior to implementing the Reach plan, in favor of a blanket ban on gas appliances would cost us tens of thousands of dollars we've already spent--and would not result in significant, if any, reduction of energy utilization. Concretely (?!), to make us replace our brand new ultra efficient gas furnace or on-demand hot water heater when we fix our crumbled driveway seems entirely unreasonable.

The bottom line is that, in order to achieve Piedmont's Reach goal, we need to focus on interventions likely to produce significant energy savings, and we need a way to value the considerable expense many of us have already spent to achieve the same goals. Don't punish us for reducing our utilization prior to enactment of this new rule. And certainly don't punish us for

a solar panel installation that will cost > \$25K! Let's focus on interventions that will have real impact.

We look forward to working with the City for a fair, equitable, and effective program to reduce Piedmont's energy utilization and carbon footprint. We support transitioning from natural gas to electricity by substituting energy efficient electric appliances for older, legacy natural gas appliances in new construction or in renovations of larger impact, perhaps > \$250K.

Jay Goldman
Mona Goldfine

Dear City Council: Please consider my comments on proposed Ordinance No. 750 N.S.

- (1) Generally, I support amendments to move the City toward electrification of new and existing homes. The point is to reduce emissions of greenhouse gases and electricity can be (but is not always) generated from renewable resources. I note, however, that there are strategies to provide GHG-reducing natural gas, e.g., collection of leaking methane from landfills for provision through existing natural gas systems, which reduces the overall GHG impact of such methane. If such strategies are someday effective, the Council may wish to reconsider its plans. That day may never come, so electrification is prudent at this time.
- (2) The proposed amendments include requiring a rooftop PV system on certain new roofs. We have repeatedly considered installing a PV system on our existing roof and providers have stated that such a system would be ineffective given the large redwood tree in our backyard that shades the house. I hope you agree that cutting down trees to provide sunlight to a rooftop PV system is inadvisable given that (a) trees provide shade that negates the need for air conditioning, (b) trees absorb CO₂, and (c) we can get renewable energy through the electrical grid in any event. I think it is a fair question whether requiring a rooftop PV system when EBCE offers a Renewable 100 plan makes sense—PV generation plants are more cost-effective on a per watt basis than individual rooftop PV systems, and rooftop PV systems only offer protection from blackouts if the owner invests in battery systems, which have limited storage in any event. Regardless, I encourage you to add a waiver option to Exception 7 to Section 150.2(a), roughly adding the following at the end of the proposed language: “provided, however, that a waiver may be sought from the Planning Department if the roof is sufficiently shaded by vegetation that a photovoltaic system would not generate sufficient electricity to meet a significant portion of the building’s electrical demand.” You could try to define it by “efficiency” over daylight hours if you want a rule with less discretion. The basic point is to not require a homeowner to either put an expensive, but useless, system on a shaded roof, or cut down trees that otherwise reduce electrical consumption.
- (3) I am not clear why these changes are limited to low-rise residential buildings. As one example, if the City is able to fund renovated or new infrastructure, I would expect the City to meet similar requirements. If not a part of this Ordinance, I encourage the City to make those commitments elsewhere.

Thank you for considering these comments.

Richard W. Raushenbush

RE: "Requiring completion of a Home Energy Score or Audit (homeowner's choice) when listing for sale of a property or submitting an application for a design review permit."

This is going too far..if someone must have design review for some necessary repair they are thrown into a possible expensive replacement of existing items that are still functional.

Sylvia Fones

City Council Members

Thank you for the opportunity to comment on the Reach Code proposals* being discussed at the July 6 meeting.

Thank you to Kevin Jackson, Justin Szasz, and all the members of Piedmont city government who worked to engage Piedmont citizens in the process to develop the Reach Code proposals to be presented on July 6. I participated in one of the townhalls held in January 2020 and found it very informative. I found all members of the team facilitating the townhall to be open and interested in answering my questions. The current proposals are thorough and detailed and I appreciate the effort to incorporate some elements of flexibility that were not represented in the earliest proposals. I did express my concern regarding the challenges of applying strict electrification requirements on a retroactive basis to homes that are 50, 80, or 100 years old.

I do have some remaining questions that I believe are worth considering before either of the official amendments to city ordinances are adopted. They focus on two issues: 1) the design of the energy efficiency upgrades provision; and 2) electricity grid reliability.

