City of Piedmont
COUNCIL AGENDA REPORT

DATE: June 21, 2021

TO: Mayor and Council

FROM: Sara Lillevand, City Administrator

SUBJECT: Receipt of a Report on the 2019 Greenhouse Gas Emissions Inventory, and Piedmont's Climate Action Plan 2.0 Implementation Status

RECOMMENDATION

Receive an informational update on the 2019 greenhouse gas emissions inventory and the status of the implementation of Piedmont's Climate Action Plan (CAP) 2.0. No action required.

BACKGROUND

On January 4, 2016, Council approved joining the Compact of Mayors, a global coalition of mayors and city officials with the mission to reduce local greenhouse gas (GHG) emissions, enhance resilience to climate change, and track progress publicly. This initial 3-year commitment turned into an ongoing commitment with the same organization under a new name: Global Covenant of Mayors for Climate & Energy, under which the City has set a new GHG reduction target, has completed an updated CAP that includes new adaptation strategies for addressing climate hazards, and commits to completing annual GHG inventory updates.

On March 19, 2018 Council adopted the Piedmont Climate Action Plan 2.0 (CAP 2.0), which includes the goal of reducing GHG emissions 40% below 2005 levels by 2030 and 80% below 2005 levels by 2050.

This report provides information on the 2019 GHG emissions inventory, including estimates for both community and municipal emissions. Compiling annual GHG inventories allows Piedmont to track progress towards meeting its climate action goals, and it also fulfills the Covenant of Mayors reporting requirements. Previous inventories were completed in 2005, 2010, and annually from 2014 through 2018. The 2019 GHG emissions inventory is the first to be completed following Piedmont's community and municipal enrollment in East Bay Community Energy's (EBCE) 100% renewable energy service plan. Enrollment took place in 2018, offering electricity procured from renewable sources including wind and solar power.

PREVIOUS GREENHOUSE GAS EMISSIONS INVENTORIES

Included below are the inventories for 2005 (baseline year), 2010 (year CAP was first adopted), as well as 2014-2018. Please note that our priority goal is to reduce emissions 40% below 2005

levels by 2030, which would mean the City cannot emit more than 29,291 metric tons of carbon dioxide equivalent (CO_2e) in a year.

- **2005:** With funds provided by the Alameda County Waste Management Authority (StopWaste), Piedmont completed a 2005 GHG emissions inventory in 2006. The 2005 inventory is used as the City's baseline, against which later inventories are compared in order to measure the City's progress towards meeting its GHG emissions reduction goal. The updated inventory indicates that 2005 GHG emissions in Piedmont totaled approximately 48,818 metric tons of CO_2e. Within this total, municipal facilities emitted approximately 1,025 metric tons of CO_2e.

- **2010:** With funds provided by Pacific Gas & Electric's (PG&E) Green Community Program, StopWaste assisted its member local governments in the completion of municipal and community GHG emissions inventories for the 2010 calendar year. Piedmont completed its 2010 GHG emissions inventory at the close of 2013. The inventory indicated that GHG emissions in 2010 were 46,901 metric tons of CO_2e, a reduction of 3.92% from 2005 levels. The City's municipal activities in 2010 resulted in approximately 1,056 metric tons of CO_2e, a 3% increase since 2005.

- **2014:** Piedmont completed a 2014 GHG inventory for both community and municipal emissions in the summer of 2016 through the efforts of the City's 2015 CivicSpark Fellow. In 2014, Piedmont produced approximately 39,456 metric tons of CO_2e, a reduction of 19.2% below 2005 levels. The 19.2% decrease in GHG reductions was due in part to ongoing conservation and energy efficiency efforts by Piedmonters and the result of fewer heating degree days (reduced gas consumption) due to exceptionally warm seasonal temperatures that year. The City's municipal activities in 2014 resulted in approximately 1,076 metric tons of CO_2e, a 1.89% increase since 2010. This increase was driven almost exclusively by the addition of energy consumption at the Aquatics Center and the Center for the Arts to the City's municipal building portfolio in 2010 and 2011, respectively.

- **2015:** Through the efforts of the City's 2016 CivicSpark Fellow, Piedmont finalized a 2015 GHG inventory for community and municipal emissions in early 2017. The updated 2015 inventory indicates Piedmont emitted approximately 38,492 metric tons of CO_2e in total, a reduction of 21.15% below 2005 levels. The primary driver of this significant reduction was warmer weather in 2015, which resulted in a decreased demand for residential heating and, consequently, less natural gas usage. Municipal activities resulted in approximately 960 metric tons of CO_2e, a 6.3% decrease since 2005. Community and municipal results from the 2015 GHG inventory were used as the basis for Piedmont's CAP 2.0.

- **2016:** The City's CivicSpark Fellow completed the 2016 GHG emissions inventory in the spring of 2018. In 2016, Piedmont produced approximately 37,025 metric tons of CO_2e, a reduction of 24% below 2005 levels. Both total municipal and community emissions decreased slightly from 2015 to 2016. These decreases seem to have been mainly due to outside factors, particularly the increase in renewable sources in PG&E's energy mix. This caused significant decreases in emissions in both the residential and commercial electricity sectors since 2015.

- **2017:** In April of 2018, East Bay Energy Watch (EBEW) announced that they had selected a consultant team (Placeworks) to help prepare the 2017 GHG inventories for all 35 East Bay Communities participating in EBEW. For the 2018-2019 year, Piedmont secured a CivicSpark Fellow. Through this collaborative effort, Piedmont completed the 2017 Municipal GHG emissions inventory in January of 2019. In 2017, Piedmont produced approximately 38,101 metric tons of CO_2e, of which 879.5 metric tons are attributed to municipal activities. This is a reduction of 22% below 2005 levels, and an increase of 2.9% from 2016 total emissions.

- **2018:** The 2019-2020 CivicSpark Fellow completed the 2018 GHG emissions inventory in the spring of 2020 and presented the inventory to Council in July of 2020. Once again, EBEW helped prepare reporting documents for the City during this inventory. In 2018, Piedmont produced about 34,340 metric tons of CO_2e, of which 934 metric tons of CO_2e are attributed to municipal activities. This was a reduction of 29.66% below 2005 levels, and a reduction of 9.8% from 2017 in-territory emissions.

2019 GREENHOUSE GAS INVENTORY

Piedmont City staff completed the 2019 GHG emissions inventory in the spring of 2021, attached as Exhibit A. In 2019, Piedmont's in-territory emissions were approximately 34,197 metric tons of CO_2e, of which 1,139 metric tons of CO_2e are attributed to municipal activities. This was a reduction of 30% below 2005 levels and a very slight reduction (less than 1%) below 2018 in-territory emissions. The reductions since 2005 are largely attributed to decreases in emissions from building appliances.

Reductions between 2018 and 2019 are largely a result of Piedmont's enrollment in carbon-free electricity services offered by EBCE starting in late 2018. An overwhelming share of Piedmont's electrical customers (93%) are enrolled in EBCE's 100% renewable energy service plan. A breakdown of Piedmont's electrical service accounts are shown in Table 1. This transition to 100% renewable energy reduced the emissions associated with residential and commercial electricity by 83% since 2018. Concurrently, the City Council's decision to enroll all municipal electricity accounts in the 100% Renewable Energy service plan led to a 99% reduction in emissions from electricity in municipal buildings and facilities.

However, although there were significant building energy emission reductions as indicated above, this did not result in an overall reduction of municipal in-territory emissions by at least 10%, as anticipated by staff in 2018. In fact, overall municipal emissions increased by 22% since 2018. The primary driver of this increase was a doubling of municipal transportation emissions, namely from the City's vehicle fleet and employee commute.

Additionally, municipal and residential natural gas use both increased by 4% since 2018. This includes emissions from natural gas appliances such as water heaters, furnaces, stovetops, dryers, gas fireplace inserts, gas fire tables on patios, and gas patio heaters. Staff also cite this increase in municipal natural gas as a contributor as to why the 10% reduction in municipal emissions anticipated from the city-wide transition to carbon-free electricity were not met.

Table 1. Piedmont's electrical customers by service option

Product	2019 Power Content	Number of Customers
EBCE Renewable 100	100% renewable	3,546
EBCE Brilliant 100	75% renewable, 25% large hydroelectric	94
EBCE Bright Choice	60% renewable, 25% large hydroelectric, 13% unspecified sources of power, 1% nuclear	197
PG&E	44% nuclear, 29% renewable, 27% large hydroelectric	200

Figure 1 below shows the City's emissions trend since 2005. For a more detailed comparison of the results of the 2019 GHG inventory to previous years, please refer to Exhibit A, pages 17-27.

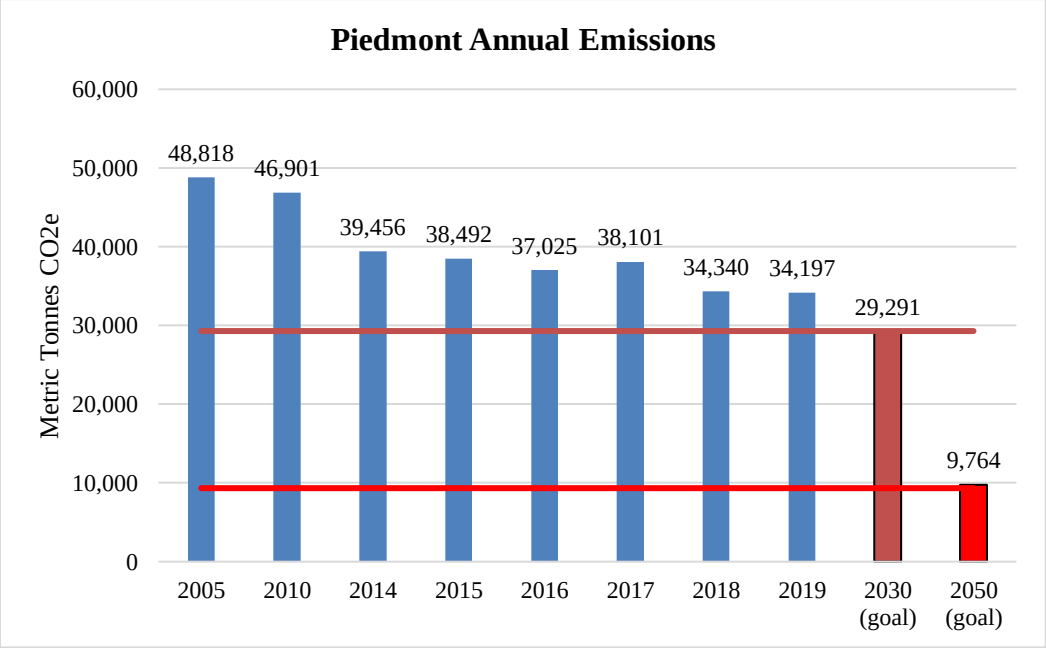


Figure 1

What follows is an overview of the two sectors included in the 2019 GHG Emissions Inventory: the Community Inventory, which includes residential, business, and municipal activities in the City, and the Municipal Inventory, which only covers activities stemming from City staff and facilities. It is important to note that municipal emissions are included in the Community Inventory, however, the Municipal Inventory is also prepared separately to inform the City on what it can do to improve emission reductions and lead by example. Both inventories were conducted by City Staff.

Community Emissions Update

In 2019, as seen in Figure 2 below, the sectors that contributed most to Piedmont's community in-territory GHG emissions were Transportation & Mobile sources[1] (49%) and Residential Energy (45%). Residential Energy in 2019 resulted in approximately 14,870 metric tons of CO_2e, while Transportation emissions resulted in approximately 16,217 metric tons of CO_2e. In 2019, Transportation surpassed Residential Energy to become the primary source of emissions.

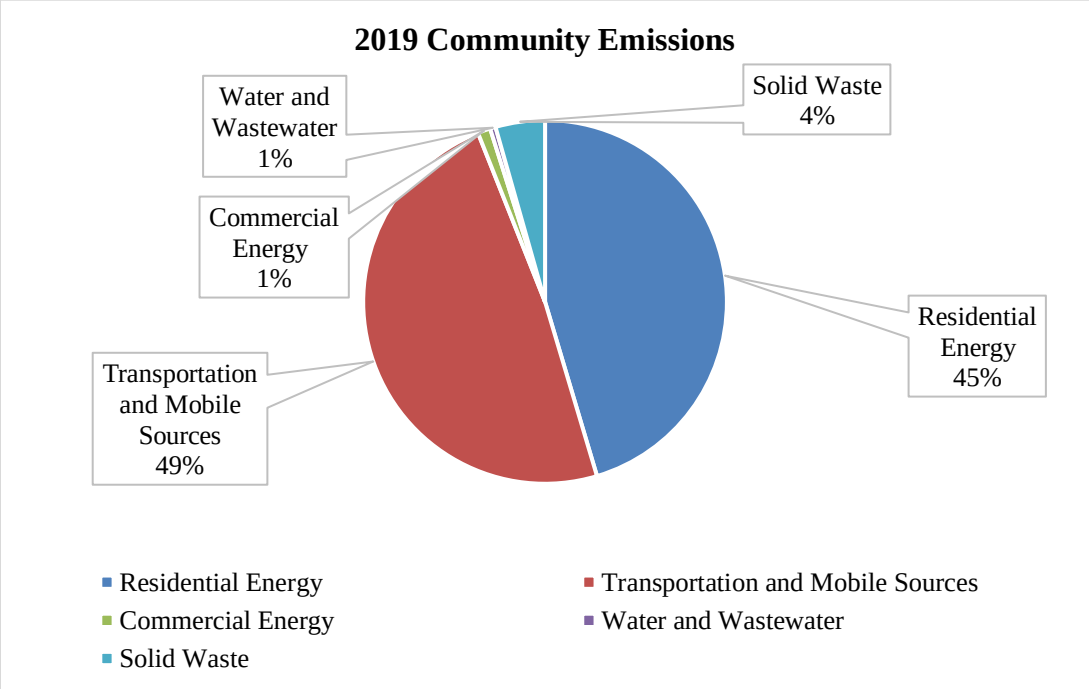


Figure 2

As shown in Figure 3 below, residential energy and transportation have consistently remained the biggest sectors in terms of contributions to GHG emissions since 2005. Figure 3 shows the emissions in 2019 (maroon bar) compared to previous years. In each sector in 2019 emissions remained at approximately the same level as previous years or were lower, except for transportation, in which emissions increased.

[1] Mobile sources include both on and off road sources such as passenger cars, trucks, buses, lawn and garden equipment, construction, and more. https://www.arb.ca.gov/msprog/msprog.htm

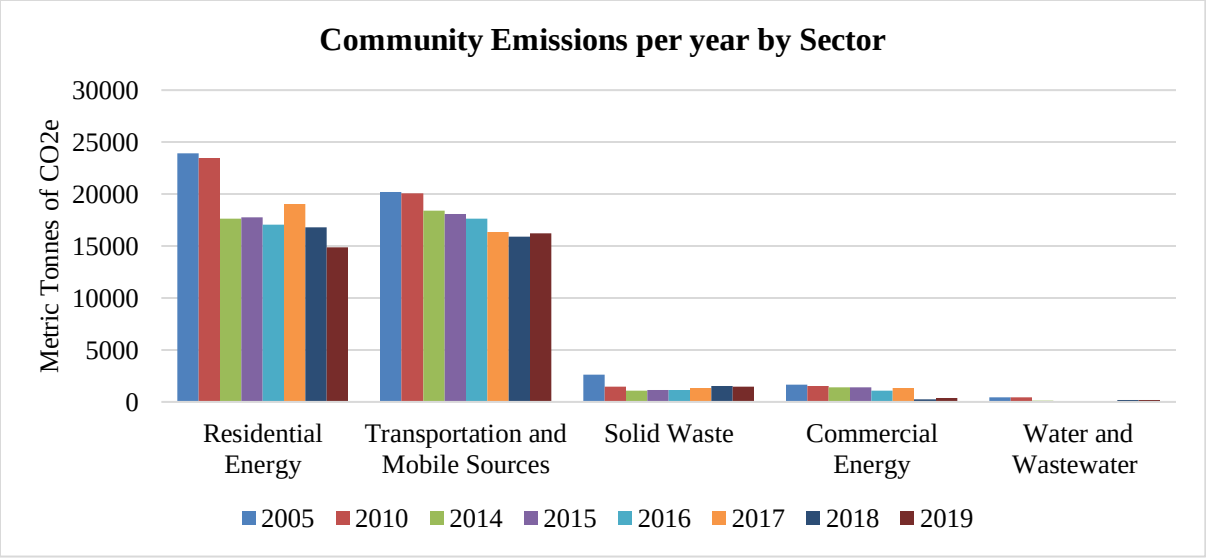


Figure 3

Figure 4 below is a comparison of the 2018 and 2019 community emissions. The decrease in residential energy emissions from 2018 to 2019 is largely attributed to the migration from PG&E electricity service in 2018 to EBCE electricity service in 2019 generated by 100% renewable sources. While Council decisions such as the 2018 EBCE enrollment approval and 2021 Energy Reach Codes will have effects on building energy usage, significant changes are needed to reduce community emissions, especially in the areas of natural gas and gas-powered vehicle use. Emissions in the transportation sector have inched downward since 2014, but increased slightly since 2018. The increase in transportation emissions may be a result of an ultimate increase in vehicle miles traveled (VMT) countywide, since emissions are based on VMT and the county is the smallest area for which VMT is determined. Significant reductions in transportation emissions will require an accelerated uptake of more sustainable modes of transit/transportation.

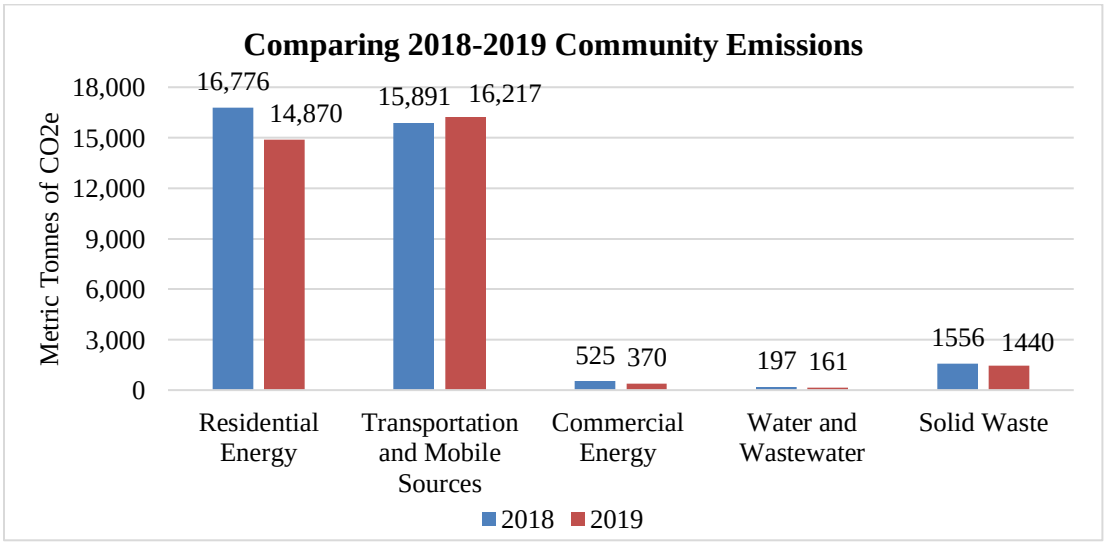


Figure 4

Water and wastewater have always constituted a very small portion of community-wide emissions: since 2014 the portion has ranged from 0.1-1% of community-wide emissions.

Similarly, solid waste constitutes a small share of community-wide emissions. According to Republic Services Annual Report, Piedmont's solid waste diversion rate in 2019 was 75.12%, meaning that three quarters of residential waste was diverted from landfills and either composted or recycled. The City's diversion rate has remained consistent during the past decade.

The method of GHG emissions inventory used in Piedmont does not take into account emissions generated outside the City boundaries due to the consumption habits of people living and working within City boundaries. If consumption was included in the inventory, emissions would be about seven times higher than they are currently.[2] According to data from a UC Berkeley study of consumption-based emissions, Piedmont continues to be the highest emitter per capita in Alameda County and one of the highest throughout the Bay Area.

Municipal Emissions Update

Municipal activities in 2019 resulted in approximately 1,139 metric tons of CO_2e, or 3.3% of total community in-territory emissions. This is an increase of 22% from total in-territory municipal emissions since 2018. This increase in emissions can largely be explained by an increase in VMT by the Police Department – 60,000 more miles were driven in 2019 than in 2018. This resulted in an 84% increase in municipal transportation emissions since 2018. Figure 5 below shows a breakdown of 2018 and 2019 municipal emissions.

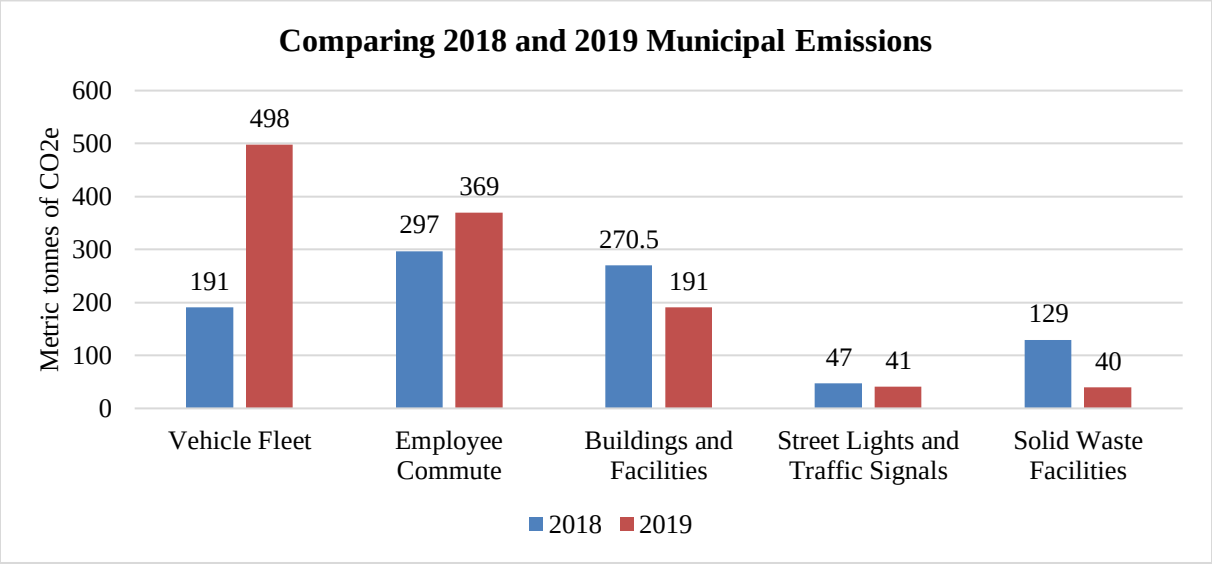


Figure 5

Figure 6 below shows a breakdown of the municipal in-territory emissions. Like previous years, the biggest sector contributing to total municipal emissions were Transportation (76% of the total),

[2] Jones, C. M, & Kammen, D. M. (2015). A Consumption-Based Greenhouse Gas Inventory of San Francisco Bay Area Neighborhoods, Cities and Counties: Prioritizing Climate Action for Different Locations. *UC Berkeley*. Retrieved from https://escholarship.org/uc/item/2sn7m83z

followed by Building and Facilities (17% of the total). The 2019 municipal emissions from transportation are separated into two sectors: employee commute and vehicle fleet.

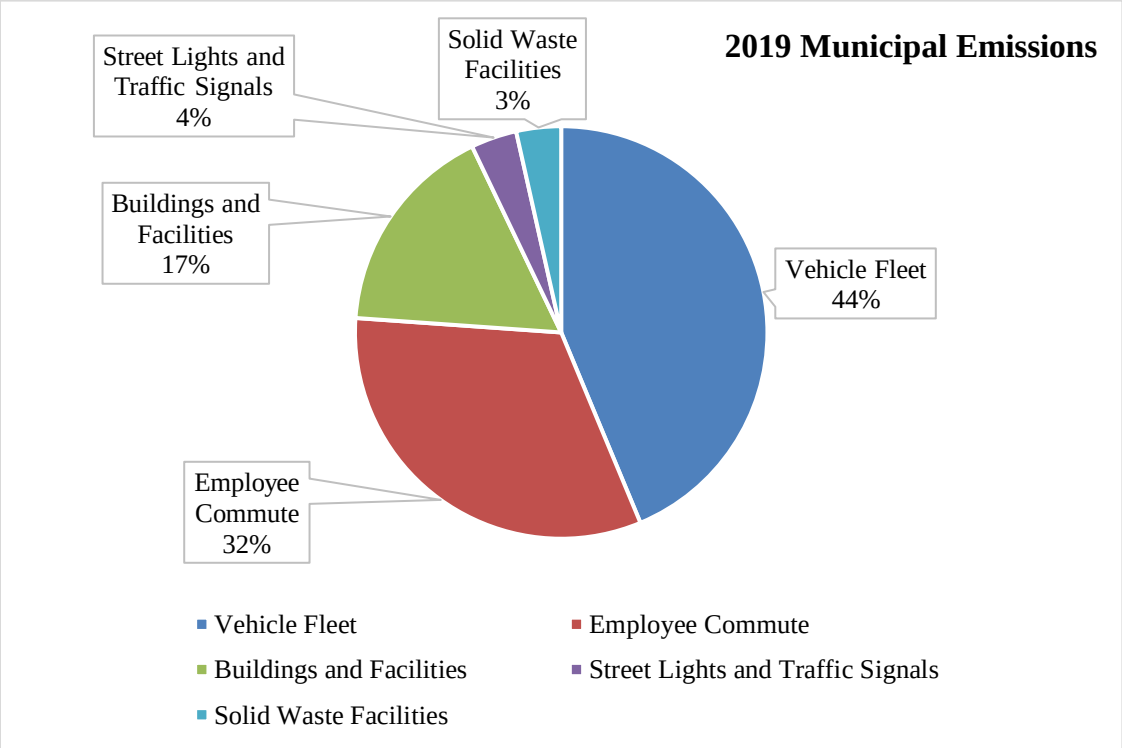


Figure 6

Employee commutes comprised nearly a third of municipal emissions, possibly attributed to the high cost of living in Piedmont and nearby communities, causing employees to live further away, and thus drive greater distances. Almost half of employees reported a one-way drive to work of over 20 miles. Driving a car can be more convenient than public transit for such a distance, which could explain the high mileage.

