

City of Piedmont
COUNCIL AGENDA REPORT

DATE: July 17, 2023

TO: Mayor and Council

FROM: Rosanna Bayon Moore, City Administrator

SUBJECT: Receipt of a Report on the 2021 Greenhouse Gas Emissions Inventory, and Piedmont's Climate Action Plan 2.0 Implementation Status

RECOMMENDATION

Receive an informational update on the 2021 Greenhouse Gas Emissions Inventory and the status of the implementation of Piedmont's Climate Action Plan (CAP) 2.0. No action required.

BACKGROUND

On March 19, 2018, the City Council adopted the Piedmont Climate Action Plan 2.0 (CAP 2.0), which includes the goal of reducing in-territory greenhouse gas (GHG) emissions (i.e., emissions occurring within City limits) 40% below 2005 levels by 2030 and 80% below 2005 levels by 2050. Piedmont's progress toward achieving its GHG emission reduction targets is measured on an annual basis and summarized in an emissions inventory. This report provides information on the 2021 GHG emissions inventory, including estimates for both community and municipal (i.e., City Government) emissions. Since the City began conducting GHG inventories over a decade ago, most of Piedmont's emissions have been attributed to two main sectors: transportation and residential energy. The 2021 inventory reaffirms these findings, albeit it reveals slight reductions in the transportation sector since 2020.,

Piedmont is on course to meet its 2030 emissions reduction target. This is due in large part to transportation emission reductions, localized decreases in emissions from building appliances and electricity service plans, and reduced heating degree days. Although Piedmont's emission reductions are cause for celebration, there is still much work to accomplish to transition to a low-carbon community. Key focal areas for future emission reductions include eliminating natural gas use in existing buildings, ensuring sustainable mobility and land use options, and reducing lifecycle GHG emissions associated with purchasing and consumption habits.

City of Piedmont staff completed the 2021 GHG emissions inventory in the spring of 2023, attached as Exhibit A. In 2021, Piedmont's in-territory emissions (i.e., emissions occurring within City boundaries) totaled 32,357 MTCO₂e, of which 914 MTCO₂e are attributed to municipal activities. This was a reduction of 34% below 2005 levels and a very slight reduction (3.1%) below 2020 emissions. The reductions since 2005 are largely attributed to continued global warming

trends, which require fewer heating degree days¹, as well as localized decreases in emissions from building appliances and Piedmont's residential and municipal enrollment in East Bay Community Energy's (EBCE) 100% renewable energy service plan. Figure 1 below shows the City's emissions trends since 2005. For a more detailed comparison of the results of the 2021 GHG inventory to previous years, please refer to Exhibit A.

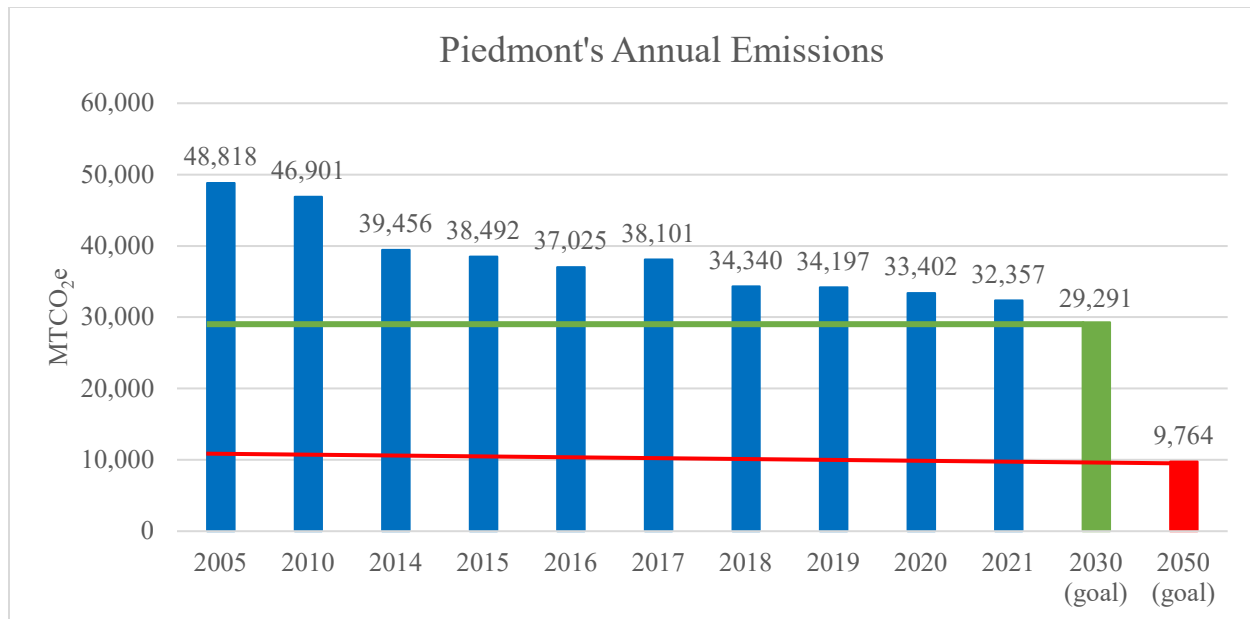


Figure 1

What follows is a brief overview of the two sectors included in the 2021 GHG emissions inventory: the community inventory, which includes residential and commercial business activities in Piedmont, and the municipal inventory, which only covers activities stemming from City facilities and City staff and contractors.

Community Emissions Update

Community activities in 2021 resulted in approximately 31,442 MTCO₂e. This is a decrease of 3.8% from 2020 in-territory community emissions. The sectors that contributed most to Piedmont's in-territory community GHG emissions were transportation & mobile sources² (48%) and residential energy (47%). Transportation and residential energy have consistently remained the biggest sectors in terms of contributions to GHG emissions since 2005. Since 2020, emissions largely remained unchanged. There were decreases in transportation and solid waste emissions, while slight increases to residential and commercial energy, water and wastewater, and fugitive and process emissions.

It is important to note the GHG emissions inventory used by staff does not include consumption-based emissions.³ While Piedmont's in-boundary GHG emissions are low relative to neighboring

¹ Heating degree day is the unit which measures how many degrees, and how many days, outside air temperature were lower than the base temperature of 65 degrees Fahrenheit.

² 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>

³ Consumption-based emissions refer to the total lifecycle emissions of goods and services imported to the city.

cities, Piedmont's rates of consumption correspond to a significant quantity of GHGs released globally. If consumption were included in the inventory, emissions would be about seven times higher than they are currently.⁴ According to data from a UC Berkeley study of consumption-based emissions, Piedmont is the highest emitter per capita in Alameda County and one of the highest throughout the Bay Area. While initially disheartening, Piedmont's high consumption-based emissions demonstrate the power residents yield globally with their purchasing decisions.

Municipal Emissions Update

Municipal activities in 2021 resulted in approximately 914 MTCO₂e, or 2.8% of total in-territory emissions. This is an increase of 21% from in-territory municipal emissions since 2020. The increase was primarily driven by an increase in vehicle fleet emissions due to the addition of emissions from Republic Services' waste collection vehicles to the inventory. This data was added for a more comprehensive picture of the impact of solid waste collection services in Piedmont. Like previous years, the biggest sectors contributing to municipal emissions were transportation- related activities (86% of the total), followed by solid waste (7%), buildings and facilities (7%), and process and fugitive emissions (<1%).

GHG INVENTORY CONCLUSIONS

The top sources of community emissions continue to be transportation and residential energy use. Curbing emissions from transportation will require increased use of public transportation, EVs, walking and biking. Addressing emissions from buildings and energy use will require electrification of new and existing buildings, the entire community's enrollment in 100% renewable electricity, and energy efficiency improvements. As in previous years, the most significant sources of municipal emissions are the City's vehicle fleet and employee commute. Electrifying the municipal vehicle fleet has the potential to markedly reduce municipal emissions. At the same time, employees should be encouraged to carpool, take alternative methods of transportation, and work from home, if possible.

CAP 2.0 IMPLEMENTATION UPDATE

The CAP 2.0 provides actions and strategies to achieve reductions in GHG emissions. Since the CAP 2.0 was adopted in 2018, the City has engaged in outreach efforts to implement some of the transportation and energy efficiency measures, as well as looked for opportunities to expand its municipal climate actions. For a detailed update on the CAP 2.0 implementation, please refer to Exhibit B.

POTENTIAL NEXT STEPS

Based on the findings from GHG emissions inventories completed in the last several years, actions considered to be "low-hanging fruit" have already been taken and further action is needed for the City to be on track to meet its CAP 2.0 goals. The City Council may direct staff to pursue some or all of the following list of actions intended to accelerate progress towards CAP implementation, which are focused on addressing Piedmont's largest GHG emitting sectors.

⁴ 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>

Reduce Natural Gas Use Through Building Electrification Efforts

- Development of a Time of Replacement Policy
- Establishment of a Permanent Funding Source for Electrification

Reduce Transportation Emissions Through Active Transportation & Electrification Efforts

- Conduct a Micromobility Feasibility Study
- Increase Availability of EV Chargers Citywide

Enhance Climate Adaptation and Resilience Efforts

- Conduct a Feasibility Analysis for a Community Resilience Hub
- Develop a Sustainable Parks Master Plan

Municipal Facilities and Opportunities to Reduce Emissions

- Electrification of the City's Fleet
- Reduce Employee Commute through Telework and Clean Commuter Programs

ATTACHMENTS

A	Pages 5-17	City of Piedmont 2020 Greenhouse Gas Emissions Inventory
B	Pages 18-55	City of Piedmont CAP 2.0 Implementation Progress

By: Alyssa Dykman, Sustainability Program Manager
Sophie Roberts, Climate Action Fellow

City of Piedmont: 2021 Greenhouse Gas Emissions Inventory Update

Executive Summary

In 2010, the City of Piedmont adopted its first 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 second Climate Action Plan ([CAP 2.0](#)), which provided an update to the original plan. The CAP 2.0 set new targets of reducing in-territory GHG emissions 40% below 2005 levels by 2030 and 80% below 2005 levels by 2050. As of 2023, City staff are in the process of developing updated GHG reduction targets to reflect current state, federal, and global targets.

To determine the City’s progress in meeting both the previous and current emissions reduction goals, a greenhouse gas inventory was conducted in 2005 to establish a baseline emissions level. Subsequent inventories were completed for the years 2010, and 2014 onwards. Most recently, Piedmont’s Climate Action Fellow completed the 2021 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 several years and the current in-territory emissions goals laid out in the CAP 2.0: reduce in-territory emissions to just 29,291 metric tons of Carbon Dioxide equivalent (MTCO₂e) by 2030, and just 9,764 MTCO₂e by 2050. The red line indicates the 2030 goal, and the green line indicates the 2050 goal.

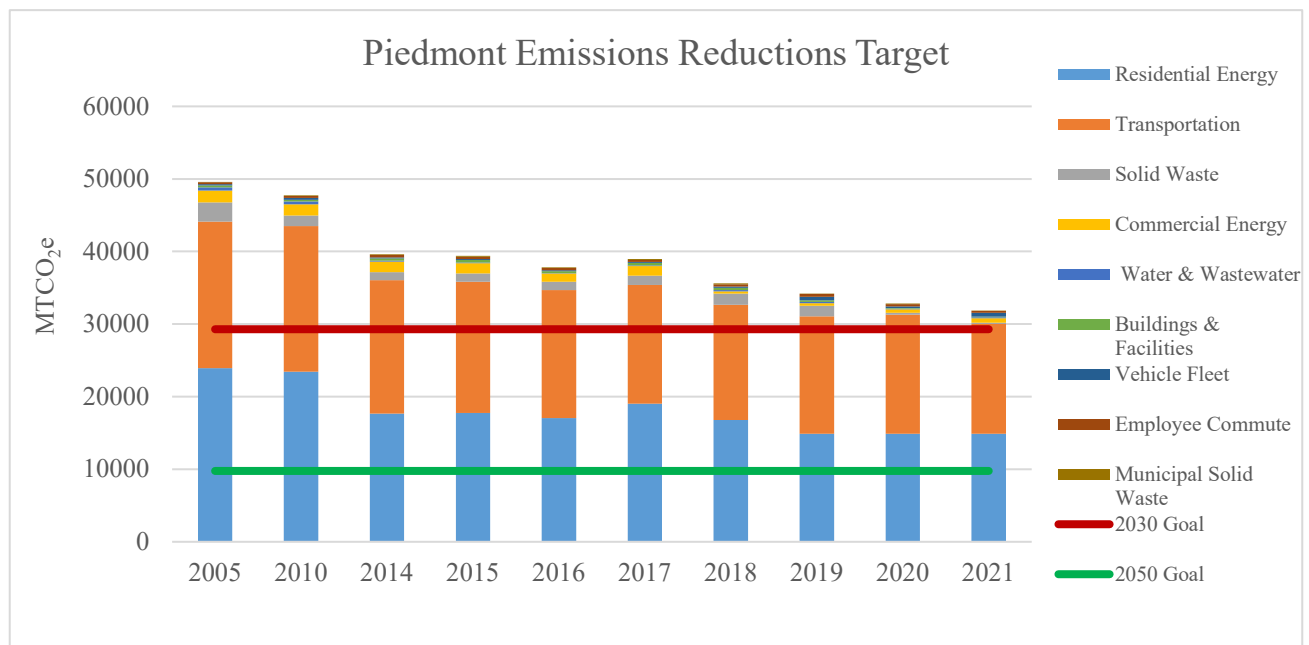


Figure 1

Previous Greenhouse Gas Inventories

Included below in Table 1 are the inventories for 2005 (baseline year), 2010 (year a CAP was first adopted), as well as 2014-2021. 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 (MTCO₂e) in a year.

Table 1: Piedmont's GHG Emissions Inventories and Relative Emissions Reductions Since 2005

Year	In-Territory Emissions in MTCO ₂ e	% Emissions Reduction Relative to 2005 Baseline
2005	In 2005, GHG emissions in Piedmont totaled approximately 48,818 MTCO ₂ e. Within this total, municipal facilities emitted approximately 1,025 MTCO ₂ e. 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 goals.	--
2010	The 2010 inventory indicated that GHG emissions were approximately 46,901 MTCO ₂ e. The City's municipal activities in 2010 resulted in approximately 1,056 MTCO ₂ e.	4%
2014	In 2014, Piedmont produced approximately 39,456 MTCO ₂ e. The decrease in GHG reductions was due in part to ongoing conservation and energy efficiency efforts by Piedmonsters 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 MTCO ₂ e. 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.	19%
2015	The 2015 inventory indicated Piedmont emitted approximately 38,492 MTCO ₂ e. The primary driver of this 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	21%

	approximately 960 MTCO ₂ e. Community and municipal results from the 2015 GHG inventory were used as the basis for Piedmont's CAP 2.0.	
2016	In 2016, Piedmont produced approximately 37,025 MTCO ₂ e. Municipal activities resulted in approximately 864 MTCO ₂ e. 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 the residential and commercial electricity sectors since 2015.	24%
2017	In 2017, Piedmont produced approximately 38,101 MTCO ₂ e, of which 879 MTCO ₂ e are attributed to municipal activities. This is an increase of 3% from 2016 total emissions.	22%
2018	In 2018, Piedmont produced approximately 34,340 MTCO ₂ e, of which 934 MTCO ₂ e are attributed to municipal activities. This was a reduction of 9.8% from 2017 in-territory emissions. This reduction was largely due to Piedmont's community and municipal enrollment in East Bay Community Energy's (EBCE) 100% renewable energy service plan.	29%
2019	In 2019, Piedmont's emissions were approximately 34,197 MTCO ₂ e, of which 1,139 MTCO ₂ e are attributed to municipal activities. This was a very slight reduction (less than 1%) below 2018 in-territory emissions.	30%
2020	In 2020, Piedmont's emissions were approximately 33,402 MTCO ₂ e, of which 722 MTCO ₂ e are attributed to municipal activities. This was a 2.3% reduction below 2019 in-territory emissions.	32%
2021	In 2021, Piedmont's emissions were approximately 32,357 MTCO ₂ e, of which 914 MTCO ₂ e are attributed to municipal activities. This was a 3.1% reduction below 2020 in-territory emissions.	34%

2021 Greenhouse Gas Inventory

Piedmont's 2022-2023 Climate Corps Fellow worked with City staff to complete the 2021 GHG emissions inventory and present it to the City Council.

