



2030 Climate Action Plan and Adaptation Strategies

September 2023

CLIMATE ACTION PLAN

ADAPTATION

PLAN

&

STRATEGIES



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Original RICAPS template and tools - 2011

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Executive Summary

Cities are on the front lines when it comes to climate change. Cities are also leading the world in reducing carbon emissions through aggressive policies and adoption of clean technologies. The City of East Palo Alto's 2030 Community Climate Action Plan and Adaptation Strategies establishes guidelines for reaching the stated goal of reducing per person (or per capita) carbon emissions 55 percent below 2005 levels by 2030 and aspires to reach carbon neutrality by 2045.

The City of East Palo Alto has already exceeded the goals established in the 2011 Climate Action Plan. Between 2005 and 2017, the City reduced total community emissions by 27,362 metric tons (MT) of carbon dioxide equivalents (CO₂e) to achieve 20 percent below 2005 levels, while the goal was 15 percent. This was equivalent to a per capita emissions reduction from 4.62 MT CO₂e/person in 2005 to 3.55 MT CO₂e/person in 2017. To achieve a 55 percent per capita reduction by 2030, the City of East Palo Alto will need to reduce per capita emissions to 2.09 MT CO₂e/person in 2030. This "bending of the carbon curve" is essential to meeting the goal of carbon neutrality before 2045 and avoiding worsened climate change impacts.

To meet this goal, this CAP provides a roadmap to reduce emissions in three sectors: 1) energy and water, 2) transportation and land use and 3) solid waste. The CAP identifies key actions that need to be accomplished within the next decade to stay on pace with achieving the goal. The City does not anticipate any substantial cumulative impacts from implementation of the CAP but will review annual implementation plans for compliance with CEQA.

Even if all emissions were eliminated today, we will continue to see increasingly severe climate change impacts in the future, including sea-level rise, hotter temperatures, and increased fire/smoke risk. East Palo Alto understands the importance of laying out a framework for enhancing the community's resilience to these impacts. The City engaged experts and community leaders to plan the best path forward for East Palo Alto, and we hope you support our vision. This CAP focuses on programs and policies that seek to equitably improve health outcomes, reduce the cost of future energy use, while enhancing quality of life and wellbeing.

This CAP describes the process East Palo Alto will embark on to develop a climate change resiliency plan moving forward.

The community's investment to support the CAP will be many times greater than East Palo Alto's own costs. East Palo Alto will need to support residents' and businesses' efforts to find funding to decarbonize their buildings, vehicles, and lifestyles. East Palo Alto may discourage carbon-emitting activities through fee-based systems or carbon taxes to shift community investment away from fossil fuels to clean technologies.

To ensure full implementation of the CAP, an interdepartmental team of City staff, in collaboration with civic and business leaders, must be assembled to maintain momentum and ensure accountability. Staff will provide annual progress reports, including greenhouse gas (GHG) inventories, and will prepare an update to the CAP after five years.

This CAP provides a pathway to accelerate our historical success to reduce climate warming emissions by an average of 5 percent per capita annually between March 2017 and reaching carbon neutrality in 2045.^a It is also a call to action to residents, community organizations, and businesses to take an active part in our transition to a low-carbon future and clean economy. In this process, we will foster a vibrant economy, increase our resiliency, and support East Palo Alto's vision for a livable and sustainable community for all generations to come.

^a This assumes that no GHG reductions have occurred between the CAP's inventory year in 2017 and adoption year in 2022.

Executive Summary

Lisa Yarbrough-Gauthier

Mayor

1. Introduction

Why a Climate Action Plan?



The City of East Palo Alto is pleased to present the following update to our Climate Action Plan (CAP). This 2030 CAP, designed to be a blueprint of our community's response to challenges posed by climate change and is a living document reflecting the ongoing efforts and challenges our community faces as the impacts from climate change grow more frequent, severe, and urgent.

Our City is a frontline community, with a history of environmental injustice and a geographical position that makes it more susceptible to poor air quality and flooding. This harms an already disadvantaged community.

Our city cannot solve the climate crisis alone. This CAP documents how East Palo Alto plans to collaborate with our partners in county, state, and federal government, along with community organizations and local businesses, to create new programs, services, and policies that will support our community in taking actions that reduce greenhouse gas (GHG) emissions.

Building on a Foundation

The City of East Palo Alto has already made significant progress in reducing greenhouse gas emissions through the implementation of the 2011 Climate Action Plan (2011 CAP). In the 2011 CAP, twenty-three actions to address our changing climate were proposed, with a collaborative of executive City staff, the Public Works and Transportation Committee, the Planning Commission, and the City Council supporting the adoption.

City Council has since authorized the following environmental programs to support implementation of the ten general goals posited in the 2011 CAP.

Goal E-1: Become more Energy Efficient:

Goal attained in part through Ordinance 373 (03-2014) establishing Green Building Code Tier 2 standards mandating a 30% improvement in energy efficiency over baseline building standards (Title 24). These standards have been continually updated as the CA Green Building standards have improved.

The city additionally passed the “East Palo Alto Water Conservation in Landscaping Ordinance” (01-2016) to establish stringent guidelines for water efficient landscaping to improve water use efficiency and reduce water-related energy consumption.

Goal E-2 Increase Renewable Energy

Goal attained with the “Building Electrification and Electric Vehicle Infrastructure Reach Codes Ordinance” adopted by the City Council on October 20, 2020. This Ordinance (07-2020) prioritizes solar, electric vehicle charging stations, and all electric buildings (with minor exceptions), and expressly disincentivizes use of natural gas in new buildings.

This goal further enhances AB 2188, wherein housing rehabilitations, or small residential rooftop solar installations for single family owner-occupied homes will have a streamlined approval process. Through a partnership with GRID Alternatives (a non-profit organization that brings the benefits of solar technology to communities that would otherwise not have access to it), we held workshops and installations of solar and electric vehicle charging systems throughout the City.

In 2020, the City installed a solar powered camera system along the City’s new Pedestrian Overcrossing.

In 2021, the City adopted the Reach Codes to support the installation of Electric Vehicle Charging Stations and solar rooftops, as well as all electric appliances on all new projects with minor exceptions for low-income projects and projects that would be otherwise infeasible.

In early 2022, the City installed new street solar powered lighting along a trail segment (pilot project) and upgraded inground cross walk lighting to solar.

In 2021, the City installed four solar powered traffic speed signs throughout the City.

Goal TL-1 Prioritize Smart Growth Land Use

The adoption of the updated General Plan Vista 2035 (adopted in 2016) as well as the Ravenswood Business District / 4 Corners Specific Plan (RBD) (adopted in 2012) have both proposed the enhancement of dense development throughout the City. The City continues to expand low-income housing with expanded public transportation and active transportation amenities to reduce single vehicle trips. The City is in process of updating the RBD Specific Plan. (<https://www.cityofepa.org/planning/page/ravenswood-business-district-4-corners-specific-plan-update>)

Goal TL-3 Encourage Walking and Bicycling

The Bicycle Transportation Plan (adopted in 2011) and subsequent Bicycle Master Plan (adopted 2017, Reso. 4905) each expanded planned networks of bicycle networks with special emphasis on locations where Class I facilities can be prioritized. The City has further expanded smart growth land use efforts by working in conjunction

with the San Mateo County Transit Agency (SAMTRANS) to expand bus routes and realign existing routes to better serve the highest density housing areas of the City, as well as the local destinations serving the residents and updating routes when new high density housing developments are planned. The City has updated Safe Routes to School annually, installed a Pedestrian Overcrossing (the first such Class I facility in East Palo Alto, which opened in 2019) and prepared and funded an American Disabilities Act (ADA) Compliance and Transition Plan to update sidewalks and improve accessibility throughout the community. The City also finalized a comprehensive citywide Mobility Study to better understand the transportation patterns and interactions between motor vehicle traffic and alternative modes of transportation including walking and biking.

In 2012, the City Council Adopted a Complete Streets Policy (Resolution No. 4359) to ensure all users have public street access, via any standard mode of transportation. This policy was incorporated into the General Plan Vista 2035.

Goal TL-4: Increase Urban Green Space

In 2012, Cooley Landing Park was opened to the public, reclaiming a brownfield area previously used as a County dump site. Through implementation of General Plan Vista 2035, the City has partnered with Grassroots Ecology and Canopy to assist with expanding urban green space by working with local volunteers to plant trees and native vegetation throughout some of the more barren landscapes in the City including trail entrances, parks, and private property. Working with public and private partnerships, these two entities have planted thousands of plants and trees throughout the community while enhancing educational awareness within the community.

Goal W-1: Promote Material Re-use

The City of East Palo Alto has hosted one Repair Cafe, bringing residents together to repair damaged household items and link the community with resources to repair their damaged items. The City is working in conjunction with San Mateo County on a Safe Surplus Food Donation program to get unwanted, edible food to people who need it. In 2013, the City Council adopted a single use plastic bag prohibition to discourage the use of single use bags while encouraging re-usable bags. The City hosted events which distributed reusable bags and enabled community members to make their own reusable bags out of old t-shirts. Live in Peace, a local non-profit partner, has been repairing and providing used, fully functional bicycles to the community, having provided over 150 bicycles to residents, to date.

Goal W-2 Increase Recycling

In 2017, the City Council adopted the Clean City Plan which instigated the hiring of City staff to support educational efforts to inform residents about recycling and composting. To date, tens of thousands of contacts have been made with residents to support them in properly sorting their recycling and utilizing recycling bins rather than overflowing trash bins. The City also has an inspection program wherein businesses are inspected to ensure they have adequate recycling and compost service, with escalating enforcement for non-compliance.

Goal W-3 Increase Composting

In 2017, the City Council adopted the Clean City Plan which instigated the hiring of City staff to support educational efforts to inform residents about composting. To date, tens of thousands of contacts have been made with residents to support them in properly sorting their compost and utilizing compost bins rather than overflowing trash bins. The City also works in conjunction with Recology's team to provide compost pails to residents living in multi-family housing. Further, the City has a new inspection program which inspects that all businesses that meet mandatory requirements have compost bins and utilize them.

Goal MU-1: Increase Municipal Energy Efficiency and Renewable Energy

The following are efforts the City made to further this goal:

2012 Replaced roughly 1,000 high pressure sodium street lights and traffic signals with LED lights.

2013 Replaced all interior lights to LED for the Annex Building located at 160 Tate Street.

In 2016, San Mateo County, from which the City leases the City Hall facility, has installed photovoltaics/ solar panels and shading frames over the adjacent parking lot located at 2415 University Avenue.

In 2017, as a partner of Peninsula Clean Energy, the City participates in a program to purchase 100% carbon-free energy that is more than 50.5% renewable for all City facilities and will be fully renewable by 2025. As of the drafting of this Plan, PCE provides nearly carbon-free energy to all customers.

2018 Replaced one electric pump from the City's primary pump station to more energy efficient pump.

Goal MU-3: Work towards Zero Waste Government Operations

In 2017, City Council adopted the Clean City Plan, which prioritizes recycling and composting education. The City has installed composting, recycling, and trash receptacles in all facilities for staff use. Upon hiring, City staff receives an overview of the solid waste management practices, to ensure all staff understand the importance of capturing all materials from the waste stream which can be repurposed.

The organization focused on reducing paperwork through a digitization effort from 2011 to present, reducing the amount of paper, ink, and energy used for printing, along with the transportation of documents to various City buildings. The organization has furthered the reduction of paperwork throughout the most recent years and intends to be fully electronic processing within the decade, to the maximum extent practicable.

In 2021, the City passed Ordinance 05-2021 to establish an environmentally friendly purchasing policy to support purchasing recycled content items and encourage the use of products that can be composted.

Beyond the Goals

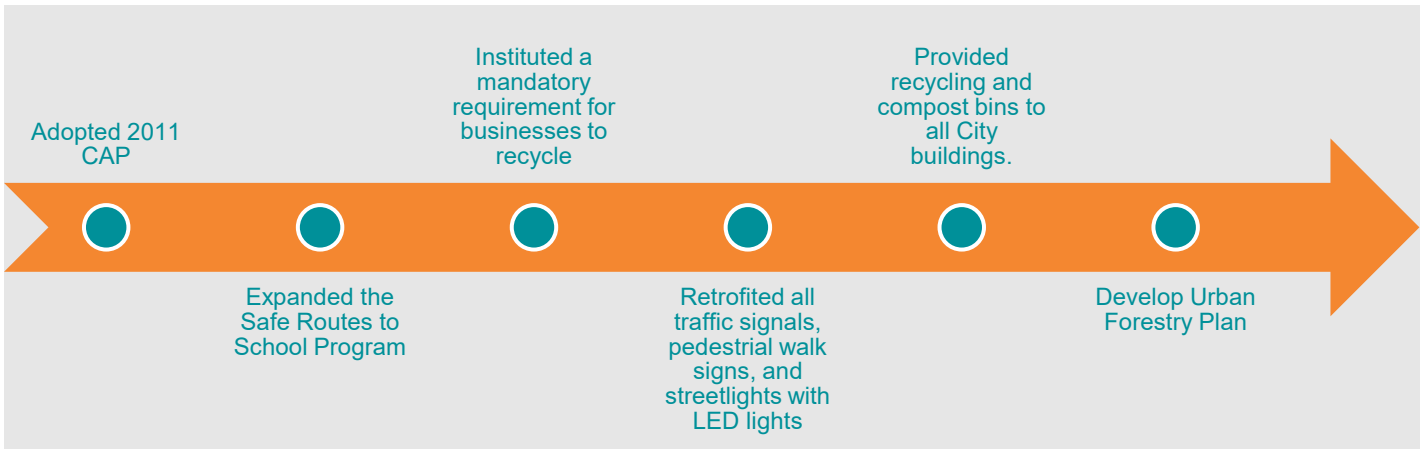
The 2011 Climate Action Plan categorized measures into three priorities based on the expected cost of implementation and the expected GHG reductions, with the highest priority or "Green Light" measures being the highest expected GHG reductions for the cost. Of the twenty-three actions listed in the 2011 Climate Action Plan, the City has met all six of the "Green Light" measures recommended for high priority implementation.

Of the "Yellow Light" measures recommended as a medium priority, the City implemented all but the following:

TL-2.2: Promote education and outreach on pre-tax transit subsidies. (if available)

Of the "Red Light" measures, considered a low priority, the City implemented all items indicated.

Of the 23 measures indicated, the goal was to surpass a reduction goal of 10,557 metric tons of carbon dioxide equivalent. All told, the City managed to reduce more than double this amount of carbon dioxide, over 27,000 metric tons by 2017.



Vision for a Better Future



If the year was currently 2030, here's what we'd like to be able to say: We have reduced our per capita carbon emissions at least 55 percent below 2005 levels. All our energy comes from renewable sources and is reliable. Many mobility options are zero carbon, shared and active, and congestion and air pollution are greatly reduced. Nearly all our waste is reused, repurposed, or recycled. All community members have reliable access to affordable, clean water. We have created a culture of awareness and action. We utilize smart city technology and principles to advance efficiency in our energy, water, waste, transportation systems, and infrastructure. Environmental, economic, and social needs are considered and are in balance. Our prosperous economy and quality of life have benefited from this transformation, and we feel safe and resilient in the face of sea level rise. We are now healthier, more connected, more equitable, and more resilient.

Benefits of Climate Action

Beyond the direct benefit of a more stable climate, many climate actions generate additional benefits, such as those listed below.

- **Enhanced resilience** – Actions that reduce GHG emissions can also bolster resilience to climate hazards. *Chapter 7: Impacts of Climate Change* summarizes the City’s risk to climate impacts and outlines the City’s commitment to reducing risk through effective climate adaptation strategies and a return towards pre-development, nature-based land use.
- **Environmental Justice** – Climate actions can foster a more equitable, inclusive community and can improve air quality as well as physical and mental health. *Chapter 8: Environmental Justice* provides a supplementary analysis of environmental justice topic areas and identifies policy gaps that the City intends to address through the implementation of this CAP to ensure all residents increase in resiliency and adapt together, with improved health outcomes.
- **Economic Justice** – Climate actions can boost the local economy through local projects, programs, and jobs. *Chapter 8: Environmental Justice* discusses the importance of growing sustainably and ensuring community members benefit from the region’s economic growth and are not trapped into old infrastructure, resulting in higher energy costs in the future.
- **Carbon Sequestration** – Many actions that address climate vulnerability and risk also absorb GHGs from the atmosphere. As outlined in *Chapter 9: Carbon Sequestration*, the City is committed to growing its urban forest and other strategies that sequester carbon, reduce stormwater runoff, promote infiltration, prevent soil erosion, and increase ecosystem biodiversity.

2. CAP Overview



2

CAP OVERVIEW

What's New in This CAP

Since the City's first climate action plan (CAP) was adopted in 2011, much has changed related to climate protection. Consequently, this CAP includes the following updates and additions:

- Incorporates **new state policies**.
- Includes **new strategies** that will help the City achieve their greenhouse gas reduction goal.
- Documents **climate change impacts** and previews what the City needs to plan for.
- Focuses on equity, or how to **make sure everyone benefits**, especially the most vulnerable members of our community.

Since the process of drafting this CAP began, several state measures have been passed in order to meet California's climate goals with urgency. In 2022, AB 1279 set a state-wide 40 percent emissions reduction target by 2030, and an 85 percent emissions reduction target by 2045, compared to 1990 levels. In addition, SB 1020 also passed in 2022, will require that 90 percent of California's electricity comes from clean energy sources by 2035, 94 percent of it by 2040, and 100 percent of it by 2045.

How the CAP Came Together

This Climate Action Plan (CAP) was developed in partnership with the Institute for Local Government, City/County Association of Governments of San Mateo County (C/CAG), and the County of San Mateo Office of Sustainability through the San Mateo County Energy Watch program and its Regionally Integrated Climate Action Planning Suite (RICAPS) initiative. RICAPS is co-funded by C/CAG and PG&E.

RICAPS assists member jurisdictions and other interested local governments with developing climate action plans that are consistent with California Environmental Quality Act (CEQA) guidelines, including both the CEQA Guidelines Amendments effective December 28, 2018, and the Bay Area Air Quality Management District (BAAQMD)'s CEQA Air Quality Guidelines (updated May 2017). RICAPS tools include a Menu of Measures, forecasting tool, climate action plan template, and technical assistance from DNV GL, an environmental consultant.

Document Roadmap



GOALS AND TARGETS

Learn how East Palo Alto's GHG emissions are calculated and about the goals we have set for reducing those emissions.

(page 14)



STRATEGIES AND ACTIONS

Read about East Palo Alto's four focus areas. Within each one, learn about progress to date, overarching strategies, and actions that will move the strategies forward.

(page 25)



IMPLEMENTATION

See how we plan to put the CAP into action, including the timeframe of priority actions, who we plan to collaborate with, who is responsible for accomplishing actions, and how we plan to track progress.

(page 43)



SUPPLEMENTAL CHAPTERS

See how climate change is already affecting East Palo Alto, how the City is addressing environmental and economic justice, and investing in carbon sequestration.

(page 51)

Strategies and Focus



Energy and Water

This includes energy that is used in community and public facilities, as well as in water treatment and transportation. This strategy addresses opportunities to reduce energy use, shift from natural gas to electricity, and reduce water consumption.



Transportation

This includes public transit, commuting, and how we use land. Opportunities to reduce GHG emissions include reducing the number of miles we drive alone in cars and increasing housing near transit.



Waste

This includes emissions from solid waste generation and disposal. The primary goal is to reduce emissions by encouraging the community to reduce waste. The secondary goal is to divert it from the landfill through recycling and composting. In this document, we have included locally produced foods with a goal of reducing the carbon footprint of organics from cradle to grave.