Another increase since 2018 was the municipal vehicle fleet, which had some of the highest emissions recorded by staff in recent years (as shown in Figure 7 below). This was largely due to an additional 60,000 VMT compared to 2018, largely from the Police Department. Piedmont Police Chief Bowers attributes part of this to a local jail closure in July 2019. For the second half of 2019, bookings had to be made at the Santa Rita jail in Dublin, about 28 miles away from Piedmont. Coupled with this the Police Department had staffing changes in 2019 which resulted with new employees. The field training program for new staff demands a significant amount of increased activity and driving to teach, assess, and allow employees to acclimate to the city and community.

A sector where municipal emissions fell was municipal buildings and facilities. Since 2018, building emissions decreased approximately 27% due to municipal accounts enrolled in EBCE's 100% renewable energy service plan. Despite the lower emissions from municipal electricity use, natural gas use remained largely consistent in municipal structures compared to 2018.

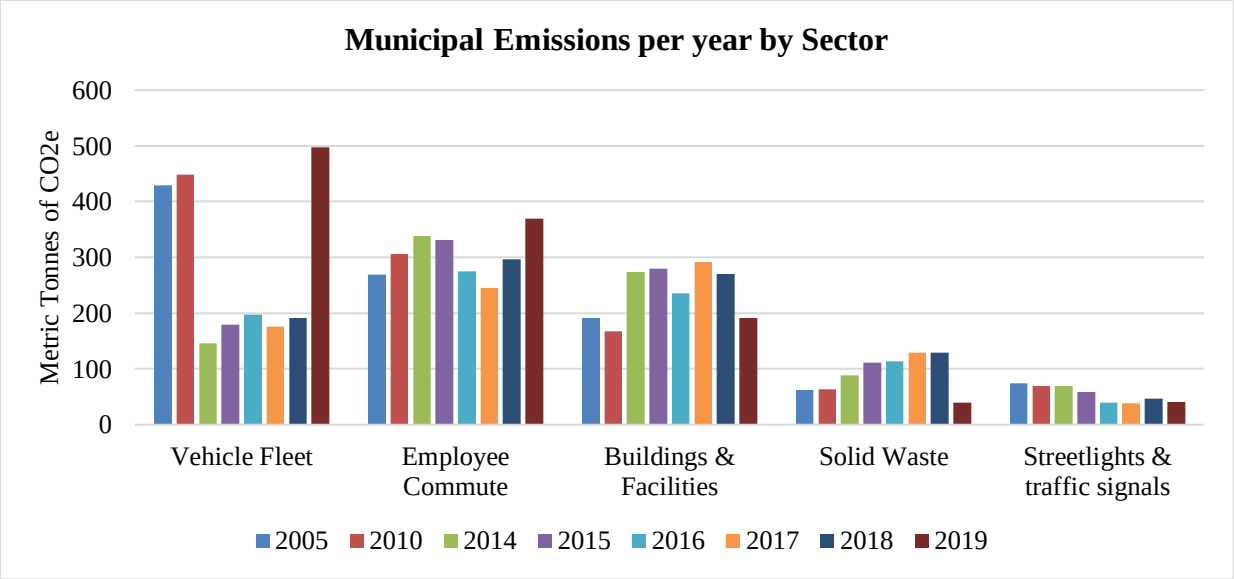


Figure 7

Municipal emissions increased by 22% in 2019 over the previous year. However, municipal emissions account for just 3.3% of community emissions overall. In spite of the small footprint, municipal activities and facilities can be improved so that the City government leads by example. Areas where efforts can be focused include reducing natural gas usage in City facilities and finding ways to reduce emissions from the City vehicle fleet and the vehicles employees use to commute to and from work. Given the COVID-19 pandemic, staff anticipate a significant decrease in municipal emissions from transportation and buildings and facilities in 2020.

CONCLUSIONS

Between 2018 and 2019, Piedmont experienced a 0.42% decrease in metric tons of CO_2e (2018's 34,340 to 2019's 34,197 metric tons). Aside from a drop in emissions from electricity, there were no sizable changes between 2018 and 2019 emissions. Transit emissions increased slightly, and solid waste and water emissions decreased slightly. While any decrease in emissions is promising, larger improvements need to be made.

The 2019 GHG inventory was the first full year accounting for the community-wide switch to electricity from EBCE generated by 100% renewable sources. Community-wide emissions from electricity dropped by 2,097 metric tons of CO_2e, or 84%, between 2018 and 2019. However, overall emissions did not drop by as much of a substantial margin as anticipated. Instead, emissions from both vehicle use and natural gas use increased, almost negating the positive effects of the carbon-free, renewable electricity.

More changes need to be made at the community level, particularly transitioning residents from gas-powered vehicles to electric vehicles and shifting from natural gas to electric appliances in their homes. Educational efforts alone are unlikely to be enough to reduce emissions to levels that meet our goals. A November 2020 survey of Piedmont registered voters conducted by FM3 Research found two-thirds of survey respondents agree that reducing natural gas use is important, but knowing the importance of the action and putting it into practice are different. Residents are

aware of the need, but switching to a lower emitting practice can be costly and time consuming. Unless the City is able to offer financial incentives or other ways to support residents in this transition, it seems unlikely that an adequate shift will occur.

On the municipal side of the inventory, building energy use and solid waste emissions both decreased, but vehicle fleet and employee commute emissions increased. Working with employees to reduce their mileage and switch to zero-emission vehicles both in their work tasks and in their commuting habits can have a sizable impact on municipal emissions. Emission reductions may be made if the City were to provide incentives to reduce emissions in commuting, such as providing charging stations for electric vehicles, promoting work at home, providing subsidized public transit passes, or maintaining a daily reporting system to keep track of mileage. Emissions from the City vehicle fleet can be minimized by reducing vehicle miles traveled, the retirement of gas and diesel-fueled vehicles, and the adoption of zero-emission vehicles.

The GHG emission inventories completed so far reveal that, for the most part, the changes from year to year are caused by external forces, and that the City still has a long way to go to make substantive changes to the building energy sector and the transportation sector so that it can meet CAP 2.0 goals. Although education and outreach efforts are important and should be continued, it appears that significant reductions in emissions will not occur without incentives or regulatory efforts from the City Council and the State and Federal governments. If Piedmont wants to reach its CAP 2.0 goal of reducing its emissions by 40% from 2005 levels by 2030 (29,291 metric tons of CO_2e annually), it needs to decrease 2019's emissions by 14.35% (approximately 4,906 metric tons of CO_2e).

Additionally, although Piedmont conducts a GHG inventory annually, the current method of inventory doesn't account for consumption by community members that results in emissions outside the City border. If consumption emissions were included in this report, the emissions numbers would be about 7 times higher than they are currently. A consumption-based emissions inventory would reveal that personal choices related to the purchase of products and travel services have as much, if not more, impact on global emissions than do in-boundary activities and energy use.

CAP 2.0 IMPLEMENTATION UPDATE

The Climate Action Plan 2.0 provides actions and strategies to achieve reductions in greenhouse gas emissions. Since the CAP 2.0 was adopted in March 2018, the City has engaged in outreach efforts to implement some of the energy efficiency measures as well as looked for opportunities to expand its municipal climate actions. Below are some highlights.

Implemented

Energy Reach Codes Adoption

In February 2021, the City Council adopted energy reach codes (Ordinance 750 N.S.) designed to reduce natural gas usage in residential buildings. Ordinance 750 N.S. requires certain energy efficiency measures to be included in new construction and existing residential building renovations. The City is one of the first in California to adopt reach codes to existing residential buildings. Staff shared the City's accomplishment in virtual presentations to StopWaste and San

Mateo County's Energy Regionally Integrated Climate Action Planning Suite (RICAPS). In May, the California Energy Commission (CEC) and Building Standards Commission (BSC) approved Ordinance 750 N.S., which became effective on June 1, 2021.

Home Energy Assessment Policy Adoption
Concurrent with the reach codes, Council passed a Home Energy Assessment Policy (Ordinance 751 N.S.) in February 2021. Ordinance 751 N.S. requires each person who sells or transfers an interest in real property in Piedmont to provide a Home Energy Score or a Home Energy Audit prepared in the past five years to potential buyers and the City's Planning & Building Department, in addition to all other disclosure documents. The Home Energy Score or Home Energy Audit are not required if the home was constructed in the past 10 years. This effort is in line with Building and Energy Action-1.1.A and Building and Energy Measure-2.1 in the CAP. Ordinance 751 N.S. became effective on March 3, 2021.

Adoption of Energy Assessment Policy for Design Review Permits
In July 2020, the City Council adopted a policy requiring an energy assessment to be conducted and submitted for projects which require design review permits and which may have an energy impact. 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 air quality, and reduce the building's GHG emissions.

Induction Cooktop Lending Program
In collaboration with EBCE, the City launched a new induction cooktop lending program for Piedmont residents in April 2021. Any resident can try out an induction cooktop for free. Each kit includes a state-of-the-art induction cooktop, a compatible pot and pan, a magnet to test out cookware to see if it will work on the cooktop, and informational pamphlets. Induction cooktops heat the pan instantly and deliver twice the thermal efficiency of gas cooktops. They also eliminate the carbon monoxide and other toxins emitted by gas stoves. Paired with EBCE's 100% renewable energy service plan, the induction cooktop is carbon neutral. More information can be found on the City's Cooktop Lending Program website page.

Earth Day Virtual Events
Staff held several Earth Day events to highlight the CAP 2.0 and teach the community about our changing climate. About 50 residents participated in the City's Earth Day scavenger hunt, which included clues regarding Piedmont's environmental and social history. Designed by Piedmont Connect and City staff, and put on with the help of the Piedmont Recreation Department, this was the first annual Earth Day scavenger hunt. In addition to the scavenger hunt, City staff organized two virtual Zoom events on Earth Day to both educate and gather feedback from about 20 residents. Participants discussed the City's CAP 2.0 in the first event, and fire management practices with several guest speakers, including newly appointed Piedmont Fire Chief Dave Brannigan, in the second event.

Survey of Piedmont Voters regarding Climate Action Measures
Staff commissioned consulting firm FM3 to design and carry out a representative survey of Piedmont's residents (384 respondents, margin of error 5%) in November-December 2020, to ascertain residents' opinions about climate change, the Climate Action Plan, the draft Reach

Codes, a public EV charger program, and a utility tax on natural gas use to generate revenue to implement the electrification of building appliances. More in-depth results of that survey are provided as Exhibit C, pages 40-82.

Sustainability Program Manager Hired
In November 2020, the City hired its first full-time staff member dedicated to sustainability. Alyssa Dykman is the Sustainability Program Manager and contributes to multiple measures of the CAP 2.0, dividing her time between climate action, solid waste, and the clean water program.

Continuing and Upcoming Events and Efforts

Climate Fellowship and Sustained Emissions Reduction Efforts
Although not a measure within the CAP 2.0, continued participation in the Climate Corps or CivicSpark Fellowship programs advances staff's capacity to achieve CAP 2.0 measures and goals. With this support, City staff continues to conduct annual GHG inventories to track the City's progress in meeting the 2030 and 2050 emissions reduction goals. Participation in the fellowship programs also serve to sustain awareness of the CAP 2.0 and help identify areas of improvement. As the GHG inventorying methodology advances to include consumption-based emissions, staff will endeavor to incorporate these emissions into future community inventories. Since 2015, the climate fellows have been and continue to be critical to staff's capacity in completing emissions inventories and in implementing the City's Climate Action Plan.

Green Infrastructure
The City of Piedmont is making near-term progress to implement Green Infrastructure (GI) in the City. Water conservation and storm water management are important to both the CAP 2.0 and to Piedmont's GI Plan, which mandates storm water practices such as bioswales and rain gardens in certain development projects. Capturing and treating storm water runoff on-site through green infrastructure helps to reduce flow volumes and pollutant loads to downstream surface waters. All public works projects since 2019 have been evaluated for GI attributes. Completed GI projects include a bioswale, bioretention area, and permeable park path in Dracena Park; a bioswale with runoff from impervious surface located at the Ramona-Ronada Triangle; a pervious planting area at the Linda-Kingston Triangle; and permeable pathways at Crocker Park Path and Hampton Park. Staff have been collaborating to develop a more tailored approach for GI project selection and options for prioritization in Piedmont.

On-going Community Engagement
The City, with the help of the Climate Fellow, has continued to conduct CAP 2.0 community engagement and education events during the pandemic. Given pandemic restrictions, these engagement and educational events have been focused in virtual formats and print materials. This has included the formation of a weekly feature in the Piedmont Post, the 'Climate Corner', focused on raising awareness of CAP 2.0 actions and issues, as well as partnering with Piedmont Connect on movie screenings and FAQs. The City also maintains a webpage to keep residents up to date on the CAP and what measures City staff are undertaking. Also see the description of the Community Climate Challenge below.

Continued partnership with Piedmont Connect (https://www.piedmontconnect.org)
Piedmont Connect is a not for profit collaborative community organization supporting resident initiatives and City efforts to build a sustainable future. Piedmont Connect has partnered with the City on several recent efforts, including Earth Day celebrations, an educational movie screening, the Piedmont Climate Challenge, and bolstering community support for the Reach Codes. Piedmont Connect maintains an active newsletter and has been instrumental in ongoing sustainability outreach, especially during the COVID-19 pandemic. City staff meets with Piedmont Connect monthly to collaborate on projects and work towards a more environmentally-friendly future.

Piedmont Community Climate Challenge (www.piedmontclimatechallenge.org)
The Piedmont Climate Challenge is an online GHG tracking platform where residents can log and track any actions they take to reduce GHG emissions in their lives. This platform was first used in late 2019 and helps fulfill Building Energy Action-1.2G, Solid Waste Action-1.2F, Water and Wastewater Action-1.2D, and Municipal Action-6.1A in the CAP 2.0. We recently completed our second full cycle of the Climate Challenge, and over 320 users have participated so far. This is a great way to have the community reflect on emissions and work to take action to reduce them. While we have not seen meaningful differences in natural gas usage in spite of this platform, determining a way to tie it with incentives could be worthwhile.

Public EV Charging Stations
City Staff has been working with EBCE to plan the installation of publicly-accessible EV charging stations in the Civic Center area served by dual-port direct current fast charging kiosk-style ground-mounted chargers. This installation will provide publicly-accessible EV-only parking spaces available to anyone with an EV in an area of Piedmont where there is the opportunity for high utilization and demand. The EV chargers are proposed to be installed, owned, maintained, and operated by EBCE at no cost to the City. Further, to incentivize EV adoption, City staff plans to research the demand for publicly accessible EV charging stations in residential neighborhoods and the feasibility of their installation. The City also maintains a streamlined permitting process for the installation of EV chargers on private property. As of May 2021, the City was awarded California's first ever Zero-Emission Vehicle Permitting Olympics Gold Medal Award, in recognition of the City's contribution to Alameda County's 100% EV Charging Station Permit Streamlining achievement and meeting the requirements of Assembly Bill 1236.

Reach Code and Home Energy Policy Assessment Outreach
To continue to raise awareness and understanding of the adopted reach codes and home energy policy assessment, City staff are providing educational materials about the policies to contractors, developers, realtors, and residents. This includes outreach through social media, local newspapers, and updates to the City's Reach Codes Information website page, along with responding to numerous questions from the public via email. Staff will work closely with BayREN and StopWaste to continue education efforts and promote opportunities for contractors to choose electric alternatives. Additionally, staff will monitor and evaluate the effectiveness of these codes throughout the coming years. At the same time, staff are also preparing for the next California Building Standards Code cycle, which will take effect in January 2023. Staff are also exploring other code changes and policies that – while not Reach Codes – would also reduce natural gas use and increase energy efficiency in Piedmont buildings.

Senate Bill 1383
Senate Bill (SB) 1383 is a state law that aims to achieve a statewide reduction in emissions of short-lived climate pollutants, particularly emissions resulting from decomposition of organic materials by reducing the amount of organic materials in the landfill. The intent of SB 1383 is to reduce GHG emissions in light of climate change and help California meet its 2045 carbon neutrality goal, i.e., offset all emissions with negative emissions or do not emit carbon emissions. This effort is especially important because short-lived climate pollutants like methane traps far more heat than carbon dioxide and can have a larger impact on climate change. California local jurisdictions have significant, new requirements to implement additional waste reduction programs and enhanced reporting and enforcement protocols to comply with the state legislation. City staff is participating in a regional task force convened by StopWaste to assess the impacts to current programs and policies. Updates on SB 1383 will be provided to the Council later this year.

NEXT STEPS AND RECOMMENDATIONS

Based on the findings from the 2019 GHG emissions inventory, actions considered to be "low-hanging fruit" have already been taken and further action is needed in order for the City to be on track to meet its CAP 2.0 goals. The City Council may want to direct staff to pursue some or all of the following list of actions intended to accelerate progress towards CAP implementation:

Municipal Facilities and Opportunities to Reduce Emissions
While municipal activities in 2019 resulted in 3.3% of total community in-territory emissions, the City has opportunities to demonstrate leadership and commitment to reducing GHG emissions through implementing energy efficiency and electrification efforts in municipal facilities and operations.

Investing in electric City vehicles and working with employees to reduce their mileage both in their work tasks and in their commuting habits can have a sizable impact on municipal emission reductions, as transportation is the biggest sector contributing to total municipal emissions. Providing incentives for electric vehicles and increasing the availability of charging infrastructure could help promote lower emission methods of getting to and from work. Additionally, promoting working from home when possible, providing subsidized transit passes, and maintaining a daily system to report mileage could aid in lowering employee emissions.

Emissions from the City vehicle fleet can be reduced by decreasing vehicle miles traveled, the retirement of gas and diesel-fueled vehicles, and the adoption of zero-emission vehicles. The CAP 2.0 Action MUN-3.2A calls for the development of a fleet purchasing policy that prioritizes fuel efficiency and zero emission vehicles. This could also involve a comprehensive fleet electrification assessment and review of the cash flows related to fleet electrification (e.g., infrastructure costs, smart charging software costs) as a capital improvement project. Staff have requested technical assistance from EBCE to conduct a fleet assessment in 2022, which would include developing a plan to transition the City fleet between now and 2030.

Emissions from building appliances and systems can be reduced by developing a plan to adopt electric alternatives to traditionally natural gas powered systems, such as HVAC and water heaters. This action can significantly reduce municipal building emissions over the next twenty years.

In the past five years, the City has developed conceptual master plans for several aging facilities including the Piedmont Community Pool. Action MUN-2.1E of the CAP 2.0 calls for the City to investigate strategies for reducing energy use at the City aquatic facilities. With the passage of Measure UU in 2020, Piedmont has the fortuity to minimize GHG emissions and incorporate energy and water conservation design elements into the construction of a new aquatics center.

Electrification Incentive Opportunities

Incentives and rebates to promote electrification can help establish a transition to electric appliances and technologies by alleviating financial barriers. Supporting this notion are findings from the representative sample of Piedmont's registered voters surveyed in November-December 2020 by FM3 (see Exhibit A, pages 17-27). A top concern of the proposed electrification Reach Codes among survey respondents was up-front cost. A majority of respondents also called for financial resources available to the public in the form of rebates and incentives when making the switch to electric appliances a convincing reason to support adopting the Reach Codes. Staff sought to address this concern by providing information on external rebates and incentive programs on the City website. However, these external programs have not resulted in a significant transition to electric appliances and the City Council may want to consider additional funding sources for financial incentive programs to facilitate residents' adoption of electric appliances, coupled with an extensive marketing and outreach campaign. The City Council might also consider the development of a plan to install publicly-accessible EV chargers in residential neighborhoods to incentivize the use of EVs. This is supported by measures of the CAP 2.0, which call for incentives to convert existing residences and commercial buildings from natural gas to electric appliances (Action BE-1.3B and Action BE-2.3B). Examples include:

a. Reduced building permit fees for the installation of photovoltaic systems, heat pump water heaters, and heat pump furnaces. Recognizing that reduced building permit fees may not be much of a financial incentive because fees are a small part of the up-front costs, City staff could explore the feasibility of:
b. Revenue generating instruments to finance rebates for the replacement of gas-fueled furnaces and hot water heaters with electric heat pumps, and other energy efficiency or electrification building improvements. Options include an increase in the Gas User Tax – an idea supported by 44% of Piedmont registered voters (FM3 survey, June 2020); or to establish a carbon tax on natural gas through a City vote (Action MUN-7.1B).

Policies

The CAP 2.0 is a commitment to incorporate sustainability into policies and regulations to foster GHG emission reductions throughout Piedmont. A dependence on economic conditions, outside agencies, and individual behavior is unlikely to achieve Piedmont's emissions reduction goals. However, aspirational policies can also be a key driver of change. Piedmont's CAP 2.0 includes actions calling for the consideration of:

a. A resolution committing Piedmont's municipal facilities and activities to be zero-carbon by 2050 and develop interim milestones (Action MUN-1.1A);
b. A policy replicating the State's goal of having all new residential construction be Zero Net Energy (Action BE-1.2F);
c. A policy requiring Zero Net Energy construction for new commercial construction (Action BE-2.2F);

d. A commercial energy assessment ordinance requiring commercial structures to disclose building energy consumption at the time of sale, major remodel, rental, or other trigger point (Action BE-2.1A);
e. Regulations that require the installation of energy conserving appliances and fixtures at point of replacement in commercial buildings (Action BE-2.2F);
f. A resolution to achieve 85% waste reduction and diversion by 2030 (Action SW-1.1A);
g. An ordinance requiring greywater or water collection systems in new construction (Action WW-2.2A).

Additionally, the City Council may want to consider a resolution recognizing the climate crisis and declaring a climate emergency. This commitment would allow Piedmont to lead by example and join nearly 2,000 jurisdictions and local governments around the globe which have made such a declaration.

Research and Development
Given the evolving and dynamic nature of the changing climate, ongoing research and development is necessary to ensure the City is utilizing the most current, comprehensive, and creative approaches in implementing the CAP. To provide an additional layer of oversight, the City Council may want to consider the formation of a climate action committee. Such a committee could serve as a technical advisory body and a liaison to the community on matters relating to sustainability and implementation of the CAP and other sustainability measures.

Moreover, as noted in the GHG inventory updates, the method of GHG emissions inventory used in Piedmont does not take into account consumption completed outside the City. A consumption-based inventory would be an additional tool by which the City could help reduce global emissions and slow climate change by accounting for emissions to be placed with the source of the demand rather than the supplier of goods and services to Piedmonters. Staff could research the feasibility, costs and benefits of conducting a consumption-based GHG inventory (Action C-1.1A) in addition to the traditional in-boundary emissions inventory.

ATTACHMENTS

Exhibit A	Pages 17-27	City of Piedmont 2019 Greenhouse Gas Emissions Inventory
Exhibit B	Pages 28-39	City of Piedmont CAP 2.0 Implementation Progress
Exhibit C	Pages 40-82	Citywide Voter Survey Analysis

By: Nate Redinbo, CivicSpark Fellow
Alyssa Dykman, Sustainability Program Manager

City of Piedmont: 2019 Greenhouse Gas Emissions Inventory Update

Executive Summary

In 2010, the City of Piedmont adopted its Climate Action Plan (CAP), which set a goal of reducing greenhouse gas (GHG) emissions occurring within Piedmont (hereafter called "in-territory emissions") 15% below 2005 levels by 2020. In 2014 and 2015, the City of Piedmont met its 15% reduction target, however in both years this was principally the result of extensive reductions in natural gas use in response to warmer weather. In 2018, the City of Piedmont adopted its CAP 2.0, which provided an update to the original plan. The CAP 2.0 sets new targets of reducing in-territory GHG emissions 40% below 2005 levels by 2030 and 80% below 2005 levels by 2050.

In order to determine the City's progress in meeting both the previous and current emissions reduction goals, a greenhouse gas inventory was conducted in 2005 in order to establish a baseline emissions level. Subsequent inventories were completed for the years 2010, and 2014 onwards. Most recently, Piedmont's CivicSpark Fellow completed the 2019 GHG inventory. Performing annual GHG inventories helps fulfill the City's commitment to the Global Covenant of Mayors for Climate & Energy (formerly known as the Compact of Mayors). The chart below shows in-territory emissions from the past years and the current in-territory emissions goals laid out in the CAP 2.0: to reduce in-territory emissions to just 29,291 metric tons of Carbon Dioxide equivalent (CO_2e) by 2030, and just 9,764 metric tons of CO_2e by 2050. The red line indicates the 2030 goal and the green line indicates the 2050 goal.