32,357 Metric Tons of CO₂e
3.1% decrease from 2020
34% decrease from 2005

The results showed that in 2021, Piedmont's in-territory emissions were approximately 32,357 MTCO₂e, of which 914 MTCO₂e were attributed to municipal activities, and the remaining 31,443 MTCO₂e were attributed to community emissions. This was a reduction of 34% below 2005 levels, and a reduction of 3.1% from 2020 in-territory emissions. The reductions since 2005 are largely due to decreases in emissions from building appliances and electricity sources in 2018.

It is important to note the method of GHG emissions inventory used by staff does not take into account emissions generated outside the City's boundaries (i.e., consumption-based emissions).¹

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 is the highest emitter per capita in Alameda County and one of the highest throughout the Bay Area. While initially disheartening, Piedmont's high consumption-based emissions demonstrate the power Piedmont residents yield globally with their purchasing decisions. Objectives identified in the CAP 2.0 for reducing consumption emissions include first and foremost, providing education to increase awareness of how consumption relates to GHG emissions, as well as reducing the carbon intensity of food, reducing food waste, enabling local food, promoting product reuse, and supporting sustainable procurement within local schools.

What follows is an overview of the two sectors included in the 2021 GHG emissions inventory: the community inventory, which includes residential and commercial business activities in Piedmont, and the municipal inventory, which only covers activities stemming from City facilities and City staff and contractors.

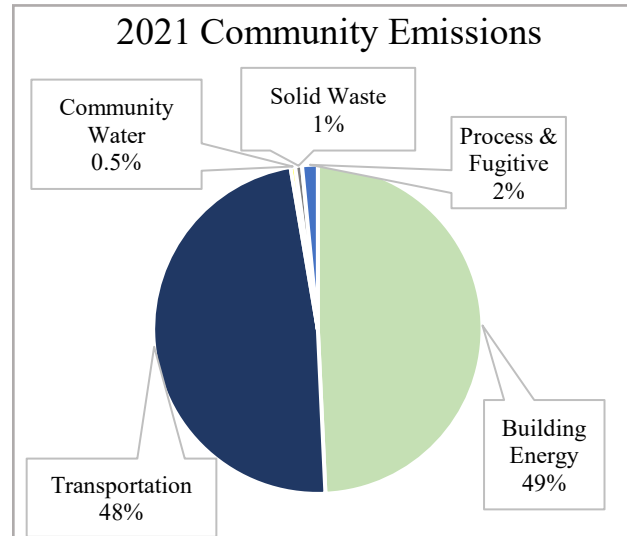


Figure 2

¹ Consumption-based emissions refer to the total lifecycle emissions of goods and services imported to the city.

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>

Community Emissions

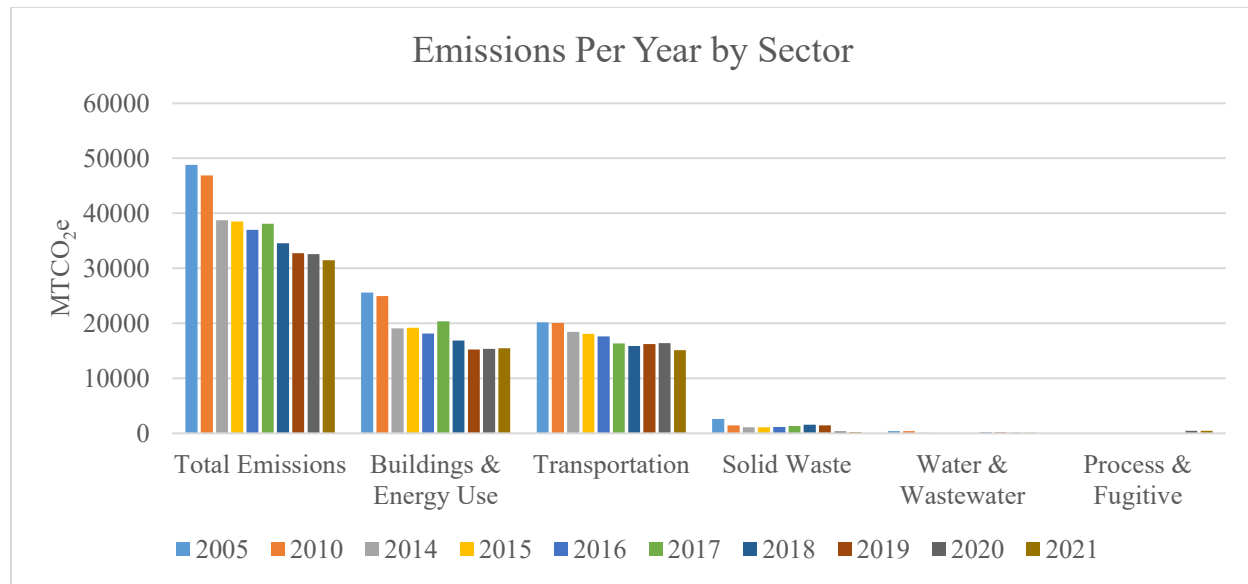


Figure 3

As seen in Figure 3 above, community-wide total emissions decreased slightly, yet sector-specific emissions increased across buildings and energy use, waste and wastewater, and process and fugitive and decreased across the transportation and solid waste sectors. The biggest sectors contributing to in-territory emissions were building energy and transportation. Process and fugitive emissions, water and wastewater, and solid waste are minor contributors to Piedmont's community greenhouse gas portfolio. Combined, these sources account for about 3% of total emissions.

Please see below for specific information on each sector:

Transportation

Transportation sector emissions, modeled by the [Metropolitan Transit Commission](#) (MTC), are the result of travel that begins or ends in the City. This includes personal vehicle travel, commercial transport within the City, and Piedmont residents' use of public transportation. Vehicle emissions are calculated through vehicle miles traveled (VMT) and on-road emissions factors (grams CO₂/mile). VMT is a key metric in transportation planning because it provides a measure of total travel, how travel changes over time, and differences in travel among regions. In 2021, transportation sector emissions contributed 47% to the community's total in-territory emissions. Transportation emissions have become a more significant percentage of emissions since 2005. This is attributed to a gradual reduction in residential energy emissions, which has positioned transportation emissions to become proportionally larger. Between 2020 and 2021, there was a 10% reduction in total VMT, indicating fewer miles driven in and out of Piedmont. While a reduction in VMT is encouraging, this decrease could largely be attributed to the continued impacts of the pandemic and telework policies.

15,115 Metric Tons of CO₂e
47% of 2021 total emissions
8% decrease from 2020

In the area of EVs, Piedmont is a leader; an estimated 8.3% of vehicles in Piedmont are EVs. Between 2020 and 2021, EV VMT increased by 1.5%. Staff anticipate the share of EV VMT to

increase in the years ahead due to the state of California's mandate requiring the sale of new light-duty vehicles to be 100% zero emission vehicles by 2035.³

Data from the [California Air Resources Board](#) indicates that Piedmont residents are driving a greater percentage of EVs in 2021 compared to Alameda County as a whole. In 2021, approximately 8.27% of vehicles registered to census tracts in Piedmont were electric, compared to 3.23% of vehicles registered to census tracts in Alameda County, as seen in Table 2.

To reduce Piedmont's in-territory transportation emissions, it is critical to continue to encourage EV and E-bike purchases and usage, as well as promote public transit use. 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 existing and affordable ways to decrease these emissions.

It should also be noted that emissions from airplane travel are not included in this inventory. Airplane travel constitutes a large portion of many U.S. residents' total GHG footprints. If emissions from airplane travel were included in this inventory, the inventory would likely find much higher community GHG emissions from the transportation sector.

Building Energy

Emissions associated with building energy come from burning fossil fuels to create electricity that powers electric appliances and from combustion of natural gas to directly power gas appliances. Eliminating both sources will have significant positive effects on Piedmont's GHG emission reductions.

15,491 Metric Tons of CO₂e
48% of 2021 total emissions
1% increase from 2020

Between 2005 and 2021, emissions from building electricity have generally decreased, while emissions from natural gas have fluctuated, as seen in Figure 4. Building energy emissions in 2021 were 39% below 2005 emission levels. Much of the decrease in emissions from 2005 to 2021 owes to Piedmont's community and municipal enrollment in East Bay Community Energy's (EBCE) 100% renewable energy service plan.

Table 2: Registered Vehicle Types in Piedmont

Vehicle Type	Piedmont	Alameda County
Gasoline	89.89%	93.56%
Electric	8.27%	3.23%
Diesel	1.77%	3.04%
Natural Gas	0.02%	0.09%
Hydrogen	0.03%	0.05%

³ California Air Resources Board (CARB): <https://ww2.arb.ca.gov/news/california-moves-accelerate-100-new-zero-emission-vehicle-sales-2035>

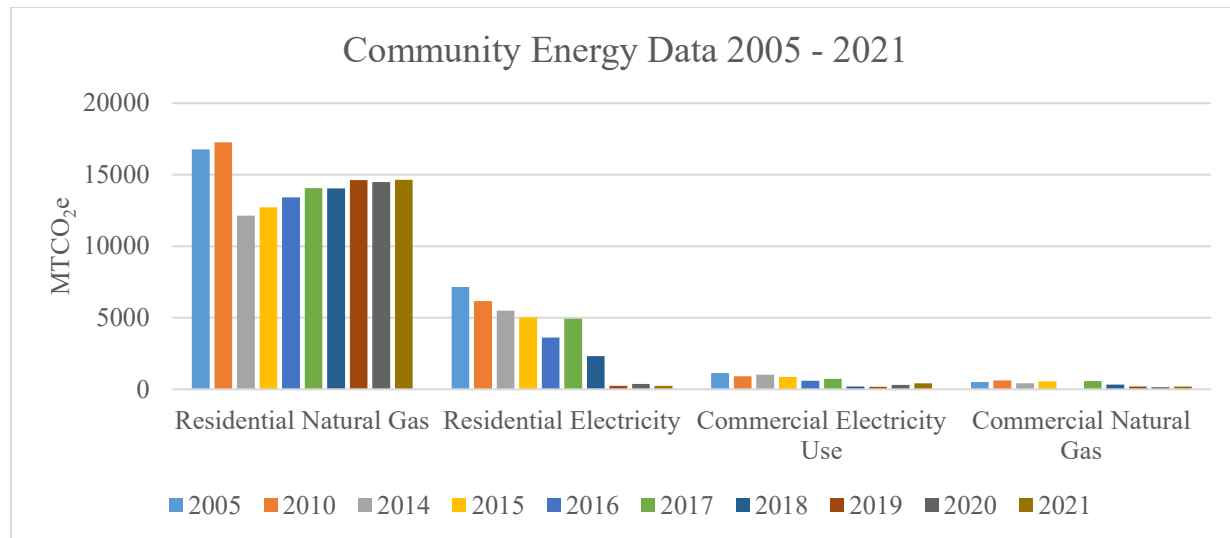


Figure 4

As seen in Figure 5 below, in 2021, emissions from electricity decreased while emissions from natural gas increased in both the residential and commercial sectors. The decrease in electricity emissions is partially attributed to changes in the power content of PG&E's energy service plans and EBCE's Brilliant 100 and Bright Choice plans. In 2020, the Bright Choice plan was 55% carbon free, and in 2021, the plan was 60% carbon free. In 2020, PG&E's base plan was 31% renewable and in 2021 it was 48% renewable. Power content changes impact the associated GHG emissions intensity tied to an energy service plan, and subsequently, GHG emissions. Despite the year-to-year fluctuation, it is notable that residential electricity emissions have decreased significantly since 2005 (a 97% reduction) mainly due to the overwhelming majority of Piedmont electricity customers enrolled in EBCE's Renewable 100 service plan.

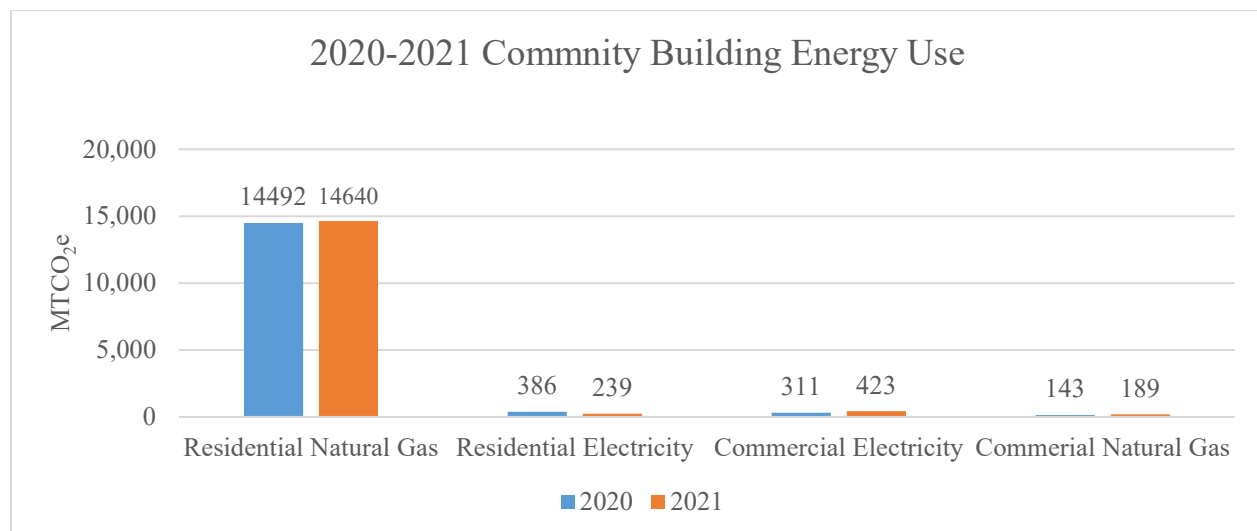


Figure 5

Residential natural gas appliances alone contributed 96% of total building energy emissions in 2021. Emissions from natural gas combustion are attributed to gas-powered appliances used inside and outside of buildings including furnaces, water heaters, stovetops, dryers, gas fireplace inserts,

gas fire tables on patios, and gas patio heaters. Residential appliances that burn natural gas (or propane gas) emit air pollution directly into homes or local communities.⁴ For instance, natural gas stoves can release carbon monoxide, formaldehyde and other harmful pollutants into the air, which can be toxic to people and pets.⁵

Natural gas use in Piedmont residential homes has increased on average since 2014, though gas use fluctuates depending on the year. Recognizing the need to reduce natural gas use in residential buildings, the City Council adopted local amendments to the California Code of Regulations, Title 24, otherwise known as “Reach Codes”. The Reach Codes, which went into effect in June 2021, require energy efficiency measures or electrification upgrades to be included in residential building renovations above a certain project valuation threshold, as well as all-electric construction in new residential buildings and detached accessory dwelling units (ADUs). Based on staff’s evaluation of the six months in 2021 the Reach Codes were in effect, it is estimated that the policy resulted in GHG reductions of nearly 15 MTCO₂e. Staff anticipate additional GHG reductions from the Reach Codes to be reflected in the 2022 GHG inventory. Additionally, staff continues to conduct outreach on electric appliances, and uses opportunities like the City’s [induction cooktop loaning program](#) and [pilot electrification rebate program](#) to improve residents’ knowledge of electrification and why it is an important climate action to take in Piedmont.

