

City of Piedmont  
COUNCIL AGENDA REPORT

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DATE: July 20, 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.

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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 7-8 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 \$100,000 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

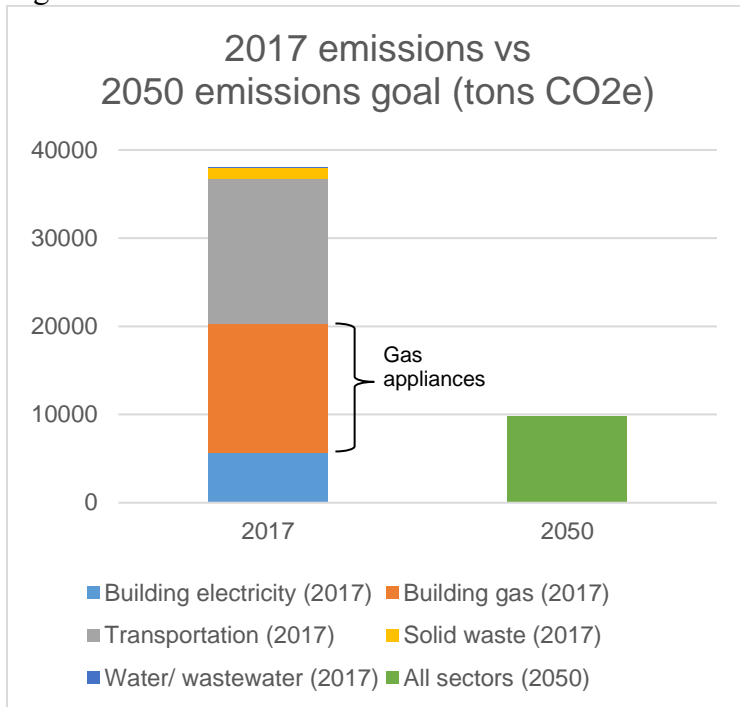
### **Piedmont’s Climate Action Plan and Greenhouse Gas Emissions**

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 CO<sub>2</sub>e 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 CO<sub>2</sub>e 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 29<sup>th</sup> and February 26<sup>th</sup>, 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 8.02.020, 2019 California Residential Code – Amendments, is proposed to be revised to add a new subsection D that amends the 2019 California Residential Code by adding new subsection R106.6 Renovation Energy Efficiency Upgrades and Electrification. Because of the insertion of a new subsection D, existing subsections D-II are proposed to be renumbered as E-JJ.

- 2019 California Residential Code section 106.6 is amended to require that a renovation of a low-rise residential building, with a stated project value of \$25,000 or more, submit documentation including in the scope of work one item from a list of energy efficient insulation or electrification measures. A housing renovation of a low-rise residential building with a stated project value of \$100,000 or more requires the inclusion of two items from this list.

#### Energy Efficient Measures and Electrification Items List:

- A. Install R-38 attic insulation, Apply air sealing practices in all accessible areas of the building. Seal ducts to meet the requirements of 2019 California Title 24 Section 150.2(b)1E.
- B. Install R-19 insulation at raised floor assemblies per 2019 California Title 24 Section 150.0(d).

- C. Install R-3 insulation on all accessible hot water piping. Install low flow water fixtures per 2019 CALGreen Section 301.
- D. Replace all screw in incandescent and CFL lamps with screw in LED lamps in all light fixtures. Install manual on vacancy sensors in all locations per 2019 California Title 24 Section 110.9(b)4.
- E. Replace Fuel Gas furnace with an electric high efficiency heat pump system. Exception: Replace Fuel Gas furnace with other high efficiency electric space heating system per approval of the Building Official.
- F. Replace Fuel gas water heater with an electric heat pump water heater. Exception: Replace Fuel Gas water heater with other high efficiency electric water heating system per approval of the Building Official.
- G. Submit a report from a Home Energy Score or Home Energy Audit completed within five years of Building Permit submittal. Incorporate one of the recommendations contained in the Score or Audit report, per approval of the Building Official.”