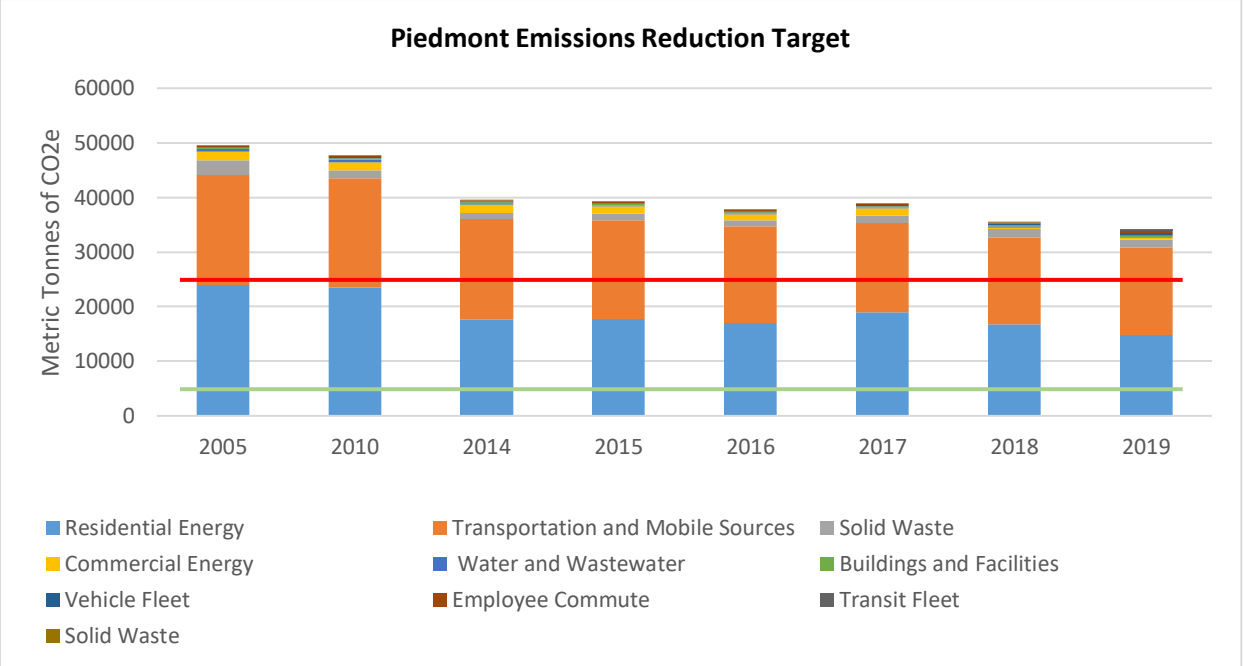


Figure 8

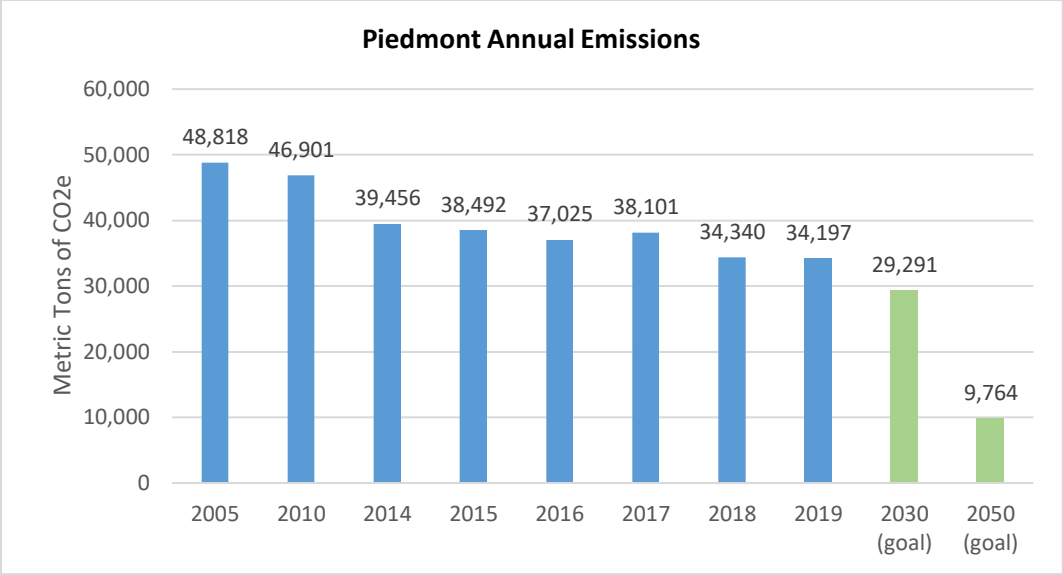


Figure 9

Previous Inventories

A base year GHG inventory for the City of Piedmont was completed by independent consultant AECOM for the year 2005. The results of this inventory indicated activities in Piedmont resulted in in-territory emissions of approximately 48,444 metric tons CO_2e. As a primarily residential community, Piedmont's largest source of in-territory emissions was building energy consumption. The second largest contributor was the transportation sector. Together, non-residential energy use, water consumption, and waste sent to landfills contributed less than 10% to overall in-territory emissions.

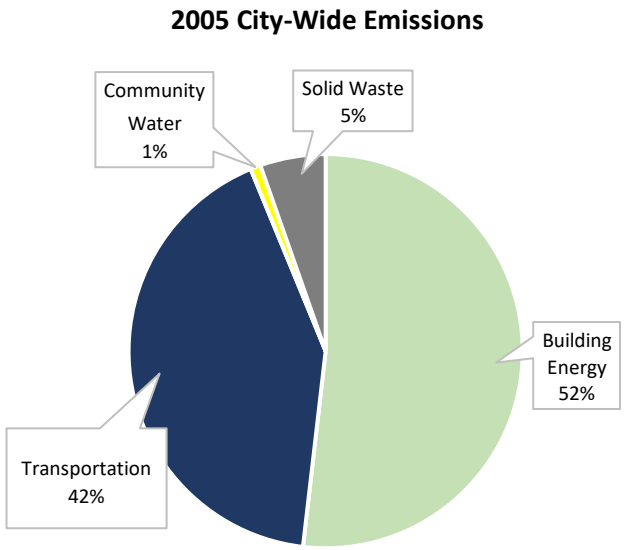


Figure 10

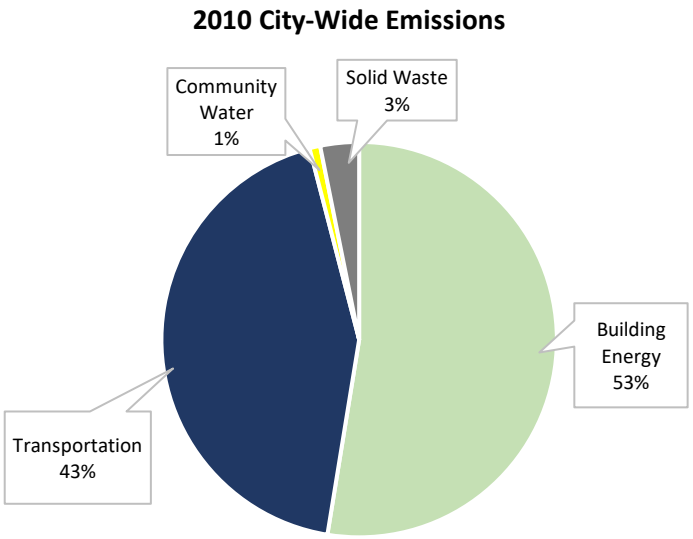


Figure 11

In 2010, a new methodology for creating an inventory for government and community GHG emissions, the U.S. Community Protocols for Accounting and Local Government Operating Protocols, was adopted as the standard across the San Francisco Bay Area. The new methodology was applied to the 2005 inventory and baseline emissions were updated to 48,818 metric tons of CO_2e. Using this calculation method in 2010, analysts found that community activities resulted in in-territory emissions of approximately 46,901 metric tons of CO_2e, a 3.9% reduction in in-territory GHG emissions from 2005 levels. This reduction can largely be attributed to an increase in hydropower in Pacific Gas and Electric Company's (PG&E) energy mix during this "wet" year. As seen in Figure 11, the distribution by sector was similar to 2005 with a slight decrease in waste produced by the community as a result of the 2008 roll-out of new recycling and organic waste programs.

In 2014, Piedmont had in-territory emissions of approximately 39,456 metric tons of CO_2e, a reduction of approximately 19.2% below 2005 levels. This was the first year Piedmont reached its 2020 GHG reduction target outlined in the CAP. In the 2010 Climate Action Plan, targets were set for 2020 and 2050. The decrease in GHG reductions was due in part to ongoing conservation and energy efficiency efforts by Piedmonters and the result of exceptionally warm seasonal temperatures. The City's municipal activities in 2014 resulted in approximately 1,076 metric tons of CO_2e.

In 2015, Piedmont had in-territory emissions of approximately 38,492 metric tons of CO_2e, a reduction of 21.2% below 2005 levels. This indicates that for the second year in a row Piedmont had reached its 2020 GHG reduction target, as seen in Figure 12. Municipal and community in-territory emissions decreased from 2014 to 2015. The reduction in emissions from the 2005 baseline is mostly the result of the continued trend in decreased

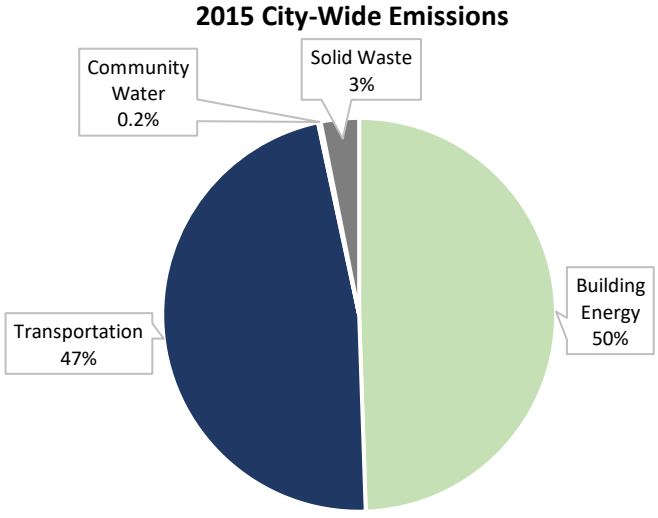


Figure 12

natural gas usage. However, it should be noted that Piedmont's total natural gas usage (commercial and residential combined) did increase 5.9% from between 2014 and 2015.

Piedmont completed the 2016 GHG Emissions inventory in the winter of 2017, once again made possible through the City's participation in the CivicSpark program. In 2016, Piedmont had in-territory emissions of approximately 37,025 metric tons of CO_2e, a reduction of 24.2% below 2005 levels. This indicates that for the third year in a row Piedmont had reached its 2020 GHG reduction target. Both total municipal and community emissions decreased from 2015 to 2016. Although natural gas usage in 2016 was still significantly lower than in 2010, it should be noted that emissions from natural gas increased 10% between 2014 and 2016. The reduced in-territory emissions between 2015 and 2016 are largely the result of an increase in hydropower in PG&E's energy mix. As a result, between 2015 and 2016 the emissions associated with residential electricity use decreased by 28%.

In April of 2018, East Bay Energy Watch (EBEW) announced that they had selected a consultant team (Placeworks) to help prepare the 2017 GHG Inventories for all 35 East Bay Communities participating in EBEW. For the 2018-2019 year, Piedmont secured a CivicSpark Fellow. Through this collaborative effort, Piedmont completed the 2017 Municipal GHG Emissions Inventory in January of 2019. In 2017, Piedmont had in-territory emissions of approximately 38,101 metric tons of CO_2e, of which 879.5 metric tons are attributed to municipal activities. This is a reduction of 22% below 2005 levels, and an increase of 2.9% from 2016 total emissions.

2017 City-Wide Emissions

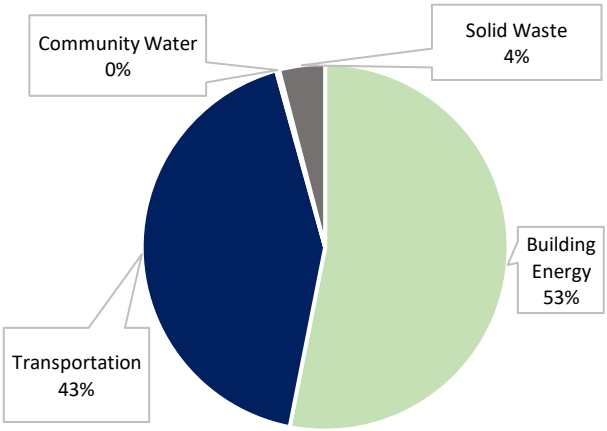


Figure 13

In 2019, EBEW and Placeworks worked with the Piedmont CivicSpark Fellow to complete the 2018 emissions inventory. In 2018, Piedmont had in-territory emissions of approximately 34,340 metric tons of CO_2e, of which 934 metric tons of CO_2e are attributed to municipal activities. This is a reduction of 26.44% below 2005 levels, and a reduction of 9.8% from 2017 in-territory emissions.

2019 Greenhouse Gas Inventory

In 2020, EBEW permanently closed. Piedmont's 2020-2021 CivicSpark Fellow, Nate Redinbo, worked with City staff to complete the 2019 GHG emissions inventory and present it to the City Council.

34,197 Metric Tons of CO_2e
0.42% decrease from 2018
30% decrease from 2005

The results showed that in 2019, Piedmont's in-territory emissions were approximately 34,197 metric tons of CO_2e, of which 1,139 metric tons of CO_2e were attributed to municipal activities. This was a reduction of 30% below 2005 levels, and a reduction of 0.42% from 2018 in-territory emissions. The reductions since 2005 are largely due to decreases in emissions from building appliances, and shift in electricity sources in 2018.

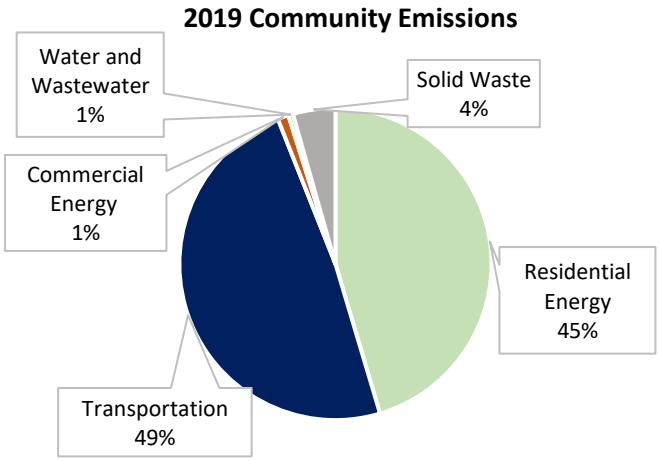


Figure 14

More specifically, the small reduction between 2018 and 2019 was largely due to the November 2018 community shift to renewable power through EBCE electricity. This shift reduced emissions stemming from electricity production substantially. In spite of this change, two of the largest sources of emissions (residential natural gas usage and residential vehicle usage) both increased since 2018, meaning that the overall decrease in emissions was smaller than anticipated. In order to have a larger impact on natural gas emissions, Council passed energy Reach Codes in 2021 designed to reduce residential natural gas usage over time.

Community Emissions

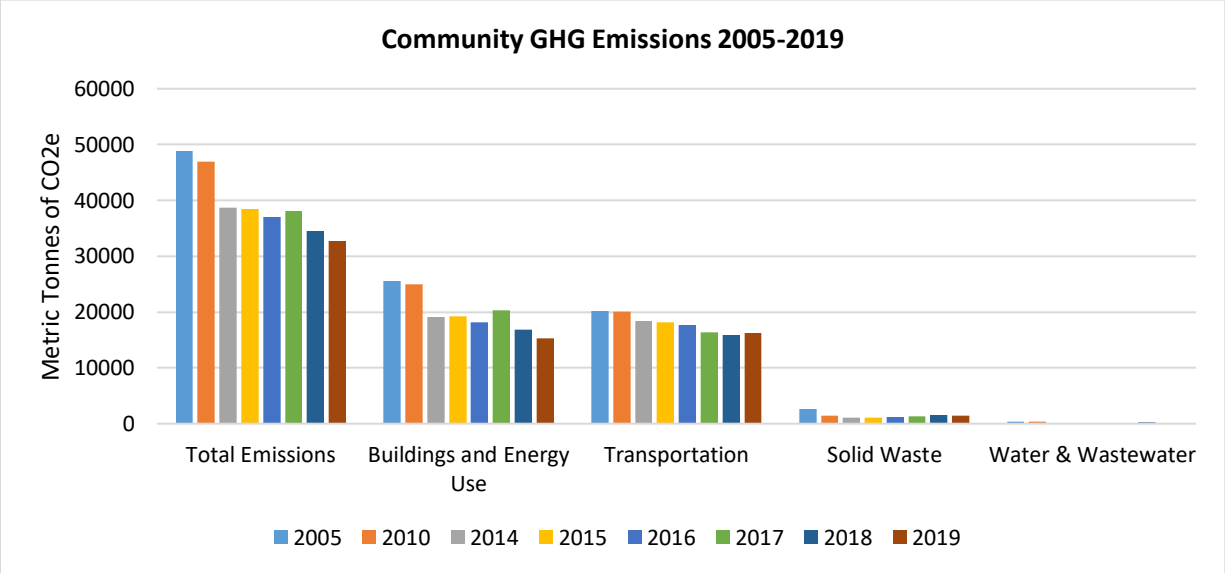


Figure 15

As seen in Figure 15 above, community-wide emissions decreased across all sectors, except for transportation. The biggest sectors contributing to in-territory emissions were building energy and transportation. Transportation does not include off road emissions, which are emissions from fuel use (gasoline, diesel, and compressed natural gas) from vehicles and equipment that are not used for transportation. Water and solid waste are minor contributors to Piedmont's community greenhouse gas portfolio. Combined, these sources account for less than 10% of total emissions. Solid waste emissions come from the breakdown of organic material in landfills.

Please see below for specific information on each sector:

Transportation

16,217 Metric Tons of CO_2e
49% of 2019 total emissions
2.1% increase from 2018

Transportation sector emissions, modeled by Metropolitan Transit Commission (MTC), are the result of travel that begins or ends in the City, or is associated with Piedmont residents' activity. This includes personal vehicle travel, commercial transport within the City, and Piedmont residents' use of public transportation, AC Transit and BART. In 2019, transportation sector emissions contributed 49% to the community's total in-territory emissions. This is consistent with previous inventories, which all found that transportation contributed between 40% and 50% of total in-territory emissions.

In-territory transportation emissions come predominately from personal vehicle use. In 2019, staff used county data to approximate Piedmont residential travel. As with elsewhere in the country, vehicle miles traveled (VMT) increased from 2018 to 2019 in Piedmont. The factors used to calculate vehicle emissions are VMT and on-road emissions factors (grams CO2/mile). The increase in transportation sector emissions from 2018 to 2019 may be explained by an increase in commercial vehicle usage.

The electric vehicle (EV) rebate information we have suggests that Piedmont residents are using clean vehicle rebates. In 2020, there were over 150 rebates used in the three zip codes that include Piedmont, according to the California Clean Vehicle Rebate Project. The actual number of EVs in Piedmont is likely greater considering those car owners who chose not to redeem their rebates, were not eligible for rebates, or purchased their EVs outside the date range analyzed.

It should also be noted that emissions from airplane travel are not included in this inventory. Airplane travel contributes a large portion of many US residents' total greenhouse gas footprint. Were emissions from airplane travel included in this inventory, the inventory would likely find much higher community greenhouse gas emissions from transportation. Although car travel is included in the inventory, it is important to consider the other methods residents use to get around, and how to limit emissions stemming from those methods.

Continuing to encourage EV purchases and usage, as well as promoting public transit use is important. As Piedmont continues to improve streets, sidewalks, and bike infrastructure, deliberate decisions by the Public Works and Planning & Building Departments can help encourage residents to choose more eco-friendly modes of transportation. Additionally, residents may respond to financial incentives. Staff will continue to conduct outreach on rebates and other financial opportunities residents can use. Although community vehicle use is one of the highest causes of emissions in Piedmont, there are ways to decrease these emissions.

Building Energy

Greenhouse gas emissions associated with building energy come from burning fossil fuels to create electricity that powers electric appliances and from burning natural gas to directly power natural gas appliances. Eliminating both of these causes will have drastic positive effects on Piedmont's GHG emission rates.

15,240 Metric Tons of CO_2e
46% of 2019 total emissions
12% decrease from 2018

Between 2005 and 2019, Piedmont's emissions from building electricity has decreased, while emissions from natural gas has fluctuated, as seen in Figure 16. Building energy emissions in 2019 was 40% below 2005 emission levels. Much of the decrease in emissions from 2005 to 2018 owes to generally lower electricity and natural gas usage.

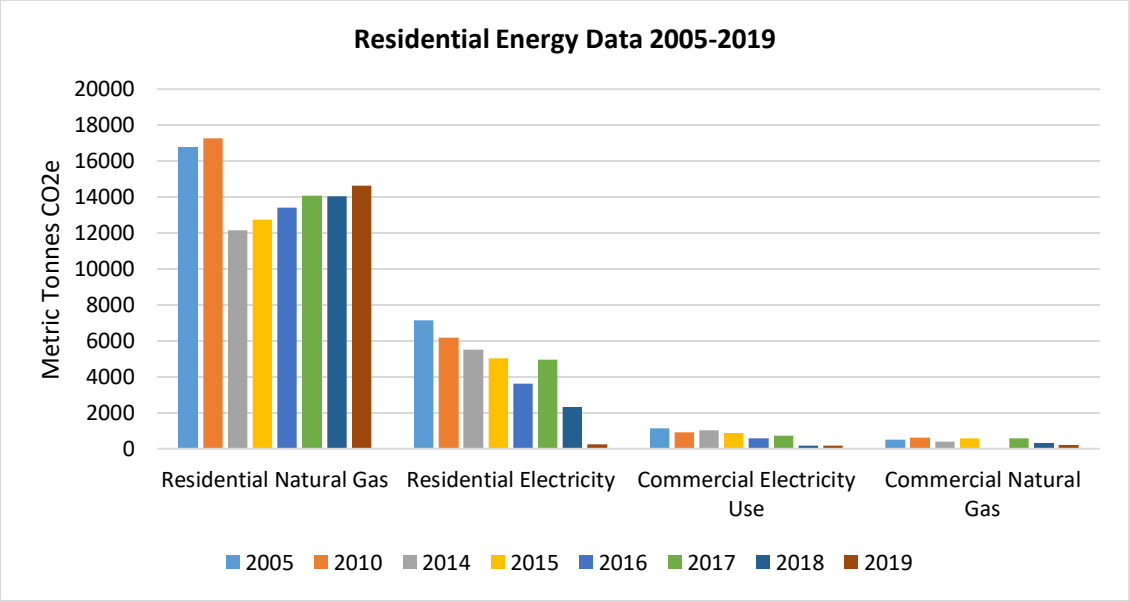


Figure 16

As seen in Figure 17 below, the most significant change between 2018 and 2019 was the sharp downward trend in residential electricity emissions. This is mainly attributed to the 3,551 accounts in Piedmont that are enrolled in EBCE's 100% Renewable energy service plan and the 94 accounts enrolled in the carbon-free Brilliant 100 service plan. Neither of these plans emit CO_2e.

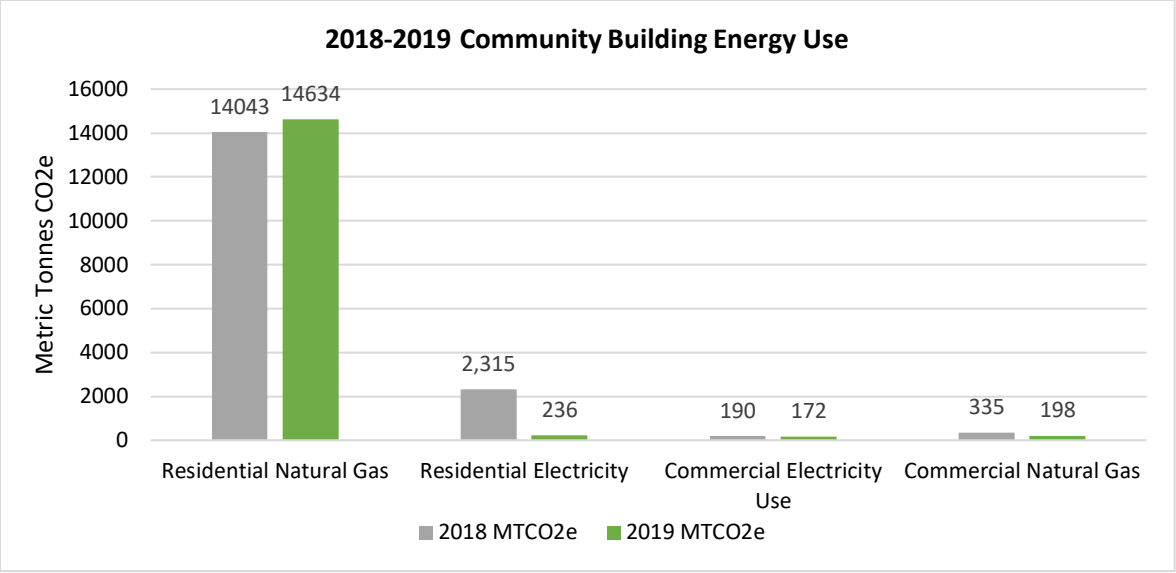


Figure 17

Although the decrease of emissions stemming from the residential electricity sector is sizable, natural gas usage has increased between 2018 and 2019. This is alarming, as natural gas is largely made up of methane, which is a potent GHG. Thus, despite the decrease in emissions from electricity, emissions from natural gas use increased.

Residential photovoltaic panel (PV) installations increased in 2019, showing that residents continue to have interest in solar and carbon-free sources of energy. Additionally, in the first two quarters of 2021, Piedmont residents received 48 Home Energy Scores, indicating an increased interest in energy efficiency. Since 2019, Piedmont residents have received 72 rebates from BayREN's Home+ program, 18 of which have been HVAC rebates.

In 2019, residential natural gas appliances alone contributed 96% of total building energy emissions. Natural gas use in Piedmont residential homes has also decreased on average over the past ten years, though gas use fluctuates depending on the year.

It is important to note that emissions from electricity are determined not just by amount of electricity used, but also by calculations for the carbon emissions released to generate electricity. These calculations change over time, both because the methods used to generate electricity change, and because companies revise their estimates of how much carbon was previously released to generate electricity. For instance, PG&E provides municipalities with power transmission emission information, but this information is not always verifiable.

Although emissions from electricity dropped, more needs to be done to decrease emissions stemming from natural gas appliances. In February 2021, Council approved a local ordinance (Ordinance 750 N.S.) that is expected to reduce natural gas emissions stemming from homes over the next two decades. Additionally, staff continues to conduct outreach for electric appliances,

and uses opportunities like the new induction cooktop loaning program to improve residents' knowledge of electrification and why it is an important climate action to take in Piedmont.