Solid Waste

Solid waste generates methane when organic material decomposes in anaerobic landfill settings. Methane gas is a potent climate pollutant that is released when organic waste, which includes surplus edible food, food scraps, food soiled paper and yard waste, decomposes in a landfill.

<p>211 Metric Tons of CO₂e 0.65% of 2021 total emissions 42% decrease from 2020</p>
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According to Republic Services Annual Report, Piedmont’s solid waste diversion rate in 2021 was 75%, meaning that three quarters of residential waste was diverted from landfills and either composted or recycled.⁶ The City’s diversion rate has remained consistent during the past decade. In contrast, the State of California has an average diversion rate of only 37%.⁷ According to the City’s web-based construction and demolition (C&D) disposal recordkeeping and analysis platform, [Green Halo](#), 78% of materials from Piedmont C&D projects in 2021 were recycled. This diversion rate is higher than the City’s C&D diversion requirements (at least 65%) and reflects a 11% increase in materials diverted since 2020.

In January of 2022, SB 1383 came into effect requiring all Californians to subscribe to organics collection services. According to Republic Services Annual Report, Piedmont produced 1,737 tons of residential waste in 2021. The tons of waste reported by Republic Services decreased by 27% from 2020.

⁴ California Air Resources Board: <https://ww2.arb.ca.gov/our-work/programs/technology-clearinghouse/technology-clearinghouse-tools/residential-appliance-comparison>

⁵ California Air Resources Board: <https://ww2.arb.ca.gov/resources/documents/indoor-air-pollution-cooking>

⁶ City of Piedmont Waste Diversion Rates

https://piedmont.ca.gov/services_departments/public_works/recycling_organic_waste_garbage/solid_waste_data

⁷ California’s 2019 Per Capita Disposal Rate Estimate, CalRecycle
<https://calrecycle.ca.gov/lgcentral/goalmeasure/disposalrate/mostrecent/>

Additionally, the decrease in emissions from solid waste can be attributed to Piedmont's waste hauler, Republic Services, decreasing Scope 1 and 2⁸ GHG emissions, as reported in their [2021 Sustainability Report](#). Another factor in the emissions decrease is changes in the landfill Methane (CH₄) collection scenario calculated by staff, which reflect updated statewide metrics associated with the [Landfill Methane Regulation](#).

Water & Wastewater

Each year between 2005 and 2021, water and wastewater have contributed only a small percentage of total in-territory greenhouse gas emissions: between 0.1-1%. In 2021, this category accounted for 0.44% of in-boundary emissions. Emissions decreased by 66 % between 2010 and 2021. The low emissions can be attributed to the East Bay Municipal District's (EBMUD) wastewater treatment plant, which is [a net energy producer](#), meaning that the plant produces more renewable energy onsite than is needed to run the facility.

Process & Fugitive Emissions

Process and fugitive emissions contributed 484 MTCO₂e, or 1.5% of emissions in the 2021 inventory. City staff chose to include these emissions in the inventory beginning with the year 2020 to reflect a holistic scope of emissions. According to the U.S. Environmental Protection Agency, fugitive emissions account for GHG compounds directly released into the atmosphere as a result of extraction, transport, storage, and processing of fossil fuels such as, methane (CH₄) or natural gas.

Municipal Emissions

Municipal activities in 2021 resulted in in-territory emissions of approximately 914 MTCO₂e, or 2.8% of total community in-territory emissions. This is an increase of 27% from total in-territory municipal emissions since 2020. This increase in municipal emissions was driven by a 120% increase in vehicle fleet emissions from 2020. While emissions from the City's vehicle fleet increased substantially, emissions from all other sectors decreased.

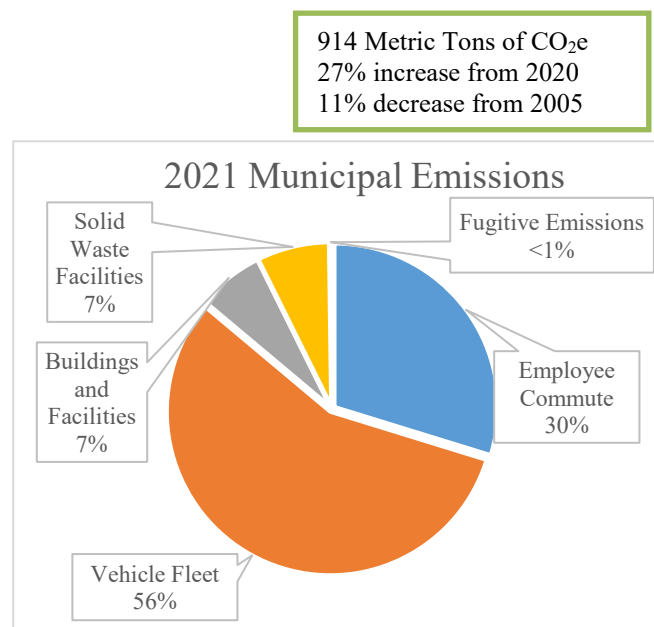


Figure 6

⁸ According to the United States Environmental Protection Agency (EPA), Scope 1 emissions are direct GHG emissions that occur from sources controlled or owned by an organization (e.g., emissions associated with fuel combustion in boilers, furnaces, vehicles). Scope 2 emissions are defined as indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling.

Source: <https://www.epa.gov/climateleadership/scope-1-and-scope-2-inventory-guidance#:~:text=Scope%201%20emissions%20are%20direct,boilers%2C%20furnaces%2C%20vehicles.>

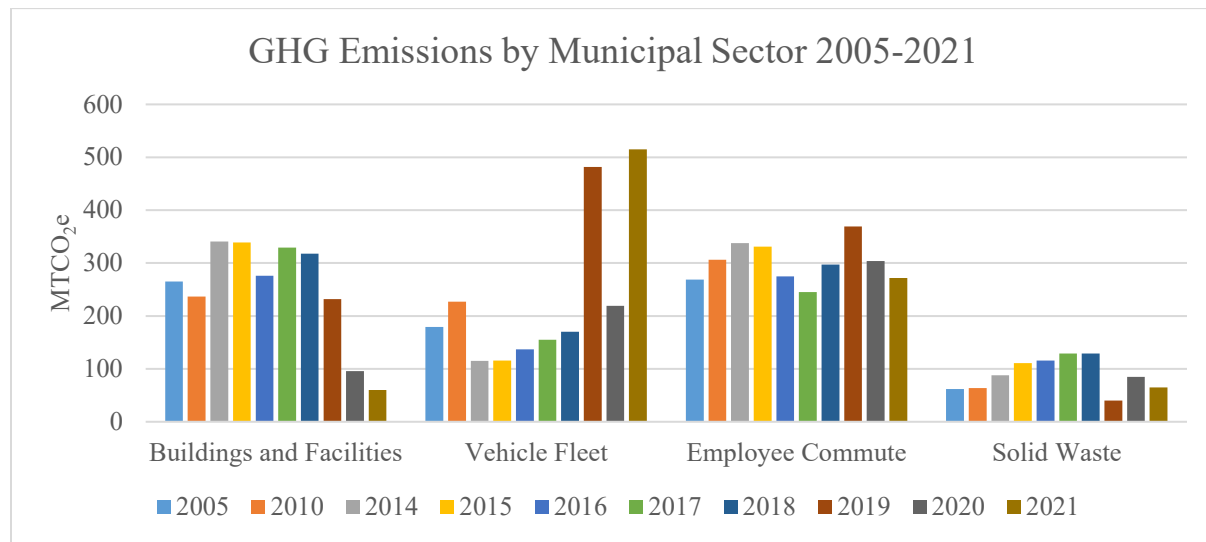


Figure 7

Municipal Vehicle Fleet

In 2021, the City's vehicle fleet accounted for 56% of total municipal emissions. The vehicle fleet consists of vehicles utilized by the police, fire, public works, and recreation departments, and by various contractor services (Rapella and Sons, Pacific General Engineering, Finberg Fencing) and solid waste collection services (Republic Services). Emissions estimates for the municipal fleet were calculated using vehicle fuel efficiency, miles driven, and fuel used by each vehicle.

In 2021, vehicles continued to contribute a substantial portion of municipal GHG emissions. There was an increase of 120% from 2020 vehicle emissions. This increase is due in part to the addition of emissions from Republic Services' dump trucks to the inventory. This calculation was added for a more comprehensive picture of the total impact of solid waste collection services in Piedmont. Additionally, the sharp increase in vehicle emissions in 2021 may be partially explained by low 2020 vehicle emissions due to the COVID-19 pandemic.

Municipal Energy Consumption: Buildings

Because of the City's municipal enrollment in EBCE's 100% renewable electricity service, emissions from municipal electricity use (e.g., buildings, streetlights, sprinklers) are zero. Therefore, emissions in this sector are attributed entirely to municipal natural gas use. Emissions associated with municipal natural gas use decreased by 38% since 2020 and 68% since 2019. This decrease is likely attributed to City Staff working from home because of the COVID-19 pandemic, as well as energy efficiency and municipal electrification improvements in City facilities.

Employee Commute

In 2021, employee commutes comprised 30% 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. About 60% 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. The slight decrease in employee commute emissions between 2020 and 2021 may be explained by City's staff adoption of personal EVs and structures in place that encouraged telework in some departments due to the pandemic.

Solid Waste Facilities

Municipal solid waste generated an estimated 65 metric MTCO₂e in 2021. This is a 24% decrease from 2020. In 2021, the City of Piedmont began to deploy three series bins (with recycling, compost and trash) in almost every office space and in high-traffic areas in the Civic Center, which decreased waste going to the landfill. The decrease in emissions from solid waste may also be attributed to Piedmont's waste hauler, Republic Services, decreasing Scope 1 and 2 GHG emissions, as reported in their [2021 Sustainability Report](#).

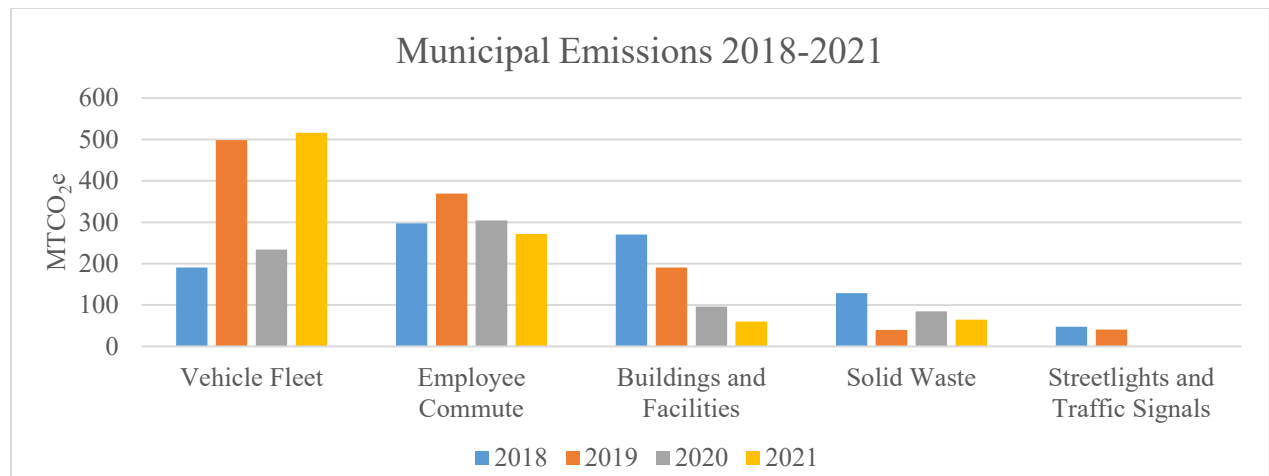
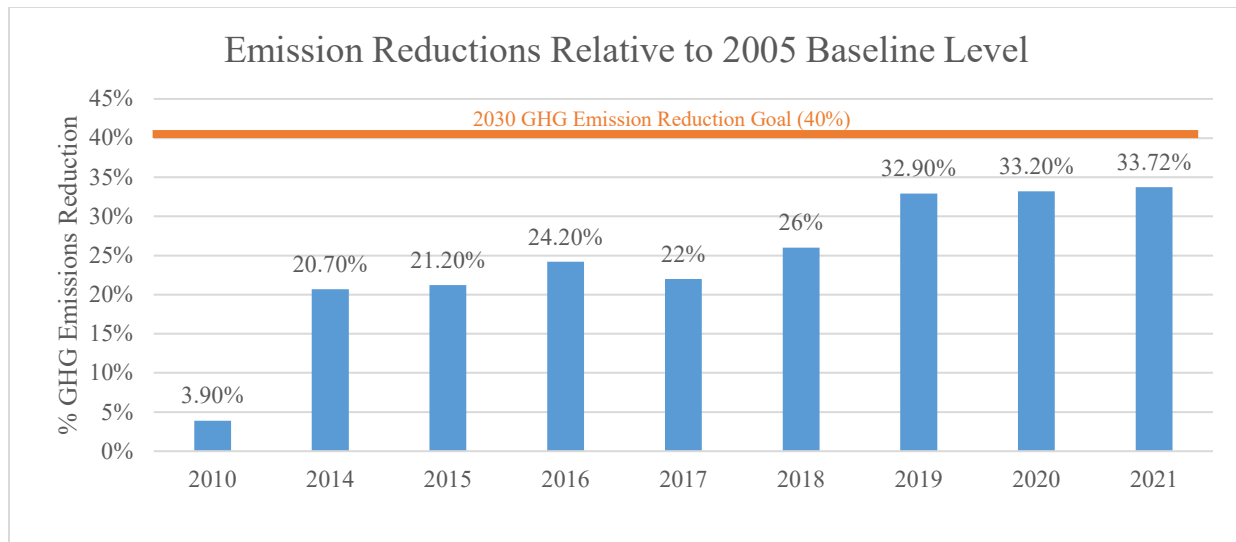


Figure 8

Conclusions

The City has demonstrated leadership in taking steps toward meeting the CAP 2.0 goals by hiring a Sustainability Program Manager, enrolling in EBCE's 100% renewable energy service plan, pioneering reach codes, and constructing an all-electric pool. Additionally, Piedmont community members have demonstrated commitments to reducing emissions through their high EV purchasing rates, high waste diversion rates, and support of City sustainability initiatives.