3. GHG Reduction Goal



3
GHG REDUCTION
GOAL

The Goal

Assembly Bill (AB) 32 directed the State to reach 1990 emissions levels by 2020. To meet this goal, the California Air Resources Board (CARB) approved the Climate Change Scoping Plan in 2008. Municipal governments were asked to reduce emissions by at least 15 percent by 2020 compared with current levels (2008 levels or earlier). This prompted many cities to adopt community-wide emissions reduction goals of at least 15 percent below 2005 levels. Appendix C.2 describes all applicable laws, regulations, and orders relevant to climate mitigation in detail.

In 2015, Governor Brown issued Executive Order B-30-15 to set the 2030 emissions goal (40 percent less than 1990 levels by 2030). It was codified by California Senate Bill (SB) 32. CARB followed up with an updated *California's 2017 Climate Change Scoping Plan*.¹ In response, East Palo Alto is joining other municipalities in adopting emissions reduction goals for the community. East Palo Alto has set a community wide goal of reducing per capita emissions 55 percent below 2005 levels by 2030, to correspond to required reductions under SB 32.^b



In September 2018, Governor Brown issued California Executive Order B-55-18, setting the goal of achieving carbon neutrality as soon as possible (by 2045 at the latest), and maintaining net negative emissions from that point forward. The following year, the San Mateo County Board of Supervisors committed to achieving carbon neutrality by 2040.² The most recent update to the *Climate Change Scoping Plan* was approved in 2022 and outlines the roadmap to comply with recent state-approved emissions targets which aim to reduce anthropogenic emissions to 85 percent below 1990 levels and achieve carbon neutrality by 2045.

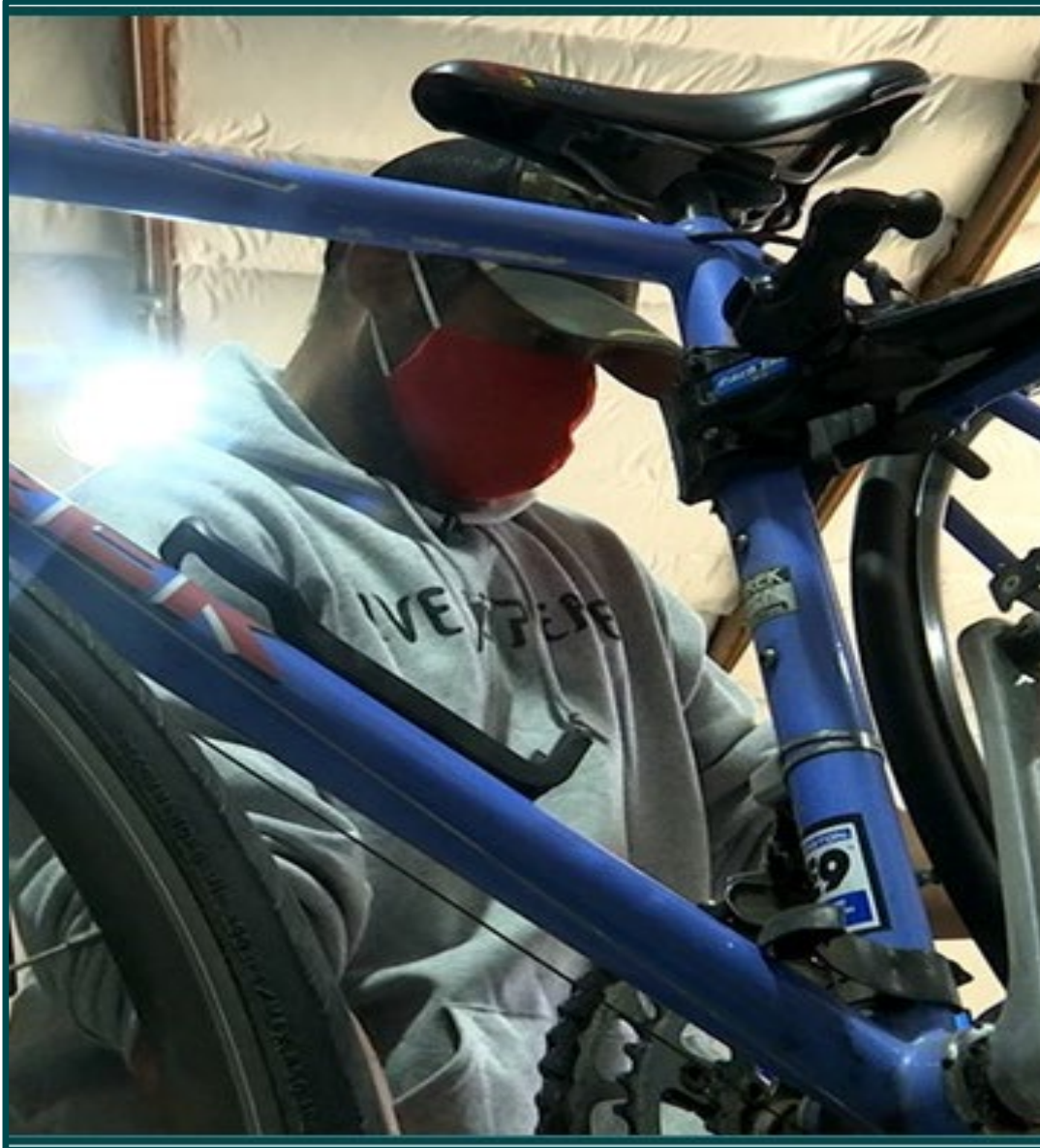
East Palo Alto recognizes the carbon neutrality goal set by the state and County; however, the City has not formally adopted goals herein to achieve carbon neutrality. The City has set carbon neutrality as a “soft target” as the City continues to fulfill goals set forth in this 2030 CAP. Given the limited resources and significant opportunities for GHG reduction with regards to barriers the City faces in attaining carbon neutrality, the City will emphasize structural supports that will enable realistic goals to reach carbon neutrality as a follow-up to these actions. The City has set per capita target reductions at 55 percent per year to attain carbon neutrality by the year 2045.

While the City recognizes that San Mateo County has set a goal of carbon neutrality for 2040, the City of East Palo Alto is determined to establish local carbon neutrality as a metric of success following the State’s objectives and intends to take actions to reach the goal of carbon neutrality as soon as possible while aligning efforts to co-benefit residents of the community meeting equity, health, quality of life and economic benefits.

With this Climate Action Plan, East Palo Alto is committing to a 55 percent reduction in per capita emissions below 2005 levels by 2030 and 100 percent reduction –carbon neutrality—by 2045.

^b GHG reduction targets can be set as either an efficiency target (MT CO₂e per capita) or as a community-wide mass emissions target (total MT CO₂e). With CARB’s 2017 Scoping Plan Update, the state recommends using efficiency metrics for local targets to incentivize growth in a coordinated manner and not penalize cities which are growing at significant rates. [California Air Resources Board. 2017. California’s Climate Change Scoping Plan, p. 99-102.]

4. Greenhouse Gas (GHG) Emissions



4

GREENHOUSE GAS
(GHG) EMISSIONS

Greenhouse Gas (GHG) Emissions Inventories

In this CAP, the City used a generation-based greenhouse gas (GHG) inventory consistent with the Community GHG Protocol. Released by Local Governments for Sustainability (ICLEI) in October 2012, the Community GHG Protocol represents a new national standard in guidance to help U.S. local governments develop effective community GHG emissions inventories. It establishes reporting requirements for all community GHG emissions inventories, provides detailed accounting guidance for quantifying GHG emissions associated with a range of emission sources and community activities. The protocol also provides a number of optional reporting frameworks to help local governments customize their community GHG emissions inventory reports based on their local goals and capacities. The State of California Governor's Office of Planning and Research recommends that California local governments follow the new national Community Protocol when undertaking their GHG emissions inventories. Released by Local Governments for Sustainability (ICLEI) in October 2012, the Community GHG Protocol represents a new national standard in guidance to help U.S. local governments develop effective community GHG emissions inventories. It establishes reporting requirements for all community GHG emissions inventories, provides detailed accounting guidance for quantifying GHG emissions associated with a range of emission sources and community activities. The protocol also provides a number of optional reporting frameworks to help local governments customize their community GHG emissions inventory reports based on their local goals and capacities. The State of California Governor's Office of Planning and Research recommends that California local governments follow the new national Community Protocol when undertaking their GHG emissions inventories.

The GHG inventory estimates existing, and future levels of greenhouse gas (GHG) emissions based on existing and projected energy use. It includes 1) direct consumption of energy by sector (i.e., transportation), 2) consumption of energy via the electrical grid, and 3) emissions from the treatment/decomposition of waste. This is the industry-accepted methodology for quantifying community GHG emissions, with emissions reported by emission source category.

Generation-based GHG Inventory

East Palo Alto's first generation-based inventory was completed for 2005 (the baseline year). Beginning in 2010, new community GHG inventories are completed annually by Pacific Gas & Electric (PG&E), enabling East Palo Alto to track progress over time.

In 2005, East Palo Alto emitted an estimated 136,027 metric tons (MT) of carbon dioxide equivalent (CO₂e) from the residential, commercial, industrial, transportation, waste, and municipal sectors (equivalent to 4.62 MT CO₂e/person).^c In 2017, East Palo Alto emitted an estimated 108,665 MT CO₂e (equivalent to 3.55 MT CO₂e/person). In comparison to the base year of 2005, that is a 20 percent decrease in total community emissions and a 23 percent reduction in per capita emissions.

As shown in Figure 4.1 and Table 4.1, the two largest categories of emissions are transportation (including highway travel, local travel, and off-road equipment) and building energy use (including residential and commercial/industrial).

^c Carbon dioxide equivalent is a unit of measure that normalizes the varying climate warming potencies of all six GHG emissions, which are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). For example, one metric ton of methane is equivalent to 21 metric tons of CO₂e. One metric ton of nitrous oxide is 210 metric tons of CO₂e.

The residential and commercial/industrial sectors represent emissions that result from electricity and natural gas used in both private and public sector buildings and facilities. The transportation sector includes emissions from private and commercial vehicles. Off-road equipment includes lawn, garden, construction, industrial, and commercial equipment. Figure 4.1 shows the proportion of East Palo Alto's total GHG emissions from all major sources for 2017.

Figure 4.1: Community Emissions by Sector: 2017

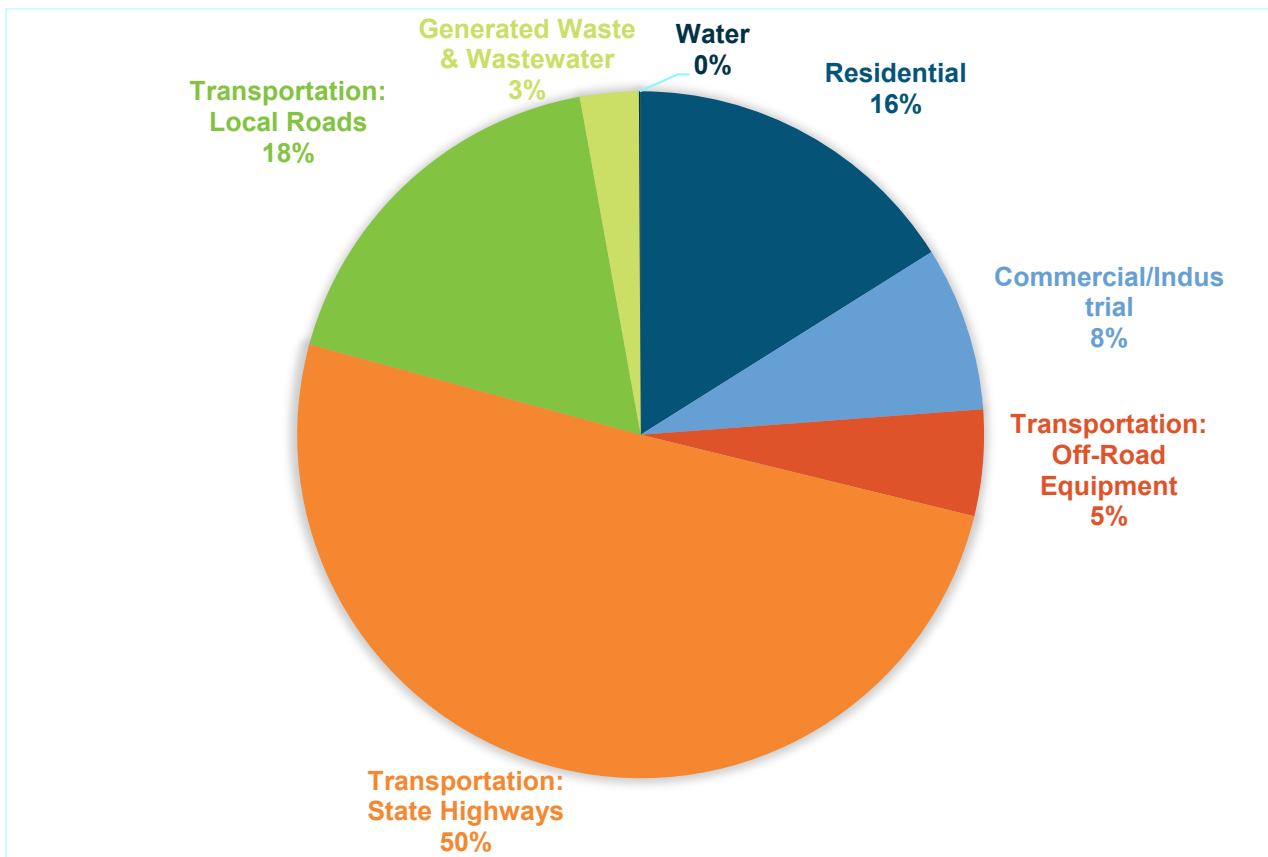


Table 4.1: 2005 vs. 2017 Community Emissions by Sector

| Sector | 2005 GHG Emissions (MT CO ₂ e) | 2017 GHG Emissions (MT CO ₂ e) | Percent Change (%) |
|---|---|---|--------------------|
| Transportation – State Highways | 67,286 | 54,794 | -21.0% |
| Residential Energy Use | 24,838 | 17,467 | -29.6% |
| Transportation – Local Roads | 19,715 | 19,467 | -1.2% |
| Commercial/Industrial Energy Use | 15,692 | 7,782 | -50.4% |
| Waste (Generated + Landfill Cover) | 3,360 | 2,153 | -36.0% |
| Direct Access | 3,092 | 234 | -92.4% |
| Transportation – Off-road Equipment | 2,044 | 5,435 | +165.9% |
| Stationary Sources | N/A | 396 | N/A |
| Wastewater and Water | N/A | 937 | N/A |
| Total | 136,027 | 108,665 | -20% |
| Estimated Population^d | 29,431 | 30,641 | +4% |
| Per Capita Emissions (MT CO₂e/person) | 4.62 | 3.55 | -23% |

As shown in Table 4.1, East Palo Alto's GHG emissions have declined over time. Major contributors of this decline include a 6 percent reduction in total electricity use and an 18 percent reduction in total natural gas use. These emissions reductions since 2005 are a good start, but East Palo Alto will have to significantly increase its emission reduction rate to achieve a 55 percent reduction in per capita emissions by 2030.

Emissions are described by category below.

Energy Emissions

Emissions from electricity and natural gas were calculated based on guidance in the Community GHG Protocol. Electricity and natural gas consumption was provided by PG&E and PCE. The total Direct Access electricity consumption in the County was provided by the California Public Utilities Consumption (CPUC). Direct access is when an end-use customer buys electricity on the wholesale electricity market, rather than from Pacific Gas and Electric Company (PG&E) or Peninsula Clean Energy (PCE). According to PG&E representatives, all-natural gas usage, regardless of whether it was purchased from PG&E or not, is included in the PG&E totals for natural gas.

PCE was launched collaboratively by the County of San Mateo and all 20 of its cities and towns in 2016 to reduce emissions via cleaner energy, while helping customers save money through lower rates. PCE currently offers two electricity options to all residents, businesses, and municipalities in San Mateo County. Customers are automatically enrolled in the ECOplus rate that consists of 50.5 percent renewable and 95 percent greenhouse gas-free energy and can "opt up" to the ECO100 rate that consists of 100 percent renewable energy that is

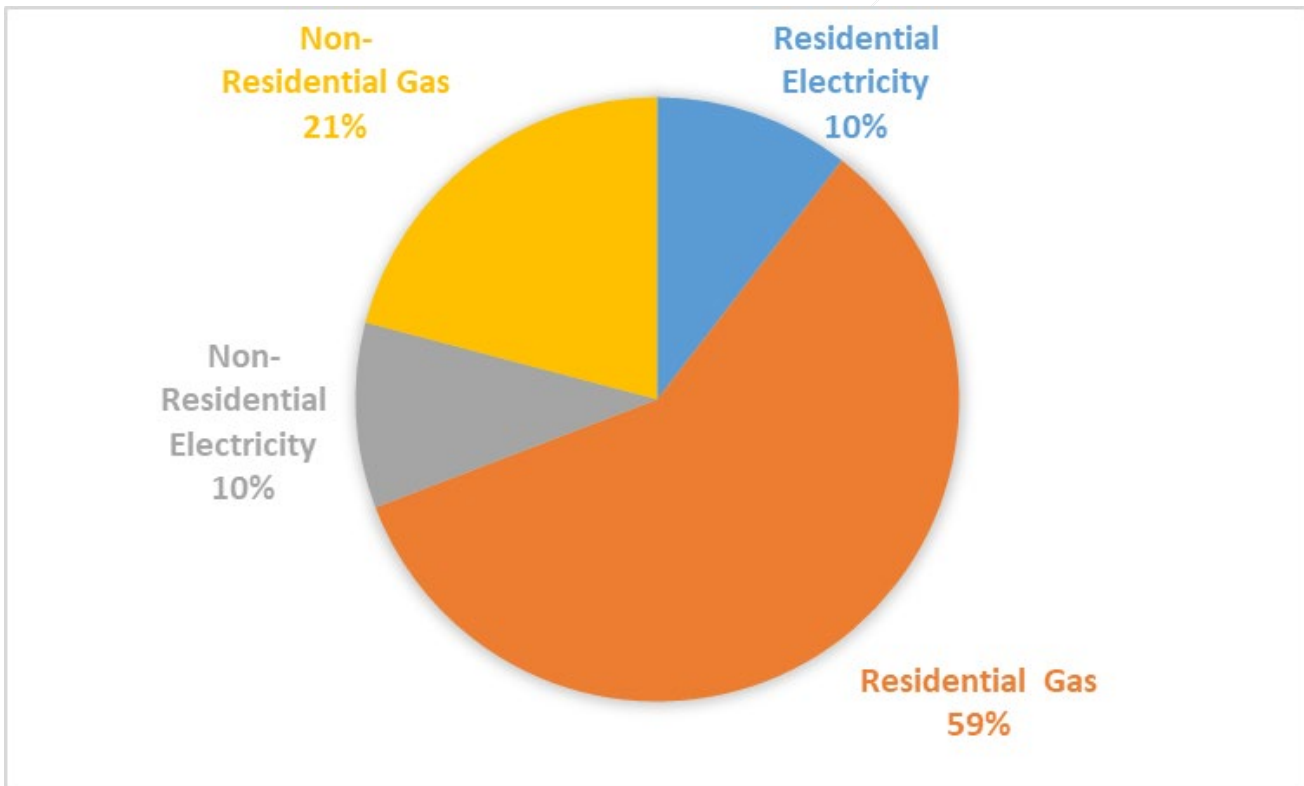
^d Population estimates for 2005 and 2017 are from the California Department of Finance (E-4 Historical Population Estimates for Cities, Counties, and the State). Accessed at: <https://dof.ca.gov/forecasting/demographics/estimates/>

Green-e certified. PCE has a stated goal of sourcing 100 percent of electricity from California Renewable Portfolio Standard (RPS) eligible renewable energy by 2025.