Solid Waste

1,440 Metric Tons of CO_2e
4% of 2019 total emissions
7.5% decrease from 2018

Solid waste generates methane when organic material decomposes in anaerobic landfill settings. According to Republic Services Annual Report, Piedmont produced 2,367 tons of waste in 2019. Over the past eight years, Piedmont has consistently diverted a majority (over 70%) of its waste from landfill to recycling and composting facilities. In 2019, Republic reported a diversion rate of 75.12% in Piedmont.

Water & Wastewater

Each year between 2005 and 2019, water and wastewater have contributed only a small percentage of total in-territory greenhouse gas emissions: between 0.1-1%. In 2019, this category accounted for 0.5% of in-boundary emissions. Emissions decreased by 18% between 2018 and 2019.

Municipal Emissions, conducted by Staff

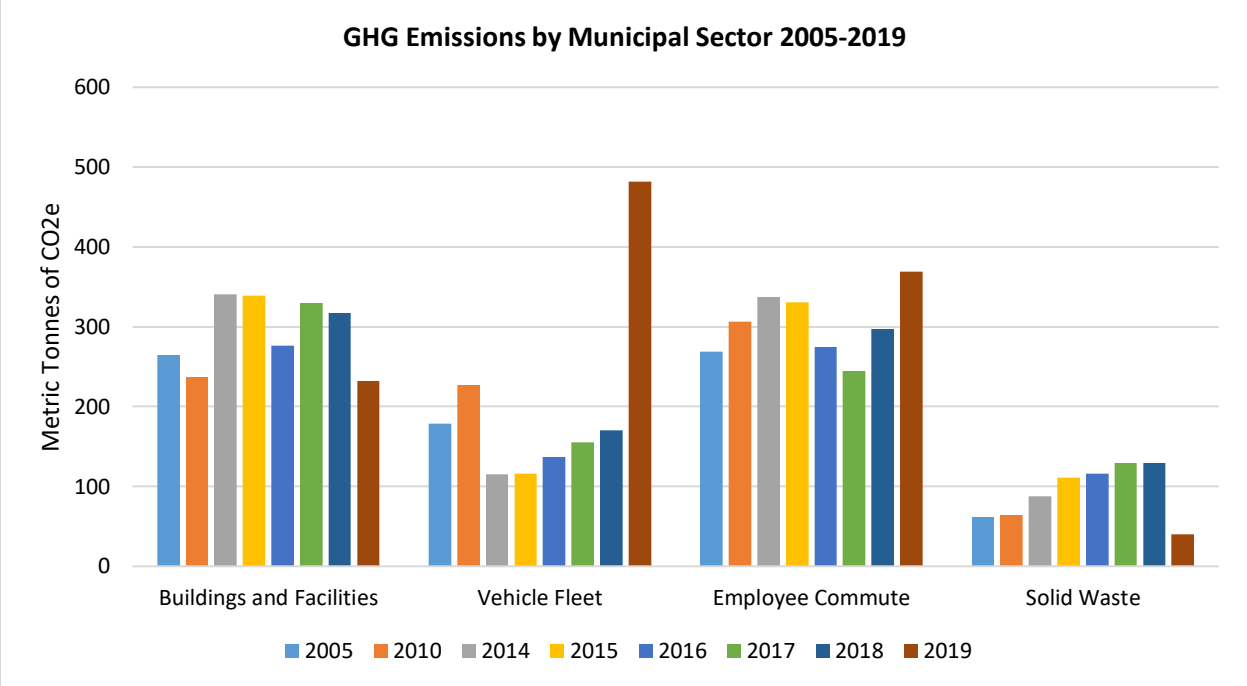


Figure 18

As seen in Figure 18 above, emissions from the vehicle fleet and employee commute increased in 2019, while emissions from buildings/facilities and solid waste decreased. Municipal activities in 2019 resulted in in-territory emissions of approximately 1,139 metric tons of CO_2e, or 3.3% of total community in-territory emissions. This is a 21.9% increase from total in-territory municipal emissions from last year. This increase can be explained by the higher VMT from the Police Department and a different method of calculating employee commute between 2018 and 2019.

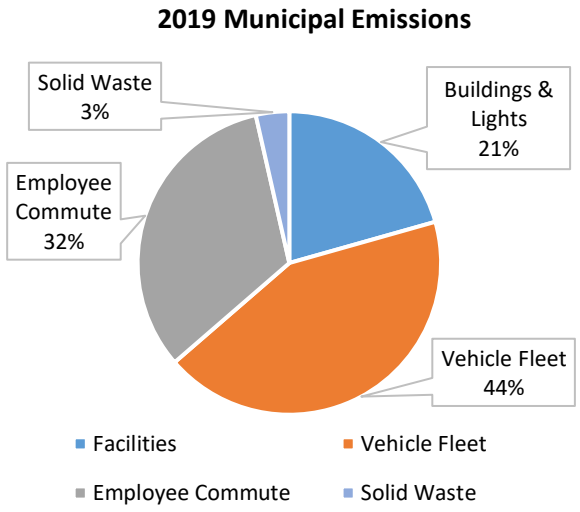


Figure 19

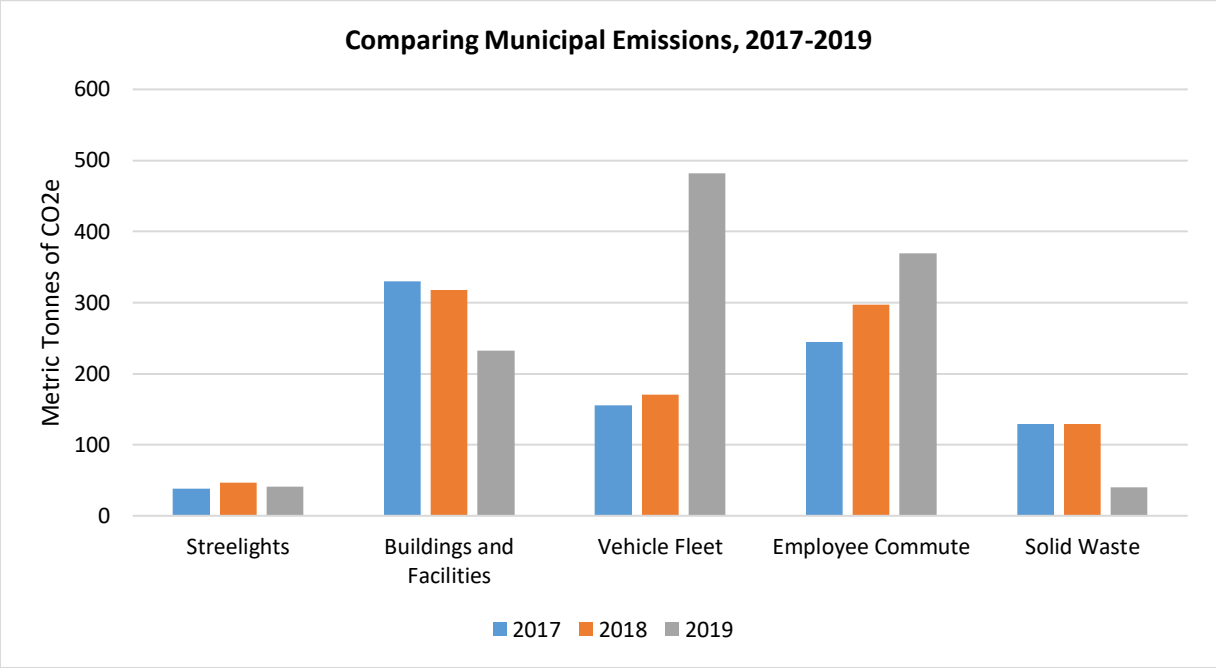


Figure 20

Municipal Energy consumption: Buildings and Lights

Emissions associated with municipal energy use (buildings & facilities, streetlights & traffic signals) decreased by 27% since 2018 due to municipal enrollment in EBCE's 100% Renewable Energy service plan. Natural gas use increased by 3.8%. Streetlight and traffic signal electricity has remained consistent with past years, and comprises a small share of emissions.

Municipal Vehicle Fleet

The vehicle fleet consists of vehicles utilized by the police, fire, public works, and recreation departments, and by contractor services for landscaping (Brightview) and solid waste collection (Republic Services). In 2019, vehicles continued to contribute a substantial portion of municipal GHG emissions, increasing emissions largely due to new staffing and vehicles by the Police Department and a higher employee commute. Emissions from transportation account for over 75% of total municipal emissions. Emissions estimates for the municipal fleet were calculated using vehicle fuel efficiency and miles driven.

Solid Waste Facilities

Municipal solid waste generated an estimated 40 metric tons of CO_2e in 2019. As solid waste sits in landfills, it emits greenhouse gases such as methane.

Conclusions

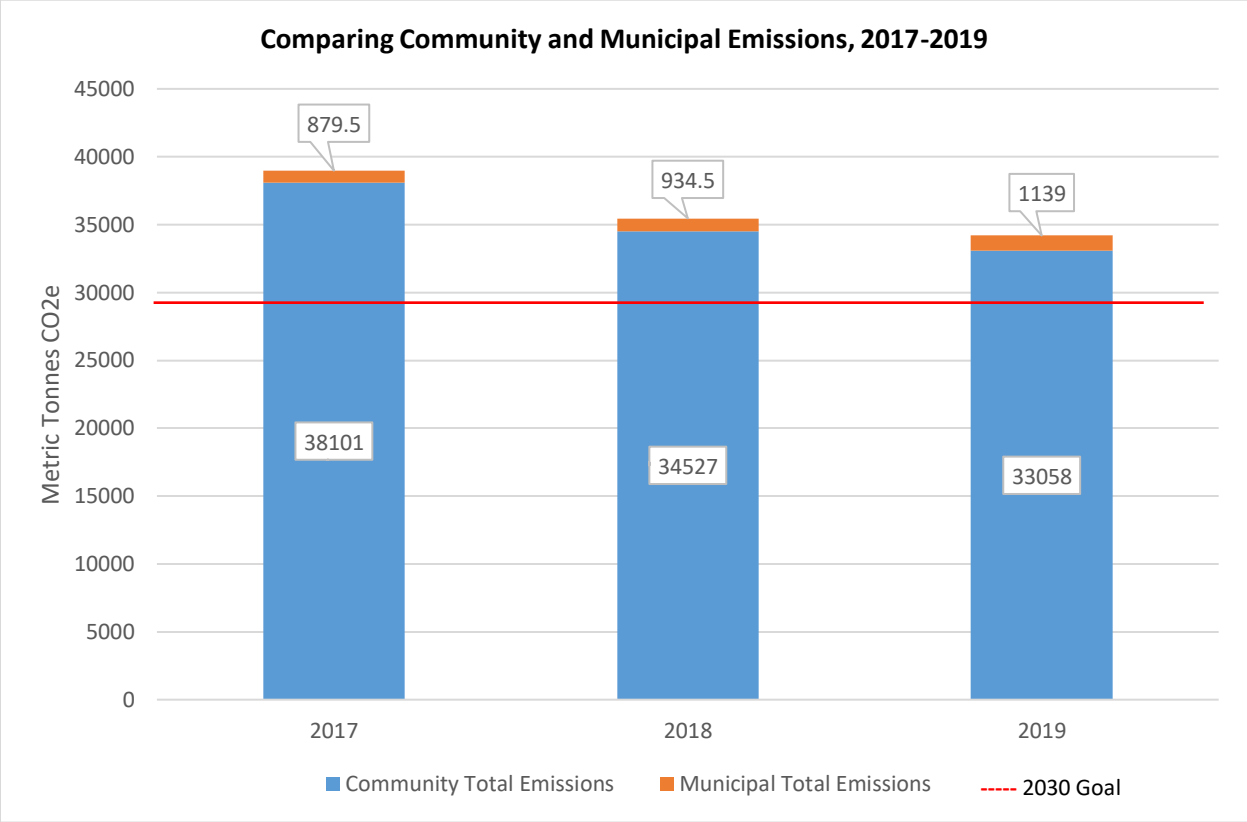


Figure 21

As Figure 21 indicates, community emissions dwarf municipal emissions. The City's residential and municipal enrollment in EBCE's 100% renewable energy service plan indeed made a difference in electricity emission reductions. However, more needs to be done on both the municipal and community side, especially to curb natural gas emissions and gas powered vehicle use.

CAP 2.0 Implementation Progress

The following list provides information on the progress the City has made on certain CAP 2.0 measures. Cost estimates and estimated potential GHG reductions for these measures are also provided to help prioritize actions and provide guidance on which measures are most impactful. The potential GHG reductions are not exact measurements. Instead, they are based on current best estimates and rely on a range of assumptions. The City has also made progress on a number of measures and actions that will support CAP 2.0 implementation. Some of the most recent actions include:

- Continued participation in the CivicSpark Fellowship Program for the upcoming 2021-2022 service year, which will expand staff capacity to implement CAP 2.0 measures
- Continued use of a Piedmont Climate Challenge platform that can help residents track emissions reductions in their daily life and compete to see who can most reduce their emissions the most; collaboration with community climate group Piedmont Connect to publicize the platform to the Piedmont community. After our second annual challenge, over 320 households have taken part in the challenge.
- Passing amendments to the statewide Building Energy Efficiency Standards ("Reach Codes" - Ordinances 750). These amendments will help residents insulate and electrify buildings and install solar panels while helping residents save energy and money.
- Considering publicly accessible electric vehicle chargers for the angled parking spots by the intersection of Bonita and Vista. This project would be implemented at no additional cost for the City.
- The City's continued commitment to the Global Covenant of Mayors for Climate & Energy (formerly known as the Compact of Mayors), which involves annual GHG inventories to track the City's progress toward meeting its emissions reduction goals.

Cost Delineations

The cost brackets for the Planning and Public Works departments were designed to match the brackets of the City's purchasing policy. A few CAP 2.0 measures rely heavily on private funds necessary for changes on private property. Some private costs would be low, like a building energy disclosure ordinance, which would cost $300 or more at the time of home sale. Some CAP measures would require higher private costs up front but should be cost effective in the long run. Many CAP 2.0 measures address actions the Piedmont Unified School District (PUSD) can take to contribute to CAP 2.0 implementation, and its cost brackets are delineated the same way as the Planning and Public Works Department's cost brackets.

Cost Categories	Planning	Public Works	Private	PUSD
LOW	<$5,000	<$75,000	<$500	<$5,000
MED	<$75,000	<$300,000	<$5,000	<$75,000
HIGH	>$75,000	>$300,000	>$5,000	>$75,000

Types of Costs

Marketing & Outreach Campaigns typically cost upwards of $75,000, a "HIGH" cost action. However, when bundled together, the costs per action decrease.

Staff Time costs include hiring a staff member dedicated to sustainability. Alone, this would be a "HIGH" cost action, but the expenditure could contribute to multiple measures, resulting in "LOW" cost estimates per action. Currently, the City of Piedmont participates in the CivicSpark program, which provides a full-time sustainability AmeriCorps fellow to Piedmont for about $29,500 per year. Additionally, the City Council

allocated funds for a new Sustainability Manager position. Alyssa Dykman is the City's first Sustainability Manager, and has the duty of managing and implementing the City's climate action goals.

Incentive programs targeting building energy efficiency and administered through the Planning Department and Building Division are highly flexible and can be adjusted depending on funds available. For example, providing a small financial incentive for local businesses or homeowners to improve energy efficiency may require a limited amount in municipal funds in conjunction with a larger amount of private funds. One project that the department is considering is revising the fee schedule.

Infrastructure projects are typically far more expensive than any other kind of CAP 2.0 implementation, with a few exceptions. Partnerships with regional JPAs, or the securing of external grants, may greatly decrease infrastructure project costs to the City. Most infrastructure project costs would likely fall to the Public Works Department, rather than the Planning Department. In contrast to incentive programs, capital improvement project costs vary greatly. Installing bike racks would be "LOW" cost, but large complete street projects could be considered "HIGH" cost. For each measure, there is also a brief description of the kind of cost, such as staff time, incentives, and marketing. Figure 5.2 shows cost breakdowns by responsible party.

Private costs would be incurred by residents or businesses. Only a few CAP 2.0 measures rely on substantial private costs. Private funds that will be necessary to achieve reductions in the two sectors that contribute 91% to Piedmont's in-territory GHG emissions: the residential and commercial building energy sector, and the residential transportation sector. Optimally, the costs associated with reducing the carbon footprint of private property owners and drivers should be cost effective over the lifespan of the improvement.

	Measures and actions by sector	2030 GHG Reduction Potential (MTCO2e)	Kind of Cost	Lead Actor	Cost	Status/Priority
	Buildings and Energy					
	Objective: Reduce Residential Building Energy Use					
BE-1.1	**Measure: Disclose building energy consumption**	304				
	Develop a single-family and/or multi-family residential unit energy assessment ordinance requiring disclosure at the time of sale, major remodel, rental, or other trigger point		Staff Time, Private	**Planning**	**LOW**	**Completed. In February 2021, City Council adopted an ordinance (751 N.S.) that requires a home energy assessment disclosure at time of sale. Became effective March 3, 2021.**
	Partner with home energy audit providers to develop public outreach and community engagement programs on residential energy assessment opportunities and energy efficiency retrofits, with a focus on post audit follow-through		Marketing & Outreach	**Planning**	**LOW**	**Ongoing. City staff currently works with StopWaste and BayREN staff on public outreach for energy assessment opportunities.**
	Increase knowledge of and encourage residents to use PGE's "My Energy" online tool to compare and understand energy and natural gas use		Marketing & Outreach	**Planning**	**LOW**	**Ongoing. A hyperlink to the My Energy online tool is provided on the Climate Action Program webpage of the City's website.**
BE-1.2	**Measure: Reduce electricity and natural gas consumption**	1602				
	Encourage utilities' to develop and implement demand-side management programs		Staff Time	**Planning**	**LOW**	**No action.**

	Promote and incentivize residential energy conservation and efficiency retrofits (i.e. insulation, energy-efficient windows, etc.) for existing buildings through competitions, case studies, rebates, and educational/community engagement events on statewide code changes, financing options, and the benefits of GHG reduction methods.		Marketing & Outreach, Incentive	Planning	MED-HIGH	Ongoing. City has launched an interactive online platform to enhance and incentivize local action, which includes residential energy conservation and retrofit opportunities. Marketing of these programs is ongoing.
	At point of replacement, consider requiring the installation of energy conserving appliances and fixtures, such as on-demand tank-less water heaters, Energy Star appliances, and LED lightbulbs		Staff Time, Private	Planning	LOW-HIGH	Completed. In February 2021, City Council adopted an ordinance (750 N.S.) that requires certain energy efficiency measures during renovations. Became effective as June 1, 2021.
	Investigate developing an online, GHG reduction tracking platform for Piedmont residents to track their actions that may affect their carbon footprint and to participate in community-wide GHG reduction challenges		Staff Time	Planning	LOW	Ongoing. In collaboration with Piedmont Connect, the City launched an interactive online platform, the Piedmont Climate Challenge, in fall 2019. We recently completed our second annual challenge in April 2021.
	Provide case studies/awards/highlights for property owners who set good sustainability examples (i.e. solar, LEED, drought-tolerant landscape, etc.)		None	Planning	LOW	Ongoing. We have a website page devoted to this, and work with Piedmont Connect to bring attention to these residents.

BE-1.3	**Measure: Switch from natural gas to electric appliances, paired with renewable energy**	14083				
	Educate residents on the options and incentives for electric appliances, such as furnaces, water heaters, dryers, stoves, and more, as well the importance of pairing electrification with the installation of renewable energy		Marketing & Outreach	**Planning**	**LOW**	**Ongoing. The City website contains information about this, as does the Piedmont Climate Challenge Website.**
	Consider requiring electric appliances for new construction		Staff Time, Private	**Residents**	**MED**	**Completed. Included in Ordinance 750 N.S.**
	Provide incentives to convert existing residences from natural gas to electric appliances		Incentive	**Planning**	**MED**	**Ongoing. Staff are having ongoing discussions about what such incentives could be and how the City could generate funds for these incentives.**
BE-3.3	**Measure: Increase the amount of renewable energy delivered through the grid**	1794				
	Encourage residents to choose East Bay Clean Energy as their electricity provider and support education and community engagement for residents throughout the transition to EBCE		Staff Time, Marketing & Outreach	**Planning**	**LOW**	**Ongoing. EBCE is currently the default option for Piedmont accounts. Staff partners with EBCE to continue to educate residents about electricity options.**
	Have 100% renewable be the default option for Piedmont residents through EBCE with an opt-down option		Staff Time, Marketing & Outreach	**Planning**	**LOW**	**Completed. In November 2018, City Council voted to auto-enroll all residential electricity accounts in East Bay Community Energy's 100% Renewable Energy service plan.**
	Transportation					
	Objective: Increase number of trips made by biking and walking					
T-1.1	**Measure: Encourage walking and biking safety**					

	Install sidewalk railings on the Oakland Avenue bridge*		Infrastructure	Public Works	LOW	Completed. As of summer 2020, this project has nearly been completed.
	Enhance street crossing safety through crosswalks, flashing pedestrian lights, and signage*		Infrastructure	Public Works	MED-HIGH	Ongoing. Staff has identified 27 intersections that need crossing safety enhancement.
	Provide safety education led by the Police or Public Works Department (traffic safety messages on city buildings and online)		Staff Time	Public Works	LOW	In August of 2018, Public Works, Police Department, and the City Engineer formed the Traffic Safety Team. It meets once a month to answer residents' inquiries and disseminate traffic safety information.
	Consider transitioning streets to one-way traffic to add bike lanes in residential areas		Infrastructure	Public Works	MED-HIGH	No action, still under study.
	Implement traffic calming measures*		Infrastructure	Public Works		No action.

T-1.2	Measure: Provide access to bicycles and bicycle paths	1340				
	Pursue the installation of a Bay Area Bike Share station in the Grand Ave commercial district*		Staff Time	Planning		Ongoing. Staff is actively searching for grants and other funding opportunities
	Enhance bike infrastructure along bikeway network designated in Piedmont's Pedestrian and Bicycle Master Plan (PBMP)*		Infrastructure	Public Works	HIGH	No action.
	Install additional bike parking racks at key destinations		Infrastructure	Public Works	LOW	Ongoing. Staff is actively searching for grants and other funding opportunities
	Implement Highland road diet		Infrastructure	Public Works	LOW	No action.
	Implement Grand Avenue road diet		Infrastructure	Public Works	LOW	Completed in 2016.
	Coordinate with Oakland on the planning, design, funding and creation of inter-city bikeways, particularly on Grand, Moraga and Wildwood Avenues and on Park Boulevard and the creation of a map that shows these networks*		Staff Time, Infrastructure	Public Works	LOW	In 2015, Moraga Avenue was repaved and a bike lane was added. In 2017, a new bike lane was added to Linda Avenue, between Grand and Rose. These bike lanes add to the regional bikeway network. The City of Piedmont has been communicating with Oakland staff to contribute to the regional bikeway map.
	Introduce traffic signal controls that prioritize bicycles		Infrastructure	Public Works	LOW	No action.
	Provide bicycle parking at city sponsored events		Infrastructure	Public Works	LOW	Ongoing. Staff is actively searching for grants and other funding opportunities
	Implement physical bike protection, separation, or warning infrastructure like Botts' dots, 5 in concrete dome curb extensions, or pop ups		Infrastructure	Public Works	LOW	No action.

	Facilitate Bike to Work Day and other bike promotion and educational/community engagement events		Staff Time	Planning	LOW	Bike to Work Day has been virtual for the past two celebrations due to the pandemic, but the City still promotes these events.
	Objective: Support the adoption of ZEVs and the growth of EV charging stations					
T-4.1	**Measure: Support the growth of EV charging infrastructure**	5181				
	Install EV chargers in the Civic Center area, Grand Avenue commercial zone, and other commonly traveled locations in Piedmont		Infrastructure	Public Works	LOW	Ongoing. City staff is working with East Bay Community Energy to develop a program.
	Develop an ordinance to require EV charger pre-wiring in any garage remodel		Staff Time, Private	Residents	HIGH	Completed. Approved by the Building Standards Commission in 2020.
	Require pre-wiring for EV charging in new construction		Staff Time, Private	Residents	HIGH	Now included in the 2019 CalGreen Code.