However, the GHG emission inventories completed to date reveal that, for the most part, the changes from year to year are caused by external forces. Substantive changes to the building energy sector and the transportation sector are needed to meet the 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 local, State and Federal governments. To reach the CAP 2.0 goal of reducing emissions by 40% from 2005 levels by 2030 (29,291 MTCO₂e annually), Piedmont needs to decrease 2021's emissions by 9.5% (approximately 3,066 MTCO₂e or 340.66 MTCO₂e per year).



Between 2020 and 2021, Piedmont experienced a decrease of 3.1% in MTCO_{2e}. The decrease in transportation emissions and solid waste emissions were offset by an increase in residential and commercial energy and water and wastewater. Ultimately, for Piedmont to make meaningful progress toward meeting the CAP 2.0 goals, the Piedmont community will need to make significant reductions in fossil fuel consumption in their homes, vehicles, and daily lives. These reductions will be centered on decarbonization efforts to transition residents from gas-powered vehicles to EVs and shift from natural gas to electric appliances in existing residential buildings. Community decarbonization efforts will need to be supported by with significant education, outreach, and awareness building efforts, along with financial and human resources. Additionally, equitable adaptation efforts must be made that recognize the historical harms and structural and institutional systems that are the root causes of the social and economic inequities climate change exacerbates.

While municipal emissions account for just 2.8% of Piedmont's total in-territory emissions, municipal activities and facilities can continue to be improved so that the City government leads by example. Recent efforts in this area include replacement of all remaining gas-powered water heaters with electric heat pump water heaters in City buildings and the Council's decision to construct the new Piedmont Community Pool to be an all-electric facility. In 2021, building energy use, solid waste, and employee commute emissions all decreased, but vehicle fleet emissions increased. The increase in vehicle fleet can be largely attributed to the addition of emissions from Republic Services' waste collection vehicles to the GHG emissions inventory. Emissions from the City vehicle fleet can be minimized by reducing VMT, transitioning from gas and diesel-fueled vehicles to EVs, installing EV infrastructure for City vehicles, and increasing the use of active transportation modes such as walking and biking to get around Piedmont. Emissions from solid waste can be reduced by continuing education and implementation of sustainable purchasing and procurement, as well as proper sorting of recyclables and organics. In the area of transportation, policies and programs that incentivize 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. Such incentives might include the provision of EV charging stations for

City staff, promoting work from home, and the provision of changing areas and showers for employees biking to work.

Finally, although Piedmont conducts a GHG inventory annually, the current methodology does not 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 roughly seven times greater.⁹ 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.

⁹ 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>

CAP 2.0 Implementation Highlights

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

Implemented

Piedmont Community Pool to be Designed as All-Electric Facility

In April 2022, the [Piedmont City Council directed that the new Piedmont Community Pool be designed as an all-electric facility](#). Since then, City staff have been working to secure funding to help offset the costs of electrification. This has entailed working with EBCE to secure a low-interest electrification loan in the amount of \$750,000 and securing a \$82,800 grant from the [California Energy Design Assistance](#) (CEDA) program to support the costs of electrification. This effort implements CAP 2.0 Municipal Measure 2-1 and Action-2.1E.

Piedmont Pilot Building Electrification Rebate Program

[The City's Building Electrification Rebate Program](#) launched in January of 2023, with the goal of providing financial incentives to Piedmont homeowners to help offset the costs of electrification in existing residential buildings. Rebates are available for heat pumps, heat pump water heaters, and associated panel upgrades. In addition, contractors who register with the [Bay Area Regional Energy Network](#) (BayREN) after January 1, 2023, are eligible for a \$500 signing bonus. In February 2023, the City's Sustainability Division held a webinar about home electrification and electrification rebate opportunities, with over 100 Piedmonters attending the live event and/or [viewing the recording](#). As of June 30, 2023, six property owners have received rebates amounting to \$7,900. An additional seven property owners are in the queue, reflecting an additional \$12,000 in rebate funding. Combined, these projects include rebates for eight heat pump water heaters, seven heat pump HVAC systems, and five electrical panel upgrades. This effort implements CAP 2.0 Action BE-1.3B.

Municipal Energy Portfolio Audit

In late 2022, Sustainability Division staff engaged BayREN to conduct a high-level portfolio review of City facilities and provide recommendations regarding opportunities for energy savings and solar generation. The following City sites were analyzed: City Hall/Fire Department, Recreation Building, Veterans Hall/Police Department, Community Hall, 801 Magnolia, and the Corporation Yard. Key recommendations from the report include installing LEDs, replacing existing gas furnaces with electric heat pumps, replacing existing gas ranges with induction stoves, and installing double pane windows. Additionally, it was noted that installing solar photovoltaic (PV) systems at Veterans Hall/Police Dept., Community Hall, 801 Magnolia, and the Corporation Yard would generate enough capacity to power the sites with full electrification of all appliances and achieve [Zero Net Energy](#) (ZNE) status. The information from this audit is being used to plan future facility improvements and has been incorporated into the City's Capital Improvement Fund schedule. This effort implements CAP 2.0 Municipal Measure-2.2B.

Gas Water Heaters Replaced with Heat Pump Water Heaters at City Facilities

Sustainability Division staff completed a project in the spring of 2022 to replace all remaining gas-powered water heaters in City facilities with electric heat pump water heaters (HPWHs). Piedmont may be the first City in the State to have accomplished this feat. [A case study of the report can be found here](#). The City benefited from this program through the installation of 6 HPWHs at 5 sites: Community Hall, Veterans Hall, Fire Department, Police Department, and the Recreation Building. The City leveraged [PG&E incentive funds](#) and [EBCE Municipal Electrification Assistance](#) gap

funding to make these improvements at zero out-of-pocket cost to the City. The 10-year lifetime GHG emission reductions of this project are 226.5 MTCO₂e. This effort implements CAP 2.0 Municipal Measure-2.1.

Reach Codes

In October 2022, the City Council adopted Piedmont's second iteration of Reach Codes (Ordinance 766 N.S.) to be effective along with the 2022 California Building Code. While the 2019 Energy Code regulated requirements for "low-rise" residential buildings, the 2022 Energy Code changes this concept to now regulate single-family buildings and multifamily buildings separately. Accordingly, City staff are in the process of developing reach codes for new and existing multifamily buildings to ensure continuity with the previous Code cycle. Additionally, City staff are conducting ongoing monitoring and evaluation of the reach codes enacted in 2021. Information about the City's reach codes can be found [here](#). This effort implements CAP 2.0 Buildings and Energy Actions-1.2E, 1.3C, and 6.1C.

Home Energy Assessment Policies

In 2020 and 2021, the City Council passed two Home Energy Assessment Policies (Ordinance 751 N.S. and Energy Assessment Policy). 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 Energy Assessment Policy requires a Home Energy Assessment to be completed for projects which require design review permits and which may have any energy impact. Since the policies went into effect, 299 Home Energy Score Reports were reported for Piedmont homes, with an average score of 3 (on a scale of 1 to 10 where a 10 represents the most efficient homes), indicating the need for energy efficiency and electrification improvements in Piedmont's existing building stock. Information about the City's home energy assessment policies can be found [here](#). These policies implement CAP 2.0 Buildings and Energy Action-1.1A and Building and Energy Measure-2.1.

Municipal Fleet Electrification Assessment

In 2022, City staff completed a project with the assistance of EBCE to conduct a fleet electrification assessment. The results of the fleet electrification assessment provide baseline, critical information, including the evaluation of short- and long-term cost savings associated with the transition to light-duty electric vehicles (EVs), impacts and benefits to the City, and outlines steps to efficiently integrate EVs and charging infrastructure at municipal facilities in a fiscally responsible manner. Medium and heavy-duty vehicles will be evaluated during the 2023-2030 timeframe via pilot programs until EVs in these classes are cost effective and can meet the same duty cycle of existing vehicles. This effort implements CAP 2.0 Municipal Measure 3.2.

Organics and Recycling Ordinance Adopted in Response to SB 1383 Regulations

California local jurisdictions have significant, new requirements to implement additional waste reduction programs and enhanced reporting and enforcement protocols to [comply with SB 1383](#). City staff continue to participate in a regional working group convened by StopWaste to assess the impacts of SB 1383 to current programs and policies. Staff also continue to promote education on ways to reduce consumption and divert waste from the landfill in accordance with Solid Waste Measure-1.2 of the CAP 2.0. In 2022, Sustainability Division staff secured a one-time CalRecycle grant of \$21,100 to help the City comply with SB 1383 and provide education on organics recycling to Piedmont schools. Staff engaged the [EcoHero Show](#) to provide engaging educational experiences to students on this topic. During the 2022-23 school year, the EcoHero Show conducted six visits to Piedmont's elementary and middle schools reaching over 350 students. This effort implements CAP 2.0 Solid Waste Measure SW-1.2.

Development of Climate Communications Plan

In 2023, Sustainability Division staff developed a Climate Communications Plan to serve as a guide for municipal government staff, educators, non-profits, and others who endeavor to build on the CAP and communicate to their audiences about climate change, mitigation, and adaptation in Piedmont. The Plan works in tandem with the research and strategies put forth by the CAP to offer a coordinated and effective strategy for delivering key messages and engaging the community about climate change. It also delineates case studies, best practices, and potential next steps for the community to consider when communicating about the implementation of CAP measures. This project partially implements CAP 2.0 Measure C-1.1 and Measure MUN-6.1.

Earth Day Events

Staff held several [Earth Day events in 2023](#) to highlight the CAP 2.0 and teach the community about our changing climate. The City's hosted its third annual Earth Day scavenger hunt, which included clues regarding Piedmont's environmental and social history. In addition to the scavenger hunt, City staff organized a free compost giveaway for residents. Lastly, City staff were invited to participate in an Earth Month Bingo Challenge where they could win prizes for taking action to reduce their carbon footprint. These efforts implement CAP 2.0 Measure MUN-6.1.

Beacon Program Participation and Recipient of Environmental Awards

In 2021, the City of Piedmont joined the Institute for Local Government's (ILG) [Beacon Program](#), which honors voluntary efforts by cities, counties, and special districts that reduce greenhouse gas emissions, save energy and adopt policies that promote sustainability. At the 2022 League of California Cities Annual Conference, the City of Piedmont accepted a Spotlight Award for its commitment to addressing climate change, as well as a Platinum Level Award for Sustainability Best Practices. The Spotlight Award recognizes sustainability actions that go above and beyond state mandates, highlighting creative and local solutions for addressing climate sustainability in ten areas, including energy efficiency and conservation, green building, and waste reduction. A link to the City's sustainability best practice activities can be found [here](#). Information about the City's award can be found [here](#). These efforts implement CAP 2.0 Measure MUN-6.1.

Received a Score of "A-" for Climate Action by CDP

Piedmont received a score of "A-" for climate action from CDP, a not-for-profit global environmental disclosure platform in fall of 2022. The City was recognized for a clear understanding of future climate risks and progress towards achieving ambitious adaptation goals, emissions reduction targets, and actions. Piedmont received a score of "A-" in both adaptation and mitigation. More information about CDP can be found [here](#). These efforts implement CAP 2.0 Measure MUN-6.1.

Continuing Events and Efforts**Public EV Charging Stations**

In October 2021, the Council signed an agreement with EBCE for the installation of EV charging stations on Magnolia Avenue. The Magnolia Avenue site will consist of 4 publicly accessible EV fast charging stations, also known as Direct Current Fast Chargers (DCFC). The chargers will serve 4 parking spaces, including one ADA space. The EV chargers will be installed, owned, maintained, and operated by EBCE. Based on current project estimates, the public EV chargers are anticipated to be in operation by summer 2024. To further incentivize EV adoption, City staff will continue researching the demand for publicly accessible EV charging stations in residential neighborhoods and assessing the feasibility of their installation. These efforts partially implement CAP 2.0 Transportation Measure-4.1.

Induction Cooktop Lending Program

In collaboration with EBCE, the City runs a free induction cooktop lending program for residents. 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. Paired with EBCE's 100% renewable electricity service plan, the induction cooktop is carbon neutral. Since the program launched, over three dozen residents have participated. More information can be found on the City's [Cooktop Lending Program website page](#). This effort partially implements CAP 2.0 Buildings and Energy Use Measure-1.2, 1.3, and 3.2.

Participation in SunShares Program

In 2015, Piedmont joined the [Bay Area SunShares Program](#), a residential solar photovoltaic bulk purchase program. The overall goal of the program is to encourage the installation of rooftop solar energy and battery storage systems by providing reduced acquisition and installation costs produced by economics of scale. While Piedmont has participated in the program for several years, there had been no contracts signed in Piedmont since 2017. For the 2022 program, the City provided significant engagement surrounding participation in the program. The additional outreach efforts were a success – 46 Piedmont residents registered for the option to participate this year, and 6 ultimately signed contracts. This made the City of Piedmont one of SunShares' top 10 outreach partners across the entire region. This effort partially implements CAP 2.0 Buildings and Energy Use Measure-3.2.

Free Compost Giveaway Program

In the fall of 2021, the City's Sustainability Division staff launched a [free compost giveaway program](#) for Piedmont residents. Since then, staff have held seven giveaway events (September and October 2021; February, March, April, and October 2022; and April 2023). Due to the popularity of the program, the City launched a self-haul program where residents can come every Friday at the Corporation Yard to pick up compost. Through the compost giveaway events and self-haul program, the City has distributed over 200 cubic yards of compost. These efforts implement CAP 2.0 Solid Waste Action-2.1D and Consumption Objective-2.

Piedmont Evergreen at Community Events

City Sustainability Division staff manage the Piedmont Evergreen Program, the City's outreach and education program for waste reduction, recycling and composting. This includes providing on-site technical assistance at major City events (Harvest Festival, Turkey Trot), providing educational materials to event organizers, and answering waste and recycling questions via the City's info@piedmontevergreen.org. Staff continue to organize and manage a group of local student volunteers, or Eco-Ambassadors, that help at the events with procurement and placement of containers, signs, stickers, and bags to ease proper sorting. These efforts partially implement CAP 2.0 Municipal Action-4.1F.

Implementation of Sustainable Procurement Purchasing Policy

In December 2021, the Council adopted an update to the [Piedmont Sustainable Procurement Policy](#). One of the notable updates includes Policy 3.7.4: The City of Piedmont shall not purchase, acquire, distribute or issue permit approval for the use of single-use plastic beverage bottles for use at City facilities, projects, events, or for staff use. Exemptions may be approved on a case-by-case situation. In light of the Policy, City staff have been working to install water refill stations in high-traffic locations such as the Main Park. Sustainability staff continue to work with Department Heads and their respective employees to adhere to the Policy's requirements and convene regular meetings to review and discuss the progress of implementation. These efforts partially implement CAP 2.0 Municipal Measure-4.1.