In 2017, electricity and natural gas emissions accounted for 29 percent of total GHG emissions in East Palo Alto. East Palo Alto’s total stationary energy consumption (electricity and natural gas consumed by residential, commercial, and industrial buildings) was 19,012,555 kilowatt-hours (kWh) of electricity and 3,780,449 therms of natural gas, including direct access electricity customers.

Of the total 26,329 MT CO₂e emitted due to energy use in buildings, natural gas accounts for a greater portion (19 percent) of total emissions than electricity (4 percent), primarily due to the City’s participation in PCE. As shown in Figure 4.2 natural gas use from residential, commercial, and industrial uses is responsible for 80 percent of all building emissions, compared to 20 percent from electricity use. The emissions per kWh of electricity generated (the emission factor) can vary considerably from year to year and can depend on the provider of electricity (e.g., PCE, PG&E, and direct access providers). For example, in 2017, PG&E’s emission factor was 210 lbs CO₂/MWh, PCE’s ECOplus (50 percent renewable) emission factor was 142 lbs CO₂/MWh, and PCE’s ECO100 (100 percent renewable) emission factor was 0 lbs CO₂/MWh.

Figure 4.2: Building GHG Emissions by Sector and Fuel Type



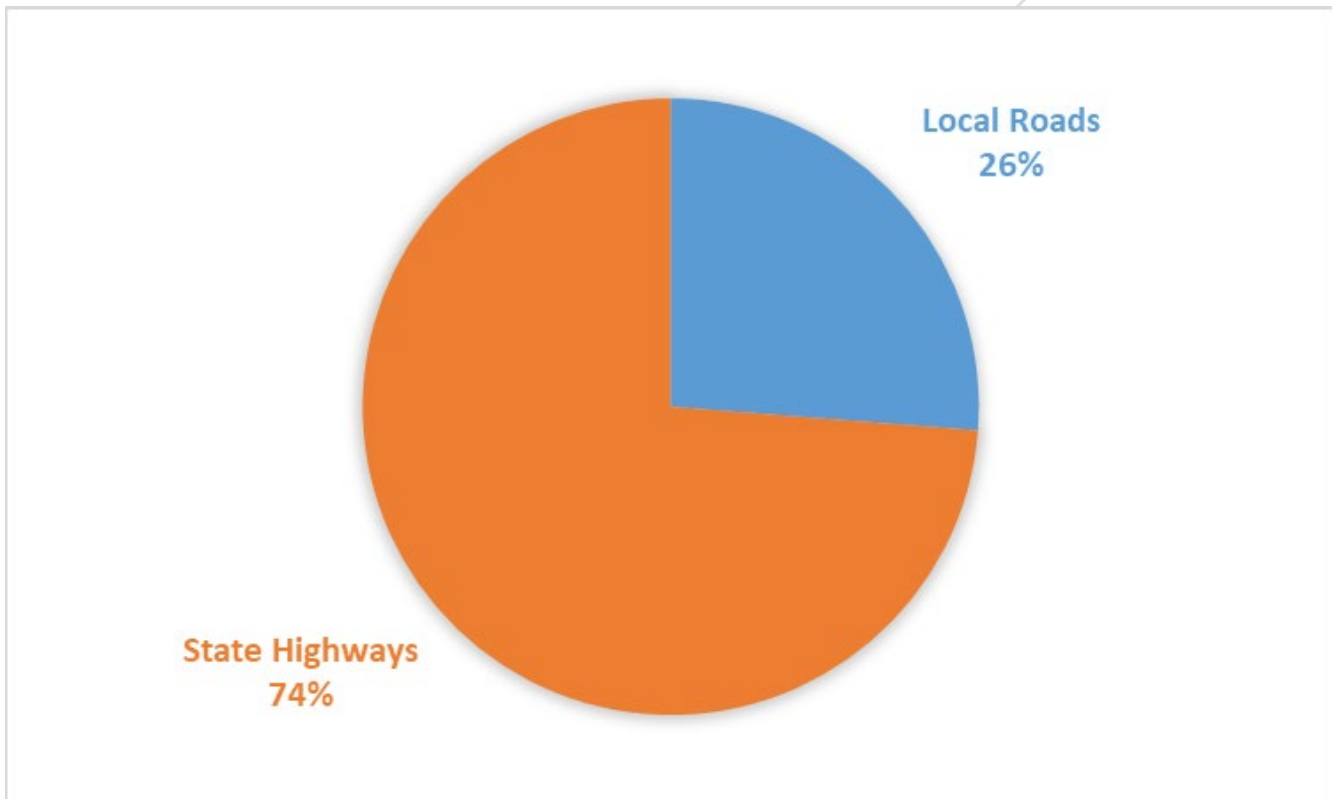
Transportation Emissions

Transportation emissions are based on VMT estimates. Calculations are done separately for Local Roads VMT and for State Highways VMT. Calculations are also done separately for gasoline fuel usage and VMT and for

diesel fuel usage and VMT. The VMT fuel mix is used to determine the portion of VMT that is gasoline, diesel, and electric. Average fuel efficiencies are then applied to estimate the gasoline and diesel fuel consumption. CO₂ emission factors are applied to the estimated fuel consumption to calculate CO₂ emissions, and CH₄ and N₂O emission factors are applied to VMT to calculate CH₄ and N₂O emissions. Emission Factors provided by the Bay Area Air Quality Management District and are based on the Emission FACTor (EMFAC), a model (v1.0.7) that estimates the official emissions inventories of on-road mobile sources in California. This methodology is the same as the methodology that was used for the baseline 2005 inventory.

Transportation emissions accounted for 74 percent of total 2017 GHG emissions in East Palo Alto. Travel on local roads accounted for 18 percent of total emissions; travel on state highways within city limits accounted for 51 percent; and emissions from off-road equipment, such as lawn, garden, and construction equipment, accounted for 5 percent. Figure 4.3 shows that transportation on state highways accounted for 74 percent of on-road transportation emissions. While the City of East Palo Alto has limited authority over the state highways passing through the community, due to the equity issues pertaining to community health and impacts on local safety concerns, the community has requested the emissions of pass-through traffic remain for tracking purposes. However, these emissions will not be targeted for reduction in the City's 2030 goal.

Figure 4.3: On-Road Transportation Emissions by Road Type



Solid Waste Emissions

Solid waste emissions were calculated using the Community GHG Protocol. In general, waste disposal to the landfill and the amount of Alternative Daily Cover is provided for each jurisdiction in the CalRecycle Disposal Reporting System database. Waste characterization data from the California Waste Characterization Study of 2008 are used to determine what percentages of materials are in the disposed waste stream. For Alternative Daily Cover, the waste characterization is provided in the CalRecycle Disposal Reporting System by jurisdiction.

Tonnages of each waste material disposed are summed, and then multiplied by emission factors in the Community GHG Protocol to determine total emissions from disposed waste.

Waste sector emissions accounted for 2 percent of total 2017 GHG emissions in East Palo Alto. Thirty-nine tons of solid waste were sent to landfills. Emissions from waste sent to landfills accounted for approximately 99 percent of waste emissions and emissions from the use of alternative daily cover (ADC) accounted for less than 1 percent of waste emissions.

Waste emissions result from organic material decomposing in the anaerobic conditions present in a landfill and releasing methane (CH₄) – a GHG 28 times more potent than CO₂. Organic materials (e.g., paper, plant debris, food waste) generate methane within the anaerobic environment of a landfill while non-organic materials (e.g., metal, glass) do not. Table 4.2 shows the approximate breakdown of the materials East Palo Alto sent to landfills in 2017. Materials that do not release GHGs as they decompose are included in the “Non-organic Material” category.

Table 4.2: Estimated Waste Composition³

| Waste Type | Waste Share |
|----------------------------|-------------|
| Non-Organic Material | 56.9% |
| Organic Material | 43.10% |
| Food Scraps | 15.5% |
| Dimensional Lumber | 14.5% |
| Corrugated Containers | 4.8% |
| Officer Paper | 1.9% |
| Grass | 1.9% |
| Leaves | 1.9% |
| Newspaper | 1.3% |
| Magazines/Third Class Mail | 0.7% |
| Branches | 0.6% |

Wastewater and Water Emissions

Wastewater Treatment Plant emissions are calculated based on the methodologies in the Community GHG Protocol. The wastewater treatment emissions include methane and nitrous oxide, which are considered process and fugitive emissions sources, as well as stationary sources.

The BAAQMD provides a list of stationary source emissions from wastewater treatment plants; these emissions are from stationary combustion sources such as diesel turbines or generators and are added to each plant's emissions total. If the combustion sources are known to be fired by natural gas, they are excluded from this portion of the inventory to avoid double counting, since natural gas combustion sources are included in Energy Emissions section. The use of electricity at wastewater plants is also excluded from this sector to avoid double-counting, as electricity use is also included in the Energy Emissions section.

In most cases, wastewater treatment plants serve more than one jurisdiction. Thus, emissions from each plant are allocated to the jurisdictions that are served by each plant, using the population of the jurisdictions multiplied by the average emissions per capita of the plants. Reported GHG emissions for all sources are available for some plants but are not available for all plants in San Mateo County. To estimate the wastewater-related emissions for each jurisdiction, the following methodology was used. The average emissions per capita, in metric tons

CO₂e/person is calculated for the plants for which data are available, and this average-emissions per-capita rate is used to estimate the emissions associated with wastewater treatment for the cities that are served or partially served by those plants. Emissions are estimated by multiplying each jurisdiction's population by the average emissions per capita.

The Community GHG Protocol, includes energy-related emissions associated with water delivery and treatment. Some of these emissions may occur within the community boundaries; as explained in the Community GHG Protocol, there is risk of some double counting in this emissions sector.

Water emissions are based on the total estimated embedded electricity use associated with each jurisdiction's water use. All embedded electricity related to water use is assumed to come from PG&E, since most water is sourced from areas within the PG&E service area. The emissions are calculated using the PG&E emission factor for CO₂ and state grid-average emission factors for CH₄ and N₂O.

Wastewater and water emissions together account for just one percent of total 2017 GHG emissions in East Palo Alto.

Future Emissions

East Palo Alto developed a forecast of future emissions (Figure 4.3) to understand what reduction measures are needed to meet the 2030 goal. The forecast starts from the last year a community inventory was developed, which is 2017 for East Palo Alto.

The forecast illustrates the following:

- **“Business-as-usual” (BAU) emissions** – This projection represents the emissions expected if the 2017 patterns of travel, energy and water consumption, and waste generation/disposal were continued throughout time. This projection factors in the expected rate of county population and job growth (0.88 percent/year). The 0.88 percent growth rate is used as a baseline in all BAU projections between 2016 and 2050, stemming from the Association of Bay Area Governments (ABAG) Plan Bay Area 2040 Final Preferred Scenario and Investment Strategy. This growth rate is an average of the projected population growth (0.7 percent per year) and the expected job growth (1.07 percent per year) to occur across San Mateo County. This projection is considered in the absence of any measures, policies, or actions that would reduce emissions over time, including state legislation and/or any other policies or procedures accepted after 2016. Under the BAU scenario, East Palo Alto emissions are projected to increase by 10 percent in 2030 (10,596 MTCO₂e) and 25 percent in 2050 (27,797 MTCO₂e), above 2017 levels.
- **Adjusted forecast (State measures plus PCE)** – This projection incorporates the same factors as the BAU, but also includes key State policies such as clean car standards, renewable portfolio standard, zero net energy building, and organics recycling. It also includes the effect of Peninsula Clean Energy (PCE) operating in San Mateo County. Switching from PG&E to PCE in 2017 gave East Palo Alto an initial 55,538 MTCO₂e reduction in energy emissions by providing a cleaner fuel mix for energy generation than the State provided. By 2045, the Renewable Portfolio Standard will have closed that gap by forcing all electricity providers to offer a similarly clean mix of energy. Total emissions are projected to decrease 25 percent from 2017 (26,730 MTCO₂e) by 2030 due to state measures plus PCE. It is anticipated this will be exceeded with the goal likely to be reached as early as 2025.
- **CAP reduction measures** – This is the reduction necessary to reach the 2030 goal. In this CAP, East Palo Alto is committing to take the actions needed to meet this goal. Those actions are described in *Chapter 5, Strategies and Actions*.



Reductions from State-Level Actions

In addition to City actions outlined below, regulations aimed at reducing GHG emissions at the state and regional levels will also contribute to emissions reductions in East Palo Alto. For example, the California Renewable Portfolio Standard (RPS) mandates that 100 percent of the electricity sold by the State's investor-owned utilities be generated from renewable resources by 2045, with an interim goal of 60 percent by 2030. The impact of state-level actions on reducing local emissions is significant and is shown in relation to East Palo Alto's emissions baseline, business-as-usual forecast, and reduction goal in Table 4.3.

A summary of the expected emission reductions from state programs is provided in Appendix C.3.

Table 4.3: Total Emission Reductions from State of California Policies and Programs

| State Initiative | Sector | % Emissions reduction from applicable sector in 2030 | 2030 reduction in East Palo Alto from BAU emissions (MT CO ₂ e) |
|---|-------------------------|--|--|
| Advanced Clean Cars Program | On-road Transportation | 27.3% | 22,057 |
| Low Carbon Fuel Standards | Off-road Transportation | 15.9% | 939 |
| Caltrain Electrification | Trains | N/A | N/A |
| Renewable Portfolio Standard | Electricity (Energy) | 19.3% | 1,202 |
| 100% Zero Net Energy New Residential 2020 | Residential Energy | 4.0% | 783 |
| 50% Zero Net Energy Existing Commercial 2030 | Commercial Energy | 19.9% | 1,950 |
| Organic Waste Diversion SB 1383 | Disposed Waste | -8.3% | -200 |
| Total Statewide Initiative Emissions Reductions: | | | 26,730 |

East Palo Alto's Contribution to the Goal

East Palo Alto is committing to a 55 percent reduction in per capita emissions below 2005 levels by 2030. Through this commitment, East Palo Alto will be doing its part in helping California achieve the statewide goal of a 40 percent reduction below 1990 levels by 2030. The emissions reduction required by 2030 below business-as-usual projected emissions, 49,887 MT CO₂e, is the equivalent to taking 10,778 passenger vehicles off the road for an entire year (Table 4.4).

Table 4.4: GHG Emissions Projection and Reduction Goal

| Emission Type | 2005 Emissions | Emissions Goal by 2030 | 2030 BAU Emissions | Emissions Reductions Required |
|--|----------------|------------------------|--------------------|-------------------------------|
| Total Community Emissions (MT CO ₂ e) | 136,027 | 69,374 | 119,261 | 49,887 |
| Per Capita Emissions (MT CO ₂ e/person) | 4.62 | 2.09 | 3.59 | 1.50 |

5. Strategies and Actions



5

STRATEGIES
AND ACTIONS

Strategies and Actions

Introduction

This climate action plan (CAP) is a beginning of a journey towards a more sustainable East Palo Alto. In this document, East Palo Alto residents will find policies and programs aimed at reducing emissions, conserving energy, and saving residents money. The goal of this CAP is to ensure that East Palo Alto continues to be a beautiful and healthy place to live, work, and play.




By adopting this CAP, East Palo Alto is committing to take action to reduce greenhouse gas (GHG) emissions. The programs and policies described give East Palo Alto a viable path towards reducing emissions that, combined with emissions reductions resulting from state and regional policies, will meet the emissions reduction goals established in Senate Bill 32 (SB 32) (see Appendix C.2 for more information).

Each section below outlines the specific actions (also known as “measures”) to reduce GHG emissions in East Palo Alto. Some measures reduce emissions from the community at large, while others may specifically focus on the municipal operations of East Palo Alto. Most measures lead to an estimated reduction in GHG emissions that is quantifiable. Some measures are not quantifiable and are consequently considered “supporting measures” because they support the achievement of related, quantifiable measures.

Assessing Impact

In considering which strategies to select, the City considered the GHG reduction potential, cost, and ease of implementation. Selected strategies and their GHG reduction potential were assessed using the RICAPS Menu of Measures Tool.

In addition to reducing GHG emissions, many actions will result in the following positive outcomes:

| Criterion | Description |
|--|---|
|  | <p>Environmental Health</p> <p>Action increases local environmental quality</p> |
|  | <p>Public Health</p> <p>Action increases health in the community</p> |
|  | <p>Financial Benefit</p> <p>Action has economic benefit for the community (i.e., cost savings)</p> |



Adaptation

Action increases community resilience and ability to adapt to climate change impact and disasters



Equity

Action advances inclusion and social equity

CAP At-A-Glance

Energy and Water



Goal EW.1 Reduce energy emissions, through continued participation in Peninsula Clean Energy, energy efficiency programs, and pilot projects

Goal EW.2 Electrify Building Stock, through new and updated policies for green building and investments in infrastructure that supports deployment of renewable electricity to replace natural gas

Goal EW.3 Reduce Water Consumption, through rebates and incentives and enforcement of water conservation ordinances

Transportation



Goal T.1 Reduce Vehicle Miles Traveled in the Community, by offering public transit alternatives

Goal T.2 Decarbonize Transportation, by promoting deployment of electric vehicles and supporting infrastructure

Goal T.3 Increase Walkability and Bikeability, by making streets safer and better able to accommodate active transportation modes

Goal T.4. Increase housing in transit corridors, by pursuing smart growth development

Solid Waste



Goal W.1 Increase Diversion of Materials from Landfills, by establishing and enforcing policies that promote organic composting and waste diversion

Strategies to Get Us There

The goals and actions presented in this CAP will work together towards achieving East Palo Alto's goal to attain a 55 percent reduction in per capita emissions below 2005 levels by 2030.

Energy and Water

What Are We Talking About?



In California, buildings account for 70 percent of total electricity use⁴ and 20 percent of total GHG emissions⁵. See Appendix B.3 for more information on trends in state emissions. In 2017, buildings in the residential and commercial/industrial sectors accounted for 29 percent of total emissions in East Palo Alto with 80 percent of building emissions resulting from natural gas consumption and 20 percent resulting from electricity consumption.

Electricity and Natural Gas

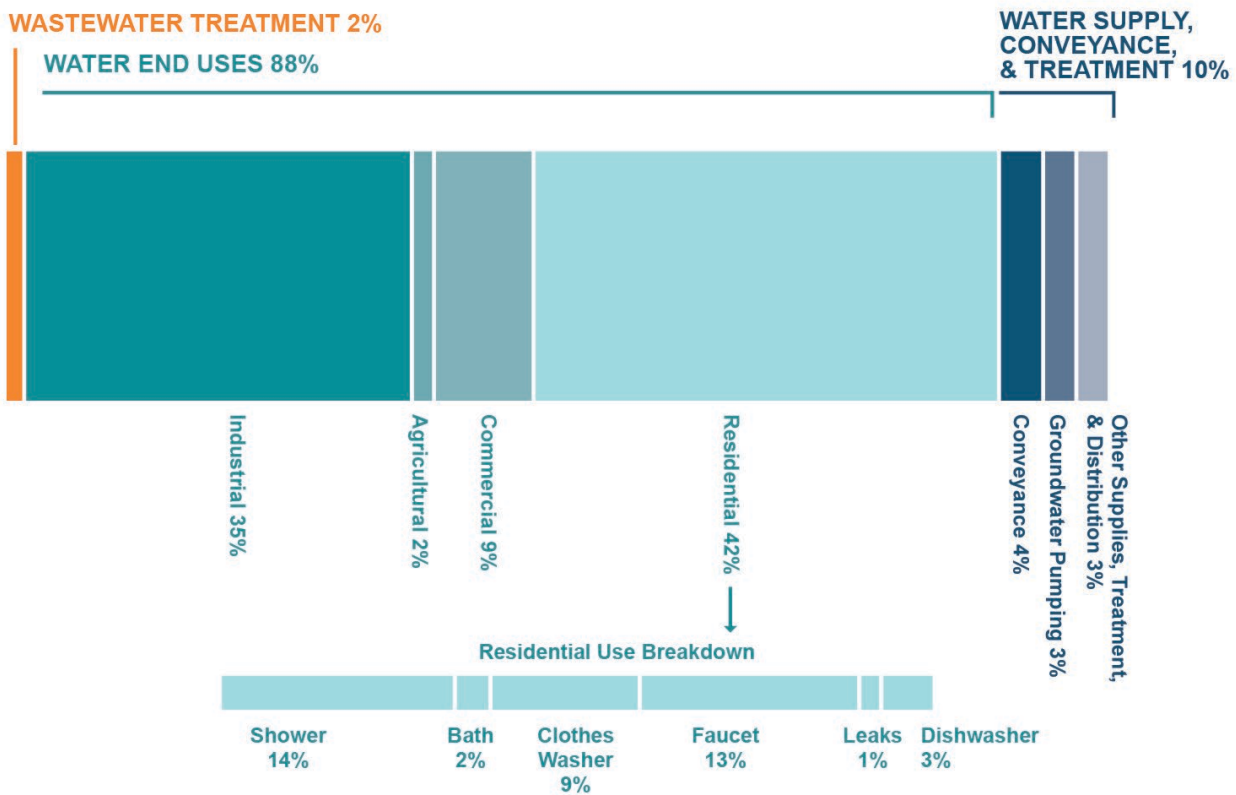
Electricity and natural gas are the most common energy sources used in buildings. Electricity is primarily used in buildings to provide lighting, refrigeration, ventilation, cooling and to power things like computers, phones, and displays. Natural gas is primarily used in buildings to provide space heating, water heating, and for cooking.