1) Energy Efficiency Upgrades w/Renovations - The provision which proposes to require one or two energy efficiency upgrades from a city-defined list if the owners conduct a renovation costing \$25,000 or \$50,000 (respectively) does provide some flexibility for homeowners to choose the upgrades that make the most sense for their property. This is a better approach than a blanket electrification requirement. However, there are a few elements of this proposal that remain unclear:

a. The definition of a "package" of certain upgrades is not provided. The size of the "package" could have significant implications on the cost of the upgrades.

b. The **Executive Summary** of this provision states that "Multiple items are cost-effective." Later in the **Code Drafting and Public Engagement** section, it states that

“2020 Low Rise Residential Reach Code Cost Effectiveness Studies – prepared by Frontier Energy, Inc. and Misti Bruceri & Associates, LLC... found that the proposed all-electric new construction and solar installation draft Codes are cost-effective. These studies also found that all the insulation list items, and the high efficacy lighting list item, are cost-effective as well.” It does not state that the options for switching out a gas furnace or water heater for a heat pump (or other energy-efficient electric heating system) are cost-effective. It is unclear how these items could ultimately be required of a homeowner in the context of a Reach Code if they are not cost-effective.

c. While the cost-effectiveness study addressing energy efficiency upgrades is thorough and helpful, it is not clear why the thresholds of \$25,000 and \$50,000 for renovations were chosen. These are quite low given the cost of contractors and materials in the Bay Area market. Any additional information that could be provided to justify those choices would be appreciated.

d. Finally, the proposed amendment to Ordinance No. 750 N.S. appears to indirectly address one element of the energy efficiency upgrade provision in Section 150.2(b) [“requirements for water heating systems, space conditioning equipment, fireplaces and decorative gas appliances, and clothes drying appliances, and cooking appliances...do not apply to alterations”] it does not explicitly define the requirements for selecting items from the city-defined list of energy efficiency measures. This needs to be more explicit if it is to be effectively enforced.

2) In **Section 2: Findings** of the proposed amendments to Ordinance No. 750 N.S., it discusses a number of potential concerns associated with natural gas usage in homes. The geologic and topographical characteristics of Piedmont have not changed since its founding and, therefore, have been a part of the considerations associated with natural gas infrastructure since the 1920’s. Recent understanding of changes in the climate have contributed to new risks which are documented in the findings as well. One risk that is not included in the findings that should be is that of electricity grid reliability. The timeline for of all Piedmont’s homes to install and successfully operate stand-alone solar panels which charge a bank of batteries – and are unconnected to the grid – is likely far in the future. Consequently, the reliability of the grid will be important to Piedmont citizens for decades to come.

a. Power Shutoffs – I live in the part of Piedmont which experienced several, multi-day episodes of PG&E’s Public Safety Power Shutoffs in the fall of 2019. A drive toward electrification of all household power needs should consider that PG&E’s current plan to address fire risk from its transmission infrastructure covers 10 years and multiple billions of dollars. The likelihood of electric power interruptions during that period (or longer) is a real risk that should be considered. The challenges in obtaining permits new backup generators as well as the cost of the multiple battery arrays necessary to provide a sufficient amount and/or duration of electric power for a multi-day outage of unknown length are not insignificant.

b. Smart Grid Infrastructure – Another risk associated with the electrical grid is projected growing demand on the existing, aging infrastructure and the need to significantly upgrade the grid to accommodate multiple, distributed sources of renewable energy over time. The State of California has aggressive goals to drive increased use of renewable power and increased use of electric vehicles to meet its climate goals. PG&E's efforts to address immediate and significant risks related to wildfires cannot always be aligned with the most efficient approach to advancing the grid of the future. Consequently, this issue also contributes to risks of grid reliability.

I look forward to your thoughtful consideration of this and the other issues facing you in these challenging times.

Respectfully,

Pete Dahling

First of all, my many thanks to you City Council Members, who volunteer your time to take care of the City's business on behalf of its citizens, and to City Staff whose job is to follow State mandates for climate control and bring their renderings before the Council for deliberation and a vote.

The current Reach Codes, etc., were written during a time when we had a stable economy and "in person" participation in discussions at City Council Meetings was possible.

Now, the economy is teetering and we are all sequestered and Zoom meetings are the order. That is not participatory government. These are very different times.

In addition, the following questions need to be asked:

1. City Staff sent out a survey to Piedmont Citizens re the above.....178 were returned. How many were sent out?
2. City Staff had 5 focus group meetings.....how many attended?
3. How many advisement notices of these meetings were put in our our local newspaper and The Exedra?
4. Why has this matter come before the Council over a holiday weekend when people are focused on other activities

Piedmont has over 8,000 adult citizens; about 20% are Senior Citizens. Were the City's percentages of pro/con replies (shown at the bottom of report) based on the above number of replies?

Over a year ago, when we were given the choice of 3 tiers of electricity, Piedmont Citizens could make their own personal choice; however, you, the City Council, voted for the top tier (all renewable energy) for all Administrative Buildings, Fire Dept, schools, corporation yard, street lights, etc. We were told this would INCREASE our electricity city charges by ONLY 1 per cent. Could we have the figures showing the cost of this new policy vs. the former one. (Piedmont was the only city in the Bay Area to choose the higher more expensive tier.). This is important to know as the City Capital Commission brings up necessary capital improvements and their costs.