Climate Fellowship and Sustained Emissions Reduction Efforts

Although not a measure within the CAP 2.0, continued participation in the Climate Corps and 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. Since 2015, the climate fellows have been and continue to be critical to staff's capacity in completing emissions inventories and in implementing the CAP 2.0.

On-going Community Engagement

The Sustainability Division engages with the community to promote climate action and raise awareness of CAP 2.0 actions and issues. City staff frequently write articles for the 'Climate Corner' section of the Piedmont Post. The City also maintains a webpage to keep residents up to date on the CAP and what measures City staff are undertaking. Additionally, a [new landing page for the City's Sustainability Division](#) was established in 2022 to help residents better navigate the City's website. In August 2022, City Sustainability Division staff established a new, separate, e-newsletter focused on climate action and sustainability updates. Approximately 200 subscribers are sent information monthly on local climate news, events, and programs. To subscribe to the monthly Climate Action e-newsletter, [please click here](#). In May 2023, the City's Sustainability Division hosted a Bike to Work/Wherever Day Energizer Station to promote sustainable transportation in Piedmont. More than 25 cyclists rode by the station, in addition to several dozen individuals who stopped by. These efforts implement CAP 2.0 Measure MUN-6.1.

Continued partnership with High School Green Club

The Piedmont High School (PHS) Green Club is a student organization focused on making PHS and the surrounding community more sustainable. The City's Sustainability Division regularly works with the Green Club by offering support with project development and implementation. In the 2022-2023 school year, the Green Club worked with the City's Climate Action Fellow to participate in [Stopwaste's Ambassador Program](#). Through the program, student worked on projects such as advocating for climate literacy curriculum in Piedmont schools, planting bee-friendly flowers on campus, and advocating for compostable dining ware in the school cafeteria.

Continued partnership with Piedmont Connect

[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 bolstering community support for the new community pool, reach codes, and EV charging stations. Piedmont Connect maintains an active newsletter and has been instrumental in ongoing sustainability outreach. City staff meets with Piedmont Connect on a regular basis to collaborate on projects and work towards a more sustainable future.

Piedmont Community Climate Challenge

[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. While more than 320 users have enrolled to participate in the Climate Challenge, there has been few new sign-ups in the last several years. 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. Staff will explore the feasibility of doing just that in conjunction with the City's Electrification Rebate Program. If participation and engagement with the platform still lags by the end of 2023, staff may discontinue use of the platform.

Upcoming Events and Efforts

Existing Buildings Electrification Strategy

As indicated by Sustainability Division staff as a recommended next step in the [2020 GHG Emissions Inventory and CAP Implementation Status Report](#) to Council in July 2022, the City will be embarking on the development of an Existing Buildings Electrification Strategy in the coming months with the assistance of a Building Electrification Task Force. The Strategy will build off the CAP 2.0 goal to reduce communitywide GHG emissions in buildings and included a phased approach for equitably implementing the needed programs, policies, financing, and engagement mechanisms needed to decarbonize existing buildings. Staff aim to bring the Strategy for the Council's consideration and adoption in 2024. This initiative will implement CAP 2.0 Buildings and Energy Use Measures-1.2, 1.3, 2.2, and 2.3.

Launch of Building Electrification Task Force

During the [February 21, 2023 City Council meeting](#), the Council directed the City Administrator to empanel and oversee a diverse Task Force to develop and implement a strategic plan on existing building electrification, providing information to the community during the process and a final report at its conclusion. In FY22-23, the City launched and completed its recruitment for the Task Force. The Task Force will meet in FY23-24 to provide input and guidance to staff for a Strategy by which Piedmont can achieve zero emissions in existing buildings.

Solar and Battery Storage at Critical Municipal Facilities

During the [November 7, 2022 City Council meeting](#), the Council adopted a resolution authorizing the City Administrator to continue pursuing the widespread deployment of solar and battery energy storage systems at critical municipal facilities in partnership with the City's public power provider, EBCE, and committed to installing these systems through a standard Power Purchase Agreement (PPA) with EBCE should the City determine that the project results in benefits to the City budget and the community. Participating in this program would increase the potential for on-site solar generation, advance Piedmont's climate action goals, and ensure that more of Piedmont's critical facilities are prepared for PG&E Public Safety Power Shutoff events, rolling blackouts, and other potential power outages such as those caused by a major earthquake. The City will be included in Phase 3 of EBCE's Program, anticipated to launch in winter 2024. This initiative will implement CAP 2.0 Municipal Measures-2.1 and 2.3.

Streamlined Solar Permitting

Senate Bill 379 (Wiener, 2022) requires most California cities and counties to implement an online, automated permitting platform that verifies code compliance and issues permits in real time or allows the city, county, or city and county to issue permits in real time for a residential solar energy system.¹ SB 379 is expected to lead to shortened project times and lower permit costs for residential solar, as well as help the state meet its clean energy goals. A city with a population of greater than 50,000 must satisfy the requirements by September 30, 2023, while a city with a population of 50,000 or fewer must satisfy the requirements by September 30, 2024. In advance of the new requirement, City staff applied for and were successfully awarded a [\\$40,000 grant from the California Energy Commission](#) in spring 2023 to help implement an online, automated permitting platform. Sustainability Division staff are working with the Building Division to chart a path forward in order to meet the requirements.

¹ California Energy Commission: <https://www.energy.ca.gov/programs-and-topics/programs/residential-solar-permit-reporting-sb-379>

Youth Climate Ambassador Program

The Sustainability Division is seeking students with ideas about how to make Piedmont more sustainable. The Youth Climate Ambassador Program is a new City initiative to increase community participation in climate action. The goals for the Climate Ambassadors are to educate, raise awareness, and engage Piedmonters on the City's CAP. Climate Ambassadors will work with City staff to develop and implement various climate projects that will create a positive environmental change in Piedmont. The projects will offer solutions to local sustainability problems and address a variety of topics such as consumption, energy, food, transportation, waste, and water. Through this Program, Climate Ambassadors will gain a better understanding of climate action and adaptation in Piedmont, as well as have the opportunity to work directly with the community.

Next Steps and Recommendations

Based on the findings from GHG emissions inventories completed in the last several years, actions considered to be “low-hanging fruit” have already been taken and further action is needed 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, which are focused on addressing Piedmont's largest GHG emitting sectors.

Reduce Natural Gas Use Through Building Electrification Efforts

Piedmont's 2030 goals for buildings and energy use identified in the CAP 2.0 include sourcing 100% of electricity from renewable sources, increasing efficiency of electricity use, and reducing natural gas consumption by 50% below the 2005 baseline. Based on Piedmont's 2005 baseline, the 2030 goal for natural gas consumption would require a 43% reduction from 2021 levels. Natural gas is responsible for indoor air pollution in buildings – several times higher than national outdoor air quality standards.² Natural gas is also getting more expensive and volatile. This past winter, higher natural gas prices were sustained on the West Coast from November to March – about 32% higher compared to the same months last winter.³ Coupled with a declining demand for fuel as appliances become energy efficient, it will be critical to have a transition plan in place, which the Existing Buildings Electrification Strategy which address. In addition to this effort, reducing communitywide natural gas use may entail the following:

Development of a Time of Replacement Policy

Replacing gas appliances at the end of its useful life, either when the gas appliance fails or when a building renovation is taking place, is a policy tool that can be used to reduce natural gas consumption. This is the most cost-effective time to install electric appliances, because the marginal cost (i.e., the difference between installing electric appliances and replacing with new gas appliances) is smaller than the full cost of installing electric appliances. A time of replacement policy would build off the City's existing policies and help meet Action BE-1.2E of the CAP 2.0. A time of replacement policy would also align with state and regional directives. Earlier this year, the Bay Area Air Quality Management District (BAAQMD) [voted to end the sale of new gas furnaces and water heaters](#) as early as 2027. The rules are meant to reduce air pollution and target nitrogen oxides (NOx) from gas heating appliances, which can cause respiratory issues and smog.

² International Journal of Environmental Research and Public Health: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7503605/>

³ PG&E: <https://www.pgecurrents.com/articles/3613-customers-energy-costs-expected-decrease-march-drop-natural-gas-market-prices>

Establishment of a Permanent Funding Source for Electrification

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 ongoing revenue generating instruments to finance rebates for the replacement of gas-fueled furnaces and hot water heaters with heat pumps, and other energy efficiency or electrification building improvements. Revenue generation instruments utilized in other cities to fund electrification incentives include an increase in the Utility User's Tax (Albany, CA) or a carbon tax on natural gas (Long Beach, CA; Boulder, CO).

Reduce Transportation Emissions Through Active Transportation & Electrification Efforts

Piedmont's 2030 goals for the transportation sector that are identified in the CAP 2.0 include 50% EV adoption, more trips made by public transit, and more trips made by walking and biking. While the latter two goals do not specify quantitative increases, based on survey data from the [Piedmont Safer Streets](#) plan, 54% of respondents shared they used to walk in Piedmont for transportation at least a few times a week, while 16% used to bike in Piedmont for transportation at least a few times a week.⁴ Based on AC Transit weekday ridership data from the fall of 2021, an average of 109 riders got on or off at Piedmont stops on Piedmont's most popular bus line (Route 33). In 2022, there was a 62% increase in ridership during the same period. However, despite the 2022 increase, ridership remains 63% below pre-pandemic levels. Therefore, the City must focus its efforts on increasing the number of trips taken by active transportation⁵, as well as increasing the adoption of EVs. Taking more trips by active transportation, such as biking and walking, instead of by personal car, is an underutilized but impactful emissions reduction strategy. Although hilly, Piedmont is a dense, walkable city. About 33% of Piedmont's residential parcels are located within ¼ mile of the community's two commercial centers on Grand Avenue and Highland Avenue and adjacent centers in Oakland. Increasing the number of miles traveled by walking and biking will require the City to create safe transit pathways and promote a culture of low-carbon transit. To accomplish this, the City must continue to actively implement measures from the Piedmont Safer Streets Plan. Concurrent to this effort, reducing transportation emissions may entail the following:

Conduct a Micromobility Feasibility Study

Micromobility is a term that describes forms of transportation that are small, low-speed, human or electric-powered. They are built for one rider at a time and include bicycles, electric bicycles (e-bikes), scooters, electric scooters (e-scooters), and other small, lightweight, wheeled conveyances.⁶ Shared micromobility refers to the organized operation of a fleet of micromobility vehicles that individuals can rent out, such as the regional [Bay Wheels](#) bikeshare program. To build on the Piedmont Safer Streets Plan and the CAP 2.0, the City could consider conducting a micromobility feasibility study, which would review the feasibility of a new shared micromobility program in Piedmont. The study could help the City develop a sustainable vision for micromobility in Piedmont that serves the transportation needs of residents, workers, and visitors. The study could also include an analysis of micromobility vehicle types, operations and partnership models, transit integration,

⁴ [Piedmont Safer Streets Plan](#) (2021). As part of the Piedmont Safer Streets planning process, an online survey was conducted. The survey received 388 responses. The data cited comes from the following survey question: Q1. "How often did you walk or bike in Piedmont before the pandemic, either for transportation (school, work, transit, shopping, etc.) or for recreation (fun, exercise, etc.)?"

⁵ Active transportation is human-powered mobility, such as biking, walking or rolling. Active transportation directly replaces motor vehicle miles traveled, so these modes are effective at conserving fuel, reducing vehicle emissions, bridging the first- and last-mile gap, and improving individual and public health. Bicycles, electric bikes, wheelchairs, scooters, and even walking are all considered active transportation. Source: [U.S. Department of Energy](#)

⁶ U.S. Department of Transportation Federal Highway Administration: <https://highways.dot.gov/public-roads/spring-2021/02>

program costs and funding options, and micromobility programs across the Bay Area. A feasibility study would also prepare the City for future micromobility program implementation. For example, in 2024, [EBCE is expected to launch a new 3-year program](#) to introduce e-bikes to local residents. Having a study completed prior to the City's potential participation in EBCE's program would be beneficial for planning and budgetary purposes.

Increase Availability of EV Chargers Citywide

About one in ten registered vehicles in Piedmont are EVs, and many residents rely on home chargers in combination with public EV chargers to meet their needs. Currently, there are no public EV chargers in Piedmont. However, the City has been working with EBCE in the last several years on a project to install four publicly accessible EV fast charging stations in the Civic Center. To further incentivize EV adoption, City staff will continue researching the demand for publicly accessible EV charging stations in residential neighborhoods and assessing the feasibility of their installation. In the winter of 2021, the Sustainability Division conducted a [community-wide online survey on residential EV preferences](#). More than 150 residents completed the online survey with an overwhelming majority in favor of the City installing additional publicly accessible EV Chargers. When asked what impacts their likelihood of using public EV chargers in Piedmont, survey respondents most frequently cited the availability of charging, the location of the charger, the type of charger (Level 2 vs DCFC), and the cost of charging. If additional public EV chargers were available in Piedmont, most respondents would prefer to use a Level 3/DCFC. Therefore, the Council may want to direct staff to explore additional partnerships with private and not-for-profit organizations to install publicly accessible EV chargers in City-owned parking lots (e.g., Community Hall, Coaches Field) and parking spaces. The Council may also want to direct staff to explore allowing residents to rent their driveways and private EV chargers to renters who do not have access to convenient charging and streamline permitting processes for existing property owners who wish to install charging stations.

Enhance Climate Adaptation and Resilience Efforts

Piedmont is, and will continue to be, affected by the impacts of climate change in the form of increased average temperatures, extreme heat events, stronger storms, more severe floods and precipitation events, more frequent and extreme droughts, wildfire smoke, and more frequent and severe wildfires. Specific climate change impacts on the community of Piedmont will vary based on social, economic, and physical characteristics. Therefore, in addition to sector-specific efforts to reduce GHG emissions, the City must implement measures that increase resilience and the ability for the community to adapt to and prepare for the effects of climate change. The CAP 2.0 contains numerous adaptation objectives that primarily focus on reducing the harmful effects of climate change in Piedmont through research and analysis, planning, and infrastructure upgrades. To ensure social and economic resilience are part of the equation, the Council may want staff to consider pursuing the following:

Conduct a Feasibility Analysis for a Community Resilience Hub

Resilience hubs are multifaceted centers that enhance a community's capacity to adapt to multiple-climate hazards. The hubs fuse human and physical infrastructure and serve as an adaptable model for a trusted space with ongoing programming that could range from disaster preparedness to cultural events. The physical space can vary to adapt to different risks (e.g. a cooling and air filtration system for wildfire smoke and heat waves), but all hubs provide resilient communications, programming, structure, power, and communications at varying levels.⁷ The Council may want to direct staff to [conduct a feasibility analysis for the creation of a community resilience hub](#) in

⁷ Climate Resolve: <https://www.climateresolve.org/resilience-hubs/>

Piedmont. This could entail identifying sites that are best positioned to serve as a resilience hub, identifying and designing mitigation measures to be implemented so the hub can serve the community in times of disaster, and identifying funding opportunities and resource needs to support the creation of a hub. Since the City has few facilities where a resilience hub could be located, the City would need to work with existing stakeholders and community groups to understand the feasibility of partnerships on non-City owned properties. A resilience hub would be beneficial in Piedmont because it could strengthen connections between residents through community-building efforts, while simultaneously provide critical services and resources in the face of climate change impacts and natural disasters. Currently, the [State of California's Strategic Growth Council](#) (SGC) and [PG&E](#) are offering grant funding to support the development of community resilience hubs throughout California.