In order to reach East Palo Alto's 2030 emissions reduction target, natural gas consumption will need to decline significantly through a combination of energy efficiency and electrification. Energy efficiency is simply using less energy to perform the same task; for example, replacing a low-efficiency gas furnace with a high-efficiency gas furnace. Electrification is the practice of replacing equipment in buildings that is powered by natural gas, including gas furnaces and gas water heaters, with electric equipment, such as air source heat pumps and heat pump water heaters.

Connection Between Energy and Water Use

Energy and water use are linked. Energy is needed to transport and to treat water, treat wastewater, and heat hot water in homes and businesses across California. Approximately 20 percent of California's electricity and approximately 30 percent of natural gas used by homes and businesses across the state is dedicated to pumping, treating, and heating water. Figure 5.1 indicates the 10 percent of energy used to transport and treat water; energy used to heat water is distributed among the various customers.

Figure 5.1: Energy (Electricity and Natural Gas) Used by the Water Sector in California⁶

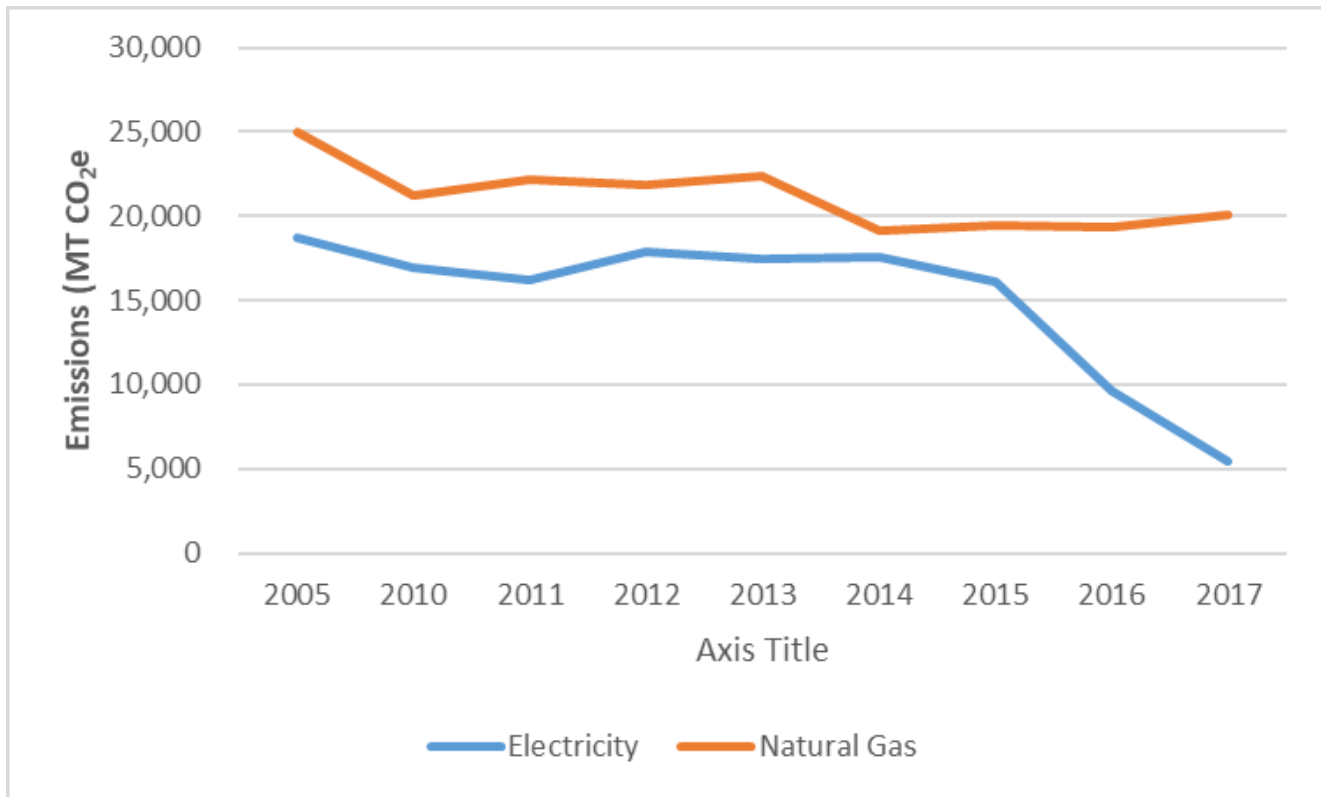


How Are We Doing?

Over time, emissions associated with each kilowatt-hour of electricity generation in California have continued to decline as the grid relies less on fossil fuel power generation sources, including coal and natural gas, and more on renewable power generation sources, including solar, wind, and hydropower.

In East Palo Alto, natural gas accounted for 80 percent of building emissions in 2017 while electricity accounted for 20 percent of building emissions. Electricity emissions in East Palo Alto have decreased 68 percent since 2010, primarily due to the City’s enrollment in PCE, and natural gas emissions have decreased 5 percent.

Figure 5.2: East Palo Alto 2005–2017 Building Emissions by Fuel Type



With the launch of Peninsula Clean Energy, which has a stated goal of all electricity sales being 100 percent GHG-free by 2021, and the State’s requirement through Senate Bill 100 (SB 100) that utilities procure 100 percent of electricity through renewable resources by 2045, the percent of building emissions associated with electricity will continue to decline.




The State of California remains a leader in implementing policies aimed at reducing water consumption. Assembly Bill 1668 (AB 1668) and Senate Bill 606 (SB 606), adopted in 2018, require urban water providers to establish a target for water use by 2022 and threatens fines for agencies failing to meet their goals beginning in 2027. Standards will be based on an allowance of 55 gallons per person per day for indoor water use, a to-be-determined amount of residential outdoor use, and a standard for water loss due to leak rates in water system pipes.




What Are We Trying to Achieve?






| # | Goal | Target |
|------|--------------------------|---|
| EW.1 | Reduce energy emissions | 50 percent reduction compared to 2005 |
| EW.2 | Electrify building stock | 90 percent of all new buildings constructed to all-electric standard; existing residential and office gas equipment is electrified when due for replacement |
| EW.3 | Reduce water consumption | 10 percent of households receive water efficiency upgrades |

How Do We Get There?




Goal EW.1: Reduce Energy Emissions

| # | Action | Implementation Considerations | Co-benefits | Time-frame | Lead | Community Partner | 2030 Emissions Reduction (MT CO2e) |
|--------|---|---|---|------------|---------------------------------------|---|------------------------------------|
| EW.1.1 | Participate in Community Choice Aggregation | Through Peninsula Clean Energy, the City will continue to provide greener renewable electricity to the community and promote residents and businesses “opting up” to PCE’s ECO100 (100% renewable) service. PCE targets 100% renewable by 2025 for all customers. |  | 2025 | Public Works - Environmental Programs | Peninsula Clean Energy (PCE) | 2,598 |
| EW.1.2 | Promote commercial energy efficiency programs for existing buildings | Through marketing and outreach, the City will promote participation in commercial energy efficiency programs and demand response programs offered by SMC Energy Watch and PG&E that result in 15% of non-residential buildings receiving energy efficiency upgrades. Programs include PCE and PG&E’s appliance rebates, 0% financing for energy efficiency upgrades, and demand response programs. The City will provide or encourage commercial energy audits during annual Clean City Plan inspections. The City will consider supplementing existing efficiency incentives and rebates by seeking grants and/or partnerships that support this effort. |  | 2023 | Public Works - Environmental Programs | San Mateo County (SMC) Energy Watch, PCE, PG&E | 62 |
| EW.1.3 | Promote residential energy efficiency programs for existing buildings | Through marketing and outreach, the City will promote participation in residential energy efficiency programs that result in 5% of residential buildings receiving energy efficiency retrofits. Programs include BayREN’s Home Upgrade program and PG&E’s efficient appliance rebates. The City will provide or encourage residential energy audits. The City will consider supplementing existing efficiency incentives and rebates and seek grant partnerships such as Climate Resilient Communities and Grid Alternatives to further this effort. |  | 2023 | Public Works - Environmental programs | Bay Area Regional Energy Network (BayREN), PCE,PG&E, CRC, GRID Alternatives | 110 |





| # | Action | Implementation Considerations | Co-benefits | Time-frame | Lead | Community Partner | 2030 Emissions Reduction (MT CO2e) |
|--------|---|---|---|-----------------|---------------------------------------|---|------------------------------------|
| EW.1.4 | Implement programs for free or subsidized shade trees | The City will continue to implement a program to reduce energy consumption associated with cooling homes through the provision of free or subsidized shade trees for buildings with eastern, western, or southern exposures, with consideration of future interest in solar installations and shading potential. The City is currently implementing this program with the Canopy contract and CALFIRE grants. Full implementation would result in 5% of all households receiving shade trees. Consider expanded large tree planting near high traffic corridors including Highway 101 and University Avenue to buffer from air quality impacts from traffic. This contract is valid for 2 years beginning in 2022, with the possibility of extension. |  | 2022 and beyond | Public Works - Environmental Programs | Canopy, CALFIRE | 4 |
| EW.1.5 | Promote opportunities for microgrid demonstration projects | The City has started work with stakeholders, such as local healthcare facilities, police station, fire department, and other critical facilities, to identify potential sites for a microgrid demonstration project. The City will continue to provide education and outreach to these stakeholders on the multiple benefits of developing a microgrid, including continuity of service in emergencies, reliability, cleaner energy, and cost savings. Successful implementation of this measure would result in 1 microgrid project every 2 years. |  | 2025 | Public Works - Environmental Programs | Menlo Park Fire Protection District | 357 |
| EW.1.6 | Encourage pairing battery storage with all solar PV systems | The City will provide education and outreach to stakeholders, including businesses, residents and contractors, on the benefits of pairing battery storage with solar PV systems. |  | 2023 | Public Works - Environmental Programs | GRID Alternatives, Rebuilding Together, Climate Resilient Communities (CRC) | 619 |

| # | Action | Implementation Considerations | Co-benefits | Time-frame | Lead | Community Partner | 2030 Emissions Reduction (MT CO2e) |
|--------------------------|---|--|---|------------|---------------------------------------|---|------------------------------------|
| EW.1.7 | Policy to prohibit gas powered lawn equipment engine exhaust, all leaf blowers, and wood/ charcoal burning devices on Spare-the- Air Days | California will ban the sale of new “small off-road engines” (SORE) primarily used in gas-powered lawn equipment, such as leaf blowers and lawnmowers, beginning in 2024. The bill, AB 1346, directs California’s Air Resources Board to draw up the regulations. Approximately 20 cities have banned leaf blowers, outright. This local policy intends to restrict the use of those most hazardous noxious emissions and fine particulate matter for the protection of those who experience respiratory issues on Spare-the-Air days. The City will encourage usage of buy-back programs for SORE offered by county, state, or community organizations, as well as inform residents of rebates or incentives offered by CARB to meet goals outlined in AB 1346. |  | 2024 | Public Works - Environmental Programs | San Mateo County Public Health, California Air Resources Board (CARB) | Supportive |
| EW.1.8 | Participate in incentive programs through Commute.org | Promote bicycle and carpool incentive programs through Commute.org providing rewards for commuting via bicycle and/or carpool with incentives according to availability. |  | 2024 | Public Works - Environmental Programs | Commute.org | Supportive |
| EW.1.9 | Support partnerships that bring awareness to air quality monitoring | Stanford study with Acterra/CRC on indoor air pollution began with a pilot of 30 families in February 2022, and has expanded to over 400 families, with 100 indoor air quality monitors distributed to individual households, with personal monitors, weather stripping, sleep monitors, and air purifiers as supportive solutions. |  | 2022 | Public Works - Environmental Programs | Stanford, Acterra/ CRC, Nuestra Casa, El Comité | Supportive |
| EW.1.10 | Install energy efficient streetlighting | City replaces street lighting – including signal, parks, and parking lots – with efficient LED lighting. |  | Completed | | | 2 |
| EW.1.11 | Participate in community choice aggregation (Municipal facilities) | Through Peninsula Clean Energy, the City will continue to provide greener renewable electricity to municipal facilities. The City will also "opt up" to ECO100 service in all municipal facilities. |  | Completed | | | 26 |
| EW.1 Sub-total (MT CO2e) | | | | | | | 3,779 |





Goal EW.2: Electrify Building Stock

| # | Action | Implementation Considerations | Co-benefits | Time-frame | Lead | Community Partner | Emissions Reduction (MT CO2e) |
|--------|---|---|--|------------|---------------------------------------|--|-------------------------------|
| EW.2.1 | Expand all-electric building policy | The City has updated its building code to mandate that new residential and commercial construction projects be built to an all-electric standard, including electric heating, cooling, and water heating ^e . After the 2023 code cycle, the City plans to remove exemption for accessory dwelling units from the existing electrification reach code to maximize GHG emissions reductions from this action and ensure low-income residents receive the benefits of the action. |  | 2023-2025 | CED | PCE | 2,362 |
| EW.2.2 | Develop an existing building electrification strategy (EBES) to aid in development of an existing building electrification ordinance for residential and office buildings | The EBES should: 1. Include a detailed existing building analysis to understand current natural gas end uses and scenarios to electrify 2. Include an electrification costs analysis that explores the up-front costs of electrification as well as ongoing energy costs for the end user (homeowners, landlords, renters, office building owners) after electrification 3. Consider impacts to renters and renter-landlord dynamics 4. Identify potential impacts to electrical grid resiliency 5. Identify and develop protections against potential equity concerns/impacts of electrification 6. Identify funding and financing opportunities for residential electrification 7. Identify the City staff resources needed to enforce a new electrification ordinance |  | 2023-2024 | Public Works - Environmental Programs | PCE, SMC | Supportive |
| EW.2.3 | Develop partnerships for EBES development | Identify and partner with local community-based organizations with connections to low-income and fixed income people, communities of color, elders, and disabled individuals with access needs to assist in development of the EBES. |  | 2023-2024 | Public Works - Environmental Programs | Nuestra Casa, YUCA, El Concilio, Samaritan House South | Supportive |

^e Assumes “No new gas” policy

| # | Action | Implementation Considerations | Co-benefits | Time-frame | Lead | Community Partner | Emissions Reduction (MT CO2e) |
|--------|--|--|--|------------|---------------------------------------|--|-------------------------------|
| EW.2.4 | Conduct community engagement for the EBES | Conduct engagement efforts for the general public and targeted to low-income people, fixed-income residents, and communities of color during development of the EBES to understand the community's concerns around electrification. |  | 2023-2024 | Public Works - Environmental Programs | Nuestra Casa, YUCA, El Concilio, Samaritan House South | Supportive |
| EW.2.5 | Adopt an electrification ordinance for existing residential and commercial buildings | Coordinate with BAAQMD proceeding on rules 9-4 and 9-6. Ban expansion of gas infrastructure and require replacement of HVAC systems, hot water heaters, and other appliances in residential and small office buildings to be all-electric at time of replacement and major renovation. Implement the ordinance through the building permit process. The City will leverage incentives provided by PCE to encourage residential and office buildings to upgrade electric panels to accommodate all-electric technologies including solar PV, battery storage, air source heat pumps, heat pump water heaters, electric dryers, electric stoves, and EV chargers. ^f |  | 2027 | Public Works - Environmental Programs | PCE, BAAQMD | 7,238 |
| EW.2.6 | Define equity metrics for existing building electrification ordinance enforcement | Define equity metrics for ordinance enforcement based on feedback from low-income and fixed-income residents, and communities of color and structure the ordinance to meet these metrics. Equity metrics should be designed to prevent displacement and ensure that end-user energy costs for low-income populations will not be greater after electrification than before. Seek funding through PCE for community outreach. |  | 2024-2025 | Public Works - Environmental Programs | CRC, PCE, YUCA | Supportive |
| EW.2.7 | Develop partnerships to fund existing building electrification | Seek out funding partnerships with local financiers and work with partners such as PCE and BayREN to fund a program specifically for decarbonization retrofits, such as a local turnkey retrofit program that leverages existing funding, which offers low-cost financing of electrification and energy efficiency retrofits for residents and local businesses. |  | 2022-2024 | Public Works - Environmental Programs | PCE, BayREN, Rebuilding Together, GRID Alternatives, Etc | Supportive |

^f Assumes 40 percent of commercial buildings are office space



| # | Action | Implementation Considerations | Co-benefits | Time-frame | Lead | Community Partner | Emissions Reduction (MT CO2e) |
|--------------------------|--|--|--|------------|--|--|-------------------------------|
| EW.2.8 | Develop a temporary staff position to support existing building electrification | Create a new staff position dedicated to understanding, streamlining, and expanding energy and electrification turnkey, rebate, and financing programs (e.g., PACE and utility-offered incentive programs). Staff would also be responsible for supporting residents with rebate applications, with a focus on low-income residents. |  | 2024-2026 | Public Works - Environmental Programs | PCE | Supportive |
| EW.2.9 | Establish a building performance standards program for multifamily and commercial building | Develop and implement a building performance standards program by 2025 for multifamily and commercial buildings such as in Boston, New York City, and/or Denver. Introduce annual energy auditing and reporting requirements, energy efficiency retrofits, and finally electrification retrofits over time. Leverage and publicize resources available through BayREN and PCE to support the program. This could be implemented through a partner such as PCE. |  | 2025 | Public Works - Environmental Programs and CEDD | RICAPS, BayREN | Supportive |
| EW.2.10 | Partner with PG&E on infrastructure pruning | Work with PG&E to identify opportunities for natural gas infrastructure pruning to reduce the chance of stranded assets (functional natural gas infrastructure with ongoing maintenance costs that has become obsolete due to electrification). |  | 2023 | Public Works - Environmental Programs | PCE | Supportive |
| EW.2.11 | Expand partnerships that bring awareness to air quality monitoring and appliance replacement or substitution | Consider potential grants to expand the Stanford study (EW.1.9) extensive supportive solutions such as providing air quality monitors and 50 induction stoves for replacement/substitution in rental homes with gas appliances to reduce reliance on gas appliances and provide alternative solutions with co-benefits of improved indoor air quality. |  | 2022 | Public Works - Environmental Programs | Stanford, CRC, Nuestra Casa, El Comité | Supportive |
| EW.2 Sub-total (MT CO2e) | | | | | | | 9,600 |



Want to Electrify Your Home? Plan Ahead

Converting your existing home to all-electric would be an expensive proposition if you did it all at once. That’s why it’s something you should do as natural opportunities arise, such as when appliances like your furnace and hot water heater need to be replaced. When they’re near the end of their life, do some homework so you’re prepared to switch to an electric model when the time comes, and take advantage of electrification incentives from BayREN (<http://www.bayrenresidential.org/>). Meanwhile, consider upgrading your electric panel to get ready. You can also opt up to Peninsula Clean Energy’s Eco100 rate. For as little as \$4 more per month, you’ll be supporting 100 percent renewable electricity.