Piedmont City Code Sections 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 20, 2020, a second reading could occur as soon as August 3, 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](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](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](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](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](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](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](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](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](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](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)  
[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](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](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>

US Environmental Protection Agency. (n.d.). Overview of Greenhouse Gases. Retrieved from <https://www.epa.gov/ghgemissions/overview-greenhouse-gases>

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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 Residential Code Section R106, 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 Residential Code, 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 each of the below amendments, to the extent 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 for each of the below amendments, to the extent 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 8.02.020

Section 8.02.060 of the Piedmont City Code is hereby amended to add the following as subsection D, with the existing subsection D to be renumbered as subsection E and all subsequent subsections to be renumbered sequentially:

D. Section R106 – Construction Documents. Section R106 is amended to add the following subsection:

“R106.6 Renovation Energy Efficiency Upgrades

A renovation of a low-rise residential building, with a stated project value of \$25,000 or more, is required to submit documentation that one item from the following list of energy efficient measures is included in the scope of work. A housing renovation of a low-rise residential building with a stated project value of \$100,000 or more shall require the inclusion of two items from the energy efficient measures below in the scope of work.

Energy Efficient Measures:

- A. Install R-38 attic insulation, and apply air sealing practices in all accessible areas of the building. Seal ducts to meet the requirements of Section 150.2(b)1E of the 2019 California Energy Code.
- B. Install R-19 insulation at raised floor assemblies meeting standards of 2019 California Energy Code Section 150.0(d).
- C. Install R-3 insulation on all accessible hot water piping. Install low flow water fixtures meeting standards set forth in the 2019 Green Building Standards Code, Section 403.3.
- D. Replace all screw in incandescent and CFL lamps with screw in LED lamps in all light fixtures. Install manual on vacancy sensors in all locations per 2019 California Energy Code Section 110.9(b)4.
- E. Replace Fuel Gas furnace with an electric heat pump system meeting the Requirements of the 2019 California Energy Code Section 150.2(b)C or with other high efficiency electric space heating system per approval of the Building Official.
- F. Replace Fuel gas water heater with a heat pump water heater meeting the requirements of 2019 California Energy Code Section 150.2Hiii(b) or 150.2Hii(c), or with other high efficiency electric water heating system per approval of the Building Official.
- G. Implement one or more recommendations specified in a Home Energy Score or Home Energy Audit report that has been completed within five years and that is submitted with the application for a building permit, with the approval of such recommendation by the Building Official.”

SECTION 4. 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.

<u>Load</u>	<u>Percent of Load</u>
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/m<sup>2</sup> or 3 volt-amperes/ft<sup>2</sup> 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 5. 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-ELECTRIC 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 6. 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 7. 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 8. 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 #5 – Reach Codes - 1<sup>st</sup> Reading of Ords. 750 & 751 & Energy Assessment Policy  
Correspondence Received before 3:00 p.m. on Monday, July 20, 2020**

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Dear City Council:

I live in an old renovated 1929 home in which I have installed solar panels on my roof, insulation in the attic and in some walls, and am told that the existing stucco walls hold the heat better than new construction. I have done everything to make this home energy efficient. Nonetheless my heating bills remain through the roof with energy bills ranging between \$500 - \$2000 per month. In the winter I have electric space heaters and turn the furnace off so only the room I work in is heated. Nonetheless when I use the electrical space heaters my energy bill skyrockets and when I calculate the difference electrical energy is almost **twice** as expensive. Natural Gas is more efficient and most importantly **cheaper**. I cite you to the following:

A website called [Diffen](#) compared the natural gas and electricity costs related to heating and cooling. Although electric heating offers significantly lower installation costs, gas heating provides consumers with a much lower cost per 1 million BTU (\$18 in comparison to the \$32 consumed by electric heating systems). The results were based on reviews by more than 200 users in the United States — and suggest that natural gas tend to be more cost-effective in the long term, as you will be receiving lower monthly utility bills.

My own experience is that natural gas is cheaper and better. Your proposed all electric requirements will do nothing but make energy costs explode. Solar power does not offset the difference in price between natural gas and electrical energy as I have solar panels on my roof and when I utilize electricity it is still more expensive than natural gas. Until electricity is as cheap as natural gas I object to the proposal that would force us all to convert to an energy source that is twice as expensive and does not provide us an alternative for energy use.

Barbara S Farley

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Dear City Council,

I am writing to voice my strong opposition to the Reach Codes proposal.