Develop a Sustainable Parks Master Plan

Parks are vital civic necessities and make a significant contribution to Piedmont's quality of life. Although "open space" represents only seven percent of Piedmont's land area, it hosts a broad range of activities and recreational facilities. To ensure the City's parks and open spaces are prepared for the impacts of climate change, the City may want to consider developing a sustainable parks master plan. This would entail collaboration among the City's Sustainability and Parks Divisions to help guide how the City continues to plan, manage, and grow its green spaces in a sustainable manner. It also could serve as a starting point for grouping sustainable practices within Piedmont parks into a more cohesive framework so we can measure and track progress over time.

Municipal Facilities and Opportunities to Reduce Emissions

While municipal activities in 2021 resulted in 2.8% of Piedmont's total in-territory emissions, the City has opportunities to demonstrate leadership and commitment to reducing its share of emissions. Based on the previous inventories completed by staff, transportation-related activities – vehicle fleet and employee commute – is the key sector warranting attention. 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. The Council may want staff to consider pursuing the following in this area:

Electrification of the City's Fleet

Fleet electrification offers local governments economic benefits that include lower lifecycle costs and reduced risk of fuel price volatility when compared to internal combustion engine vehicles. Deployment of EVs in municipal fleets also benefits the local population through the use of clean electricity as fuel, which helps reduce criteria air pollutants and GHG emissions. In 2022, the City completed a project with the assistance of EBCE to conduct a fleet electrification assessment. The assessment found that electrification of the City's light-duty municipal fleet would cost the City about \$540,000 but save the City more than \$250,000 in operating expenses when compared to a baseline scenario over a ten-year period. This investment is also expected to reduce GHG emissions by 794 MTCO_{2e} over the ten-year period. The cost reductions in the transition scenarios are driven by vehicle incentives, Low Carbon Fuel Standard (LCFS) credits, fuel cost savings and lower maintenance costs. To ensure City Departments are selecting EVs as replacement vehicles, where appropriate and available, the Council may want to direct staff to develop a Fleet Purchasing Policy. The Policy could specify the purchase of hybrid vehicles and EVs for light-duty fleet acquisitions and replacements and prohibit the acquisition of sport utility vehicles (SUVs). To ensure the City is prepared to install EV charging infrastructure required for said purchases, the Council may also want to direct staff to conduct an electrical assessment of all City facilities.

Reduce Employee Commute through Telework and Clean Commuter Programs

Promoting working from home when possible and maintaining a daily system to report mileage could aid in lowering employee emissions. Providing incentives for EVs and increasing the availability of charging infrastructure could also help promote lower emission methods of getting to and from work. About 60% of City employees report a one-way drive to work of over 20 miles. Two immediate actions the Council may want staff to pursue include the adoption of a telework policy and a clean commuter policy. Currently, Piedmont is the only City in Alameda County that does not have a telework policy in place. Telecommuting can promote both energy savings and emission reductions, specifically in the area of VMT. If the City were to adopt a telework policy that accommodated a hybrid work schedule (i.e., 3 days in the office, 2 days remote), employee commute emissions would decrease 15-20% according to staff's estimates. In conjunction with telework, the Council could also consider directing staff to adopt a clean commuter policy. A clean commuter policy could entail implementing programs and incentives for staff to reduce their carbon footprint such as a Transportation Demand Management Program Vacation Benefit (regular employees that use a qualifying commute mode for at least a certain percentage of their normally scheduled work days in a pay period can accrue extra vacation days per year), End-of-Trip Facilities for active transportation commuters (install showers and lockers which allow employees to clean up after bike rides or jogs and to store their "active wear" clothes during the day), and Commute Cash (employees who walk, bike, or carpool to work can earn a certain dollar amount for each day that they do so up a certain annual threshold).

CAP Implementation Progress Matrix

The following list provides information on the progress the City has made on CAP 2.0 measures, including cost estimates and estimated potential GHG reductions for these measures. The potential GHG reductions are not exact measurements. Instead, they are based on current best estimates and rely on a range of assumptions.

Cost Delineations

The cost brackets for the Planning & Building 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, such as the installation of a heat pump hot water heater. 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 & Building 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 a staff member dedicated to sustainability. Alone, this is a “HIGH” cost action, but the expenditure contributes to multiple measures, resulting in “LOW” cost estimates per action. As of 2020, the City hired its first Sustainability Program Manager, Alyssa Dykman, who manages and implements the City’s climate action goals. The City also has participated in the Climate Corps program, which provides a full-time sustainability AmeriCorps fellow to Piedmont for about \$30,000 per year.

Incentive programs targeting building energy efficiency and administered through the Planning & Building Department 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 & Building 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 can be expected to be cost effective over the lifespan of the improvement.

	Measures and actions by sector	2030 GHG Reduction Potential (MTCO ₂ e)	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 & Building	LOW	Completed. In July 2020, City Council adopted an Energy Assessment Policy requiring an energy assessment to be conducted for projects which require design review permits and which may have an energy impact. In February 2021, City Council adopted Ordinance 751 N.S. that requires a home energy assessment disclosure at time of sale. Ordinance 751 N.S. became effective March 3, 2021. Evaluation of the policies is ongoing. A webpage on Home Energy Assessments can be found here on the City's website .
	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 & Building	LOW	Ongoing. City staff continues to work with home energy auditors, as well as StopWaste and BayREN staff to conduct public outreach on home energy assessment opportunities. Resources are provided on the Home Energy Assessment and Building Electrification webpages on the City's website.
	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 & Building	LOW	Ongoing. A hyperlink to the My Energy online tool is provided on the Building Electrification 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 & Building	LOW	Ongoing. Information on distributed energy resource programs are provided on the Building Electrification and Solar FAQ webpages on the City's website.
	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 & Building	MED-HIGH	Ongoing. In May 2022, the City's Planning & Building Department launched its first Sustainability Awards as part of its annual Design Awards. In 2023, the City's Sustainability Division will expand this initiative. The City also hosts an interactive online platform to enhance and incentivize local action, which includes residential energy conservation and retrofit opportunities and peer-to-peer sharing. 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 & Building	LOW-HIGH	Completed. In October 2022, City Council adopted Ordinance 766 N.S. that requires certain energy efficiency measures to be installed during major renovation projects. Ordinance 766 N.S. became effective January 2023.
	Promote Property Assessed Clean Energy (PACE) financing and other energy improvement financing programs		Marketing & Outreach	Planning & Building	LOW	Ongoing. Information on PACE financing and other energy improvement financing programs are listed on the Building Electrification and Rebates and Incentives webpages on the City's website.
	Consider following the State's goal of having all new residential construction be Zero Net Energy (ZNE)		Staff Time, Private	Planning & Building	HIGH	Completed. Based on the state's Residential New Construction Zero Net Energy (ZNE) Action Plan, all new residential construction will be ZNE by 2020. The state's definition of a ZNE building is an energy-efficient building where, on a source energy basis, the actual annual consumed energy is less than or equal to the on-site renewable generated energy. As of the 2019 Building Code, solar photovoltaics (PV) are required to offset the remaining energy needed to get to ZNE. The 2022 Building Code expands solar PV systems with onsite battery storage standards.
	Investigate developing an online, GHG reduction tracking platform for Piedmont residents to track their		Staff Time	Planning & Building	LOW	Completed. In collaboration with Piedmont Connect, the City launched an interactive online platform, the Piedmont Climate Challenge , in fall 2019.

	actions that may affect their carbon footprint and to participate in community-wide GHG reduction challenges					
	Provide case studies/awards/highlights for property owners who set good sustainability examples (i.e. solar, LEED, drought-tolerant landscape, etc.)		None	Planning & Building	LOW	Ongoing. In May 2022, the City's Planning & Building Department launched its first Sustainability Awards as part of its annual Design Awards. In 2023, the City's Sustainability Division will expand this initiative. We also have a page devoted to this on the City's website called 'Highlighting Projects' 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 & Building	LOW	Ongoing. In February 2023, the City's Sustainability Division held a Building Electrification Webinar surrounding this topic. Staff also share information on the Building Electrification and Rebates and Incentive webpages on the City's website, and the Piedmont Climate Challenge Website . Additional information is shared through the City's monthly Climate Action e-newsletter, local media outlets, and on the City's Building Permit Checklist.
	Consider requiring electric appliances for new construction		Staff Time, Private	Residents & Building	MED	Completed. In February 2021, City Council adopted Ordinance 750 N.S. that requires all-electric appliances for new construction of low-rise residential buildings and detached accessory dwelling units (ADUs). In October 2022, City Council readopted these requirements (Ordinance 766 N.S.).
	Provide incentives to convert existing residences from natural gas to electric appliances		Incentive, Staff Time	Planning & Building	MED	Completed. Starting January 2023, the City launched a new electrification rebate program that incentivizes the replacement of appliances fueled with natural gas with electric appliances. Information about the program can be found on the Electrification Rebate Program website page. Eligible appliances include heat pumps, heat pump water heaters, and associated panel upgrades.

BE-3.1	Measure: Commit to being a renewable energy city					
	Pass a resolution to meet 100% of community-wide electricity demand by renewable sources by 2030		Staff Time	Planning & Building	LOW	Action needed. Although an overwhelming share of Piedmont's residential electricity accounts are enrolled in EBCE's 100% Renewable service plan, as are the City of Piedmont's accounts, the Council may want to direct staff to pass a resolution.
BE-3.2	Measure: Install on-site renewable energy	218				
	Require all new construction or existing buildings that substantially increase their floor area to install on-site solar to off-set at least 75% of their electricity usage		Staff Time, Private	Planning & Building	HIGH	Action needed. The City's Reach Codes (Ordinance 766 N.S.) include requirements for all-electric new construction and installation of solar photovoltaic systems at point of roof expansion, however, there are no provisions related to offsetting a certain % of electricity use. The Council may want to direct staff to develop a policy.
	Target 100% of buildings with solar to install battery storage		Marketing & Outreach, Private	Planning & Building	HIGH	Ongoing. The 2022 Building Code expands solar PV systems with onsite battery storage standards, thereby encouraging battery storage in new buildings. Existing buildings can be targeted through the City's Reach Code requirements, in addition to continuing education and outreach efforts to property owners.
	Require buildings that undergo roof replacements to be "solar ready"		Staff Time, Private	Planning & Building	HIGH	Completed. The City's Reach Codes (Ordinance 766 N.S.) includes requirements for the installation of solar photovoltaic systems at point of roof expansion (>30%) or the addition of a new upper level.
	Increase outreach and community engagement for solar installation programs and incentives, including community-based social marketing campaigns, public workshops, and partnering with utilities		Marketing & Outreach, Incentive	Planning & Building	LOW	Ongoing. The City is a partner of Bay Area SunShares , an annual program where SunShares partners with government agencies and large employers across the Bay Area to offer rooftop solar and battery storage installation at roughly 15% below market rates. For the 2022 program, in addition to outreach through local newsmedia, the City heavily promoted SunShares in the City's weekly e-news and other direct communication channels, including the Climate Action e-newsletter, website homepage, and social media. This resulted with 46 Piedmont residents

						registering for the option to participate and 6 ultimately signing contacts. This made the City of Piedmont one of SunShares' top 10 outreach partners across the entire region. The City also promotes solar installation programs such as EBCE's Resilient Home Program , as well as provides information related to net energy metering (NEM) on the City's website and in climate action e-newsletters.
	Develop a reach code to phase-out electric service panels below a 200-amp capacity at time of upgrade		Staff Time	Planning & Building	LOW	Completed. The City's Reach Codes (Ordinance 766 N.S.) includes requirements for upgrading panel capacity to accommodate future electrification of all appliances.
BE-3.3	Measure: Increase the amount of renewable energy delivered through the grid	1794				
	Encourage residents to choose East Bay Community Energy as their electricity provider and support education and community engagement for residents throughout the transition to EBCE		Staff Time, Marketing & Outreach	Planning & Building	LOW	Ongoing. EBCE is currently the default option for Piedmont accounts. 93% of residential electricity accounts are enrolled in EBCE's 100% Renewable service plan, and 5% are enrolled in EBCE's Brilliant 100 service plan. 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 & Building	LOW	Completed. In May 2018, City Council voted to auto-enroll all residential electricity accounts in EBCE's 100% Renewable Energy service plan starting in November 2018. An overwhelming share of Piedmont's electric customers are enrolled in EBCE's 100% Renewable and Brilliant 100 service plans.
BE-5.1	Measure: Decrease the impact of Piedmont's building stock on pollution and GHG emissions	1950				
	Prohibit wood-burning fireplaces in new development and encourage retrofitting existing wood-burning fireplaces with natural gas or electric alternatives		Staff Time, Private	Planning & Building	LOW	Ongoing. Ordinance 766 N.S. requires all-electric appliances for new construction of single-family buildings and detached accessory dwelling units (ADUs). Both interior and exterior wood-burning fireplaces in new construction are prohibited. Additional requirements could be considered to retrofit existing fireplaces with electric ones.