Goal EW.3: Reduce Water Consumption

| # | Action | Implementation Considerations | Co-benefits | Time-frame | Lead | Community Partner | Emissions Reduction (MT CO2e) |
|---|--|---|---|-------------------|--|--------------------------------------|-------------------------------|
| EW.3.1 | Partner and promote water efficiency programs with local non-profit entities. Promote existing residential water conservation rebates and services | The City will promote residential water conservation including through BAWSCA rain barrel rebate programs. The City will consider supplementing existing rebates and services. Successful implementation of this measure would result in 10 percent of households receiving water efficiency upgrades. Partner with Climate Resilient Communities, in partnership with Grassroots Ecology, for landscape efficiency upgrades, cisterns, and low water use landscaping to reduce landscaping irrigation demands. Pilot will install 25 raingardens with cisterns as demonstration sites at low-income households. Seek further opportunities to expand programs to reach additional households with these and other partners. |  | 2023-2025 | Public Works - Environmental Programs | CRC, Grassroots Ecology, BayRen, SSV | 86 |
| EW.3.2 | Develop initiative to ensure enforcement of Water Efficient Landscape Ordinance | The State Department of Water Resources requires cities in California to enforce a Water Efficient Landscape Ordinance or local ordinance that is at least as effective as the State's model ordinance. Provide enforcement and issues fines to ensure compliance with ordinance. Water efficient landscaping policies are already in place and required on any new project that requires a permit in the City. Successful implementation of this measure would result be a 90 percent household compliance rate. |  | 2022 COMPLETED | Public Works - Environmental Programs, Engineering, Building Department Planning | Veolia Water | 16 |
| EW.3 Sub-total (MT CO2e) | | | | | | | 102 |
| Energy and Water Total (MT CO2e) | | | | | | | 13,742 |

EW.4 Protect low-income residents from extreme heat

| # | Action | Co-benefits | Time-frame | Lead | Community Partner | Emissions Reduction (MT CO2e) |
|--------|--|---|------------|--|---|-------------------------------|
| EW.4.1 | Conduct an extreme heat study to understand the potential future impacts of extreme heat on local underserved communities and identify opportunities for extreme heat mitigation in those areas. |  | 2024-2025 | Public Works - Environmental Programs | CRC, YUCA, Stanford | Supportive |
| EW.4.2 | Work with local community-based organizations to identify and understand the application process associated with funding and financing opportunities for converting residential furnaces and air conditioners to heat pumps in low-income housing. |  | 2024 | Public Works - Environmental Programs, with consult by CED | PCE, SMC, EPA CanDo, Eden Housing, MidPenn, etc | Supportive |
| EW.4.3 | Work with local community-based organizations to educate local low-income communities about the dangers of extreme heat and opportunities for retrofitting their homes with heat pumps and improving insulation as ways to avoid the most dangerous impacts of extreme heat. |  | 2024 | Public Works - Environmental Programs | CRC, YUCA, Nuestra Casa, GRID Alternatives, Rebuilding Together, Habitat for Humanity | Supportive |



Dry Up Household Water Waste

Did you know that the energy use related to water — transporting, cleaning, and heating it — consumes 19 percent of California's electricity and 30 percent of its natural gas every year? We've all learned the importance of taking shorter showers and installing low-flow shower heads, low-flow aerators on faucets, and low-flush toilets to save water. But don't forget outside, too, since half of California's residential water use goes toward landscaping⁷ and half of all water wasted in the United States is due to poorly managed and maintained irrigation systems.⁸ ReScape California (<https://rescapeca.org/>) is a nonprofit that provides resources for selecting low-water plants, conserving water, and fostering soil health.

Transportation and Land Use



What Are We Talking About?

In California, 41 percent of total GHG emissions stem from transportation. The vast majority of transportation emissions are from on-road vehicles, the cars and trucks that move people and goods through the state. In East Palo Alto, 74 percent of emissions come from transportation sector. Travel on local roads represent 24 percent of total *transportation emissions*, while travel on state highways make up 69 percent. Off-road emissions (from residential uses) account for the remaining 2 percent of transportation emissions.

Carbon Intensity of Fuels, Vehicle Efficiency, and Vehicle Miles Travelled

Reducing emissions from the transportation sector requires addressing three constituent components: 1) reducing the carbon intensity of fuels, 2) increasing vehicle efficiency, and 3) reducing vehicle miles travelled (VMT). The two main fuels, gasoline and diesel, used to power vehicles across the state, have a very high carbon intensity. Transitioning to lower carbon intensity fuels, especially electricity, is key to reducing emissions in the transportation sector. Similar to electrification of fossil fuel equipment in buildings, as the electricity grid continues to rely more heavily on renewable energy sources for electricity generation, the emissions reduction potential of replacing gasoline and diesel vehicles with electric vehicles continues to increase.

The Challenges of Reducing VMT and Associated Co-benefits

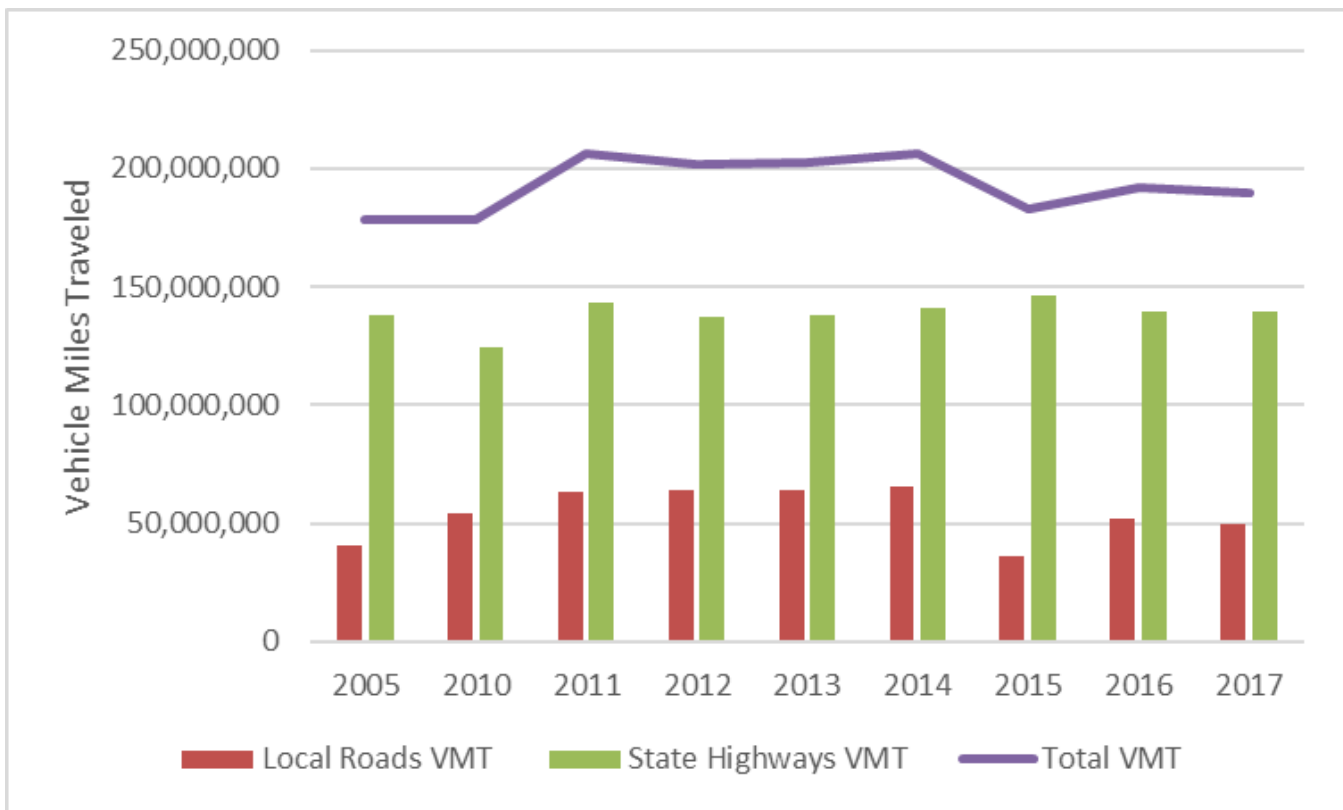
Fully understanding the factors that lead to increased VMT is challenging, but the contributors include the following: economic growth, lack of affordable housing near urban cores, urban sprawl, lack of viable public transportation options, cheap gasoline, and streets that discourage pedestrian or bicycle access.

The benefits of integrated planning and sustainable development go far beyond simply reducing the GHG emissions that contribute to climate change and its damaging effects. Communities that are well designed provide housing options for all income and age groups and enable community members to use a range of transportation options that reduce congestion, improve air quality, and increase economic development.

How Are We Doing?

As of 2019, electric vehicles made up 7.8 percent of total new car sales in California.⁹ Efficiency of gasoline and diesel vehicles, in terms of miles per gallon (MPG), continues to increase. For model year 2017, the average fuel economy of new vehicles sold in the United States reached 24.9 MPG – a record high.¹⁰ However, addressing the third component, reducing VMT, is considerably more difficult than the previous two. Californians have driven more and more miles per year over the past five decades. Figure 5.3 demonstrates the growth in VMT within East Palo Alto between 2005 and 2017.

Figure 5.3: East Palo Alto 2005–2017 Total Vehicle Miles Traveled














What Are We Trying to Achieve?

| # | Goal | Target |
|-----|--|--|
| T.1 | Reduce vehicle miles traveled in the community | Reduce VMT by 0.8 percent compared to BAU by 2030 |
| T.2 | Decarbonize transportation | Increase EV ownership and EV charging stations so EV passenger cars make up 6 percent of total vehicle VMT |
| T.3 | Increase walkability and bike ability | 6 miles of bike lanes and bike parking provided in over 50 percent of non-residential locations |
| T.4 | Increase housing in transit corridors | 43.1-86 units/ acre or 150 to 300 persons/ acre. Maximum height 7 stories and 75 feet. Up to 2.5 floor area ratio (FAR) with increases allowed to permitted density/intensity and height for projects that provide income-restricted affordable housing targeted to the income levels of current residents and in excess of requirements in current regulations. |

How Do We Get There?






Goal T.1: Reduce Vehicle Miles Traveled in the Community

| # | Action | Implementation Considerations | Co-benefits | Time-frame | Lead | Community Partner | 2030 Emissions Reduction (MT CO2e) |
|-------|---|---|--|------------|---------------------------------------|---------------------------|------------------------------------|
| T1.1 | Support the establishment or expansion of local shuttle service | <p>The City will encourage the establishment of a local shuttle service. The City will work with partners to apply for grant funding from C/CAG and work with the County Transportation Authority (Alliance) to fund local shuttles, as applicable.</p> <p>Successful implementation would expand the City's transit network coverage by 50%. This action is being considered on a regional basis with the City's transportation consultants and future developers.</p> |  | 2026 | Public Works, CEDD | SAMTRANS/ Alliance/ C/CAG | 258 |
| T1.2 | Encourage and incentivize e-bike and e-car sharing companies to operate in the City | <p>The City will develop policies and incentives that attract e-bike and e-car sharing companies to establish or expand service in the City, ensuring that there is an e-bike and e-car sharing program in place in 2030. Focus on placing hubs near neighborhood entry points.</p> |  | 2030 | Public Works | C/CAG/ SAN Mateo County | 217 |
| T1.3a | Enhance infrastructure to promote shared electric bikes and scooters | <p>Modify existing city infrastructure to accommodate shared electric bikes and scooters that provide last-mile solutions to residents and commuters. Infrastructure enhancements include dedicated off-street parking spaces and on-street corrals to accommodate shared electric bike and scooter parking and prevent conflicts with pedestrians.</p> |  | 2023-2030 | Public Works - Environmental Programs | SMC | 385 |
| T1.3b | Enhance City policies to promote shared electric bikes and scooters | <p>Modify existing city policies to specifically accommodate shared electric bikes and scooters to utilize public infrastructure, such as roads, trails, and bike racks</p> |  | 2023-2025 | Public Works - Environmental Programs | SMC RICAPS | Supportive |

| # | Action | Implementation Considerations | Co-benefits | Time-frame | Lead | Community Partner | 2030 Emissions Reduction (MT CO2e) |
|-------------------------|---|---|--|----------------|---|--|------------------------------------|
| T1.4 | Expand programs that provide bicycles at free or reduced costs to residents, with bicycle safety training | The City will support programs, such as the Live in Peace Bike Shop Program, supporting bicycle repair, community bike rides, bike rodeos, bike clubs, and bike racing teams, giving away more bicycles and training additional residents to be certified in bike mechanics, along with program expansion to expand residents' access to bicycles in the community and supporting schools to reduce ICE ⁹ trips. |  | 2023 | Public Works - Environmental Programs | LIP, C/CAG/SAN Mateo County, RCSD | Supportive |
| T1.5 | Free public transit program | Expand free public transit Clipper Card pilot program that provides free public transit to students, foster youth, and unhoused youth in East Palo Alto. |  | 2024-2025 | Public Works - Environmental Programs, CEDD | El Concilio, Samaritan House South, SamTrans, etc | Supportive |
| T1.6 | Adopt ordinance to require employers to develop TDM plans | Adopt ordinance to require medium to large-sized employers (25 employees or more) to develop a Transportation Demand Management (TDM) Plan. TDM plans should include subsidies for employees to bike, walk, or carpool, and provide free transit passes for all employees. |  | 2022 COMPLETED | Public Works, CEDD | Developer s | Supportive |
| T1.7 | Encourage free micro-mobility in new multi-family development | Encourage new multi-family development projects to install a car share, bike share, or scooter share for residents to use freely as a part of their comprehensive TDM Plan. The TDM Plan shall be required for all new development that meets the threshold in the City's TDM Ordinance. The City has hired a TDM coordinator that will begin enforcing the program. |   | 2024 | Public Works, CEDD | Developer s | Supportive |
| T1.8 | Free e-bike pilot | Pilot a program to provide free or reduced-price access to e-bikes or other micro mobility options to low-income residents and students. |   | 2024-2027 | Public Works - Environmental Programs | PCE, El Concilio, Samaritan House South, SamTrans, etc | Supportive |
| T.1 Sub-total (MT CO2e) | | | | | | | 860 |






⁹ Internal combustion engine vehicle. ICE vehicles are usually powered by fuels such as gasoline or diesel.

Goal T.2: Decarbonize Transportation

| # | Action | Implementation Considerations | Co-benefits | Time-frame | Lead | Community Partner | 2030 Emissions Reduction (MT CO ₂ e) |
|------|---|--|---|--|---|--|---|
| T2.1 | Increase electric vehicle ownership | The City will establish an overarching community target for adoption rate of electric vehicles that results in 6% of all community VMT from electric vehicles. The City can encourage use of the State Cash for Clunkers program & PCE rebates for new/used EV purchasing. |  | 2022-2030 | Public Works - Environmental Programs | CRC, PCE, Grid Alternatives, Rebuilding Together | 11 |
| T2.2 | Encourage expansion of EV charging infrastructure through incentives and partnerships | Leverage incentives from PCE and develop public and private partnerships to fund expanding charging infrastructure in existing public properties, multi-unit dwellings (20%) and workplaces (10%). Goal: 100 publicly accessible Level 2 and 3 EV charging stations by 2030. All publicly accessible charging stations should be accessible to City residents. |  | 2030 | Public Works - Environmental Programs, CEDD | PCE | 4,129 |
| T2.3 | Survey EV charging network | Conduct a survey of existing publicly accessible electric vehicle chargers and their locations and identify a prioritized list of locations for new electric vehicle charging stations with particular consideration for equitable distribution of chargers to residents of multi-family homes, low-income people, people on a fixed income, and communities of color. |  | 2024 | Public Works, Dept. Environmental Programs | PCE | Supportive |
| T2.4 | Establish commercial and residential EV charging ordinance | Update residential and commercial building code to increase the mandated percentage of EV parking spaces. Adopt the current Title 24 CalGreen Tier 2 EV Charging Requirements. |  | Reach Code adopted in 2020 (new buildings) | Community and Economic Development Department - Building Division | PCE | 1,090 |
| T2.5 | Develop policies to encourage the use of EV TNCs in the community | Create a program that will utilize funds generated by fees on ICE TNC ^h rides to provide discounts on EV TNC rides. Provide designated drop-off ADA accessible locations and charging |  | TBD | Public Works and Transportation | PCE, commute.or g | 1,177 ⁱ |






^h Transportation network company. Lyft and Uber are two examples.

ⁱ Assumes the fee per mile ICE TNC trip is \$0.80

| | | | | | | | |
|------------------------|--|---|--|-----------|---|-----------|------------|
| | | locations for EV TNCs to facilitate EV adoption. Include in Capital Improvement Plan; Implementation of EV Charging. | | | Department | | |
| T2.6 | Pursue EV car share for priority housing | Pursue affordable, electric vehicle (EV) car share to serve affordable housing and/or multifamily developments with a priority to target low-income, fixed-income, renters, residents in multi-unit housing, and communities of color. |  | 2023 | Public Works and Transportation Department | | Supportive |
| T2.7 | Review and improve local EV adoption rates | Review electric vehicle (EV) adoption rates based on demographics of East Palo Alto to identify ways to improve EV adoption (e.g., renters, low-income communities, communities of color). Based on the results, conduct targeted outreach to groups to identify barriers and concerns of potential EV drivers. Work with community-based organizations to target outreach and program planning to reduce barriers for EV adoption among groups with low participation rates. |   | 2023-2025 | Public Works and Transportation Department | PCE, CRC | Supportive |
| T2.8 | EV on-bill financing | Work with PCE and PG&E to incentivize electric vehicle charger installations through on-bill financing. |  | 2023-2030 | Public Works Department, Environmental Programs | PCE, PG&E | Supportive |
| T2.9 | Commercial EV incentives | Identify and implement incentives for commercial fleet electrification. This could include local tax breaks. |  | 2023-2030 | Public Works Department, Environmental Programs | | Supportive |
| T.2 Sub-total (MTCO2e) | | | | | | | 6,406 |

Goal T.3: Increase Walkability and Bikeability



| # | Action | Implementation Considerations | Co-benefits | Time-frame | Lead | Community Partner | Emissions Reduction (MT CO ₂ e) |
|--------------------------------------|---|--|--|------------|----------------------------------|---|--|
| T3.1 | Develop walkable and bikeable street landscape locations | <p>Modify landscaping to make walking and biking more desirable. Include a green slow safe street network where feasible.</p> <p>Install bike lanes, bike parking, and traffic calming measures along 100% of new or significantly updated major arterial, minor arterial, and collector roadways. When roadway widths accommodate, plant with native and habitat-friendly tree canopy/ shade cover, whenever feasible, etc.^j</p> <p>Actions are included in, and will be implemented through, the Green Infrastructure Plan and the Bicycle Master Plan.</p> |  | Ongoing | Public Works | Private Development Live in Peace | 1,099 |
| T3.2 | Establish parking policies that encourage public transit, biking, and walking | The incoming Sustainability Coordinator will survey current City parking policies and draft a plan to implement new parking policies including metered parking ^k reducing parking requirements for new development to encourage alternative forms of transit, and "unbundling" sales/leases of parking space from building space to increase use of public transit, biking, and walking. |  | 2026 | Public Works, CEDD - Planning | MFD owners | 1,494 |
| T3.3 | Support Safe Routes to School Program | <p>Support the City's Safe Route to Schools program by investing in enhancing bike trails and safe pedestrian routes to local schools.^l Promote the program through collaboration with schools, hosting of events, and outreach to increase volunteer participation.</p> <p>Action will be implemented through the Bicycle Master Plan.</p> |  | Ongoing | Public Works, Community Services | Live in Peace, Safe Routes to School, Silicon Valley Bicycle Coalition, Ravenswood City School District | 30 |
| T3.4 | Equitable bicycle and pedestrian network | Plan for equitable access to safe bicycle and pedestrian infrastructure in all areas of the city. Prioritize bicycle and pedestrian infrastructure projects in low-income communities and areas in the city with less existing bicycle and pedestrian infrastructure, especially those lacking sidewalks. |  | 2023-2030 | Public Works - Engineering | | Supportive |
| T3.5 | Bike parking improvements | Improve the bike/e-bike parking network to reduce theft and increase rider attraction. This would include surveying existing bike parking facilities throughout the city and developing a plan to improve these with preference given to improving bike/e-bike parking facilities near public transit stops to improve and expand access to transit (i.e., first- and last-mile access) |  | 2023-2025 | Public Works - Engineering | | Supportive |
| T.3 Sub-total (MT CO ₂ e) | | | | | | | 2,623 |



What Would It Be Like?