	Objective: Reduce emissions associated with food consumption and food waste					
C-2.1	**Measure: Reduce Food Waste**					
	Educate residents on how to reduce waste of edible foods through proper food storage, meal planning, and purchasing of 'imperfect food'		Staff Time, Marketing & Outreach	**Planning**	**LOW**	**Ongoing. City staff organized a community event in April 2019 to raise awareness on more sustainable consumption habits, goods, and services. City's Climate Challenge platform and Piedmont Evergreen program also include information about this topic.**
C-2.2	**Measure: Reduce carbon intensity of food consumption**					
	Begin a community campaign to educate the public about food choice as part of a climate-friendly lifestyle		Staff Time, Marketing & Outreach	**Planning**	**LOW**	**Ongoing. City staff organized a community event in April 2019 to raise awareness on more sustainable consumption habits, goods, and services. City's Climate Challenge platform and Piedmont Evergreen program also include information about this topic**
	Objective: Increase awareness of consumption related GHG emissions					
C-3.1	**Measure: Provide education on consumption related GHG emissions**					
	Increase awareness of consumption-based GHG emissions through the Climate Action Plan		Staff Time, Marketing & Outreach	**Planning**	**LOW**	**Ongoing. City staff organized a community event in April 2019 to raise awareness on more sustainable consumption habits, goods, and services. City's Climate Challenge platform and Piedmont Evergreen program also include information about this topic**

	Promote education on personal and household carbon footprints		Staff Time, Marketing & Outreach	Planning	LOW	Ongoing. City staff organized a community event in April 2019 to raise awareness on more sustainable consumption habits, goods, and services. City's Climate Challenge platform and Piedmont Evergreen program also include information about this topic
	Host a decarbonization workshop to promote awareness of the climate change impacts of consumption		Staff Time, Marketing & Outreach	Planning	LOW	Ongoing. City staff organized a community event in April 2019 to raise awareness on more sustainable consumption habits, goods, and services. City's Climate Challenge platform and Piedmont Evergreen program also include information about this topic

	Municipal					
	Objective: Reduce emissions from City buildings and energy supply					
M-2.1	Measure: Reduce energy use in city buildings					
	When remodeling or repairing City buildings, include opportunities for energy efficiency retrofits or green building certification		Infrastructure	Public Works	MED	Ongoing, the City has a Civic Green Building Ordinance that resides in chapter 8 of the Piedmont Municipal Code.
	Construct new City buildings to ZNE and green building certification standards		Infrastructure	Public Works	LOW	Ongoing, the City has a Civic Green Building Ordinance that resides in chapter 8 of the Piedmont Municipal Code.
	Increase the energy efficiency of lighting and appliances in City buildings as opportunities arise		Infrastructure	Public Works	LOW	Ongoing, the City has a Civic Green Building Ordinance that resides in chapter 8 of the Piedmont Municipal Code. This is also standard practice for the Piedmont Building Department.
	Switch from natural gas to electric appliances once the electricity supply nears 100% and the technology becomes affordable		Staff Time	Public Works	TBD	Ongoing, the City already converted all cobra head streetlights to LEDs and will be converting the remaining decorative post top streetlights to LEDs.
	Investigate strategies for reducing energy use at the City aquatic facilities		Staff Time	Public Works	TBD	Ongoing. Staff is discussing internally methods to reduce energy use at the aquatic facilities. The City Council is considering revenue sources to upgrade the aquatic facilities.
M-2.3	Measure: Increase the amount of renewable energy on-site and through the grid					
	Evaluate the potential for and install cost-effective renewable energy systems on City Properties		Staff Time	Planning		Ongoing.

	Commit to 100% renewable energy through EBCE.		Staff Time	Public Works	LOW	Completed. In November 2018 City Council voted to auto-enroll all municipal and residential electricity accounts in East Bay Community Energy's 100% Renewable Energy service plan.
M-2.4	**Measure: Reduce emissions from high global warming potential gases**					
	Enforce the ban on petroleum powered leaf blowers and maintenance equipment		Staff Time	Public Works	LOW	Ongoing. City staff are considering options to more effectively enforce the ban.
	Replace high GWP refrigerant air conditioners and dispose of them properly		Infrastructure	Public Works	LOW	Ongoing. Corp Yard replaced gas furnace and water heater with heat pumps in August 2020.

Voter Attitudes Toward Piedmont's Reach Code Policy

Key Findings of a Survey Conducted November 21-December 3, 2020

FM3 RESEARCH
OPINION RESEARCH & STRATEGY

Survey Methodology

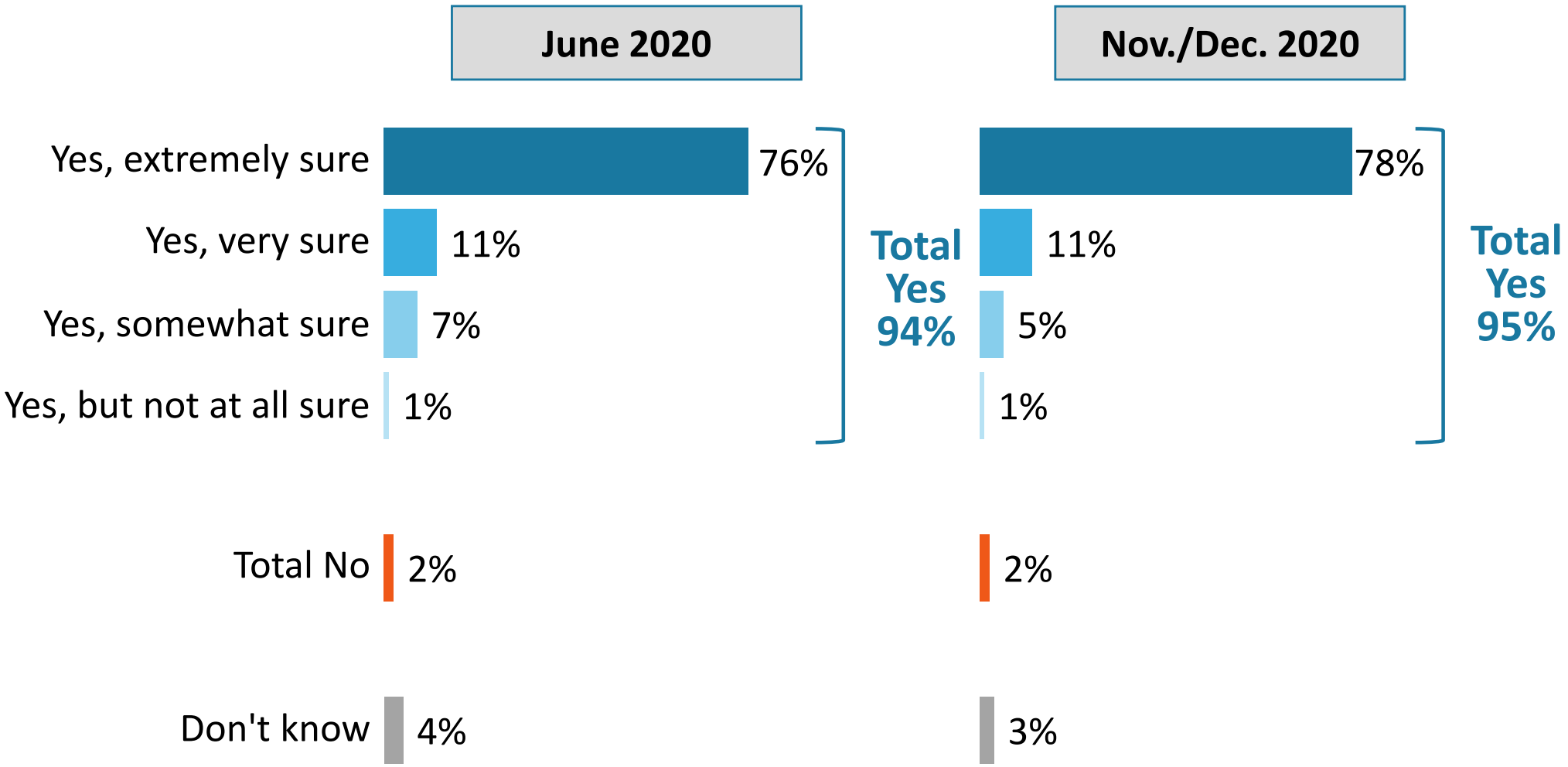
- ✓ 384 online interviews with Piedmont voters
- ✓ Interviews conducted November 21 - December 3, 2020
- ✓ Margin of sampling error of ±5.0% at the 95% confidence level
- ✓ Some percentages may not sum to 100% due to rounding
- ✓ Select comparisons to past voter surveys

FM3 RESEARCH

Perspectives on Climate Change

Piedmont voters continue to agree that climate change is real…

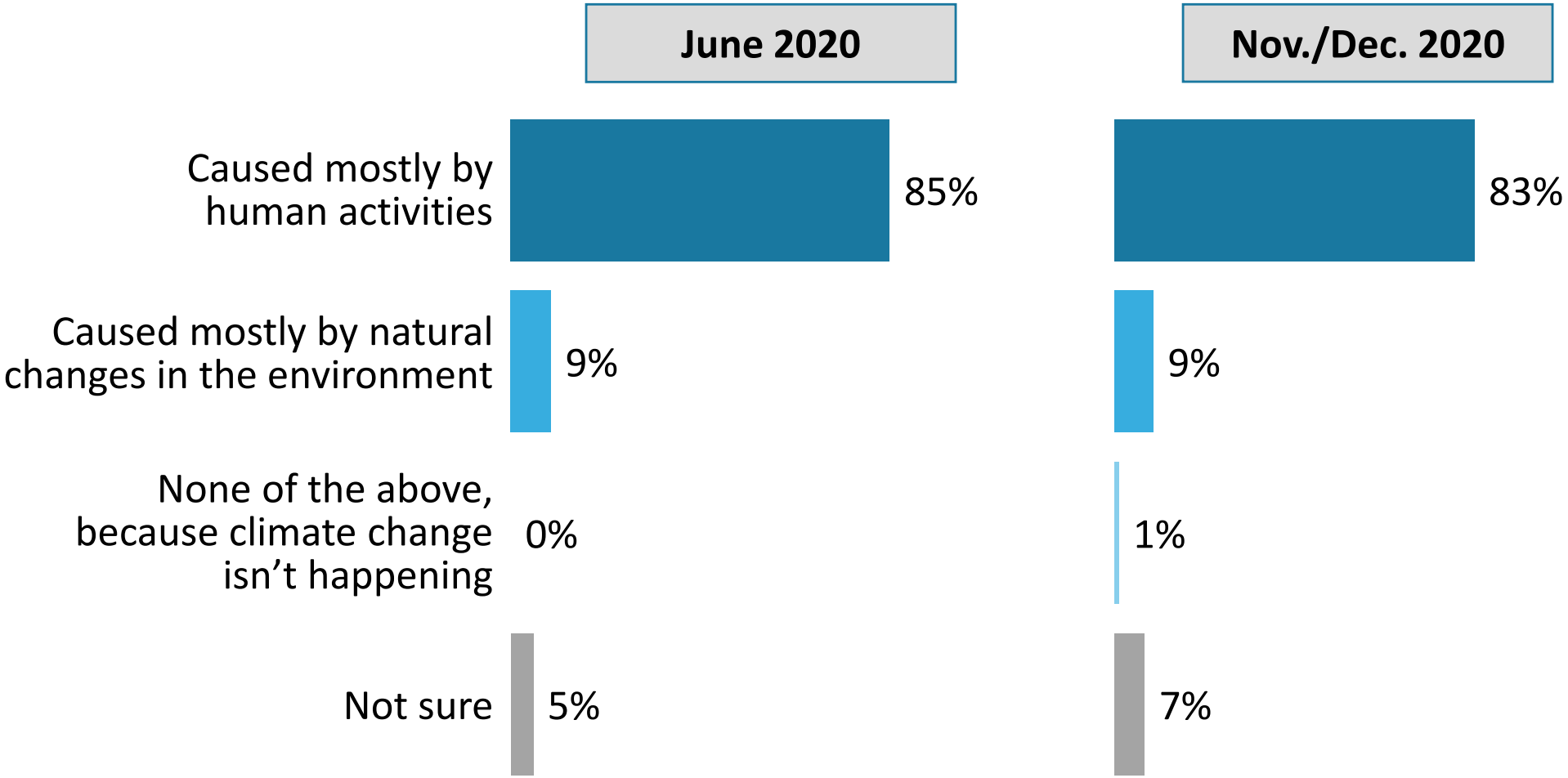
Do you think climate change is happening?



Q2.

...and more than four in five say it is caused by human activities.

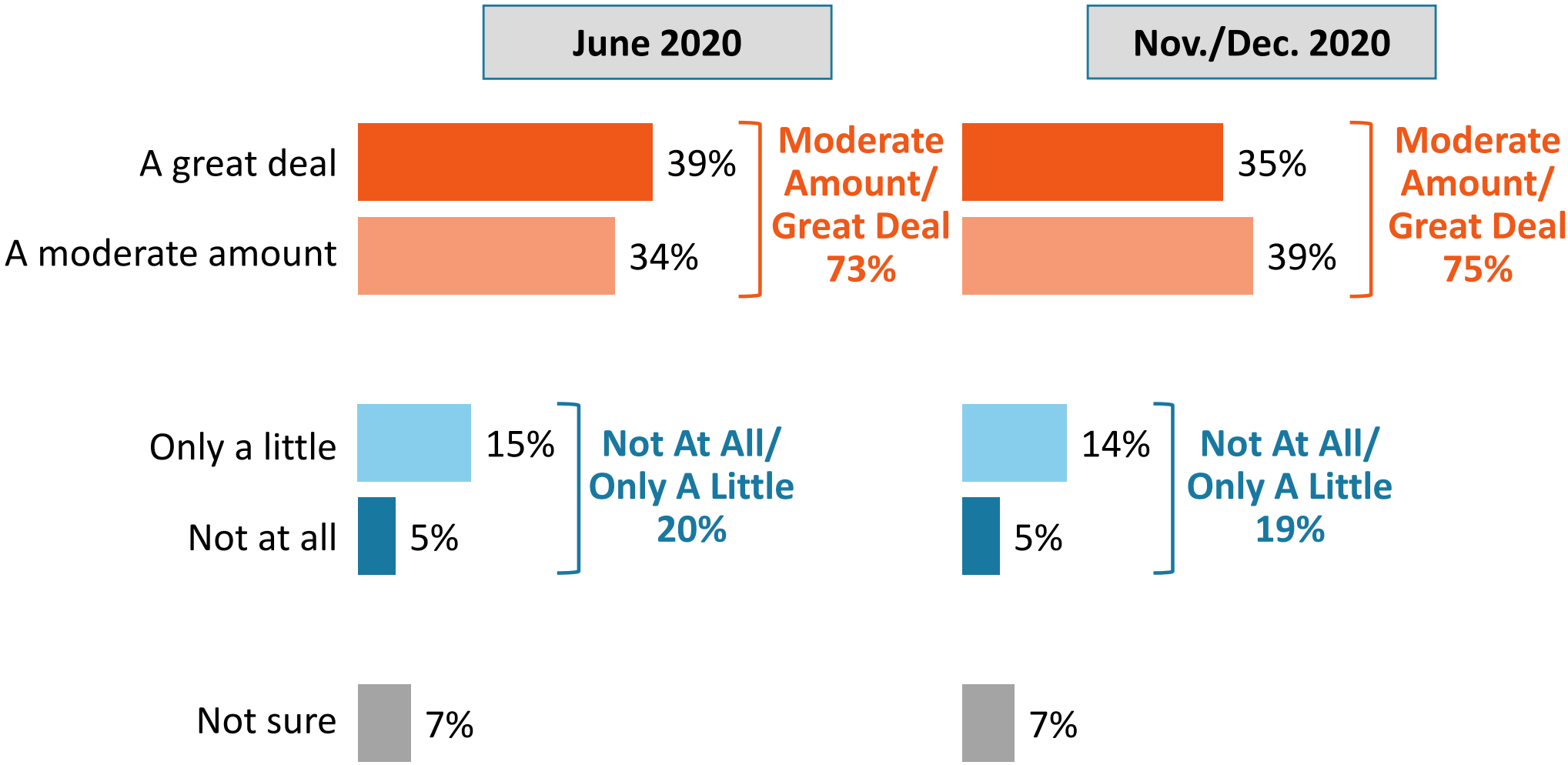
Assuming that climate change is happening, do you think it is…



Q3.

Three-quarters say that climate change will harm them personally.

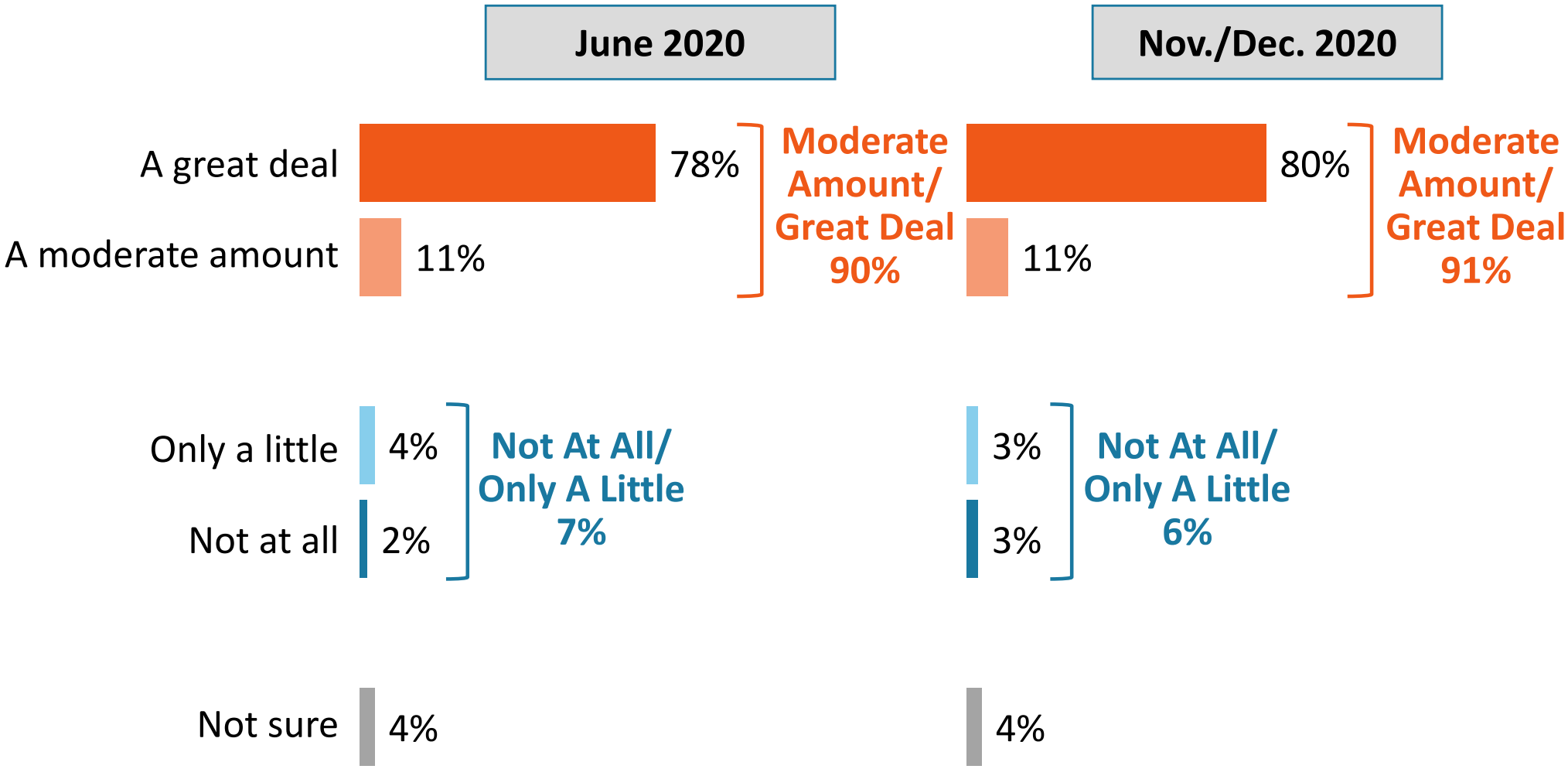
How much do you think climate change will harm you personally?



Q4.

Nine in ten say it will harm future generations.

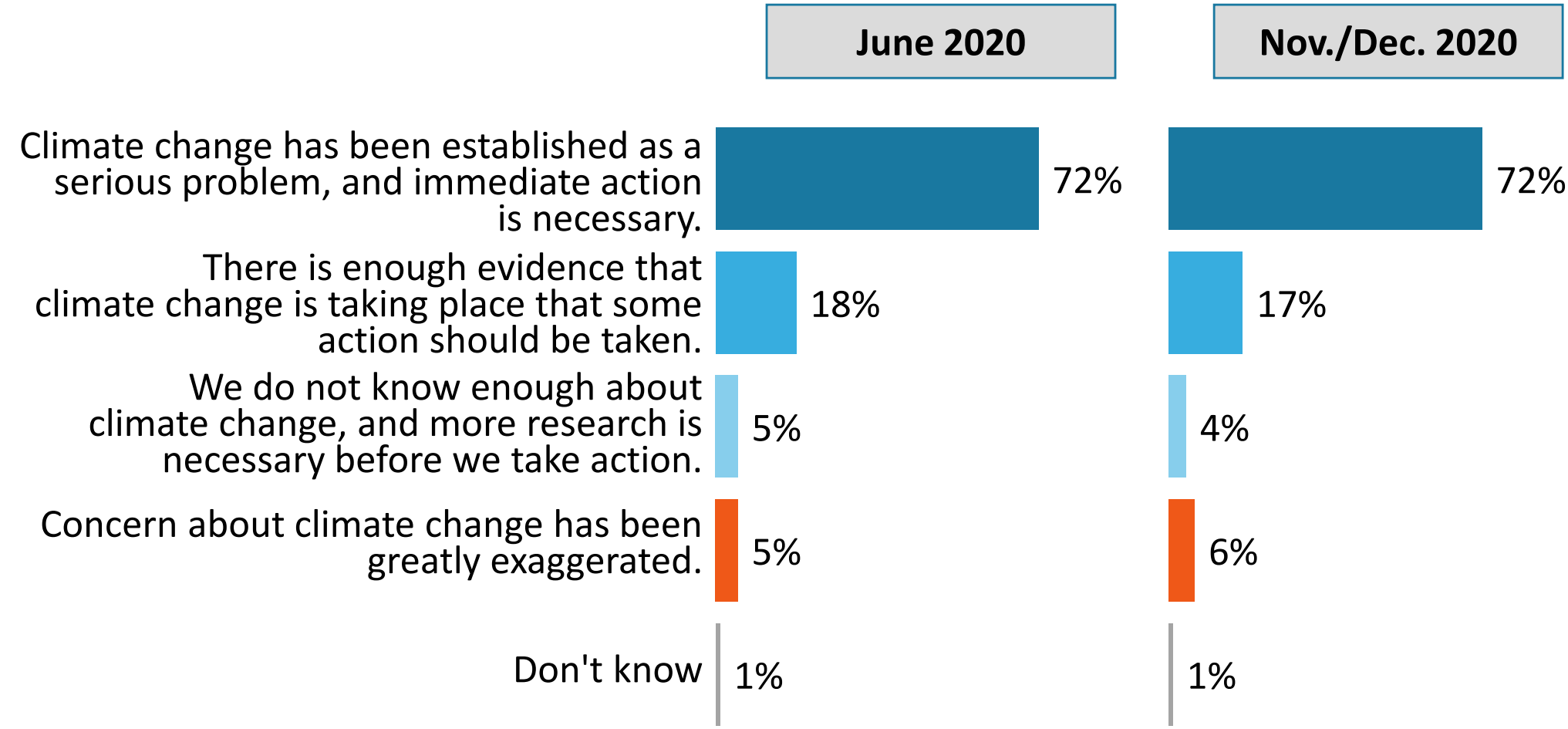
How much do you think climate change will harm future generations?



Q5.

Three-quarters agree immediate action is necessary for climate change.

From what you know about climate change, which of the following 4 statements is closest to your opinion?



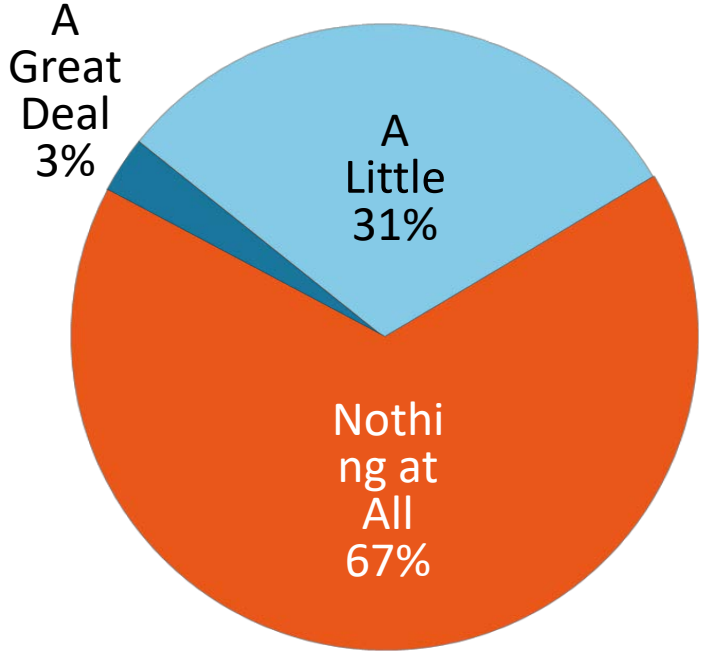
Q6.

Views on the Climate Action Plan 2.0

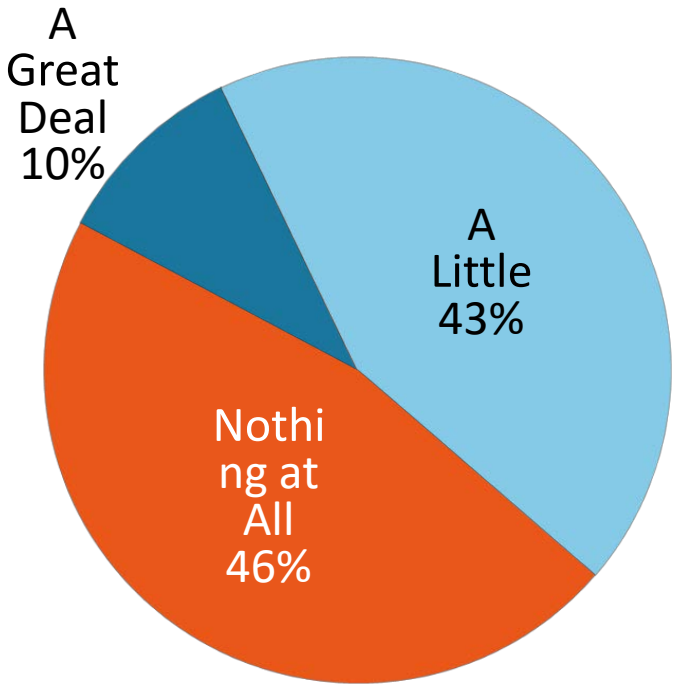
Awareness of the CAP 2.0 has increased since this summer.

How much have you heard, seen, or read recently about the City of Piedmont's Climate Action Plan 2.0?