	Require that new air conditioning and refrigeration units use refrigerants with low global warming potential (e.g. CO2 or ammonia instead of hydrofluorocarbons)		Staff Time	Planning & Building	LOW	Ongoing. In 2020, the California Air Resources Board (CARB) approved first-in-the-nation rules to phase down the use of HFCs , including banning many HFCs in new equipment. At the federal level, the AIM Act , which was included in the Consolidated Appropriations Act (2021), directs the Environmental Protection Agency (EPA) to phase down production and consumption of HFCs in the U.S. by 85% over the next 15 years. Staff will monitor the HFC prohibitions and effective dates.
	Promote and consider requiring the installation of exterior electrical outlets to promote the use of electric maintenance equipment		Staff Time, Private	Planning & Building	LOW	Action needed. In 2021, CA Assembly Bill 1346 was signed into law, effectively banning small off-road engines (SOREs) which are used primarily in lawn and garden equipment. Staff are conducting ongoing outreach on the City's leaf blower regulations and determining opportunities to incorporate exterior electrical outlet requirements in the Building Code.
BE-6.1	Measure: Explore deep decarbonization infrastructure changes					
	Assess the potential for district heating in Piedmont, including a density assessment to evaluate potential costs, mapping the City's heating and cooling demand (including building stock and consumption data)		Staff Time, Private	Planning & Building	HIGH	Action needed. In FY 23-24, staff will prepare an existing buildings electrification strategy that will provide baseline information in this area, however, an additional study specific to municipal buildings may be warranted.
	Explore micro-grids as a carbon reduction and resiliency strategy		Staff Time, Private	Planning & Building & Public Works	HIGH	Ongoing. Staff continue to explore funding and partnership opportunities for microgrid deployment in Piedmont. As of November 2022, the City Council approved a resolution authorizing the City Administrator to pursue widespread deployment of solar and battery energy storage at critical municipal facilities in partnership with EBCE.
	Reduce the need for new natural gas lines through phasing out natural gas appliances in new construction and existing building replacements		Staff Time, Private	Planning & Building	HIGH	Ongoing. Ordinance 766 N.S. prohibits natural gas infrastructure in new construction of single-family buildings and detached accessory dwelling units (ADUs). While not required, the Ordinance includes provisions for voluntary heating system electrification improvements in existing building renovation projects. Additional policy

						levers, such as time of replacement, gas line decommissioning, and building performance standards, will be necessary to address the phasing out of natural gas in existing buildings. The building electrification strategy staff plans to prepare in FY23-24 will seek to address this area and provide a roadmap for phasing out gas appliances.
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	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, safety railings along both sidewalks on the Oakland Avenue bridge were completed.
	Enhance street crossing safety through crosswalks, flashing pedestrian lights, and signage*		Infrastructure	Public Works	MED-HIGH	Ongoing. In December 2021, the Council adopted the Piedmont Safer Streets plan which identifies 21 locations, including a subset of the highest-priority locations, that need enhanced street crossings. High priority sites are located on Moraga, Grand, and Oakland Avenue. As of May 2023, the Public Works Department completed Phase 1 of safety improvements at Mesa and Moraga Avenues, which involved repainting the existing sidewalk for better visibility, adding corner stripping lined with white reflectors to increase visibility for approaching vehicles, and adding rumble strips to slow down vehicles.
	Provide safety education led by the Police or Public Works Department (traffic safety messages on city buildings and online)		Staff Time	Public Works	LOW	Ongoing. In August of 2018, Public Works, the 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. To celebrate Bike Month in

						2023 , the Police Department cohosted a Bicycle Safety Event to provide an opportunity to practice safe bicycling for younger riders, as well as disseminated bike safety information at the Sustainability Division's Energizer Station on Bike to Work/Whenever Day.
	Consider transitioning streets to one-way traffic to add bike lanes in residential areas		Infrastructure	Public Works	MED-HIGH	Ongoing. In 2020, the City evaluated a neighborhood request to convert the western loop of Wildwood Gardens to one-way traffic. The recommendation of the study was to keep the loops two-way. Additional studies are being conducted for other streets in the City.
	Implement traffic calming measures*		Infrastructure	Public Works		Ongoing. The City does not have a formal traffic calming program; instead, it considers residents' requests on a case-by-case basis. In 2020, the Council approved a pilot program for the installation of traffic-calming 'speed cushions' on Scenic and Greenbank Avenue. As of May 2023, the Public Works Department completed Phase 1 of safety improvements at Mesa and Moraga Avenues, which involved adding rumble strips to slow down vehicles.
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	Public Works	LOW	Ongoing. Staff is actively searching for grants and other funding opportunities. According to Bay Wheels, the first phase of their expansion in the East Bay is complete in Berkeley, Oakland, and Emeryville and they are currently evaluating the network design. As of spring 2023, EBCE announced their new local electric bike program to be launched in 2024. Staff will work with EBCE in the coming year to determine the feasibility of installing a Bike Share station in the City.

	Enhance bike infrastructure along bikeway network designated in Piedmont's Pedestrian and Bicycle Master Plan (PBMP)*		Infrastructure	Public Works	HIGH	Ongoing. Based on the Safer Streets Plan , since 2014, the City completed or is in the process of 8 crossing improvement projects at intersections, 8 bikeways on street segment projects, 9 pedestrian curb ramps at intersections, and 15 street resurfacing projects. As of May 2023, the Public Works Department completed Phase 1 of safety improvements at Mesa and Moraga Avenues, which involved adding a new class 2 bike lane in the uphill direction on Moraga Ave toward the Oakland border.
	Install additional bike parking racks at key destinations		Infrastructure	Public Works	LOW	Ongoing. Staff is actively searching for grants and other funding opportunities to install racks in high-traffic locations.
	Implement Highland road diet		Infrastructure	Public Works	LOW	Action needed. The Safer Streets Plan recommends a detailed traffic study of the Highland Avenue corridor, with 3 objectives: road diet, reconfiguration of the “bend”, and alleviating school-related congestion.
	Implement Grand Avenue road diet		Infrastructure	Public Works	LOW	Completed. In 2016, the City of Oakland implemented a road diet on Grand Avenue between Elwood Avenue and the Piedmont city limit, near Jean Street/Wildwood Avenue. The project replaced two travel lanes with bike lanes and a center turn lane.
	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	Ongoing. 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. In May 2023, two new class 2 bike lanes were added in the uphill direction on Moraga Ave. 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	Action needed.

	Provide bicycle parking at city sponsored events		Infrastructure	Public Works	LOW	Completed. With the assistance of BAAQMD, the City installed bike racks at key locations in the Civic Center where events are held.
	Implement physical bike protection, separation, or warning infrastructure like Botts' dots, 5 in concrete dome curb extensions, or pop ups		Infrastructure	Public Works	LOW	Ongoing. Based on the Safer Streets Plan , since 2014, the City completed or is in the process of 8 bikeways on street segment projects.
	Facilitate Bike to Work Day and other bike promotion and educational/community engagement events		Staff Time	Public Works	LOW	Completed. In 2023, the City promoted Bike to Work Day events through various communication platforms and hosted an Energizer Station in the Civic Center.
	Objective: Increase residents' use of public transit					
T-3.1	Measure: Increase use of busses and BART	32				
	Incentivize public transit use through community-based social marketing campaigns		Marketing & Outreach	Planning & Building & Public Works	LOW	Ongoing. Staff provide up-to-date information on public transit options for Piedmonsters on the Public Transit website page on the City's website. Additional work is needed to incentivize public transit use among all community members.
	Work with AC transit to improve fuel efficiency and alternative fuel buses		Staff Time	Planning & Building & Public Works	LOW	Ongoing. Staff support AC Transit's transition to a zero emission bus fleet . Since 1999, AC Transit has been committed to exploring conversion to zero emission technologies—first with hydrogen and now battery-powered buses. AC Transit is actively converting one of the largest bus fleets in California to 100% clean fuels. By the end of 2023, 10% of AC Transit's fleet will be zero emission clean air buses. By 2040, 100% of AC Transit's fleet will be zero emission buses.
	Consult with AC transit to ensure Piedmont has bust stops that provide shade, weather protection, seating, lighting, and route information		Staff Time	Planning & Building & Public Works	LOW	Ongoing. Staff is working with AC Transit on ways to enhance ridership in post-pandemic times. Currently, more than half of Piedmont bus stops have benches and shading.

	Consider investing in an intra-city shuttle to provide convenient transit within the city and to key locations like schools, casual carpool sites, and BART		Infrastructure	Planning & Building & Public Works	HIGH	Action needed. The Council may direct staff to pursue a study to determine the feasibility of an intra-city shuttle.
	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, Staff Time	Public Works	HIGH	Ongoing. City staff is working with East Bay Community Energy to complete the installation of 4 publicly accessible EV fast charging stations (DCFC) on Magnolia Avenue south of the Exedra. The chargers are anticipated to be installed by summer 2024. Staff is actively searching for grants and other funding opportunities to deploy additional chargers.
	Develop an ordinance to require EV charger pre-wiring in any garage remodel		Staff Time, Private	Planning & Building	HIGH	Completed. Chapter 8 of City Code requires newly constructed one- and two-family dwellings, townhouses, and one- and two-family dwellings with an existing or proposed garage for which a building permit application has been submitted with a project value of \$50,000 or greater and that includes an electric service panel upgrade to comply with 2022 CalGreen Code.
	Require pre-wiring for EV charging in new construction		Staff Time, Private	Planning & Building	HIGH	Completed. The 2022 CalGreen Code requires new construction to include the installation of an EV capable raceway to accommodate a dedicated 208/240-volt branch circuit.

	Solid Waste					
	Objective: Reduce waste going to the landfill	125				
SW-1.1	Measure: Establish a waste diversion target for 2030					
	Adopt a resolution to achieve 85% waste reduction and diversion by 2030		Staff Time	Public Works	LOW	Action needed. The City currently has a diversion rate of 75% which has remained consistent over the last decade. The City Council may direct staff to pursue a resolution to achieve this goal.
SW-1.2	Measure: Provide education on ways to reduce consumption					
	Encourage composting within the City through education and community engagement about proper green waste sorting, backyard composting, and providing compostable bags and countertop compost bins		Staff Time, Marketing & Outreach	Public Works	LOW	Ongoing. As of January 1, 2022, all residents in California are required to subscribe to organics collection service per SB 1383 regulations. Information about composting is distributed through Republic's quarterly billing inserts, the City's Climate Action e-newsletter, and articles in local media. Composting information is also located on the Organics and SB 1383 pages of the City's website. Staff regularly give away compostable bags and green kitchen pails to residents at the City's Planning & Building Counter. In 2021, sustainability staff managed a table at the Harvest Festival about composting.
	Promote educational programs and community engagement and outreach on reducing food waste, recycling, and landfill diversion		Staff Time, Marketing & Outreach	Public Works	LOW	Ongoing. Sustainability Division staff manage Piedmont Evergreen, the City's outreach and education program for waste reduction, recycling, and composting. In the last year, staff assisted with waste management and diversion efforts at the Harvest Festival and Turkey Trot. The City's website provides information on these topics on various pages housed under Recycling, Organic Waste, & Garbage Collection Services in Piedmont .

	Promote “fix-it” clinics to educate residents on how to repair items instead of throwing them away		Staff Time, Marketing & Outreach	Public Works	LOW	Ongoing. Staff distribute information about “fix-it” opportunities through local media articles and the City’s Climate Action e-newsletter.
	Provide education and community engagement on items accepted in bulk-pick up program to ensure proper disposal of appliances and other bulky refuse		Staff Time, Marketing & Outreach	Public Works	LOW	Ongoing. Information about bulky-items is distributed through Republic’s quarterly billing inserts, the City’s Climate Action e-newsletter, and articles in local media. Information can also be found on the City’s Bulky Items website page. County-wide information can be found on StopWaste’s Re:Source tool .
	Provide education and community engagement on where to drop-off specialized waste, such as paints, fats, grease, oils, and other items that cannot go in curbside or bulk pick-up		Staff Time, Marketing & Outreach	Public Works	LOW	Ongoing. Information about specialized waste is distributed through Republic’s quarterly billing inserts, the City’s Climate Action e-newsletter, and articles in local media. Information can also be found on the City’s Household Hazardous Waste and E-Waste website pages. County-wide information can be found on StopWaste’s Re:Source tool .
	Provide updated detailed information about which specific materials are currently being recycled by Piedmont’s waste hauler, rather than shipped elsewhere for disposal. Educate residents on the fact that recycling is a market-based program, and that if there is no market for a material, it will not be recycled.		Staff Time, Marketing & Outreach	Public Works	LOW	Ongoing. Information about the disposal locations of Piedmont’s solid waste, recycling, and organics are provided in Republic Services’ annual reports and on their Piedmont specific webpage . Solid wastes collected in Piedmont are taken to the Golden Bear Transfer Station in Richmond, CA, where the loads are dropped, recognizable recyclables are pulled out and set aside to be picked up by specialty processors. Residual wastes are then reloaded and transported to Keller Canyon Landfill in Pittsburg, CA for burial. Recycling loads are delivered to the newly updated West County Integrated Resource Recovery Facility in Richmond, CA. Organic loads are taken to the West Contra Costa Materials Processing Site in Richmond, CA. Information on recycling can be found on the City’s Collection Services website pages .

	Consumption					
	Objective: Reduce emissions associated with food consumption and food waste					
C-1.1	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 & Building	LOW	Ongoing. City staff organized a community event in April 2019 to raise awareness on more sustainable consumption habits, goods, and services. The City's Climate Challenge platform and the Climate Action website page on the City's website provide information about this topic. Staff also provide updates on consumption-based emissions in the annual GHG inventory report to the City Council.
	Promote education on personal and household carbon footprints		Staff Time, Marketing & Outreach	Planning & Building	LOW	Ongoing. City staff organized a community event in April 2019 to raise awareness on more sustainable consumption habits, goods, and services. The City's Climate Challenge platform and the Climate Action website page on the City's website provide information about this topic.
	Host a decarbonization workshop to promote awareness of the climate change impacts of consumption		Staff Time, Marketing & Outreach	Planning & Building	LOW	Ongoing. City staff organized a community event in April 2019 to raise awareness on more sustainable consumption habits, goods, and services. The City's Climate Challenge platform and the Climate Action website page on the City's website provide information about this topic.
	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	Public Works	LOW	Ongoing. City staff organized a community event in April 2019 to raise awareness on more sustainable consumption habits, goods, and services. The City's Climate Challenge platform and Piedmont Evergreen program website pages also include

						information about this topic. Sustainability staff regularly share information from StopWaste surrounding this topic in the Climate Action e-newsletter and in local media outlets.
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	Public Works	LOW	Ongoing. City staff organized a community event in April 2019 to raise awareness on more sustainable consumption habits, goods, and services. The City's Climate Challenge platform and the Climate Action website page on the City's website provide information about this topic. Sustainability staff regularly share information from StopWaste surrounding this topic in the Climate Action e-newsletter and in local media outlets.
	Educate residents and businesses on low-carbon food options, such as minimally processed foods, fruits, grains and vegetables		Staff Time, Marketing & Outreach	Public Works	LOW	Ongoing. The City's Climate Challenge platform and the Climate Action website page on the City's website provide information about this topic. Sustainability staff regularly share information from StopWaste surrounding this topic in the Climate Action e-newsletter and in local media outlets.
	Educate residents on the benefits of collecting and recycling fats, oils, and grease from food products and use		Staff Time, Marketing & Outreach	Public Works	LOW	Ongoing. The City's Climate Challenge platform and the Climate Action website page on the City's website provide information about this topic. Sustainability staff regularly share information from StopWaste surrounding this topic in the Climate Action e-newsletter and in local media outlets.
	Objective: Reduce emissions from the consumption and disposal of goods					
C-3.1	Measure: Reduce emissions from the consumption of goods					

	Promote durable, reusable, pre-owned, recycled content, and locally-made goods, which reduce excessive manufacturing and transportation emissions		Staff Time, Marketing & Outreach	Planning & Building	LOW	Ongoing. The City's Climate Challenge platform and the Climate Action website page on the City's website provide information about this topic. Sustainability staff regularly share information from StopWaste surrounding this topic in the Climate Action e-newsletter and in local media outlets.
	Promote and support tool lending libraries, convene interested community stakeholders, develop a plan to start a lending library, own or operate a lending library as part of local government		Staff Time, Marketing & Outreach	Planning & Building	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 the Climate Action website page on the City's website provide information about this topic. Sustainability staff regularly share information from StopWaste surrounding this topic in the Climate Action e-newsletter and in local media outlets. In 2021, Sustainability Division staff launched an Induction Cooktop Lending Program which offers residents the opportunity to rent out an induction cooktop for free. Staff are looking into additional opportunities to facilitate tool lending.
	Launch a "Be Resourceful Campaign" to connect residents to information and resources to get the things they need. Key strategies include a) buy smart (plan before purchasing, buy local, purchase durable goods) b) reuse c) borrow, share, and rent items d) fix and maintain		Staff Time, Marketing & Outreach	Planning & Building	LOW	Action needed.
	Promote local arts, entertainment, recreation and local businesses which have a lower GHG footprint than buying goods		Staff Time, Marketing & Outreach	Planning & Building	LOW	Ongoing. The City's Climate Challenge platform and the Climate Action website page on the City's website provide information about this topic. Sustainability staff regularly share information from StopWaste surrounding this topic in the Climate Action e-newsletter and in local media outlets. Staff also support the CA Green Business Network .