Many of us drive our cars for short trips. We drive three blocks to work out at the local gym, we drop off our teenager at a friend’s house in the neighborhood, or we move our car to park near the entrance of the next store on our list of errands. Some short car trips are necessary; for example, health and mobility issues might limit our ability to walk. Other times, driving is convenient: when we’re in a hurry, if it’s cold or raining, or if we have a lot of groceries to carry. However, some short car trips might be easily made by foot or bike. What if we all chose to walk or bike for just half of our car trips of under a mile?


If we all chose to power half of these short trips with our feet instead of petroleum, assuming an average fuel economy of 22 mpg and an average fuel price of \$2.50/gallon, we would save about \$575 million in fuel costs and about 2 million metric tons of CO2 emissions per year. That’s like taking approximately 400,000 cars off the road each year. The total financial savings are even bigger — almost \$900 million dollars — when you include savings on maintenance and tire replacement.¹¹

^j Assumes calming measures and bike parking in place and 12 miles of bike lanes per City’s 2017 bike master plan

^k Including a 25 percent increase in on-street parking and \$25 monthly parking fee

^l Assumes roundtrip distance from residential to school is 2 miles

Goal T.4: Increase Housing in Transit Corridors

| # | Action | Implementation Considerations | Co-benefits | Time-frame | Lead | Community Partner | Emissions Reduction (MT CO2e) |
|--|---|--|---|------------|---|-------------------|-------------------------------|
| T4.1 | Establish and implement smart growth development policy | Continue to enforce and pursue the City's smart growth policy, outlined in the City General Plan. Smart Growth prioritizes infill, higher density, transportation-oriented development and mixed-use development. This policy leads to walkable neighborhoods that do not rely on personal automobiles as a primary mode of transit. |  | 2022 | Community and Economic Development Department | Developers | 15 |
| T.4 Sub-total (MT CO2e) | | | | | | | 15 |
| Transportation and Land Use Total (MT CO2e) | | | | | | | 9,904 |

Solid Waste



What Are We Talking About?

In California, 2 percent of total GHG emissions are generated from the disposal of waste. While it may not be immediately obvious, reducing the amount of waste deposited into the landfill through material reuse, reduction, and recycling is an important strategy East Palo Alto residents can take to reduce GHG emissions.

When organic material, including food and wood products, are sent to landfills they release methane as they slowly decay over time. While some landfills capture as much methane as possible and combust it for electricity generation, many landfills leak or “flame” methane, a potent GHG, directly into the atmosphere.

How Are We Doing?

Although composting programs have begun to decrease the amount of organic material sent to landfills, organic material still accounts for 37.4 percent of all materials sent to landfills in California. Because organic materials sent to landfills release methane directly into the atmosphere, increasing the percentage of organic materials that are sent to dedicated composting facilities is critical to reducing emissions in the waste sector.

What Are We Trying to Achieve?

| # | Goal | Target |
|-----|--|------------------------------------|
| W.1 | Increase diversion of materials from landfills | Achieve 85% diversion rate by 2030 |

How Do We Get There?

Goal W.1: Increase Diversion of Materials from Landfills

| # | Action | Implementation Considerations | Co-benefits | Time-frame | Lead | Community Partner | 2030 Emissions Reduction (MT CO2e) |
|-----------------------------|---------------------------------------|---|-------------|------------|---------------------------------------|-------------------------------------|------------------------------------|
| W1.1 | Achieve a higher waste diversion rate | Achieve 85% diversion rate by establishing mandatory residential organics recycling ordinance, ensuring enforcement of State’s Mandatory Commercial Organics Recycling Ordinance, and establishing sustainable vendor policy for public events. May need to institute penalties for non-compliance. | | 2030 | Public Works - Environmental Programs | CalRecycle, Recology, ReThink Waste | 27 |
| Solid Waste Total (MT CO2e) | | | | | | | 27 |

6. Implementation



6 IMPLEMENTATION

Implementation

The preceding chapters describe the principal sources of East Palo Alto's GHG emissions and related goals and actions for achieving the community's goal of reducing per capita emissions 55 percent below 2005 levels by 2030. This section outlines the main components of the process for putting this CAP into action and identifies specific actions from earlier sections that are recommended for implementation (Table 6.1).

By the Numbers: Meeting the Emissions Goal

Table 6.1: Meeting the 2030 Emissions Goal

| State Initiative | Sector Impacted | 2030 BAU Emissions in Sector (MT CO ₂ e) | % Reduction from 2030 BAU in Sector | Reduction in City's Emissions by 2030 (MT CO ₂ e) | Reduction in City's Per Capita Emissions by 2030 (MT CO ₂ e/person) |
|--|------------------------|---|-------------------------------------|--|--|
| Advanced Clean Cars Program | Transportation | 80,656 | 27.3% | 22,057 | 0.66 |
| Low Carbon Fuel Standard | Transportation | 5,903 | 15.9% | 939 | 0.03 |
| Renewable Portfolio Standard | Electricity (Energy) | 6,240 | 19.3% | 1,202 | 0.04 |
| ZNE 100% New Residential Construction by 2020 | Residential Energy | 19,442 | 4.0% | 783 | 0.02 |
| ZNE 50% Existing Commercial Construction by 2030 | Non-Residential Energy | 9,806 | 19.9% | 1,950 | 0.06 |
| Organic Waste Diversion SB 1383 | Disposed Waste | 2,403 | -8.3% | -200 | -0.01 |
| A. Total Expected Statewide Initiative Emissions Reductions | | | | 26,730 | 0.81 |
| B. Total Expected East Palo Alto's Climate Action Plan Reductions Measures | | | | 23,412 | 0.71 |
| Energy and Water Emissions Reduction | | | | 13,742 | 0.41 |
| Transportation Emissions Reduction | | | | 9,904 | 0.30 |
| Solid Waste Emissions Reduction | | | | 27 | <0.01 |
| C. Total Expected Emissions Reductions by 2030 (A+B) | | | | 50,142 | 1.52 |
| D. East Palo Alto's Emissions Reduction Requirement for 2030 | | | | 49,887 | 1.50 |
| G. Meets/exceeds CAP goals? (C > D) | | | | YES | YES |

Getting It Done: Managing the Strategy

Support will be needed to direct the implementation of the CAP measures. This section details how the city will organize itself to put this CAP into action.

- **Expand Environmental Programs** – The City will expand staffing capacity of the Environmental Programs, to include dedicated responsibility for implementation of this CAP as 0.50 full time equivalent position for CAP-related business.
- **Establish a Climate Action Task Force (CATF)** – Create an environmental/sustainability committee to provide input for the implementation of the Climate Action Plan, Clean City Plan, Green Infrastructure Plan, and Sea Level Rise, along with related vulnerability issues. Potential to utilize the Community Climate Change Team which has been involved in these efforts for multiple years. Other avenues include expansion of the Public Works and Transportation Committee (i.e., update jurisdiction to Public Works, Transportation, and Sustainability) to provide an expanded purview to include these matters pertaining to sustainability.
- **Roles and Responsibilities**—The responsibilities of the efforts regarding environmental sustainability practices and climate action require direct action to implement. Reviewing projects in a comprehensive manner to ensure all aspects are implemented into future developments, new city streets, and updated and new parks.

Better Together

Meaningful climate planning and action is grounded in the needs and priorities of community residents and stakeholders. COVID-19 has brought about significant changes to our daily lives and work and shifted individual focus. From paying rent and taking care of families to managing health care and other urgent priorities, community members have little time to focus on climate planning. Nevertheless, it remains critical to continue engaging with the public to ensure their input informs decisions that will impact our community for years to come.

The City of East Palo Alto partnered with the Institute for Local Government (ILG) to carry out public participation approach to engage a community grappling with economic hardship and health crisis. Comprised of city staff with minimal bandwidth to co-lead this engagement and ILG staff, the project team implemented the approach over a short timeline and with a small budget provided through ILG's in-kind services.

Public engagement methods included a combination of online surveying, phone interviews with key stakeholders, ongoing dialogue with the Community Climate Change Team (CCCT) and other community leaders, an analysis of community input from recent planning efforts and surveys related to sustainability, clean mobility, energy, health, equity, and more. Specifically, ILG and city staff team looked at the community data from the CCCT, a local group of diverse stakeholders and residents engaged in the community vulnerability and adaptive capacity project a year prior. A one-year-old Climate Planning Survey conducted by Stanford University and the city's mobility study survey further identified community climate planning preferences, needs and opportunities.

This effort builds upon the extensive public engagement that was conducted for the city's 2011 Climate Action Plan. To better understand the current priorities of our community in this dynamic environment and to fill gaps in data needed to inform CAP strategies and programs further, the project team worked with community-based organizations (CBOs) and partners to design the questions and ensure the language was user friendly for a wide diversity of community members. The online survey was made available on the East Palo Alto website, WhatsApp, and Facebook in English and Spanish. City and school district newsletters expanded the survey's reach. The survey asked participants questions about climate action programs and projects around transportation, energy, waste, healthy locally sourced foods, clean air, and more.

During a time in which not all could prioritize participation, targeted interviews with community leaders and stakeholders helped make engagement more inclusive. The interviews provided another opportunity to add to existing community data to better understand diverse community values and climate planning opportunities. Serving as a neutral third-party nonprofit, ILG conducted a series of phone interviews with

- education sector representatives,
- business sector representatives,
- residents working and living in the city of East Palo Alto,
- faith leaders,
- CBOs leaders that serve a diverse East Palo Alto population,
- public works and planning commissioners,
- regional stakeholders, including the San Mateo County Office of Sustainability.

As part of the ongoing dialogue and collaboration, the project team stayed committed to process transparency while acknowledging engagement and timing challenges. Part of this commitment was to have continuing conversations with a small group of community leaders and stakeholders, including CCCT, Acterra, and Nuestra Casa, sharing preliminary rough drafts and asking for specific suggestions.

The project team thanks participants for their time and effort while recognizing the difficulty and uncertainty the pandemic has brought about for so many community members. The City of East Palo Alto looks forward to the opportunity to engage with and learn from the community on climate action planning more deeply.

Key Takeaways

Public engagement activities helped to shape the direction and policies of the Climate Action Plan. Just as all California cities are very different, the ways that we can reduce our greenhouse gas emissions can also be different in every community. The City of East Palo Alto has environmental challenges because of our location near freeways and our proximity to the rising sea. We also have many opportunities because of committed community leaders and passionate residents who strive to call East Palo Alto “our home” for many years to come. The community’s values, efforts, and choices help the city decide how to fund and prioritize projects and programs that help us reduce greenhouse gas emissions in our community.

Engaging the community not only helped to identify needs and priorities around climate planning; it also illuminated the opportunity for more collaborative engagement, increased education, and ongoing action with the community on climate and sustainability topics. We heard loud and clear that affordable housing, disaster preparedness, safe biking and walking, access to healthy locally sourced foods, and clean energy are essential to address in order to increase the health, safety, and resilience of our city. Our youth and the Community Climate Change Team are motivated and eager to take action on these climate topics and represent emerging and active community leaders. We strive to continue engaging with our community leaders, residents, and CBOs and fostering partnerships with the city to make progress on our climate goals together. We look forward to building a more sustainable, healthy, and equitable East Palo Alto.

Timeline

The following timeline lists the major milestones in the CAP implementation process. Progress and updates to this schedule should be submitted to the City Council and the public as part of an annual Plan Implementation Report (Table 6.2).

Table 6.2. Climate Action Plan Implementation

| Milestone | Target Date |
|--|-----------------------|
| GHG Inventory Completed | 01/14/2021 |
| GHG Reduction Goal Established | 02/15/2022 |
| Draft CAP Published | 03/09/2022 |
| Community Comment Period | 03/09/2022-05/01/2022 |
| Council Review | 09/05/2023 |
| CAP Adoption | 09/05/2023 |
| Sustainability Coordinator Begins Implementation | 09/2023 |
| 2021 GHG Inventory Completed | 11/2023 |
| Community Comment Period | 02/2024-03/2024 |
| 1 st Annual CAP Implementation Report | 06/2024 |

Implementation Budget

Staff has evaluated the resource impacts across City departments and identified resources needed to implement this CAP for the next 7 years.

Some of the actions will be absorbed and integrated into existing departmental operating or project budgets, we anticipate coordination of these programs to be 0.25 full time equivalent (FTE) of staff time in the Public Works, Transportation, and Community and Economic Development departments. Additional resources needed over the next 7 years include 0.5 additional FTE staff positions and augmenting the City's ongoing budget for CAP implementation. Resources allocated to implementing the CAP will be refined and finalized as part of the annual process for budget development and approval by the City Council.

In order to implement the CAP, the City will need to add one FTE 2-year contract staff position to Environmental Programs who will serve as the Sustainability Coordinator. This contract may need extension or renewal for the duration of implementation up to and including 2030. The future Environmental Program Manager may be able to fulfill part or all of this role, depending on other duties assigned. This position is currently slated to be partially filled by an incoming Fellow serving as a Sustainability Coordinator paid in part by the City, pending City Council approval, and procured through the Sustainability Service Corps, a program of Bay Area Community Resources. This Fellow's term will begin in September 2023 and conclude in July of 2024, with the possibility of extension. This contract staff member will create an Implementation Plan to further develop and begin implementing the listed measures and Adaptation Strategies as well as identify and secure sources of funding for measures that are not or under-funded.

The City's strategy to finance implementation of current and future actions will evolve over time. Strategies the City may consider could include:

- Leveraging partnerships and collaborative projects, particularly through Peninsula Clean Energy and Office of Sustainability programs and grant programs available through utilities, Federal, and State opportunities.
- Charging carbon impact fees for development projects, for example, as a traffic mitigation or if a waiver of electrification requirements is sought due to special circumstances
- Implementing user fees for selected activities and services, where a nexus exists
- Implementing paid parking in selected locations
- Adding transportation impact fees to requirements for new construction projects and/or mitigation of off-road vehicles with higher emissions impacts

Monitoring and Improvement

East Palo Alto envisions that the core strategies will remain constant as we move forward. As we live in an age and place of abundant technological innovation, more advanced technologies and creative innovations may be integrated into the CAP in the future.

Generation-based inventories provide a consistent way to track progress over time. But these inventories have two shortfalls:

1. **Annual GHG generation-based inventories lag about two years behind.** For instance, the 2021 became available in February 2023. This makes it difficult to get immediate feedback on changes to programs and policies.
2. **Generation-based inventories don't tell the whole story.** Our goal is to achieve 55 percent reduction of per capita GHG emissions from 2005 levels by 2030. It will be difficult to meet the carbon neutrality goal without calculating and tracking emissions from the consumption of goods and services in addition to more direct generation of emissions from the City itself and the energy it uses.

East Palo Alto's monitoring and ongoing improvement program addresses these shortfalls:

- East Palo Alto will establish and track key performance indicators (KPIs) for each action listed in *Chapter 5, Strategies and Actions, Strategies to Get Us There* section, including actions to reduce consumption-based emissions. Progress on KPIs will be posted on the City's website and updated annually, at minimum.
- Through the RICAPS program, East Palo Alto will consider participating in a countywide goal for KPIs agreed to by all cities in the county. Those KPIs will be posted and tracked on the County's website. Examples of common KPIs are number of solar installations, number of EV charging stations installed, number of homes retrofitted, number of EVs purchased, number of heat pump water heaters and/or space heaters installed, etc.
- Every year, the Sustainability Coordinator will issue an Annual Climate Action Plan Implementation Report to update the City Council, residents, and other interested stakeholders on progress made implementing the CAP actions, with the opportunity for the community to provide input. The ACAPUR will detail lessons learned and make recommendations for changes to the implementation strategy or the CAP itself. East Palo Alto will review the newest community GHG inventory provided by the County of San Mateo Office of Sustainability through the San Mateo County Energy Watch program and conduct a

municipal GHG generation-based inventory to track progress on reducing the City's own emissions which will be included in the ACAPUR.

- The Sustainability Coordinator will track the emissions, resource savings, equity and inclusion impact, and any other effects of each implemented action, as well as estimate costs to government, residents, and businesses. Each action will be summarized in the ACAPUR and made available for public review.
- This CAP may need to be updated based on the results of the GHG inventories. East Palo Alto may modify and/or add new actions to ensure that the City is on track to meet its GHG reduction goals.
- In partnership with the County Office of Sustainability, East Palo Alto will explore a collaboration with a research institution to include questions about climate protection behaviors in an annual countywide survey of community members. Responses from the survey could be used to track progress on community actions related to consumption-based emissions.