June 2020



Nov./Dec. 2020

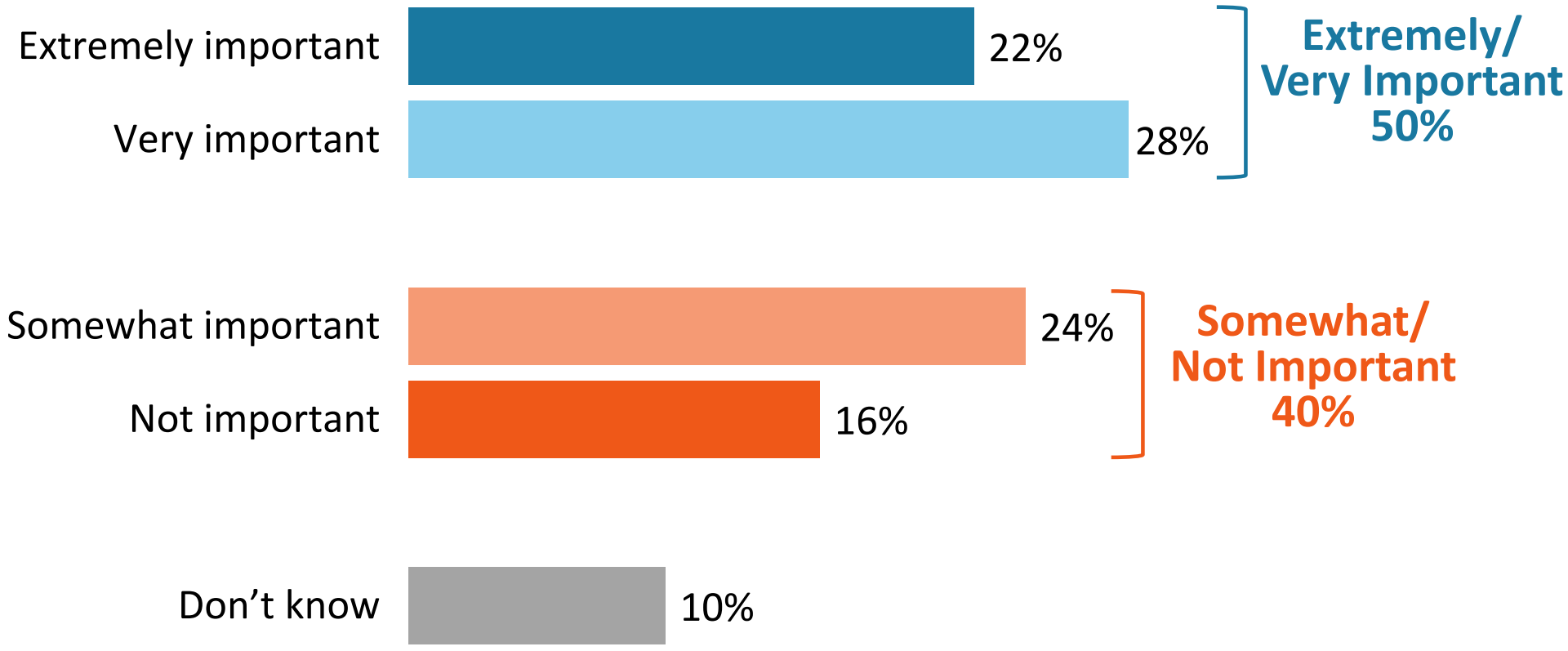


Q7.

Of those familiar with the plan, a majority says it is important.

Based on what you've heard about the Climate Action Plan 2.0, how important is it for the City of Piedmont to meet the plan's objectives?

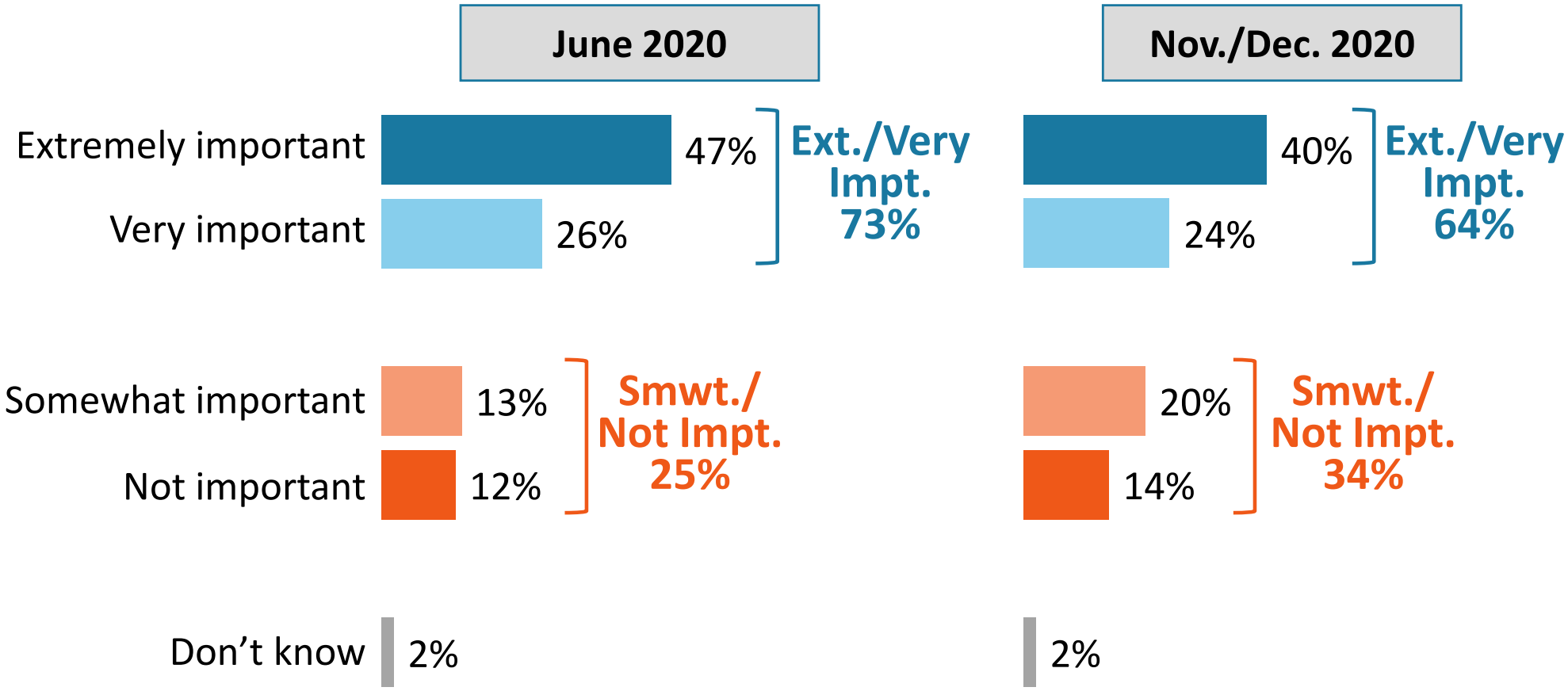
(Asked Only of the 53% Aware of the City of Piedmont's Climate Action Plan 2.0)



Q8.

Nearly two-thirds view CAP as "very important," a slight decrease in intensity.

Here is some more information about the City's Climate Action Plan (CAP) 2.0. The purpose of the CAP 2.0 is to support current statewide efforts to reduce the pollution that causes climate change; provide a pathway for Piedmont to reduce greenhouse gas emissions within City boundaries by 40% by 2030; and be on track to reduce emissions within City boundaries 80% by 2050.



Q9. How important do you think it is for the City of Piedmont to meet these objectives?

Voters under 30, women, and Democrats place the greatest importance on the plan.

Demographic Group	Extremely/ Very Important	Somewhat/ Not Important	Don't Know
Age			
18-29	77%	23%	0%
30-39	65%	33%	2%
40-49	61%	37%	1%
50-64	65%	32%	2%
65-74	56%	42%	1%
75+	65%	33%	3%
Gender			
Men	57%	41%	2%
Women	71%	27%	2%
Party			
Democrats	78%	20%	2%
Independents	46%	51%	2%
Republicans	17%	83%	0%

Q9. How important do you think it is for the City of Piedmont to meet these objectives?

Renters and those with incomes below $250,000 are more likely to view it as important.

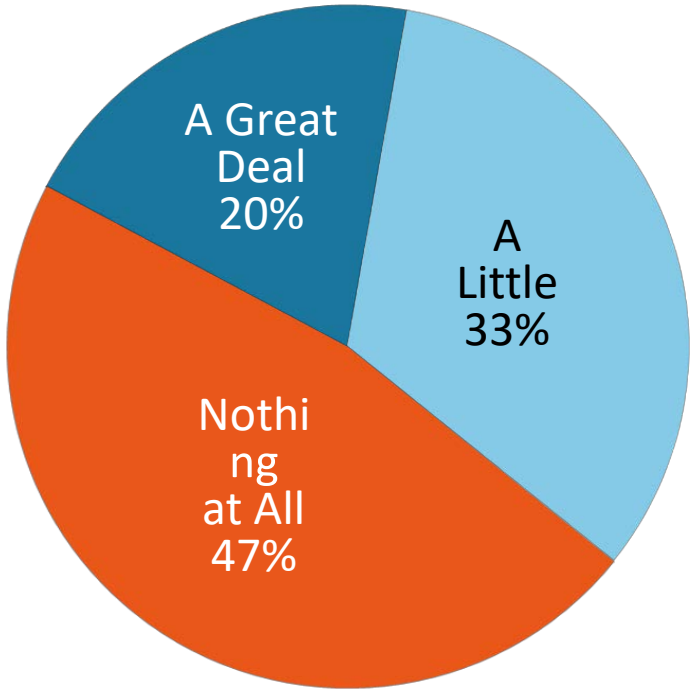
Demographic Group	Extremely/ Very Important	Somewhat/ Not Important	Don't Know
All Voters	**64%**	**34%**	**2%**
Time in Piedmont			
Born and Raised	52%	48%	0%
0-5 Years	67%	31%	3%
6-10 Years	70%	27%	3%
11-20 Years	62%	38%	0%
21+ Years	65%	33%	2%
Residence			
Homeowners	63%	36%	1%
Renters	74%	22%	5%
Household Income			
<$250,000	82%	18%	0%
$250,000+	65%	34%	1%

Q9. How important do you think it is for the City of Piedmont to meet these objectives?

Attitudes Toward Building Reach Codes

A majority has heard of the plan to adopt Reach Codes.

How much have you heard, seen, or read recently about the City of Piedmont adopting "Reach Codes," which are local amendments that would go above and beyond existing California building codes to improve the energy efficiency of buildings and reduce greenhouse gas emissions?



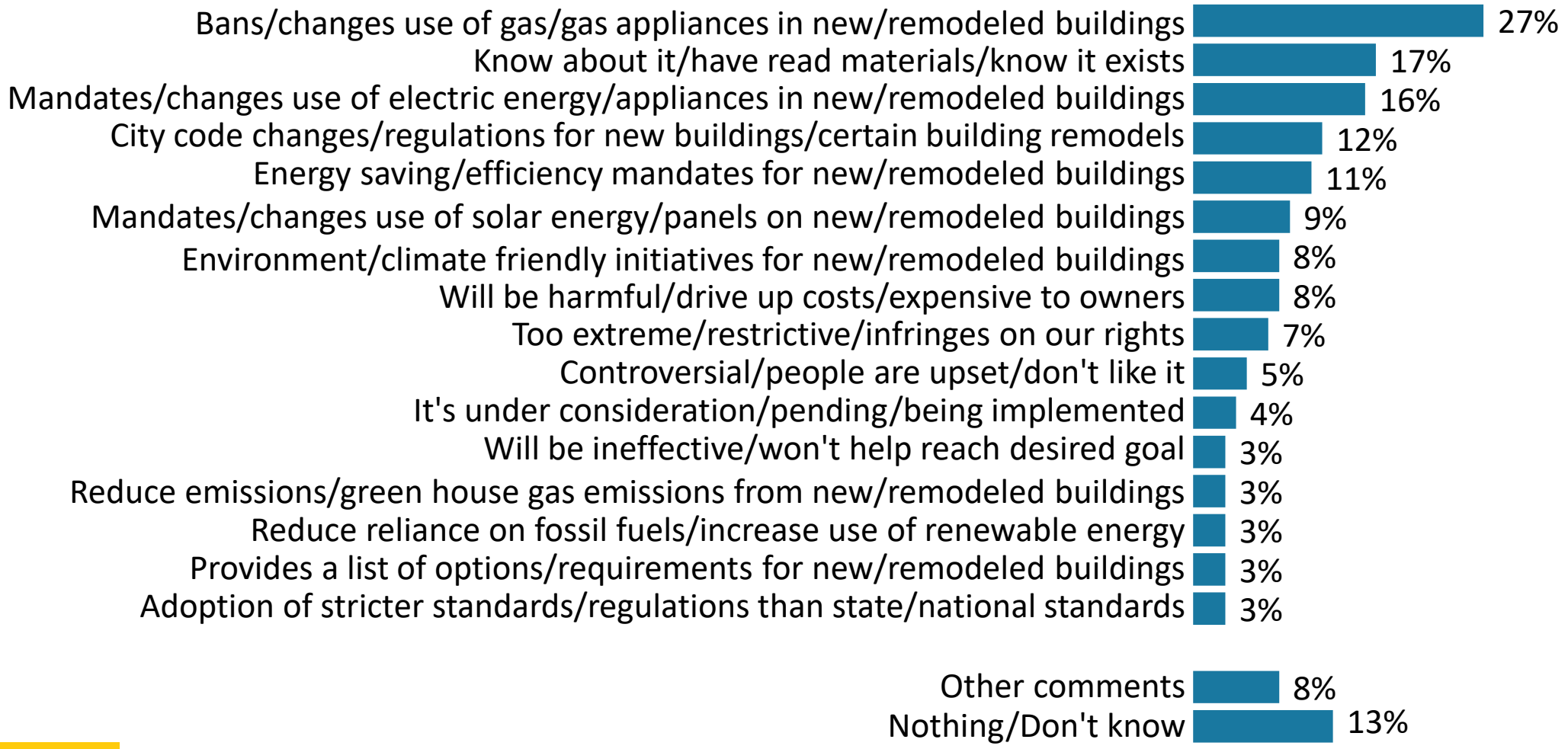
Demographic Group	Heard a Great Deal
All Voters	**20%**
Republicans	40%
Independent Women	40%
Independents Ages 50+	33%
Work in Piedmont	32%
Ages 65+	28%
Independents	27%
Lived 21+ Years in Piedmont	26%
Women Ages 50+	26%

Q10.

The most common understanding is that it bans or changes the rules around gas appliances.

What have you heard about the City's Reach Codes?

(Open-ended; Asked Only if Have Heard, Seen, or Read the City of Piedmont adopting "Reach Codes," Responses 3% and Above Shown; N=205)



Q11.

Verbatim Comments Describing What Voters Heard About Reach Codes

They are effectively a tax on homeowners who wish to improve their properties, requiring unwanted and forced changes that make living in California even more expensive and less enjoyable.

If I remember correctly, they require energy efficient home equipment such as stoves and ovens in new houses and houses being remodeled.

Build in use of electric appliances over gas ones when remodeling. Adding solar to roofs.

Requirement to incorporate gas, electric, solar changes for all new projects and for specific threshold renovations.

I've only heard that reach codes in general seek to go beyond state minimum requirements for energy efficiency in buildings.

That ignorant public officials in Piedmont want to restrict the use of natural gas and replace it by "clean" electric energy use. Insane and shows a total lack of any scientific understanding of how electricity is produced.

I think I read something about moving towards eliminating natural gas in homes.

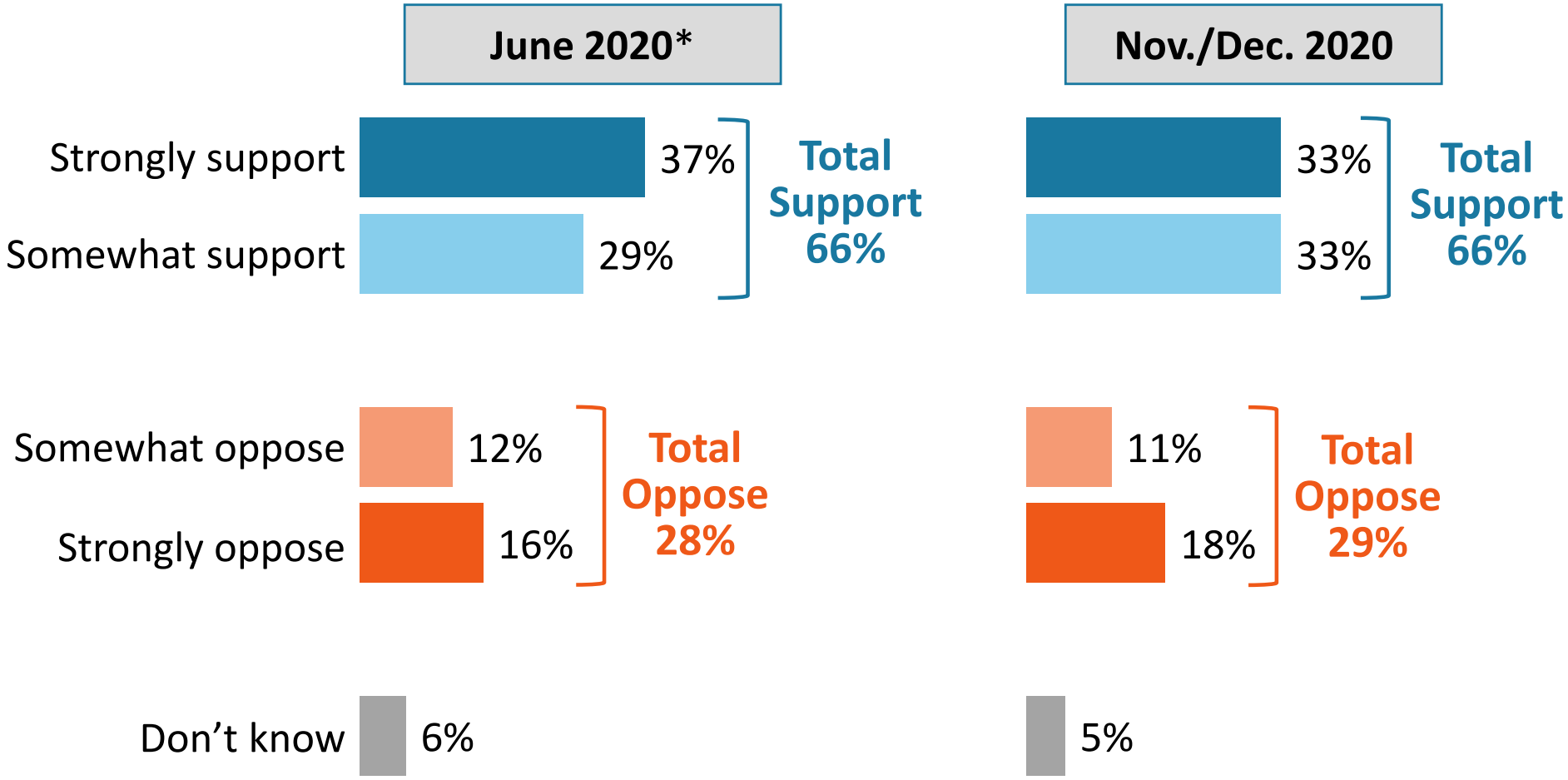
Q11. What have you heard about the City's Reach Codes?

Description of Climate Goals and Reach Codes Provided

"Piedmont's Climate Action Plan calls for the community to emit just 9,800 metric tons of carbon dioxide – one of the major greenhouse gases that causes climate change – across the building, transportation, and waste sectors, combined, in 2050. The City took an important initial step in meeting this goal when it joined East Bay Community Energy and started receiving electricity generated by 100% renewable sources in 2018. By contrast, in 2017, the Piedmont community emitted about 14,000 metric tons of carbon dioxide just from using natural gas appliances in residential buildings; most of these emissions come from natural gas furnaces and water heaters. To meet these goals the Piedmont community must significantly reduce natural gas use in its buildings by replacing natural gas furnaces and water heaters with those powered by electricity generated by 100% renewable sources."

Two-thirds support the Reach Code plan after hearing the description.

Would you support or oppose the City of Piedmont's efforts to revise its building codes to reduce the use of natural gas in Piedmont buildings?



*Q12. *Worded Slightly Differently in June 2020 Survey*

Majority support cuts across age group, gender, Democrats and independents.

Demographic Group	Total Support	Total Oppose	Don't Know
Age			
18-29	78%	22%	0%
30-39	73%	22%	6%
40-49	65%	30%	5%
50-64	67%	28%	5%
65-74	58%	37%	5%
75+	57%	30%	12%
Gender			
Men	60%	33%	7%
Women	71%	25%	4%
Party			
Democrats	79%	16%	5%
Independents	53%	41%	6%
Republicans	17%	78%	4%

Q12. Would you support or oppose the City of Piedmont's efforts to revise its building codes to reduce the use of natural gas in Piedmont buildings?

The one in five who have heard a great deal about Reach Codes are less supportive than those who have heard less.

Demographic Group	Total Support	Total Oppose	Don't Know
All Voters	**66%**	**29%**	**5%**
Time in Piedmont			
Born and Raised	55%	36%	9%
0-5 Years	76%	20%	4%
6-10 Years	70%	22%	9%
11-20 Years	68%	31%	1%
21+ Years	60%	34%	6%
Residence			
Homeowners	64%	31%	5%
Renters	82%	10%	8%
Household Income			
<$250,000	83%	14%	3%
$250,000+	66%	30%	4%
Reach Code Awareness			
A Great Deal	42%	58%	0%
A Little	70%	25%	5%
Not Aware	72%	20%	7%

Q12. Would you support or oppose the City of Piedmont's efforts to revise its building codes to reduce the use of natural gas in Piedmont buildings?

Additional Background Provided

"As part of the Reach Code requirements the City is considering requiring homeowners making renovations that cost more than $25,000 to make 1 insulation or electrification upgrade from a pre-determined list to reduce the use of natural gas. Renovations costing more than $100,000 would require 2 insulation or electrification upgrades.

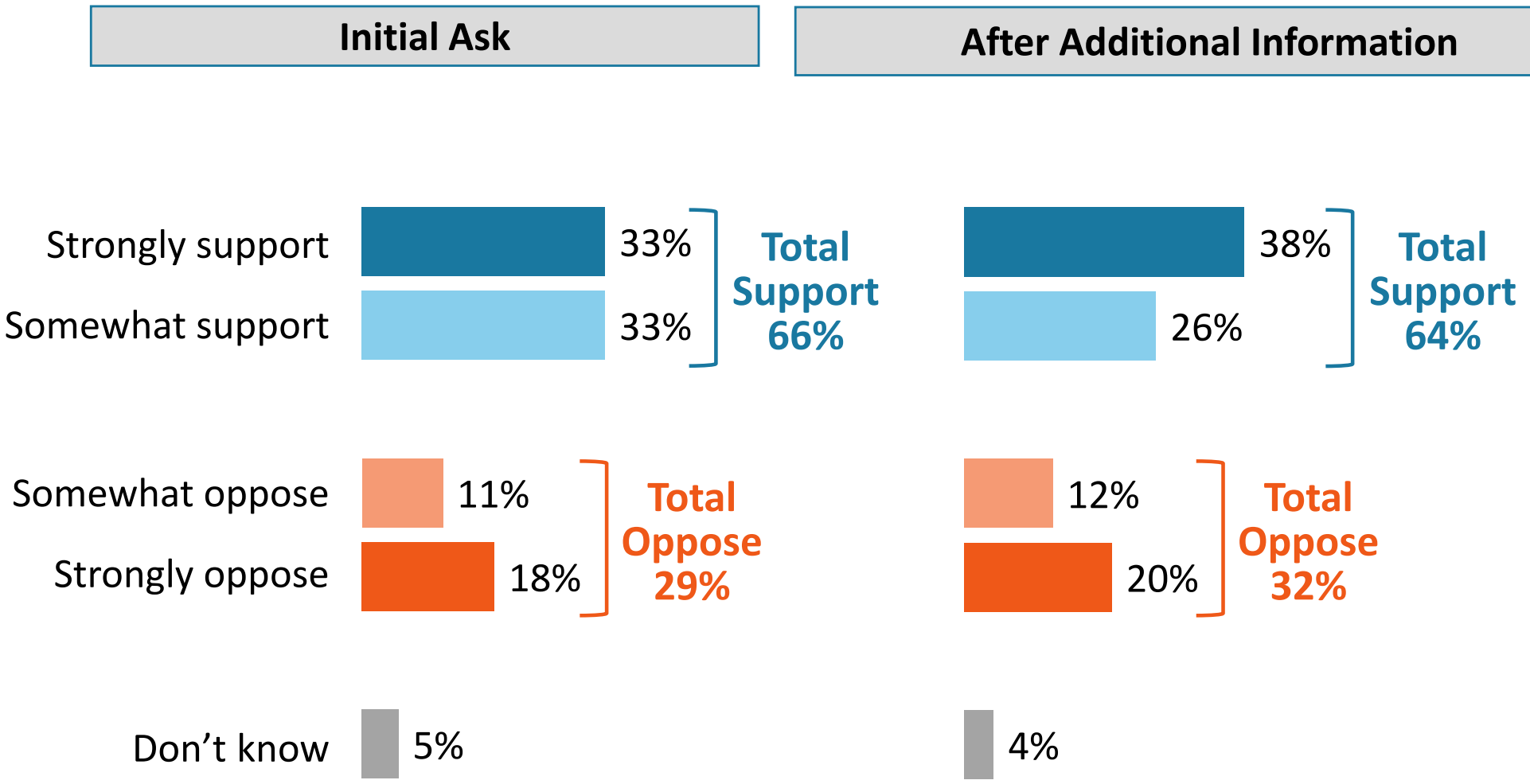
"Below are some examples of improvements that would meet the Reach Code requirement using a $27,000 bathroom remodel as an example. Residents would be required to make only 1 upgrade from this list as part of their renovation in this scenario:"

Improvement	Estimated Cost
Insulate accessible hot water piping. Install low flow plumbing fixtures	$1,200
Implement 1 or more recommendations specified in a Home Energy Score or Home Energy Audit. Example: weather stripping and duct sealing	$1,200
Replace all screw-in incandescent and CFL light bulbs with screw-in LED bulbs. Install vacancy sensors in bathrooms and laundry rooms	$200
Install R-19 insulation at raised floors	$1,500
Install R-38 attic insulation, and air sealing. Seal ducts	$2,500
Replace gas water heater with a heat pump water heater	$4,500
Replace gas furnace with an electric heat pump system (furnace and AC unit)	$15,000 to $20,000

FM3 RESEARCH

Q13.