I understand that the City wishes to promote more energy efficient buildings and help residents transition from natural gas to electricity. Those objectives are laudable. This should not be achieved, however, through mandates to community members, but instead should be achieved through voluntary choices. In my view, these are economic decisions to be made by homeowners and the City's municipal priorities can never change that fact.

I don't believe it is the function of city government to require its community members to incur expenses in order to achieve the City's climate action goals. On the other hand, I would strongly support the City's offering incentives to citizens, e.g., expedited permitting, discounts on permits, etc., so that community members are incentivized to make decisions that further the City's goals in this area.

Sincerely,

Sandra Rappaport

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Dear City Council,

We are writing to voice our strong support for the following climate actions that you will soon be voting on: Reach Codes to promote more energy efficient buildings and help residents transition from natural gas to electricity and a community pool complex powered by renewable energy. Climate change is one of our society's most pressing challenges. It is encouraging to see the city of Piedmont taking concrete steps to address this challenge and meet the targets of our Climate Action Plan.

Sincerely,

Marianne Mitosinka & George Wick

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Dear City Council,

I am writing to voice my very strong support for Reach Codes to promote more energy efficient buildings and help residents transition from natural gas to electricity. I also strongly support the requirement for a home energy audit at time of sale or major renovations (which may be only slightly incremental to current Title-24 requirements). You may also want to consider a [home energy labeling program](#)

One comment though is that you may want to review the list of measure options.

- The requirement for solar PV is perhaps questionable given that Piedmont has the default 100% renewable electricity option and the State is going to 100% carbon free electricity by 2045 - thus, the PV on roof criteria may be excessive.
- I have not done any analysis but floor insulation may not be a particularly important option in our climate.
- What does seem to be missing is any form of controls (e.g., lighting and thermostat controls) as one of the most important needs for the built environment is demand flexibility. For example, see <https://www.energy.ca.gov/proceedings/energy-commission-proceedings/2020-load-management-rulemaking> and <https://www.recurve.com/blog/californias-energy-efficiency-action-plan-moving-to-flexibility-and-achieving-our-goals>
- More people are putting in air conditioning in general, may want to consider addressing that

Thank you for your time and consideration.

Steve Schiller

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Dear City Council,

I am writing to voice my strong support for the following climate actions that you will soon be voting on:

\*Reach Codes to promote more energy efficient buildings and help residents transition from natural gas to electricity.

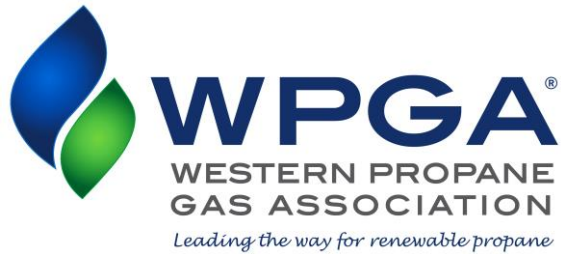
\*A community pool complex powered by renewable energy. Climate change is one of our society's most pressing challenges. It is encouraging to see the city of Piedmont taking concrete steps to address this challenge and meet the targets of our Climate Action Plan.

I also urge you to update plans to keep the City on its path to fight climate disruption, save funds, and help the environment.

Sincerely,  
Susan Ode

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July 20, 2020

Robert McBain, Mayor  
City of Piedmont  
Attn: Piedmont City Council  
120 Vista Avenue  
Piedmont, CA 94611  
[rmcbain@piedmont.ca.gov](mailto:rmcbain@piedmont.ca.gov)

**SUBMITTED VIA EMAIL**

**RE: City of Piedmont Development of All-Electric Reach Code**

Dear Mayor McBain and Councilmembers:

Thank you for the opportunity to provide input on the City of Piedmont's consideration of a proposed Building Electrification Reach Code. The Western Propane Gas Association (WPGA) seeks to be a valuable contributor in both the development of the Reach Code and the policies and procedures that may emerge as a result of these discussions.

WPGA would like to emphasize that while we applaud decarbonization efforts, we believe that the Council should take a comprehensive approach toward providing consumers with clean energy solutions and low-carbon fuel options.

The propane industry is proud of the role we play in providing an affordable, clean energy for communities across California. Propane is non-methane and provides residents with a reliable, non-toxic energy source at a cheaper rate than electricity. The advent of renewable propane has also dramatically changed propane's value proposition. As the California Energy Commission and Council continue to develop building decarbonization strategies, WPGA hopes the Council will recognize the role that both propane and renewable propane can play in reducing greenhouse gas emissions in the building sector.