7. Impacts of Climate Change and Climate Adaptation



7

IMPACTS OF CLIMATE CHANGE AND CLIMATE ADAPTATION

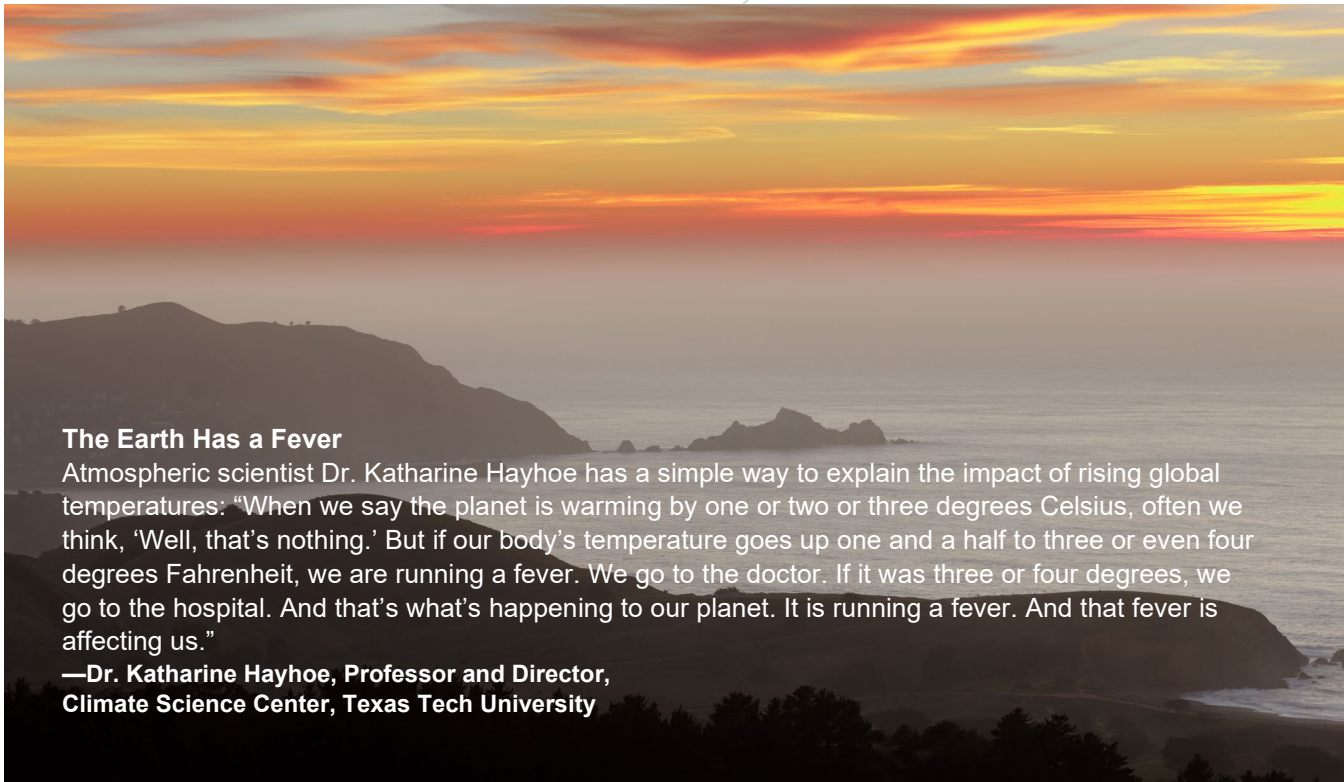
Impacts of Climate Change on East Palo Alto

Climate Science Overview

Climate change presents one of the most significant challenges of our time. As levels of greenhouse gas (GHG) emissions increase in the atmosphere, the Earth's climate system is being destabilized. GHG emissions are invisible, and include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and three man-made gasses: hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

As more greenhouse gasses are trapped inside the Earth's atmosphere, more of the sun's energy is trapped as heat, which means temperatures keep getting hotter. In fact, the world has already become nearly 1°C warmer since 1880, and we're seeing extreme consequences because of it, including more intense storms, greater wildfire risk, and rising sea levels.

Although we're already seeing impacts of climate change, there's a range of how relatively mild or devastating the future impacts might be, depending on how aggressively we take action to address it (see Chapter 7, Impacts of Climate Change and Climate Adaptation, Future Projections section). Scientists have laid out four pathways, or scenarios, based on future levels of GHG emissions. The pathways range from the very optimistic to the highly pessimistic. In accordance with state guidance, this CAP uses the RCP 8.5 ("business as usual" scenario) for future climate projections out to mid-century (2050), and both RCP 8.5 and RCP 4.5 ("mitigating" scenario) for end-of-century (2100) projections. For more information about the four pathways, see Appendix B.4.



The Earth Has a Fever

Atmospheric scientist Dr. Katharine Hayhoe has a simple way to explain the impact of rising global temperatures: "When we say the planet is warming by one or two or three degrees Celsius, often we think, 'Well, that's nothing.' But if our body's temperature goes up one and a half to three or even four degrees Fahrenheit, we are running a fever. We go to the doctor. If it was three or four degrees, we go to the hospital. And that's what's happening to our planet. It is running a fever. And that fever is affecting us."

—Dr. Katharine Hayhoe, Professor and Director,
Climate Science Center, Texas Tech University

Climate Change in East Palo Alto

Climate change has already affected and will continue to affect East Palo Alto in significant ways. Climate change will have many different effects on the community and on the natural world. The following section documents historical and projected changes to climate.



The city's **annual average maximum temperature** increased 1.4°F from 1950 to 2004.



Coastal fog, which is critical to the region's climate and ecosystems, is less frequent than ever before.



Sea level has risen over 8 inches in the last century.



The forceful 2015–2016 El Niño weather pattern, one of the three largest in history, resulted in unprecedented outer coast **beach erosion** due to winter wave energy that was more than 50 percent greater than a typical winter.



The 2012–2016 statewide **drought** led to the most drastic moisture shortages in the last 1,200 years, resulting in a 1-in-500-year low in Sierra snowpack. This drastically reduced **snowpack** resulted in \$2.1 billion in economic losses, 21,000 jobs lost statewide in agricultural and recreational sectors, and a continuing exhaustion of groundwater sources.

Future Projections



Under a “business as usual” emissions scenario, the City's annual average maximum temperature will increase by up to 5.6°F from a 2005 baseline of 69.9°F to 75.5°F by mid-century. By end-of-century, temperature rise will be between 7.6°F and 11.8°F dependent on the emissions scenario. The East Palo Alto community is at heightened risk during extreme temperature days due to a lack of existing air conditioning in many homes and businesses.



Precipitation frequency and severity will continue to vary each year. The differences between wet and dry years are projected to become more extreme and damaging in the coming decades. If no action is taken to combat climate change, the Sierra snowpack, a critical source of water for the State, will decrease by an average of 64 percent by the end of the century.¹² East Palo Alto residents are at higher risk from flooding related to higher precipitation events. During drought conditions, water cutbacks will be challenging due to an already low water allocation from the regional water supply.



As temperature continues to increase, it is anticipated to cause longer and more intense California **droughts**, posing major problems for government operations, water supplies, ecosystems, agriculture, and recreation.



Studies suggest that even with significant emissions reductions, it is inevitable that there will be at least 6 feet of **sea-level rise** over the next several centuries due to the delayed effects of climate change. East Palo Alto is at direct risk of sea-level rise and related impacts.



As a highly urbanized, built-out city, East Palo Alto is not at direct risk of wildfires. However, increased frequency and severity of wildfires in San Mateo and neighboring counties will likely worsen air quality for residents.

Social Vulnerability

Social vulnerability refers to populations with greater sensitivity to climate impacts because of social inequities, physical characteristics, or baseline conditions. These include, but are not limited to:

- Children and the elderly
- People with limited English proficiency
- Low-income communities
- Communities of color
- LGBTI and/or gender non-conforming community members
- Undocumented immigrants
- Women
- Community members who practice a minority religion
- Community members with limited education or literacy
- Residents with unstable economic or housing situations
- People with disabilities or physical and mental health conditions
- Outdoor workers and others whose workplace conditions expose them to disproportionate risk, including people in the informal workforce
- People whose housing conditions expose them to disproportionate risk
- People who are disproportionately exposed to pollution and toxic hazards or natural hazards
- Community members without access to the internet or phone service
- Transit-dependent populations
- Community members who face multiple areas of vulnerability or intersectional vulnerability

The County of San Mateo developed a Community Vulnerability Index (CVI) to demonstrate the geographical distribution of the overall vulnerability of the residents of the county. The index is composed of seven indicators: health insurance coverage, level of education, supplemental security income, gross rent as a percentage of income, poverty, unemployment, and disability status. The indicators have been standardized and combined to create dimension scores, on a scale from zero to 100 (higher value represents greater social vulnerability), for each of the census tracts within San Mateo County.

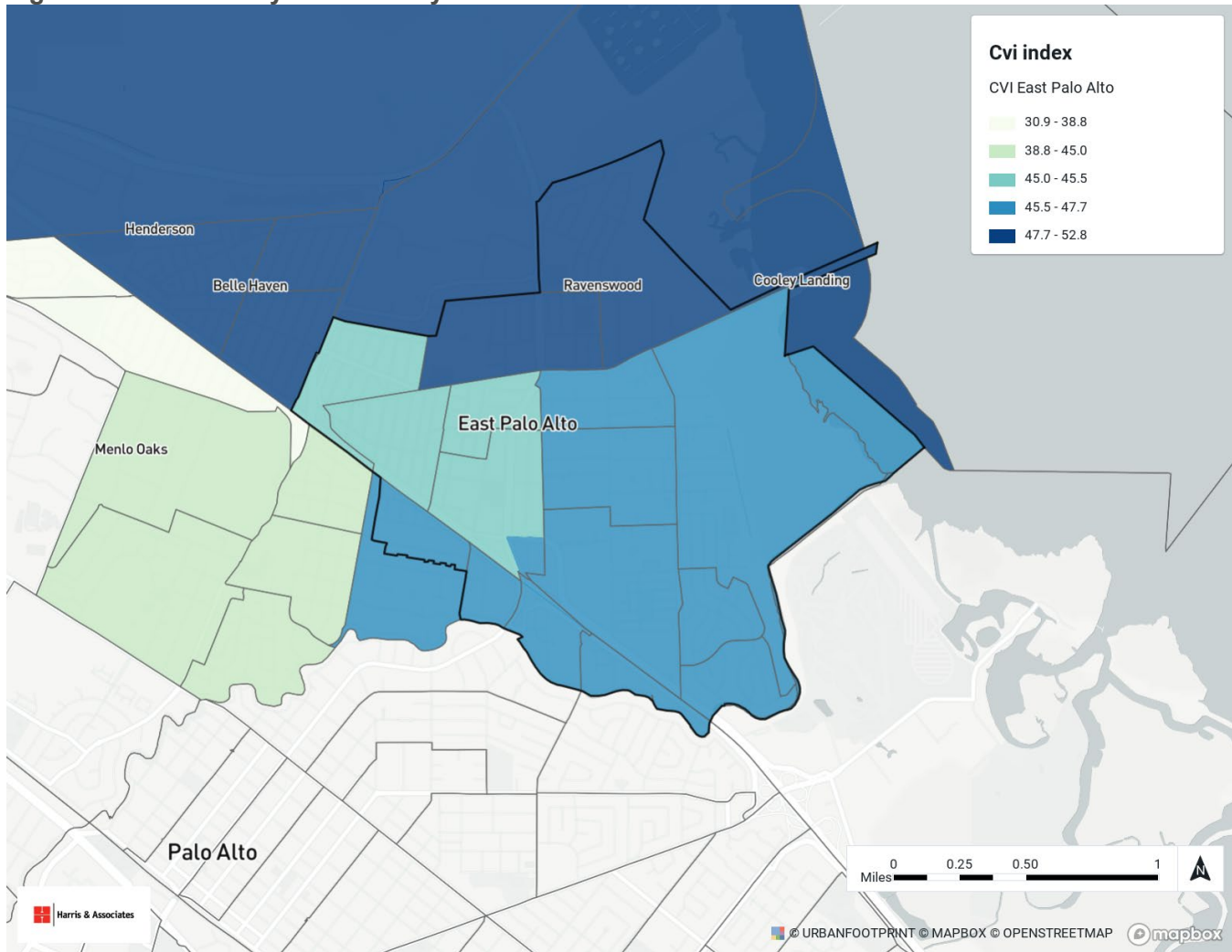
SEVEN INDICATORS OF VULNERABILITY

1. No Health Insurance Coverage
2. Education – High School or Higher
3. Supplemental Security Income
4. Gross Rent as a Percentage of Income – Households Spending 35% or More
5. Poverty
6. Unemployment
7. Disability

The CVI is mapped at the census tract level for the City in Figure 7.1. As shown on Figure 7.1, the northeastern portion of the City has the greatest vulnerability relative to other areas in the City. This index can help the City equitably allocate resources to protect vulnerable communities from climate impacts.



Figure 7.1: Community Vulnerability Index



Climate Impacts in East Palo Alto

Following are some of the key climate impacts, including those on the built, social, and natural environment that the City will likely experience in the future.

Impacts on people



Climate change could have broad impacts to communities and people – hitting those most vulnerable first and worst. High levels of socioeconomic inequity in the bay area create large differences in the ability of individuals to prepare for and recover from heat waves, floods, and wildfires.

Direct effects include a broad spectrum of heat-related diseases, ranging from heat exhaustion to heat stroke to death, and injuries and fatalities that result from severe weather. Indirect effects of climate change on human health arise from the connection of climate and weather conditions with health responses. Examples include air pollution, pollen and allergens, decreases in water quality and more extensive harmful algal blooms, and changes in supply of water and food.

Rising Temperatures

The City's average annual maximum temperature increased by 1.4°F from 1950 to 2004. Even as the City takes action to mitigate greenhouse gas emissions, global emissions are projected to continue rising. East Palo Alto will likely see annual average warming of approximately 2.4°F by mid-century and as much as 6.8°F under the high-emissions scenario compared to a 2005 baseline. By the end of the century, temperatures could rise by 4°F to 6.8°F.¹⁴

Extreme heat events occur when air temperatures reach or exceed 92.4°F. Historically, East Palo Alto has experienced an average of 3 heat events per year. Under the high-emissions (“business as usual”) scenario, extreme heat events may occur more than 3 times as frequently, up to 10 per year by mid-century and 14 to 23 per year by end-of-century.

Extreme heat events pose a threat to human lives, especially socially vulnerable groups (see page 17). Even temperatures as low as 80°F can cause fatigue after prolonged exposure, and heat exhaustion may follow. When a person's internal temperature reaches 105°F, organ failure and even death can result. Heat also intensifies smog and air pollutants that can contribute to and exacerbate respiratory disease and result in more asthma and heart attacks.

Only 10 percent of homes in the Bay Area currently have air conditioning.¹⁵ Warming trends are expected to cause more people to install and use air conditioning, resulting in an increase in GHG emissions. The largest increase in summer energy demand is expected in coastal cities as air conditioning adoption grows. The amount and location of new air conditioning needed can be predicted through a metric called “cooling degree days” (CDD). This value quantifies how much the air temperature exceeds 65°F on a single day or period of days. As the temperature rises above 65°F outside, occupants inside get increasingly uncomfortable and will typically turn on air conditioning if it is available, so a larger CDD indicates a higher likelihood of increased energy consumption to cool homes and businesses. Some solutions to the effects of CDD discussed in this CAP include the expansion of urban tree canopy, improving building insulation, and the replacement of impermeable ground surfaces with green space in order for residents to feel more comfortable on these days. In East Palo Alto, CDDs are projected to double or triple between present day and 2070. Figure 7.2 shows average CDDs for East Palo Alto relative to other jurisdictions in the County.

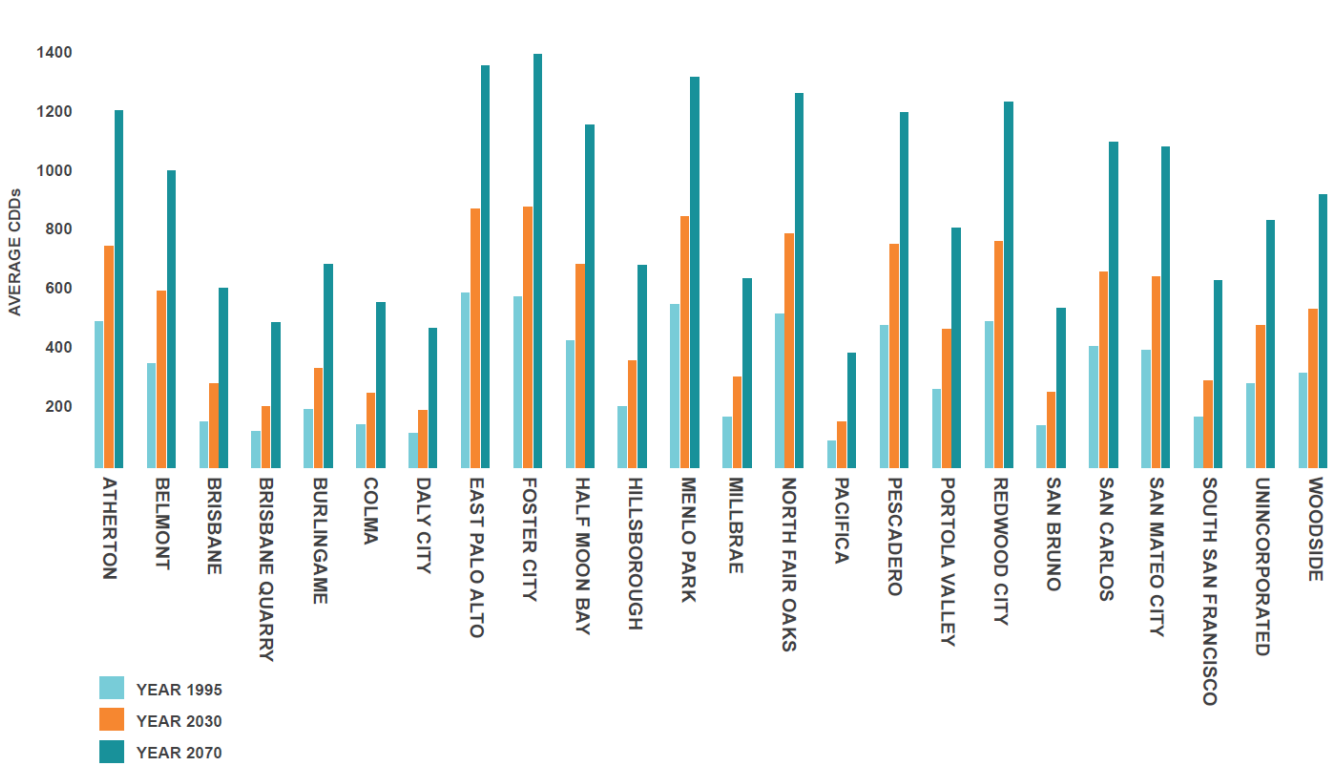
Impact of Heat on People



In a heat wave, the most dangerous places can be the ones where people spend the most time: inside houses and apartments. In poorly insulated buildings, heat can build up and not even dissipate at night. In 2018, a KQED investigation found that bay area homes without air conditioning were as much as 15 to 20 degrees hotter inside than outside overnight.¹³

These risks are compounded for low-income communities. A September 2017 bay area heat wave overwhelmed the protective and social infrastructure in San Francisco, resulting in 6 deaths and 38 hospitalizations. Members of socially vulnerable communities may not be able to afford to cool their work or living spaces or may be forced to choose between air conditioning and paying for basic necessities (e.g., food and rent).