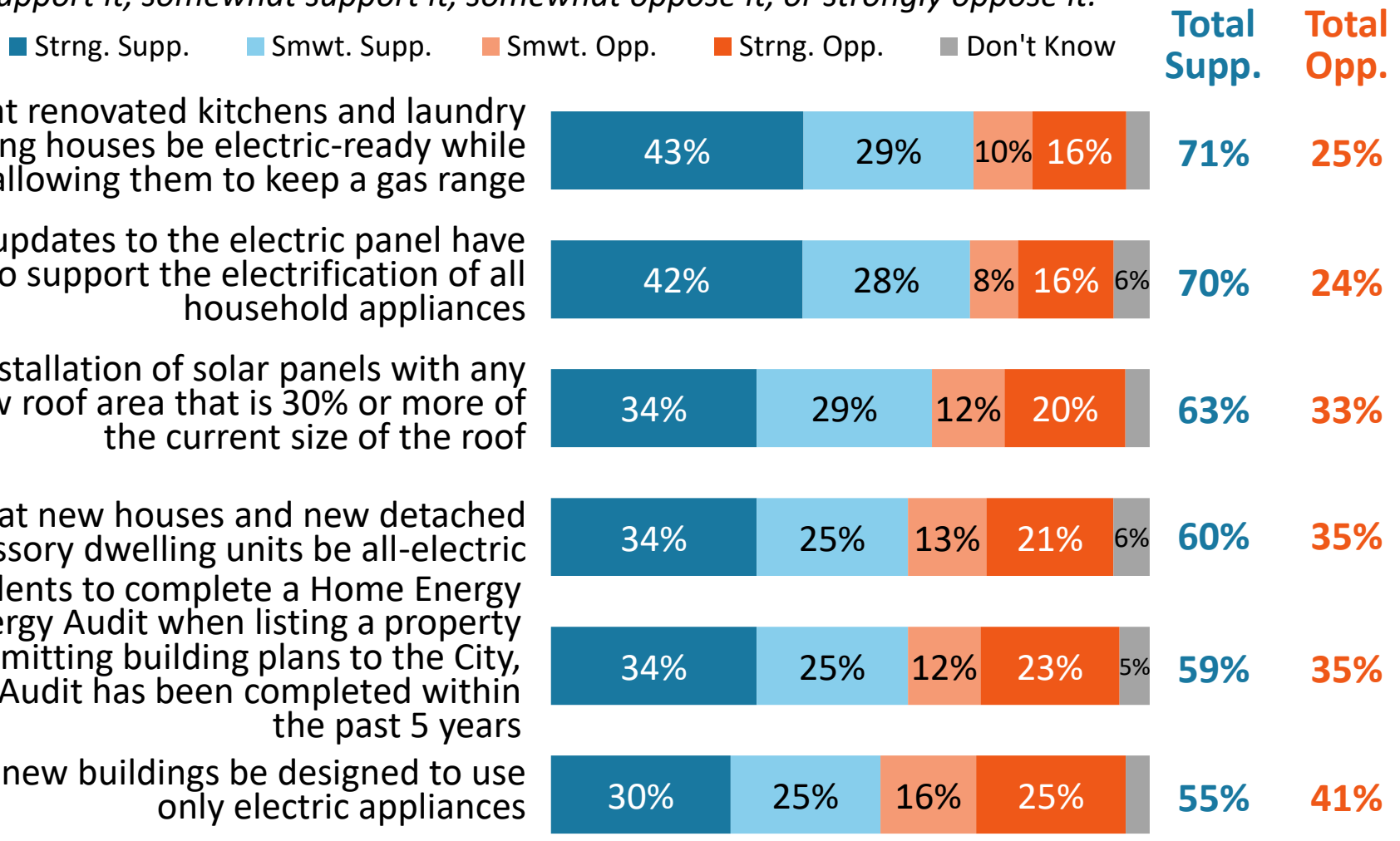
After learning more about the cost impacts of Reach Codes, support remains consistent.



Q12 & Q13.

Voters strongly support requiring renovated kitchens and laundry rooms be electric-ready and that the electric panel have capacity for electrification of all appliances.

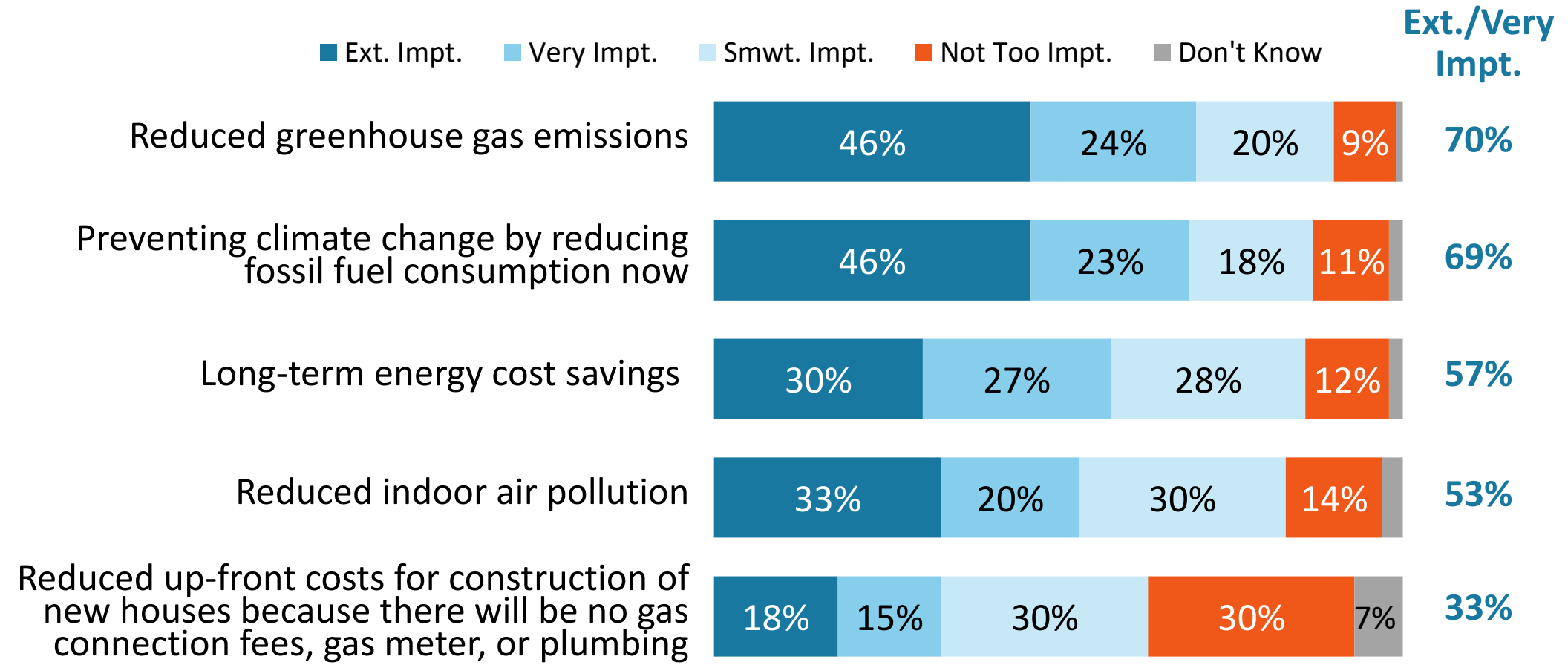
There will be a series of specific building code changes the City is considering implementing to meet its greenhouse gas reduction goals. For each, please indicate if you strongly support it, somewhat support it, somewhat oppose it, or strongly oppose it.



Q14.

Voters view reduced GHGs and reduction of fossil fuel consumption as the most important benefits of Reach Codes; reduced construction costs are lower in importance.

Here are benefits of establishing Reach Codes to reduce the use of natural gas. Please indicate how important this benefit is to you: extremely important, very important, somewhat important or not important.



Q15.

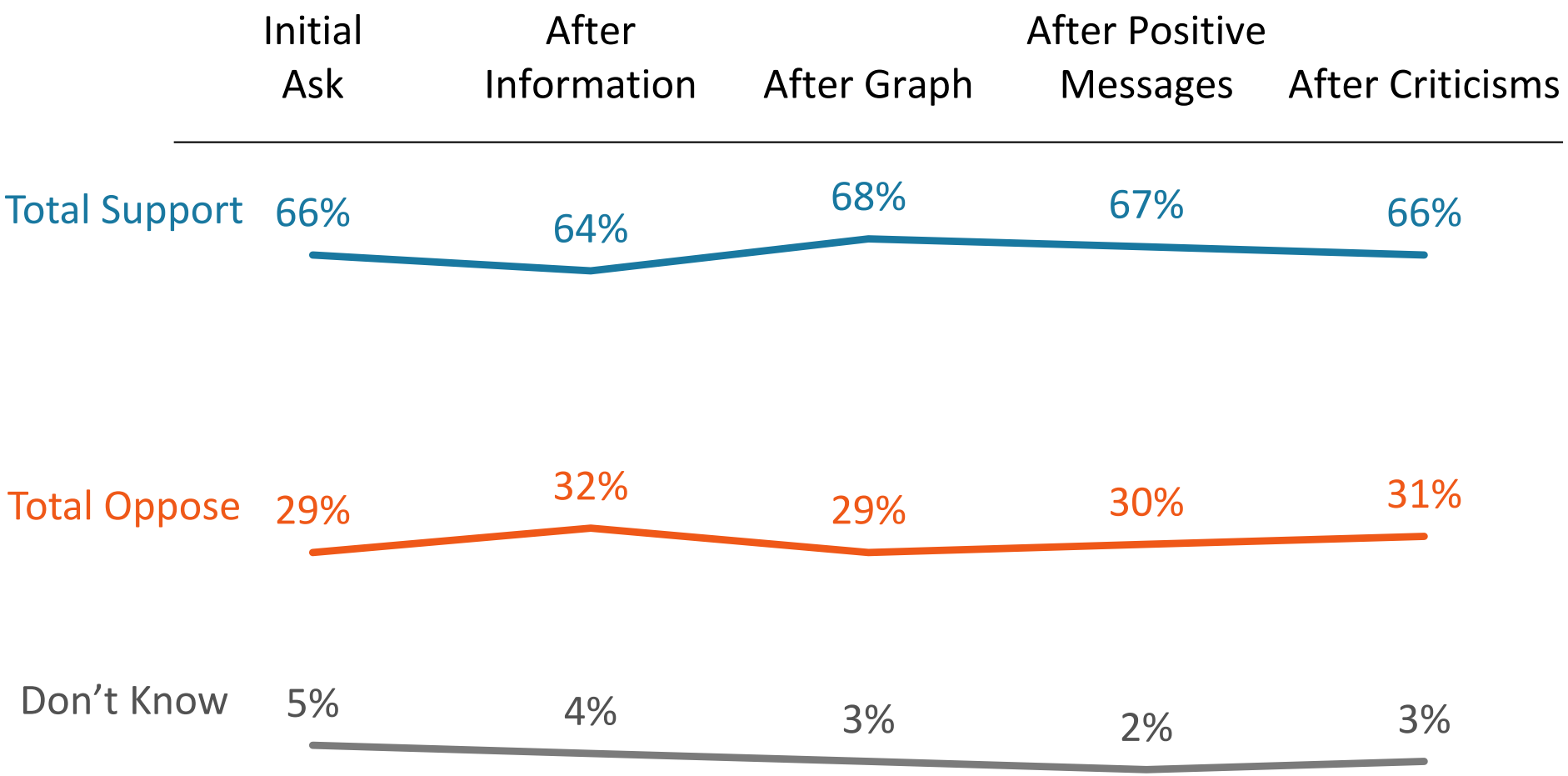
Messaging

Graphic Representation of the Impact of Reach Codes

"40% of Piedmont's greenhouse gas emissions come from natural gas appliances in residents' homes. The graph below shows the effect that implementing reach codes will have on Piedmont's greenhouse gas emissions:"

Q16.

After messaging, support continues to remain consistently at the two-thirds level.

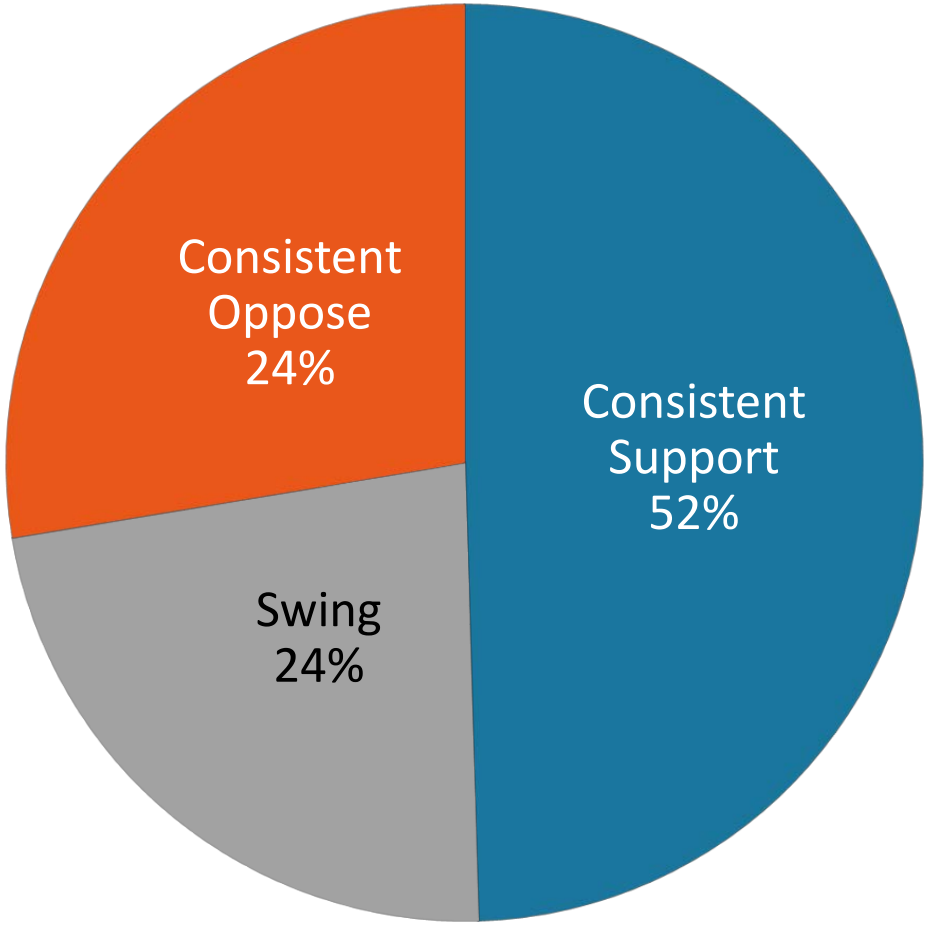


Q12. Would you support or oppose the City of Piedmont's efforts to revise its building codes to reduce the use of natural gas in Piedmont buildings?
Q13. Do you support or oppose requiring that home renovations costing between $25,000 and $100,000 include at least 1 insulation or electrification upgrade from this list, and that home renovations costing more than $100,000 make 2 upgrades from this list, in order to reduce use of natural gas?
Q16, Q18, & Q21 (N=239). Would you support or oppose the City of Piedmont's efforts to revise its building codes to encourage less use of natural gas in Piedmont buildings?

Segmenting the Population by Consistency of Support for the Reach Codes

- **Consistent Support:** Voters who consistently indicated they support the Reach Codes
- **Consistent Oppose:** Voters who consistently indicated they oppose the Reach Codes
- **Swing:** Voters who do not fall into any of the other categories – remaining consistently undecided or switching positions

The following slide shows demographic groups that *disproportionately* fall into one category or the other.



Demographic Profile of the Segments

Consistent Supporters	Swing	Consistent Opponents
52% of the Electorate	**24% of the Electorate**	**24% of the Electorate**
Democratic Women	Lived 6-10 Years in Piedmont	Republicans
HH Income <$250,000	Republicans	Independents Ages 50+
Democrats	Men	Independents
Under Five Years in Piedmont	Ages 50-74	Ages 65+
Women	Democrats Ages 50+	Men Ages 50+
Ages 18-49	HH Income <$250,000	
Lived 6-10 Years in Piedmont	Homeowners	

Messages in Favor of the Reach Code Proposal

Ranked by % Very Convincing

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

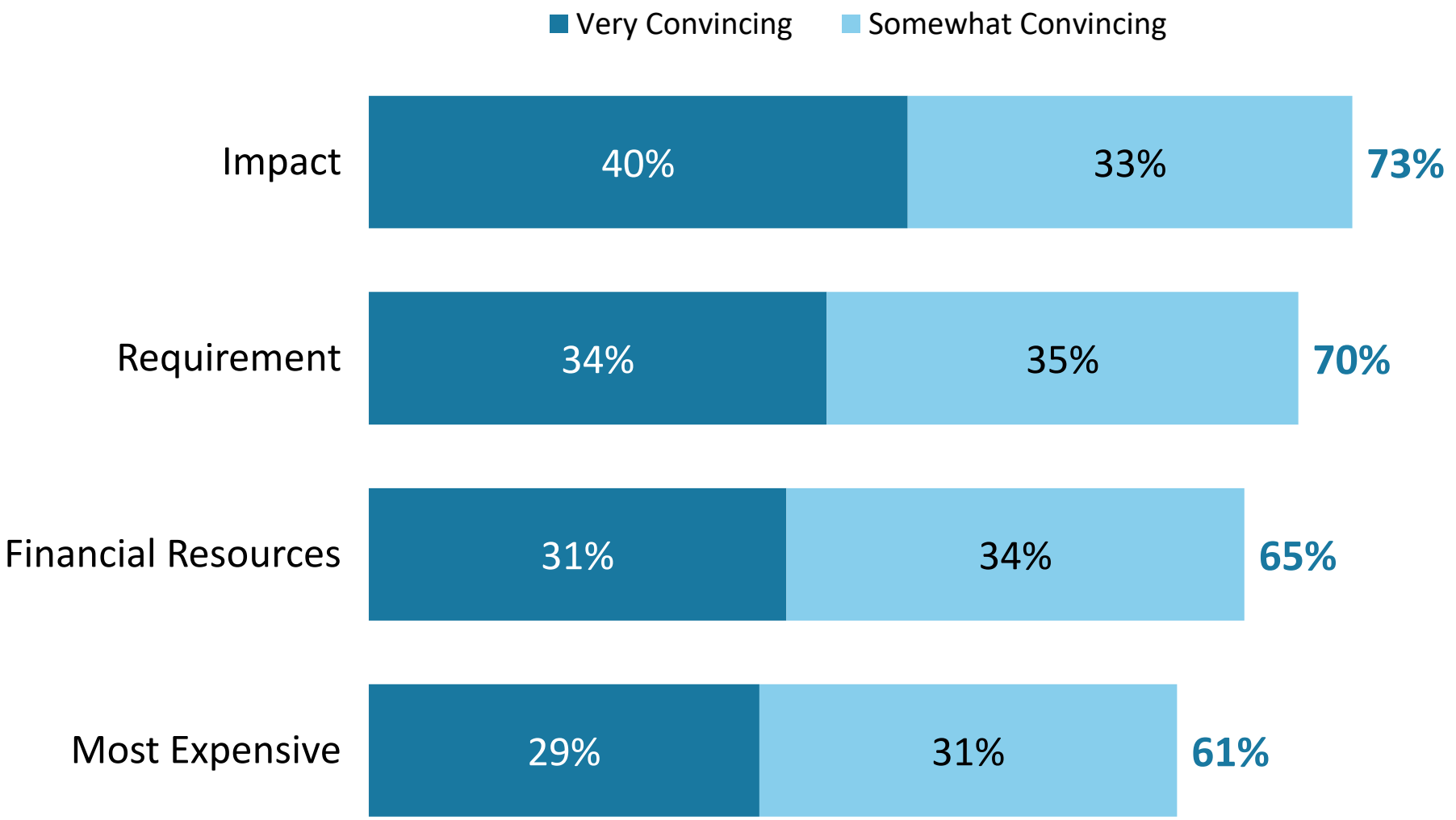
(REQUIREMENT) The State requires that all electricity provided in California be generated by renewable sources by 2045. Piedmont is supporting residents in meeting this goal by adopting these changes to building codes.

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

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

Q17. Here is a series of facts about these proposed Reach Codes to reduce the use of natural gas. Please indicate if that is a very convincing, somewhat convincing, or a not too convincing reason to support adopting Reach Codes in Piedmont.

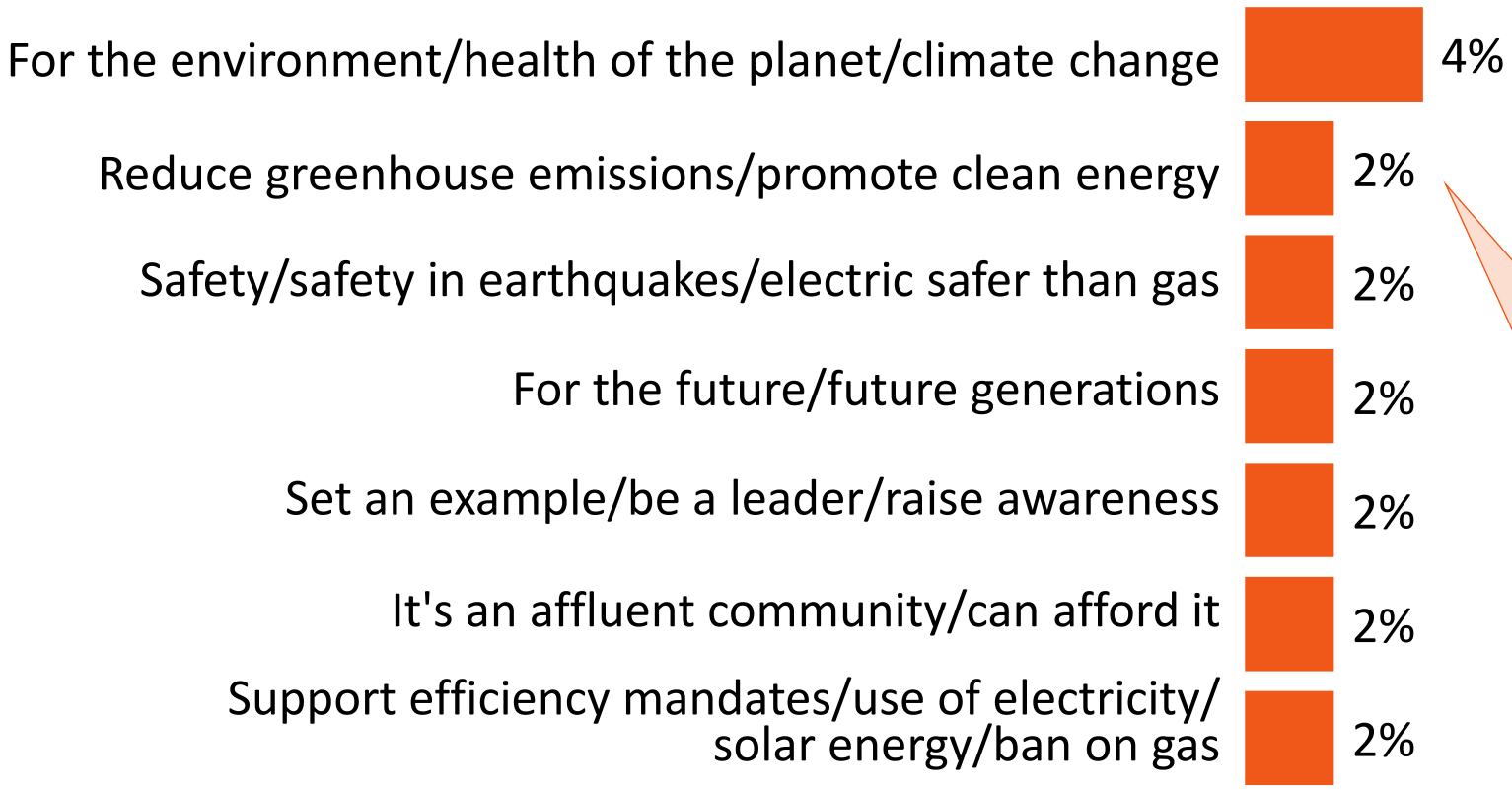
The message describing the impact GHG's from homes have on the environment resonates most strongly.



Q17. Here is a series of facts about these proposed Reach Codes to reduce the use of natural gas. Please indicate if that is a very convincing, somewhat convincing, or a not too convincing reason to support adopting Reach Codes in Piedmont.

Respondents' suggested reasons to Reach Codes focused on saving the planet.

Are there other reasons to adopt these proposed Reach Codes to reduce the use of natural gas that you didn't see listed?
(Open-ended; 2% and Above Shown; 81% Had no Additional Suggestions)



"Saving the planet for our future generation is of utmost importance!!"

Q19.