	Water and Wastewater					
	Objective: Reduce water use by 20%	13				
WW -1.1	Measure: Encourage residential and commercial users to participate in EBMUD's free water audit program					
	Partner with EBMUD and StopWaste to provide water conservation outreach and community engagement programs and encourage residential and commercial users to participate in free water efficiency audits		Staff Time, Marketing & Outreach	Public Works	LOW	Ongoing. Information on water conservation can be found on the Water Conservation page on the City's website. Staff regularly provide updates on the drought and water conservation at Park Commission meetings. Staff also share updates on water conservation opportunities in the City's Climate Action e-newsletter and local media.
	Promote rebates for water efficiency projects, including low-flow fixtures		Staff Time, Marketing & Outreach	Public Works	LOW	Ongoing. Information on water efficiency be found on the Water Conservation page on the City's website, while information about rebates can be found on the Rebates & Incentives page. Staff regularly provide updates on the water efficiency projects at Park Commission meetings. Staff also share updates on water efficiency opportunities in the City's Climate Action e-newsletter and local media posts.
	Require a water efficiency audit at point of sale		Staff Time, Marketing & Outreach	Planning & Building	LOW	Action needed.
WW -1.2	Measure: Reduce residential water use					
	Adopt a residential retrofit program to encourage the installation of water conservation measures		Staff Time, Marketing & Outreach, Private	Planning & Building	LOW	Ongoing. Ordinance 766 N.S. includes a water conservation package option for homeowners to select for installation when undergoing a \$30,000 or \$115,000 renovation project, however, additional measures could be enacted.

	Consider requiring the installation of water conserving fixtures at the point of sale or rental		Staff Time, Marketing & Outreach	Planning & Building	LOW	Action needed.
	Consider requiring pool covers in order to reduce evaporation		Staff Time, Marketing & Outreach	Planning & Building	LOW	Action needed.
	Investigate developing an online, GHG reduction tracking platform for Piedmont residents to track their actions related to water use that may affect their carbon footprint and to participate in community-wide GHG reduction challenges		Staff Time, Marketing & Outreach	Planning & Building	LOW	Completed. In collaboration with Piedmont Connect, the City launched an interactive online platform, the Piedmont Climate Challenge , in fall 2019. The platform provides information related to water conservation actions that help to reduce GHG emissions.
WW-1.3	Measure: Promote landscaping that minimizes water use					
	Encourage the replacement of high water use landscapes in residential and commercial uses		Staff Time, Marketing & Outreach	Planning & Building & Public Works	LOW	Ongoing. Staff continues to promote the replacement of high water use landscapes through City demonstration projects, and in outreach materials such as the Water Conservation and Rebates & Incentives pages on the City's website.
	Enforce and consider expanding the California Water Efficiency Landscape Ordinance (WELO)		Staff Time, Marketing & Outreach	Planning & Building & Public Works	LOW	Action needed.
	Objective: Conserve and Collect water					
WW-2.1	Measure: Promote infrastructure improvements					
	Work with EBMUD to repair and maintain existing water lines to prevent leaks		Staff Time	Public Works	MED	Ongoing. Staff are evaluating and monitoring water use reports to determine priority sites for repairs and improvements.
WW-2.2	Measure: Encourage use of greywater and rainwater collection					

	Consider requiring greywater or rainwater collection systems in new construction		Staff Time, Private	Planning & Building	LOW	Action needed.
	Create an outreach or community engagement program that encourages business and residents to construct greywater and rainwater collection systems that can be used for irrigation and non-potable uses		Staff Time	Public Works	MED	Action needed.

	Municipal					
	Objective: Reduce City GHG emissions					
M-1.1	Measure: Set a zero-carbon goal for the City government					
	Pass a resolution committing Piedmont's municipal facilities and activities to zero-carbon by 2050 and develop interim milestones		Staff Time	Planning & Building	LOW	Action needed.
	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. In May 2022, the City secured grant funding to replace all remaining existing gas water heaters at City facilities with heat pump water heaters. The new Piedmont Community pool will be designed as an all-electric facility and be the City's first LEED Certified Building. Staff is actively searching for grants and other funding opportunities to make improvements.

	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. The new Piedmont Community pool will be designed as an all-electric facility and be the City's first LEED Certified Building. Staff is actively searching for grants and other funding opportunities to make improvements.
	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. In the last several years, the City has upgraded light fixtures to high efficiency fixtures in buildings and will continue to do so in the years ahead. Staff is actively searching for grants and other funding opportunities.
	Switch from natural gas to electric appliances once the electricity supply nears 100% and the technology becomes affordable		Staff Time	Public Works	MED	Ongoing. In May 2022, the City replaced all remaining gas water heaters with electric heat pump water heaters. The City also already converted all cobra head streetlights to LEDs and will be converting the remaining decorative post top streetlights to LEDs. Staff is actively searching for grants and other funding opportunities.
	Investigate strategies for reducing energy use at the City aquatic facilities		Staff Time	Public Works	HIGH	Completed. In April 2022, an Energy Use Report developed for the new Aquatic Facility that determined it is feasible to electrify the entire facility with a combination of electric heat pumps, photovoltaic/thermal (PVT) panels, and integration with the clean electrical grid. In April 2022, Council directed staff to proceed with full electrification of the new facility and pursue additional funding and partnership opportunities to offset electrification costs. Staff is actively searching for grants and other funding opportunities.
M-2.2	Measure: Monitor Building Performance					

	Consider installing electronic building performance displays in all publicly accessible buildings		Staff Time, Infrastructure	Public Works	LOW	Action needed.
	Conduct energy audits of all buildings every 10 years		Staff Time, Private	Public Works	MED	Completed. In early 2023, the Sustainability Division staff worked with BayREN to complete a municipal energy portfolio audit of City 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	Public Works	MED	Completed. In early 2023, the Sustainability Division staff worked with BayREN to complete a municipal energy portfolio audit of City facilities. As of November 2022, the City Council approved a resolution authorizing the City Administrator to pursue widespread deployment of solar and battery energy storage at critical municipal facilities in partnership with EBCE.
	Commit to 100% renewable energy through EBCE.		Staff Time	Public Works	LOW	Completed. In May 2018, City Council voted to auto-enroll all municipal electricity accounts in EBCE 100% Renewable Energy service plan starting in November 2018.
	When constructing new buildings or replacing and structurally upgrading roofs, build solar ready or include the installation of solar in the bid process		Staff Time	Public Works	MED	Ongoing. The City has a Civic Green Building Ordinance that resides in Chapter 8 of the Piedmont Municipal Code. In April 2022, Council directed staff to proceed with full electrification of the new Aquatic Center facility, which will include photovoltaic/thermal (PVT) panels. Additional opportunities will be explored as the City seeks to upgrade its facilities.
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, Marketing & Outreach	Public Works	LOW	Ongoing. In 2021, CA Assembly Bill 1346 was signed into law, effectively banning small off-road engines which are used primarily in lawn and garden equipment. Staff are conducting ongoing

						outreach on the City's leaf blower regulations and determining opportunities to incorporate exterior electrical outlet requirements in the Building Code. City staff are also considering options to more effectively enforce the ban.
	Replace high GWP refrigerant air conditioners and dispose of them properly		Infrastructure	Public Works	LOW	Ongoing. As of August 2020, the furnace and water heater were replaced with heat at the Corporation Yard. All remaining gas water heaters were replaced with heat pumps in May 2022. Staff is actively searching for grants and other funding opportunities to install heat pumps at City facilities.
	Continue to maintain Piedmont's urban forest and plant new trees where possible to sequester carbon emissions, improve air quality, and help reduce the heat island effect		Staff Time, Marketing & Outreach	Public Works	LOW	Ongoing. As of 2022, staff are working to develop a municipal tree inventory that will provide baseline information and conditions.
	Objective: Reduce Municipal Transportation Emissions					
M-3.1	Measure: Reduce employee transportation emissions					
	Promote employee ride-shares, walking, biking, and public transportation as commuting alternatives		Staff Time, Marketing & Outreach	Public Works	LOW	Ongoing. Sustainability Division staff worked with the Human Resources Department in 2022 to re-establish the Bay Area Commuter Benefits Program. Staff also are seeking opportunities for additional clean commuter incentives.
	Provide a shower and changing area for City employees to facilitate biking to work		Staff Time, Infrastructure	Public Works	LOW	Action needed.
	Install EV chargers accessible to City employees		Staff Time, Infrastructure	Public Works	MED	Action needed.
M-3.2	Measure: Reduce municipal fleet emissions					

	Develop a fleet purchasing policy that prioritizes fuel efficiency and ZEVs		Staff Time	Public Works	LOW	Action needed. In 2022, Sustainability Division staff worked with EBCE to conduct a fleet electrification assessment. The Council may direct staff to develop such a policy now that the assessment has been completed.
	Objective: Reduce Solid Waste Generated by City Services					
M-4.1	Measure: Reduce solid waste generated by the city or city-related events					
	Implement a zero-waste City Events, including compostable dinnerware, water refilling stations, and banning plastic water bottles		Staff Time	Public Works	LOW	Ongoing. City staff follow guidelines and procedures set forth by the Green Event Guide and Sustainable Procurement Policy to achieve maximum waste diversion, including the use of reusable foodware.
	Institute paperless practices for City Council, Commissions, and community meetings		Staff Time	Public Works	LOW	Ongoing. Staff follow guidelines and procedures set forth by the Sustainable Procurement Policy to reduce paper use.
	Enforce and expand the City's environmental purchasing policy		Staff Time	Public Works	LOW	Completed. In December 2021, the Council adopted updates to the City's Sustainable Procurement Policy , which expands on purchasing policies since the first plan was adopted in 2011.
	Conduct a solid waste audit for City facilities		Staff Time	Public Works	LOW	Completed. With the assistance of Republic Services, a solid waste audit was completed at City facilities in 2022.
	Consider meat-free options for City events		Staff Time	Public Works	LOW	Ongoing. Staff follow guidelines and procedures set forth by the Sustainable Procurement Policy to minimize emissions from food and food waste.
	Educate City employees and the public on recycling and composting at city events and facilities		Staff Time	Public Works	LOW	Completed. In 2022, Sustainability staff provided trainings to City purchasers on the City's recently updated Sustainable Procurement Policy .
	Replace paper towels with electric hand dryers in City bathrooms		Staff Time	Public Works	LOW	Ongoing. Electric hand dryers have been installed in Community Hall and staff are evaluating sites for additional deployment.

	Objective: Reduce City Water Use					
M-5.1	Measure: Reduce water use in City buildings					
	Install water efficient fixtures in City buildings, including motion sensor faucets in bathrooms		Infrastructure, Staff Time	Public Works	LOW	Ongoing. Staff are evaluating sites in City facilities to install water efficient fixtures.
	Install water efficient appliances, such as dishwashers and hot water heaters		Infrastructure, Staff Time	Public Works	LOW	Ongoing. Staff are evaluating sites in City facilities to install water efficient appliances.
M-5.2	Measure: Reduce and capture water use in City landscapes					
	Transition current water-intensive landscaping to drought-tolerant landscaping, limiting areas requiring intensive irrigation		Infrastructure, Staff Time	Public Works	LOW	Ongoing. Staff are monitoring and tracking water use in City landscapes and public areas. In FY 2022-23, irrigation upgrades focused on improvements to turf irrigation in Piedmont parks where lawn is actively used for irrigation.
	Facilitate the installation of weather-based evapotranspiration (ET) controller irrigation systems in City landscapes		Infrastructure, Staff Time	Public Works	LOW	Ongoing. In FY 2023-24, irrigation upgrades will start at existing meters in parks, medians, and civic landscapes. Installed submeters will provide flow information, leak detection and improve water management at each meter by transmitting water use data through a wireless network.
	Implement the City's Green Infrastructure Plan		Infrastructure, Staff Time	Public Works	LOW	Ongoing. Staff are actively assessing opportunities for green infrastructure, including Oakland Avenue, Lower Grand, and the Highland-Guilford Steps. These opportunities are being prioritized to help meet green infrastructure targets by 2027.
	Objective: Use the City's resources to disseminate and collect information on climate change					
M-6.1	Measure: Enhance and update the City's climate action program outreach efforts					

	Develop a user-friendly web page and/or build the City's social media presence to provide information on energy and water efficiency programs, waste reduction best practices, renewable energy, electric vehicles, and other resources. Investigate ways to include the GHG emissions reduction potential of each action		Staff Time	Planning & Building	LOW	Completed. The Piedmont Climate Challenge contains numerous actions individuals, households, and businesses can take and their associated GHG emission reductions. In addition, various pages on the City's website (Climate Action Plan , Electric Vehicles , Electrification , Piedmont Evergreen , Reach Code Information , Upcoming Webinars , Water Conservation Resources) include information on sustainability best practices. Staff are actively working to build out Piedmont Evergreen social media accounts.
	Distribute information to residents and commercial business owners on energy and water audit programs, rebates, waste reduction best practices, and environmental stewardship		Staff Time, Marketing & Outreach	Planning & Building	LOW	Ongoing. In April 2022, Sustainability Division held a Reach Code Community Forum which featured an informational presentation on incentive programs offered by BayREN. In February 2023, staff hosted an Electrification Rebate Webinar which featured incentive and rebate programs available for building electrification efforts. Staff also distribute information at the City's Planning & Building counter, as well as to participants of the City's compost giveaway events.
	Host education events on residents reducing GHG emissions		Staff Time	Planning & Building	LOW	Ongoing. In September 2021, staff worked with Piedmont Connect to host a water conservation webinar that showcased how Piedmonters are utilizing sustainable landscaping practices during the drought. Staff also distribute information at the City's Planning & Building counter, as well as to participants of the City's compost giveaway events.
M-6.2	Measure: Collect information to track progress on the Climate Action Plan					
	On application forms for building and design review permits include a questionnaire regarding energy efficiency improvements include in the construction, and that heightens awareness of others not considered		Staff Time	Planning & Building	LOW	Ongoing. Staff are developing a form to be included when the Department rolls out its online permitting system in summer 2023.

	Objective: Consider adjusting taxes to reflect the social costs of carbon					
M-7.1	Measure: Reduce the City's carbon footprint through carbon pricing					
	Consider adjusting the utility tax to act as a revenue neutral carbon tax on natural gas while reallocating money to reduce electricity and/or communication taxes through 2030		Staff Time, Private, Marketing & Outreach	Planning & Building, Public Works, Finance	HIGH	Action needed.
	Through a City vote, establish a carbon tax on natural gas that dedicates its revenue to energy efficiency, renewable energy, and fuel switching incentives for residents		Staff Time, Private, Marketing & Outreach	Planning & Building, Public Works, Finance	HIGH	Action needed.
	Support State and Federal efforts to establish a tax or fee on carbon		Staff Time, Marketing & Outreach	Planning & Building	LOW	Ongoing. In September 2021, Mayor King participated in a panel discussion on carbon pricing at a League of Women Voters event.