I know we need to address Climate Change, but some of these amendments incur additional expense for home owners and State and City intrusion into our personal lives.

During the Pandemic and these extraordinary times, NOW is not the time to implement these new Reach Codes. They need more discussion and input from Piedmont Citizens.

Thank you for listening to my concerns,

Diana Edgerton

Dear Council members and staff,

Excited to see so many items related to Climate Action on tonight's agenda, and wanted to provide some input.

Item #7 (REACH codes)

I am grateful for the work staff did to develop and propose REACH codes for our community, and to include items that impact renovations (more common in Piedmont) and not just new construction. I don't see any mention of electrical upgrades to facilitate the installation of EV chargers, either in the menu of options or in the electrical code changes. This seems like a critical oversight, as item #6 shows that emissions from transportation remain one of our biggest local hurdles.

Grateful for your service and leadership,
Susan Miller-Davis

Dear City Council:

I've reviewed the City Administrator's Council Agenda Report on July 6, 2020 agenda item #7, along with some of the referenced sources, and wish to make the following comments.

It is unclear from the Agenda Report how broadly the changes would apply. It says that it will apply to low-rise residential buildings, but it does not define this term. The PG&E document suggests that low-rise residential buildings are multi-family buildings up to three units. However, the use of this term in the Agenda Report suggests that it applies to single family homes. If that is the case, the Council should make this very clear, as it would have broad application. I would submit that due to the absence of such definition, Piedmonters have not been afforded adequate notice of these proposed changes.

The Agenda Report does not define "housing renovation." Without this definition, it is difficult, again, to determine how broadly the changes would apply. I would submit that due to the absence of such definition, Piedmonters have not been afforded adequate notice of these proposed changes.

The Agenda Report does not provide the text of the proposed ordinance requiring certain items to be completed in the case of housing renovations of low-rise residential buildings. This is baffling.

The Agenda Report provides conflicting threshold amounts at which two remediation items must be done. See pages 2 and 6 (one states \$50,000 and the other states \$100,000). I support setting the higher threshold at \$100,000, and believe the confusion in amount is a significant deficiency in the notice concerning the proposed changes.

With regard to the list of items:

- Solar panel installation should be among the items. I'm not an expert, but I suspect that solar panel installation would significantly increase a home's energy efficiency.
- Homeowners should be given credit for energy efficiency steps they have already taken, such as installation of double paned windows, installation of solar panels, or other items already on the list, regardless of when they were done. It seems unfair to require homeowners, who have already taken significant steps and incurred significant expense to lower their carbon footprint, to take still more steps.
- Consideration should be given to allowing the owner with renovations above the \$100,000 threshold to complete one, rather than two, of the items in the case of a more costly item (for instance, electing the package of attic insulation, air sealing and duct sealing would satisfy the requirement, instead of getting a home energy score and lighting improvements). The items should consider the *quality* of the energy efficiency step, not just count numbers of items.

With regard to amending Building Code division 8.08 to require the inclusion of a Home Energy Score or Home Energy audit with home sale disclosures: It's not clear what this change would accomplish, other than driving up costs for home sellers. Piedmont is a community of mostly older homes, and owners are limited in the energy efficiency steps they can take. It is unlikely that including a home energy score or home energy audit would deter buyers from proceeding with a purchase. Recently the Council is considering increasing the transfer tax, which already would increase the seller's cost of sale. I oppose burdening sellers with additional costs without compelling reasons, as is the case with this proposal.

Meanwhile: it seems hypocritical for the Council to aggressively push these changes, while allowing 3,000 gallons of chlorinated water to leak every day from the City pools. Due to the pandemic, the pool will not be able to reopen anytime in the near future. The environmentally correct course of action is to close and drain the pools while alternatives are being considered. I beg the Council to live its environmental values by taking this action immediately. It will not be irreversible, and it will eliminate the current detriment to our environment.

Thank you for this opportunity to comment.

Sincerely,
Kathleen Quenneville

Please consider raising the lower tier threshold to \$100k. In exchange, pass a building ordinance that any new water heaters or home heaters in Piedmont must be electric.

The low \$25k threshold adds a regressive cost to Piedmont households seeking a building permit. “Small” jobs are actually quite expensive in the Bay Area. The threshold as is will:

- Prevent minor upgrades from being carried out
- Prevent safety repairs from being done
- Cause people to avoid the permit process altogether

It may appear that there is a variety of options in the “energy efficient” list of items. In reality, many of us have already made most of the easy switches. In some cases like our own, people have installed more efficient gas models.

The requirement for solar panels on second story additions (or 30% additions to square footage) may not work in every case. We looked into it years ago and were told our large cedar tree prevents the investment from making sense.

Please consider the nuances of what you are requiring homeowners to do for small repairs. Homeowners who want to make necessary, not discretionary, improvements or make their homes safer will be unreasonably burdened by the additional expense.

Thank you,

Tom and Mary Brickley