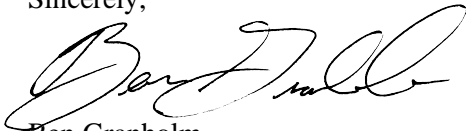
WPGA also has concerns with the cost effectiveness study that a number of local cities across California are using to adopt Reach Codes. The data in the study we have seen thus far does not appear to calculate the true cost of plumbing a house with propane. There is no substantial cost differential between building with propane in comparison to electric, especially once you factor in the cost of the energy. If the costs for all sectors are not analyzed in the study, it is impossible for local cities or the State to deem these efforts as truly "cost effective."

Last Fall, we saw millions of Californians left in the dark and cold due to Public Safety Power Shut Offs. These occurrences, which are expected to continue for at least the next 10 years, are a prime example as to why relying on a single power source is unacceptably risky and accentuate the need for both energy diversity and resiliency across the state. Whereas, countless individuals were able to power their homes, stay warm and ensure that essential life sustaining equipment was not turned off during the shut offs because their homes were also plumbed with propane. We believe the proposed Reach Code should ensure that residents across the state have much needed access to both clean energy diversity and resiliency options.

Climate change and decarbonization is a complex challenge that requires deployment of all clean energy sources. Wind, solar, and other renewable fuels – like renewable propane – all have to factor in the equation of how to combat one of the most critical issues of our time.

The Western Propane Gas Association appreciates your work in this area and hope the Council and staff take a holistic view of the complementary role propane plays alongside decarbonization efforts including solar, wind and other renewable fuels.

Sincerely,

A handwritten signature in black ink, appearing to read "Ben Granholm". The signature is fluid and cursive, with a large initial "B" and a long, sweeping tail.

Ben Granholm  
Regulatory Affairs Specialist

**Item #5 – Reach Codes - 1<sup>st</sup> Reading of Ords. 750 & 751 & Energy Assessment Policy  
Correspondence Received after 3:00 p.m. on Monday, July 20, 2020**

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Dear City Council -

I am writing to request that you support the proposed reach codes. Passing the reach codes will be another positive step forward in reducing Piedmont's GHG emissions toward reaching CAP goals.

Also, I support your decision to put a bond measure on the November ballot for the pool complex. However, given that California is phasing out natural gas to reduce GHG emissions, it would make sense for our new pool complex be designed to run on renewable energy and include other energy and water reduction features.

Finally, I also request that you approve installation of the EV chargers including the fast charges proposed in downtown Piedmont.

Best regards,  
Indira Balkissoon

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City Council Members - Thank you again for your thoughtful consideration of the multiple, significant proposals that you have had to consider recently. I submitted some comments on the Reach Codes prior to the previous meeting on July 6. As a follow up to the discussion from that meeting I have two additional comments/questions:

- 1) Could Kevin Jackson explain a bit more about why “partial” electrification of houses is not cost effective. At the meeting on July 6 there was some discussion on how this was driven by the nature of electric rates.
- 2) It is important for transparency in discussion of new policies that costs to citizens be made clear. This issue surfaced in the discussion of the survey taken of Piedmont citizens regarding climate policies. The only policy where there was any significant concern expressed was the natural gas use tax where the cost to citizens was made clear. The Reach Codes will also impose additional costs on citizens associated with a given house project. Many of those costs will pay off over time. However they are real, additional up front costs.

Again, thanks to the staff for incorporating some additional flexibility into the original Reach Code proposals.

Peter Dahling

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Dear City Council,

I am writing to voice my very strong support for Reach Codes to promote more energy efficient buildings and help residents transition from natural gas to electricity. I also strongly support the requirement for a home energy audit at time of sale or major renovations. I appreciate the

leadership you and City staff are showing at developing Reach codes tailored to Piedmont's uniquely built-out environment.

I think it's excellent that our Reach codes would encourage residential solar adoption, which has numerous benefits even as more sources of commercial renewables come online, including the potential for improved local resiliency, lower stress on the transmission system, and producing energy when it is most in demand.

Many thanks,

Susan Miller-Davis

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