Messages Opposing the Reach Code Proposal

Ranked by % Major Concern

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

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

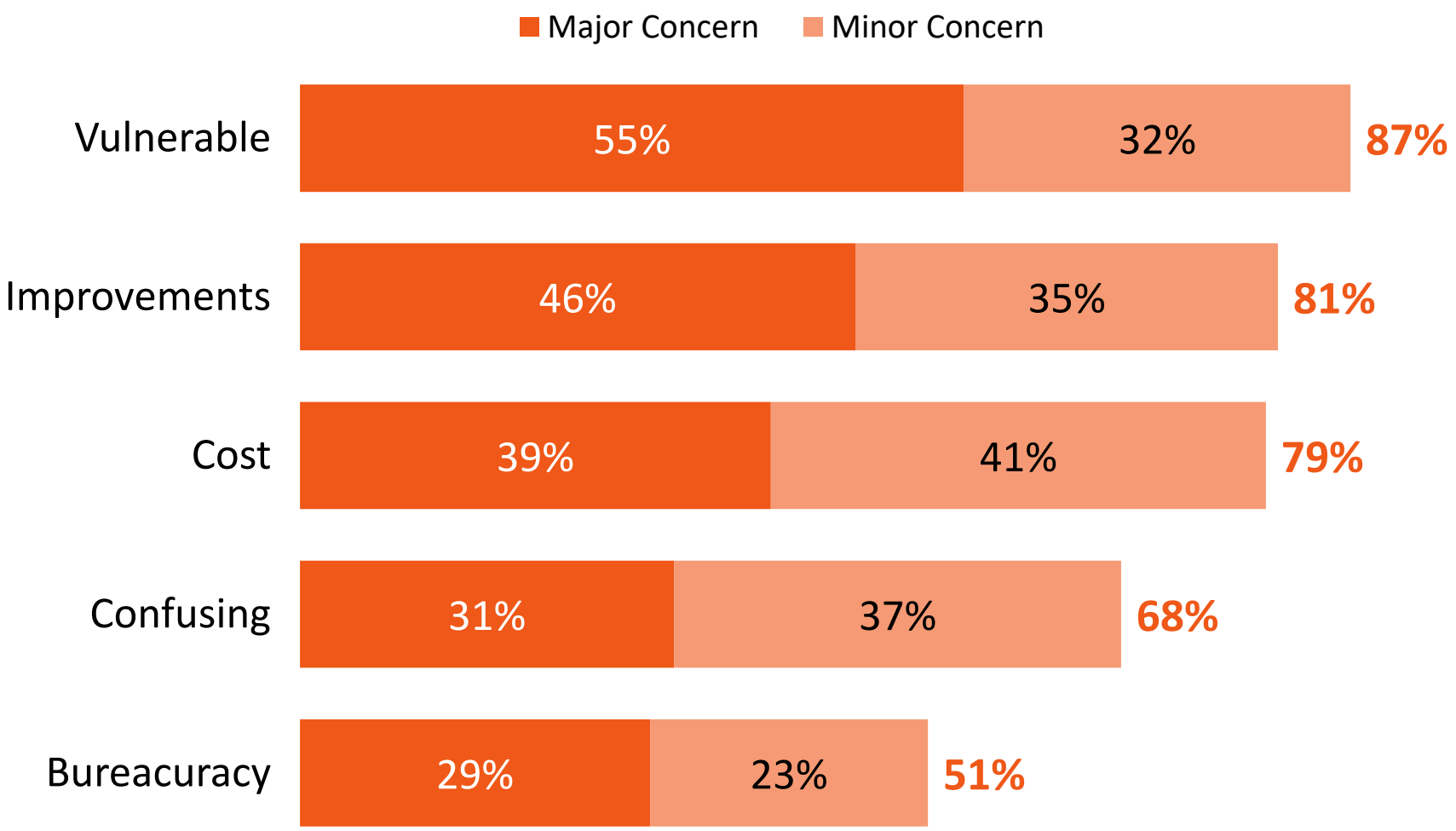
(COST) The Reach Codes would require changes to some home renovation projects, which may be too expensive for some property owners - especially during an economic downturn.

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

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

Q20. Here are some opinions about the proposed Reach Codes stated by members of the community that oppose their adoption. Please tell me if this is a major concern for you, a minor concern for you, or not a concern for you.

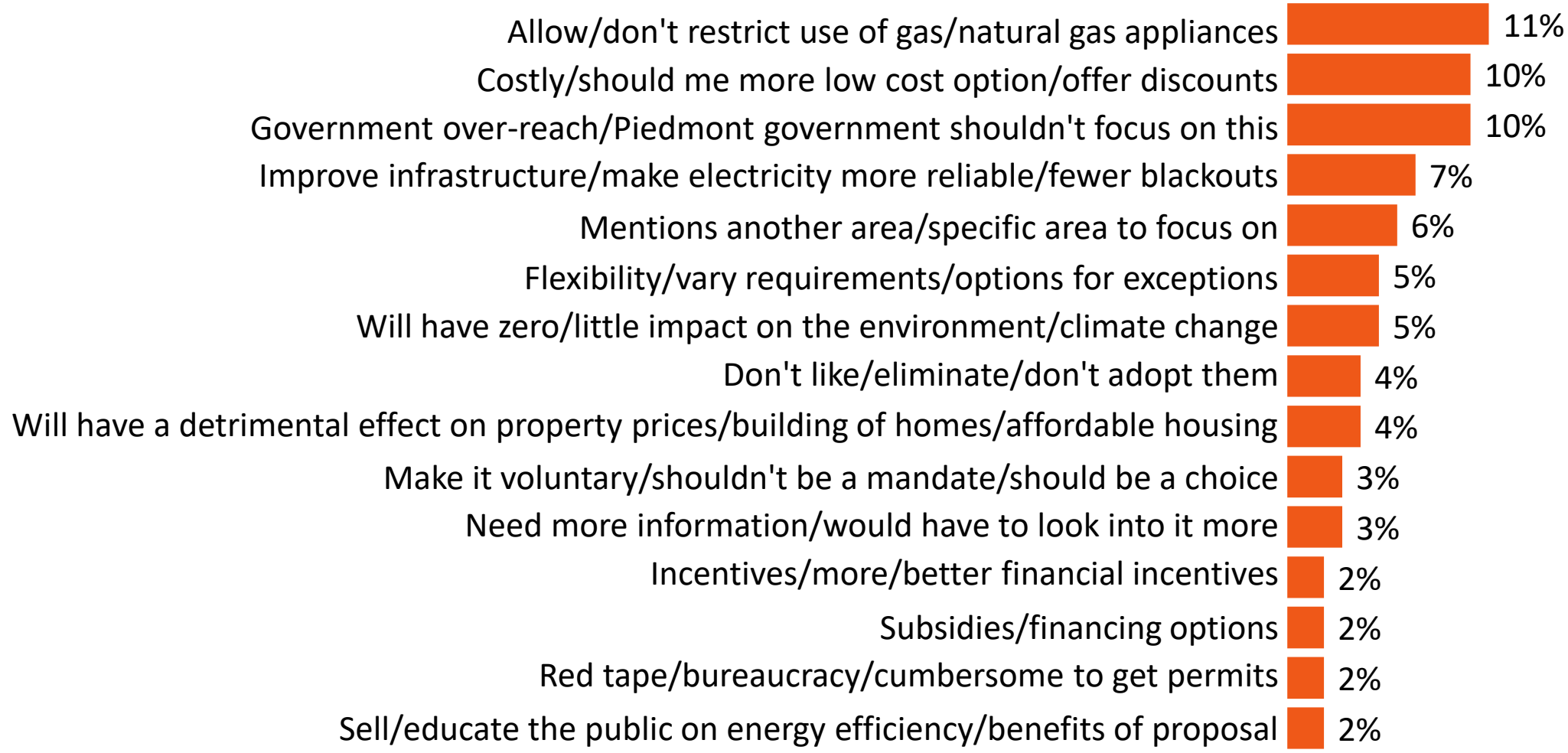
Messages saying Reach Codes put homeowners at risk during power outages and are unfair to those who have made investments already raise the most concern.



Q20. Here are some opinions about the proposed Reach Codes stated by members of the community that oppose their adoption. Please tell me if this is a major concern for you, a minor concern for you, or not a concern for you.

Voters have concerns about restricting the use of natural gas and the cost of the proposal.

Are there other concerns you have about establishing the Reach Codes to reduce the use of natural gas in Piedmont?
(Open-ended; 2% and Above Shown)



Q22.

Verbatim Comments Describing Concerns about the Reach Codes

While I am 100% in favor of measure to reduce climate change, my understanding is that natural gas is a relatively clean form of energy. My concern is that the statistic that 40% of greenhouse gases in Piedmont come from natural gas is probably based upon a flawed and biased study. I would much rather see climate change efforts directed to the more important and damaging sources of greenhouse gases.

Costs for code compliance, future renovation red tape and costs, and being more vulnerable to wildfires.

Natural gas is important for stoves, fireplaces, barbecues and generators.

There should be more flexibility in how an individual homeowner reduces the GHG emissions in their footprint. If it is more palatable for them to reduce it in other ways (electric vehicle, solar, better insulation, etc.) then that should be taken into account.

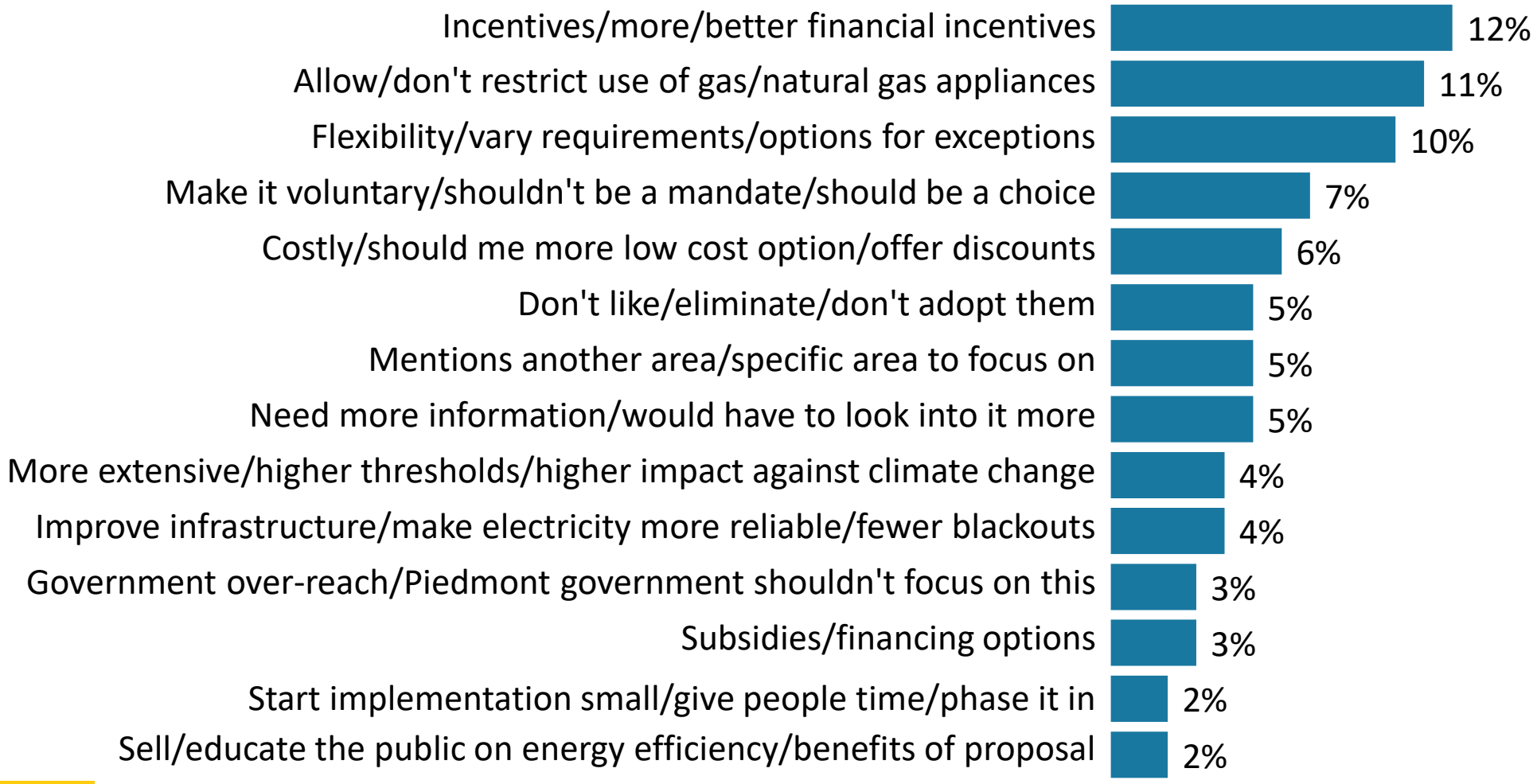
I hope implementation is gradual and not the Piedmont "overkill" enforcement. Also, gas should be allowed for cooking !

Folks will do work without permits to get around these requirements and the added cost for homeowners who may be stretching to do a project at all.

Q22. Are there other concerns you have about establishing the Reach Codes to reduce the use of natural gas in Piedmont?

Financial incentives, fewer restrictions on natural gas, and flexibility in the rules are the most-commonly suggested changes.

What changes, if any, to the Reach Code policy might make it more acceptable to you?
(Open-ended; 2% and Above Shown)



Q23.

Verbatim Comments Suggesting Improvements to the Reach Code Proposal

Financing options for those who need it.

Make it voluntary instead of mandatory; promote the use of electricity by providing financial and moral incentives; improve the infrastructure by undergrounding the power lines.

City should get an Energy Audit for all residents done. Then it would be more apparent for all what needs to happen.

I think the already done renovations such as solar, electrical appliances and insulation should be taken into account when renovations are done rather than requiring new ones and it should be regardless of the cost of the renovation.

I would like for homes that have already made many of these changes to get credit for that.

As long as a gas range is allowed to stay in the kitchen, I support the adoption of Reach Codes. If you can afford to do a retrofit, you should be spending the extra money to make your home more efficient.

Q23. What changes, if any, to the Reach Code policy might make it more acceptable to you?

Conclusions

Conclusions

- Piedmont voters continue to broadly agree that climate change is real and an urgent problem.
- Familiarity with the City's Climate Action Plan has grown since June, and more than three in five say it is "very important."
- More than half have heard about the proposed Reach Codes; awareness has increased since June.
- Two-thirds of voters consistently support the plan, even as they get more information on the cost impacts and its pros and cons.
  - Those who were most familiar with the plan prior to taking the survey were more divided in their support than others.
- Overall, the sizable impact of GHGs generated by Piedmont homes offers the most compelling reason to support the proposal.
- However, concerns about the cost impacts and potential vulnerability to power outages raise the most concerns.
- Alternative approaches suggested by voters center on providing financial incentives to residents, allowing previous upgrades to count toward the requirements, and allowing exceptions for gas cooktops.

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Item #8 – 2019 Greenhouse Gas Inventory and Climate Action Plan 2.0 Report
Correspondence Received before 4:00 p.m. on Monday, June 21, 2021

City Council: The report on the 2019 Green House Gas (GHG) Inventory is alarming for two reasons. First there has been virtually no change in city's GHG emissions from 2018 to 2019 which indicates the city is not making progress towards the reduction targets. Second, the inventory indicates the transition to renewable energy provided by EBCE will not provide sufficient GHG reduction for the city to meet those targets. The report shows the only way for Piedmont to achieve the 2030 and 2050 targets is through reduction (and possibly elimination) of the use of natural gas and the transition to electric vehicles.
The report may lead some to suggest there has been progress in that the GHG contributions of the residential sector have been reduced as a percentage of Piedmont's total GHG emissions (figure 2 from the GHG report). That change is based solely on the assumption that all electricity currently provided to Piedmont from EBCE is renewable. The reductions assigned to in the residential and municipal facility sectors in the 2019 GHG report have yet to be achieved although it may be appropriate to account for them at this time. Doing so now means that the City will achieve no further GHG reductions through ECBE's greening of the grid and will need to find reductions in other ways. This is evident in Figure 17 (from Attachment A) - electricity emissions are now essentially zero while natural gas emissions have gone unchanged for 3 years now. EBCE renewable energy has produced a reduction of only 2000 MT. There is much greater reduction to be achieved through natural gas.

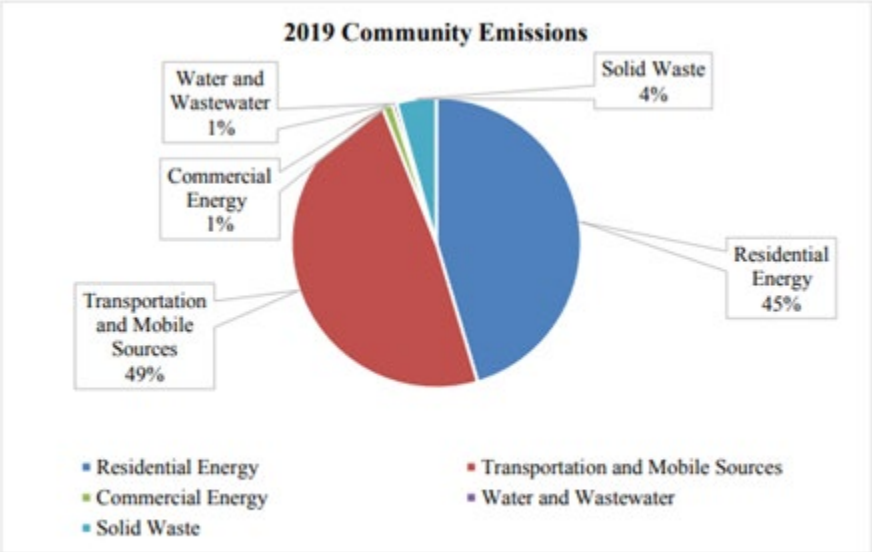

Figure 2

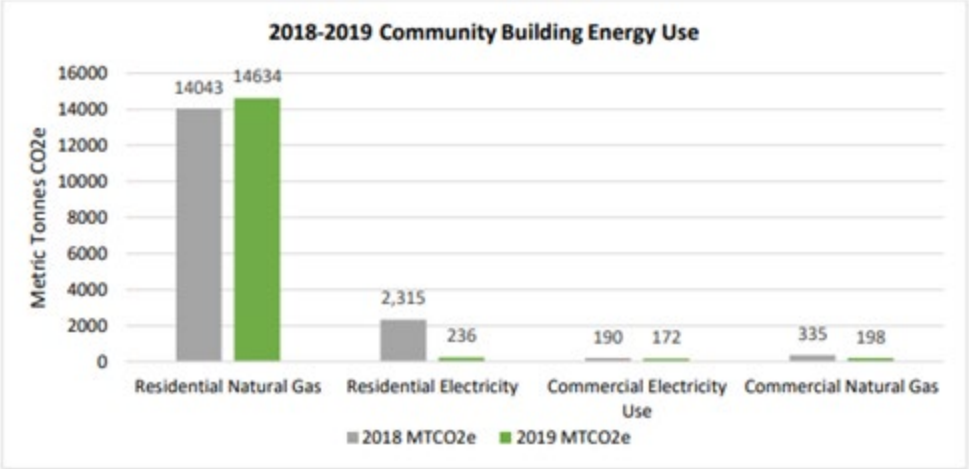

Figure 17

This "reduction" in the residential sector may also lead some to think we need to focus instead on transportation. While transportation is important, market forces are driving the adoption of EV's and in fact the city can do very little to affect this change. Instead, the City needs to focus on reducing the community sector GHG emissions through more REACH Codes, incentives and bans on use of natural gas in new construction and residential additions.

On this last point, the City is in an excellent position to lead by example for the community. Adoption of EV's in the municipal fleet would be a visible statement by the city on its commitment to reducing GHG. But a city action of even greater relevance would be the building of a net zero carbon pool. The current pool is the largest municipal user of natural gas in the city and the conceptual design for the new pool will at least double that usage. During the upcoming public engagement on the pool design, the city should advocate for a ZNC pool and provide designs and cost estimates of a ZNC pool during the public process. It is a stated goal of CAP 2.0 for the City to have net zero carbon operations by 2050.

Finally, staff suggests Council consider the establishment of Climate Action Committee to provide technical advice to the City on implementing the CAP and to serve as a liaison to the community. Virtually every other Bay area municipality has done this. Given that the city's GHG reduction has stalled, innovative ideas will need to be vetted and Piedmont has a wealth of energy expertise that can assist staff. And as we saw with the REACH codes, the community wants these new proposals from staff presented at public hearings and a Climate Action Committee would provide that venue. Give direction to staff to report back to Council with concepts for such a committee in the near term.

Garrett Keating

Dear Council Members,

As Arizonans struggle to live in 119 degrees heat, I've placed an order for N95 masks with valves and checked the filters on our air purifiers, knowing that this fire season is going to be just as bad or even worse than previous years. Climate change is here, we are suffering from it, and it is only going to get worse.

It was very disappointing to see that, even with the GHG emissions reductions we've accomplished by opting Piedmont residents into EBCE's 100% renewable electricity plan, our overall emissions continue to remain the same. It's clear that climate action needs to be a top priority for Piedmont and that we need to move quickly, as 2030 (our first emissions reduction target date) will be here in 9 years and we're not going to meet our goal unless we significantly step up our effort.

Even though the 2019 GHG Inventory shows the transportation sector slightly outpacing the building energy sector, we should maintain building energy action as our main focus. For one thing, the transportation numbers are based on countywide vehicle use, so they may not accurately reflect Piedmont's progress in EV adoption (which is commendable). For another, building energy is a sector where the City has actual jurisdictional power to effect change -- through local building codes and ordinances.

Many of the actions that would intensify our climate action effort already lie within our Climate Action Plan 2.0. In particular, I urge you to follow up on the following:

- Establish a Climate Action Commission, to serve as technical advisors, liaise with the community, monitor our progress toward Climate Action Plan goals, and update the CAP to reflect current knowledge and practices. We have commissions to oversee various other aspects of Piedmont residents' wellbeing (our parks, our recreational activities, the design of our homes); we must also have one for the all-important task of combating climate change before it's too late.

- Investigate establishing a Piedmont Climate Fund (possibly through our natural gas tax), to fund incentives or a loan program for replacing gas appliances with efficient electric models, as well as a high-quality and thorough outreach campaign. Currently there is practically no budget for climate action, preventing us from being able to carry out the intensive outreach that will be necessary for getting all Piedmonters motivated to phase out their gas appliances. Polling has indicated that the main stumbling block for residents considering adopting climate-friendly technologies is financial. We need to especially help residents on fixed or lower incomes.

- Commit to designing a new pool facility that will be carbon free (or close to carbon free) in its operations and to involving the Sustainability Manager in the design process. The old pool's use of natural gas for water heating constituted around two-thirds of municipal emissions. We have the chance to not only eliminate these emissions but also to motivate residents to aim for zero carbon in their own home improvement projects. Although the CAP doesn't specifically single the pool out to be ZNE, it does call for all city new construction to be so, and the pool is the City's current large construction project.

- Replace all city-owned, gas-fueled vehicles with EV's as soon as possible. Provide incentives for city employees to purchase or lease EV's for their commutes.

- Develop the rest of the policies outlined in the Climate Action Plan. It's commendable that we developed and passed Reach Codes that address residential remodels, as well as

mandated Home Energy Scores at point of sale. But the following policies remain to be developed:

- a resolution committing Piedmont's municipal facilities and activities to be zero-carbon upon appliance replacement and no later than 2050
- a policy requiring Zero Net Energy construction for new commercial construction
- a commercial energy assessment ordinance
- regulations requiring the installation of energy conserving appliances and fixtures at point of replacement
- an ordinance requiring greywater or water collection systems in new construction.

Beyond the CAP, the following actions would signal to residents that we are taking climate action very seriously, and motivate more people to get on board:

- Issue a climate emergency resolution, with concrete accompanying goals and actions. If this is well-publicized, it could play a strong role in motivating residents
- Implement a new consumption-based annual greenhouse gas inventory method. Our current method doesn't account for air travel emissions or emissions generated in creating the goods and services we consume. Piedmont residents' emissions are much more than their "in boundary" emissions, and we need to account for and address this. The Cool Climate project at UC Berkeley has developed a consumption-based inventory model, and we should prioritize investigating using it for our next GHG inventory.

Now that we have a Sustainability Manager in place, as well as a climate intern, let's give them the tools they need to make our climate action more effective: funding (through a Climate Action Fund), an advisory committee of experts to ensure that we are following the latest developments in climate action and bringing community attention to the effort, as well as legislation to start amping up the requirements and expectations for residential home building energy management.

With thanks for your service to the community,
Margaret Ovenden

Good afternoon,

In light of the lackluster progress demonstrated in the latest greenhouse gas inventory and climate action report, I urge this capable team to prioritize and expedite more aggressive steps in our community.

Why not start by moving **now** to form a Sustainability Commission, as recommended by staff (page 16), to more deeply involve residents in the needed efforts and to raise the profile of the work that needs doing?

Please don't put off important action like this for further weeks, months or, for heaven's sakes, years!

Respectfully
Susan Miller-Davis

Dear City Council,

As the communications manager for the Water Program at Environmental Defense Fund, I have spent the past few days helping to field interviews with reporters from the New York Times, Associated Press and others about drought, water scarcity and climate change in the West.
The news they are delivering is grim: Climate change is here and its consequences are dire. Use less water and brace yourself for another deadly wildfire season. Of course, we also need to address the root cause of the changing climate—greenhouse gas emissions from fossil fuels.
At the same time, as a Piedmont resident, I was disappointed to read about our community's lack of progress in the city's latest greenhouse gas emissions report. It's time for Piedmont to make climate change a higher priority in both our government and community. It's time for the City Council to create a Sustainability Commission to advise the council and city staff and help achieve more meaningful progress on fighting climate change.
I urge you to take action now by creating this new commission. With another fire season upon us, we can't wait any longer.

Thank you,
Ronna Kelly

To City Council Members,

Since global warming is undeniably the greatest threat to the survival of life on earth, it is imperative that every one of us does all we can to slow it down. The goal for reducing Piedmont's carbon emissions to a potentially sustainable level by 2030 is clearly laid out in the GHG Inventory Report. Unfortunately, we are not making enough progress to meet the goal, and in fact are back-sliding, due to more natural gas usage and gas-fueled transportation.

The report lays out specific steps the City and residents can take to get us back on track to meet the 2030 goal. A good place to start would be to create a Climate Change Commission of residents to study, advise and report to the Council on progress the City is making.

Thank you for your consideration and your ongoing work for Piedmont.

-Marjorie Blackwell