Figure 7.2: Average Cooling Degree Days (CDD) by Jurisdiction



Sea-Level Rise

East Palo Alto is one of the top hotspots for sea-level rise in the nation. Average sea level in the Bay Area has risen 8 inches in the past 100 years, based on the San Francisco tide gauge.¹⁶

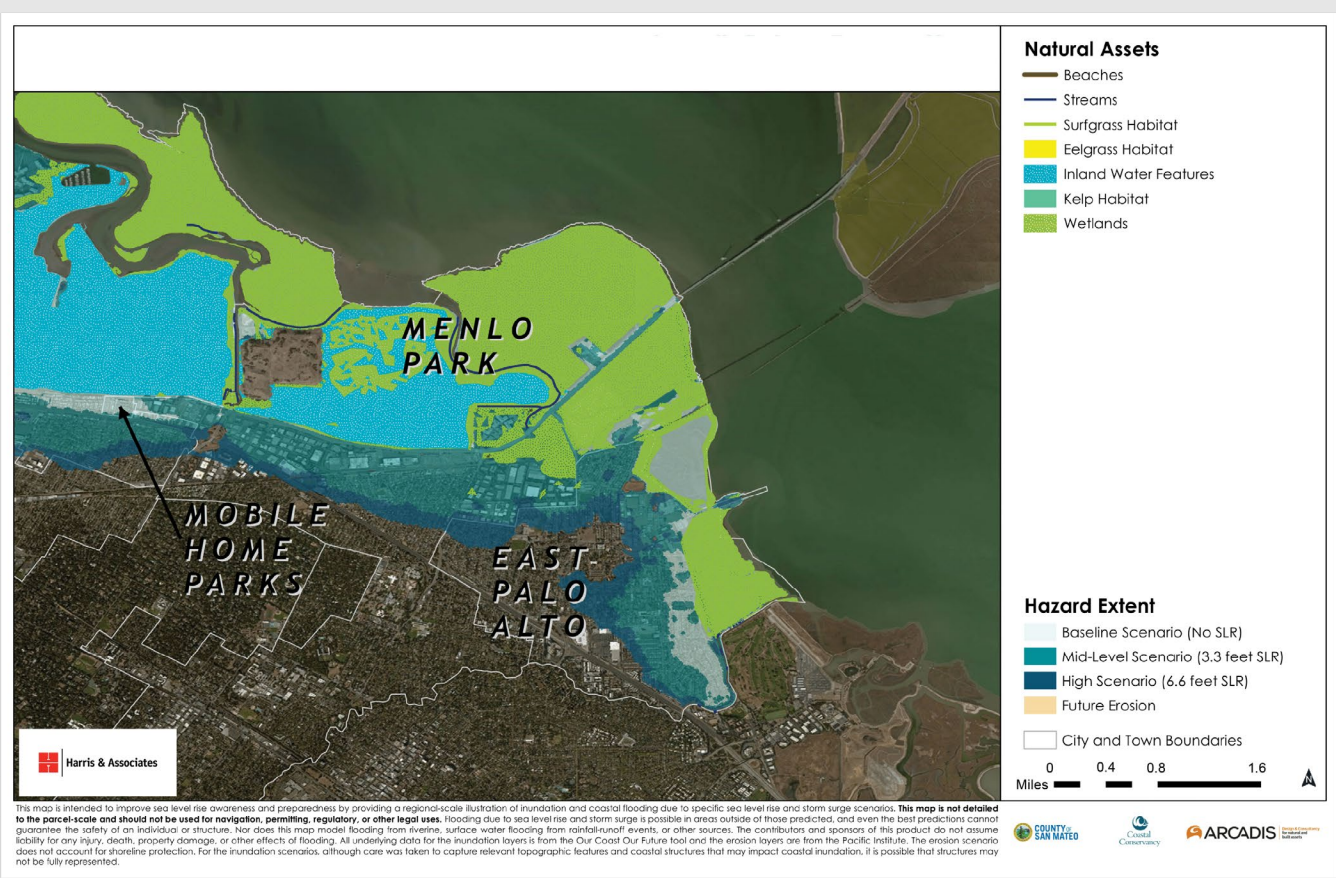
In 2018, the County of San Mateo finalized a *Sea-Level Rise Vulnerability Assessment*¹⁷ for the County in coordination with cities, agencies, businesses, community groups, and others. Sea-level rise impacts include flooding, increased wave action, rising groundwater tables and saltwater intrusion, increased erosion (i.e., landward shoreline retreat), and changes in sediment supply. The Assessment assessed the risk of sea level rise with respect to three scenarios:

1. Baseline Scenario: 0 feet of sea level rise + 1 percent annual chance flood (present-day extreme flood also known as the 100-year flood)
2. Mid-Level Scenario: 3.3 feet of sea level rise + 1 percent annual chance flood
3. High-End Scenario: 6.6 feet of sea level rise + 1 percent annual chance flood

In 2018 the *California Ocean Protection Council (OPC)* released updated *Sea-Level Rise Guidance*, which uses “probabilistic-based”^m projections and lays out an approach for developing adaptation strategies. The OPC recommends using extreme risk projections in planning for larger and more complex infrastructure projects such as roads, wastewater treatment plants, and hazardous waste sites. The extreme risk projections indicate that the City may experience the mid-level scenario (3.3 feet of sea level rise) as early as 2060 and the high-end scenario (6.6 feet of sea level rise) by 2080.

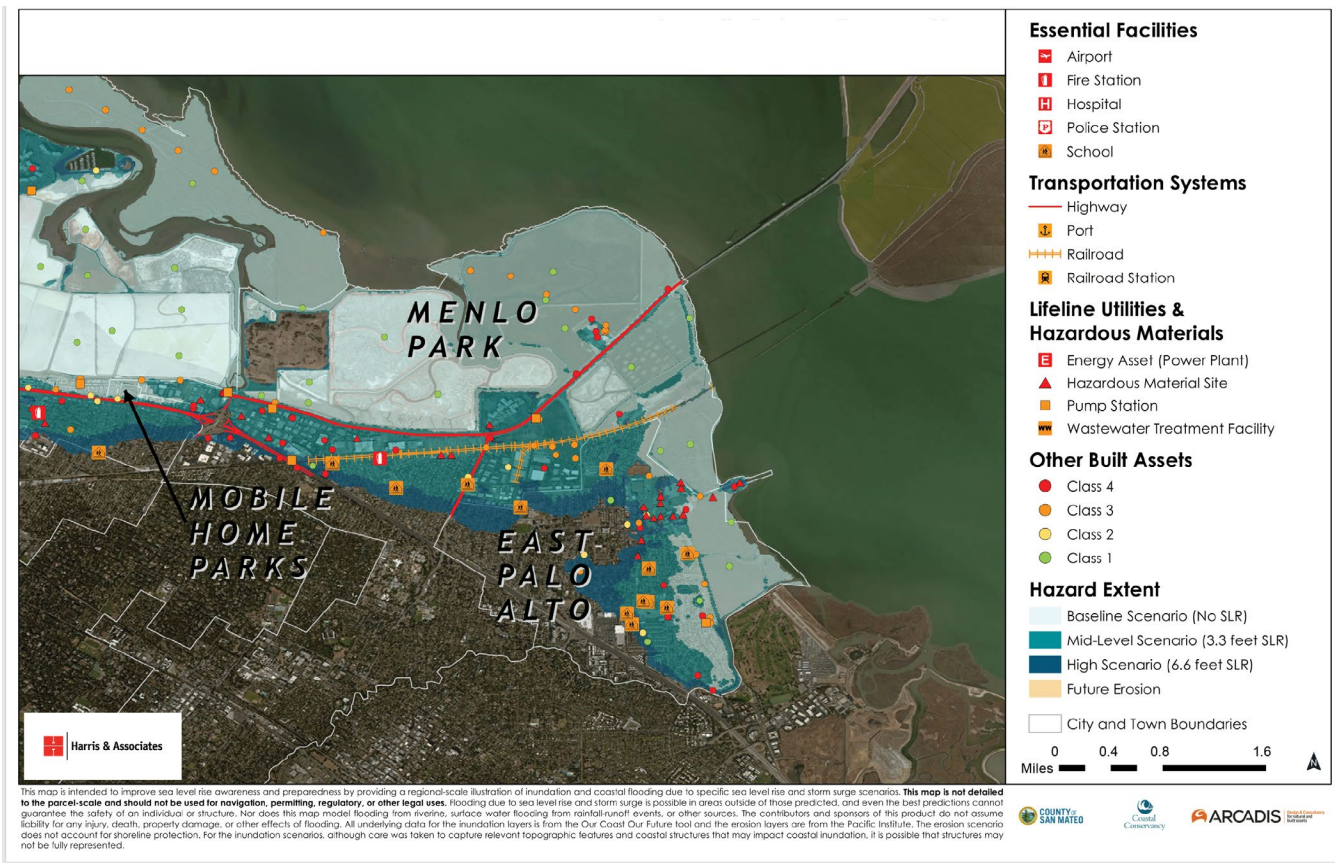
According to the County’s Assessment, the City of East Palo Alto has 335 acres of land at risk in the baseline scenario, 714 acres in the mid-level scenario, and 992 acres in the high-end scenario. Nearly 60 percent of East Palo Alto’s population and almost all of the City’s wetlands are vulnerable to sea level rise under the mid-level scenario, as shown on Figure 7.3. Critical infrastructure and community-serving facilities included energy and water infrastructure, local roadways, schools, emergency shelters, and parks would also be impacted by sea level rise, as shown on Figure 7.3. Notably, neither of these scenarios include storm surges which could create similar scenarios even sooner than with sea level rise alone.

Figure 7.3: East Palo Alto Natural Asset Exposure to Sea Level Rise



Source: County of San Mateo 2018

Figure 7.4: East Palo Alto Critical Infrastructure Exposure to Sea Level Rise



Source: County of San Mateo 2018.

As shown on Figure 7.4, under a mid-level scenario, the following **critical infrastructure** would be exposed to sea level rise:

- 1 electric substation
- 1.4 miles of transmission lines
- 5 water outfalls (many submerged by Bay mud)
- 1 stormwater pump station requiring upgrades
- 4 miles of storm drains (many lack positive hydraulic flow)
- 0.9 miles of natural gas pipeline
- 14.6 miles of road
- 1 underground chemical storage tank

The following facilities would also be impacted under a mid-level scenario:

- 7 emergency shelters
- 6 schools
- 39 hazardous material sites
- 1 outpatient health care facility

Increased Fire Risk

Fire risk is a reflection of accumulation of wood or fuels in a forest combined with changes in the length and frequency of the fire season due to warmer climate, changing precipitation, lower humidity, higher winds, and soil drying from droughts. Fire suppression in the area has increased as fuel reserves have built up in mismanaged forests and woodlands. Though wildfires are unlikely to directly impact East Palo Alto, the City's proximity to dry upland vegetation on the bayside does present a vulnerability to brush fires. There is a non-zero risk of impact to nearby homes and infrastructure, as well as a local air quality. Climate change is expected to increase the frequency, intensity, and duration of wildfire events impacting San Mateo County.

Wildfires are most likely to impact the City of East Palo Alto in two primary ways: 1) mass evacuations may result in an influx of displaced persons after a wildfire event, and 2) city residents may be exposed to unhealthy levels of smoke for days to weeks at a time. Older housing stock may be inadequately sealed, which can reduce the residents' opportunity to seek isolation from the smoke by remaining sheltered in place at home. Between 1995 and 2030, the model projects an increased risk of wildfire in San Mateo County from nine to 13.4 percent. In addition, by 2070, the projected burn area nearly doubles to 25 percent. Simulations of large wildfires using statistical models developed for the Fourth California State Climate Assessment¹⁸ show that the probability of a large fire—which burns more than 1,000 acres—in San Mateo County increases rapidly with a warming climate, with an eight-fold increase in the probability of a large wildfire by 2070. By 2070, the chance that large wildfires or those over 1,000 acres will occur increases to 4 percent per year.

Figure 7.5 shows the areas that are most at risk of wildfire in the future. The “average annual area burned” is the modeled annual mean area burned in hectares for 1970–1979.

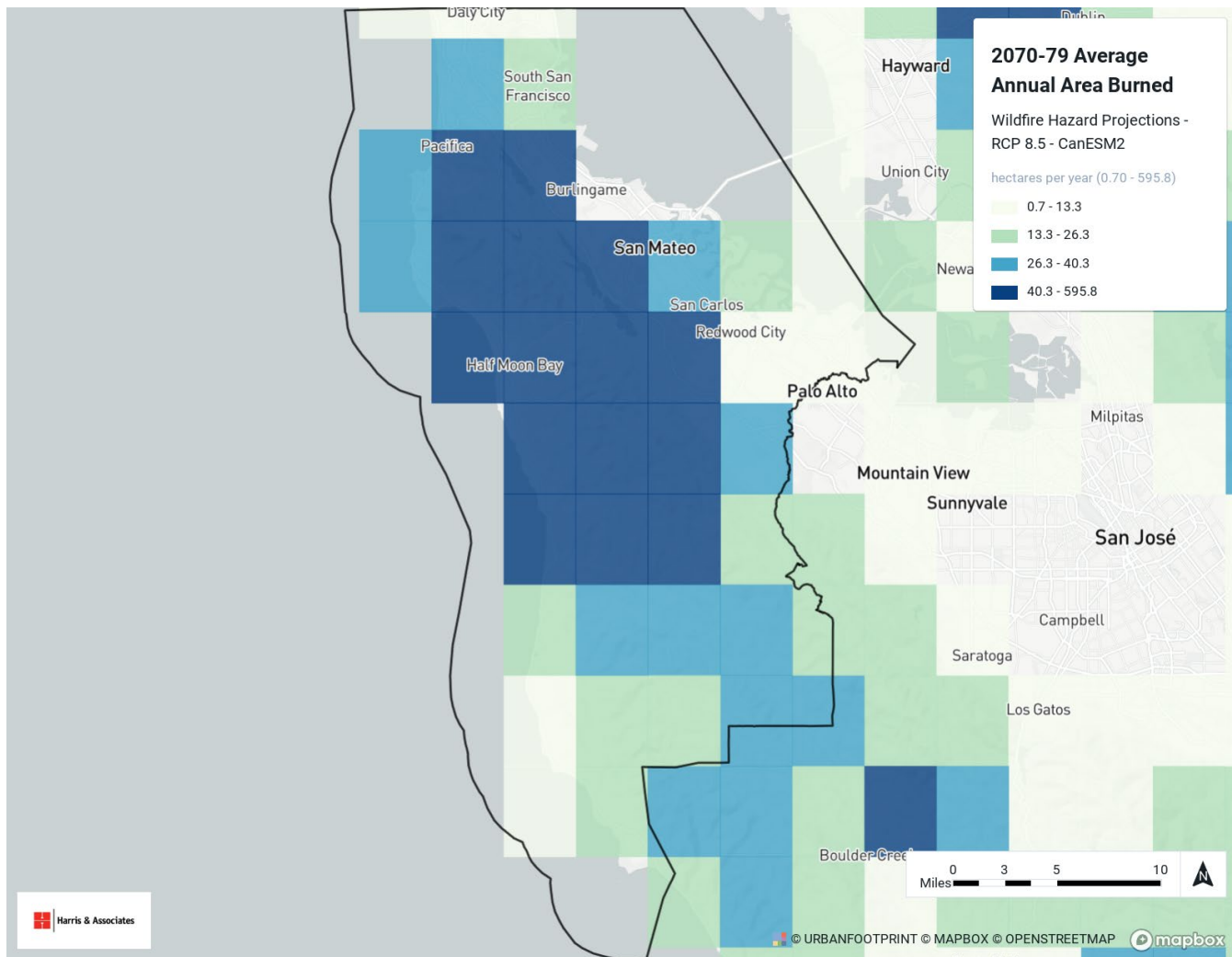
Impact of Wildfires and Poor Air Quality on People



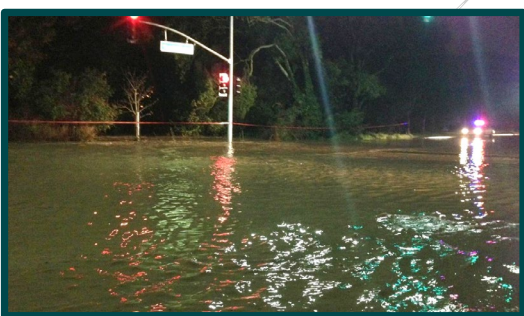
Most Californians are not aware of recent statistics that suggest that California is home to the worst air quality in the nation, with over 90 percent of Californians breathing unhealthy air. According to the California air resources board, unhealthy levels of ozone (smog) and particulate matter annually contribute to 19,000 premature deaths and 9,400 hospital admissions for respiratory and cardiovascular disease in California alone. Wildfires exacerbate the air quality problems, causing temporary large increases in outdoor airborne particles, and substantial increases in gaseous air pollutants such as carbon monoxide.

Socially vulnerable residents may be more affected by wildfires if they have existing health issues, less access to social services and internet, and fewer economic resources to respond.

Figure 7.5: Average Percent Burned Area in San Mateo County



Increased Frequency and Intensity of Storms



The City’s largest winter storms will likely become more intense, and potentially more damaging, in the coming decades. Flooding is a significant threat in the City and is expected to increase as a result of climate change. According to flood modeling that integrates the impacts of sea-level rise and inland flooding throughout the County, a flood with a one percent chance of occurring in 2030 would increase to a two percent chance of occurring under 2070 climate conditions. The higher probability of extreme flooding means that creeks and municipal storm sewers are more likely to be overwhelmed, potentially resulting in damage

to infrastructure and even loss of life. The largest individual storms are becoming more intense with climate change. In addition, more frequent “whiplash” events that swing from extremely dry to extremely wet conditions in California could become the new normal.

In the last century, storms tracked in East Palo Alto have shown a higher incidence of increasingly intense rainfall events, with higher tidal influence, doubly exacerbating flooding impacts as rainwater is restricted from entering the San Francisco Bay or San Francisquito Creek in tidally influenced areas.

New Year's Day 2023

This past winter, several atmospheric rivers entered California, causing flooding in and around the Bay Area.

On New Year's Eve going into New Year's Day, January 1, 2023, East Palo Alto residents experienced 4 inches of rainfall at once. San Francisquito Creek overflowed, and water flooded into adjacent low-income apartments and single-family homes. Power went out or became unreliable, and many residents had to take shelter elsewhere. Several points of failure were later identified along the creek and have been prioritized for construction, improvement, or rehabilitation by SAFER Bay, the joint powers authority that oversees much of the creek maintenance for East Palo Alto, Palo Alto, and Menlo Park. This event underscores the importance of continued preparation for weather and flooding events as the effects of climate change continue to affect East Palo Alto residents.

Decreased Availability and Quality of Water



The 2012–2016 California drought led to the most severe moisture deficits in the last 1,200 years and a 1-in-500-year low in Sierra snowpack. The record low snowpack resulted in \$2.1 billion in economic losses and exacerbated an ongoing trend of ground water overdraft.¹⁹ While the total amount of precipitation in the Bay Area is not projected to change significantly (models project an additional 2 to 5 inches), the amount and timing of water available as drinking water may change. The City of East Palo Alto receives approximately 90 percent of local drinking water from the Hetch

Hetchy water system, operated by the San Francisco Public Utilities Commission (SFPUC). The Hetch Hetchy system is located in the Sierra Nevada mountain range. Under a high emissions scenario, average Sierra Nevada snowpack is projected to decline by nearly 20 percent in the next two to three decades, 30 percent to 60 percent in mid-century and by over 80 percent in late century.²⁰ At the time of this document preparation, California and the Southwestern United States is in the middle of a 22-year drought, with a 75 percent chance of the drought extending another eight years. A study has recently determined that the extended drought has a 42 percent chance to have been exacerbated by human activities such as global warming emissions.²¹

Rising bay water and groundwater levels will also increase salinity intrusion and subsurface flooding inland. Climate change will require improved storm water management in the Bay Area as extreme storm events increase in size and frequency.

In East Palo Alto, the City has one active emergency well at Gloria and Bay Rd, and a second emergency well expected to be onboard in 2023 at "Pad D" located at the corner of Clarke and E Bayshore Road. Sea Level Rise has a high potential of saltwater intrusion into the local aquifer, known as the San Francisquito Subbasin, due to the proximity to tidally influenced areas.

The O'Connor Tract Mutual Water Company is located on the central-west portion of the City of East Palo Alto. Only a portion of the service territory is located within city limits. The remaining portion is in Menlo Park. The O'Connor Tract consists of approximately 340 connections, of which many are for multifamily residences. About 35 of these connections are metered. This drinking water is pumped from the groundwater aquifer and is not regulated by the City of East Palo Alto.

The Palo Alto Park Mutual Water Company is located on the central-west portion of the City of East Palo Alto. The Palo Alto Mutual Water Company consists of approximately 677 unmetered residential connections, 20 unmetered commercial connections, and two metered residential connections. This drinking water is pumped from the groundwater aquifer and is not regulated by the City of East Palo Alto.

As climate changes and drought becomes more prevalent the primary reliance on Hetch Hetchy will become more restricted, with ever-increasing calls for conservation as the greater Bay Area relies on this vital resource as a continued reliable drinking source. With increased restrictions on the Hetch Hetchy system, increased pressures to supplement drinking water with groundwater resources will become more commonplace. Due to conflicts with potential saltwater intrusion into the groundwater aquifer, the City must support increased recharge of the groundwater aquifer by partners such as the City of Palo Alto, Santa Clara Valley Water District, West Bay Sanitary District, South Bayside Waste Management Authority, and San Mateo County to ensure the system continues in equilibrium, without subsidence pressures. Increased subsidence pressure will increase the likelihood of salt-water intrusion into the system.

The City will address ongoing water needs through the City's Urban Water Management Plan (UWMP) to address changing conditions related to water sources, water availability, water demands, and water reliability for the next 20 years, and to update its UWMP every five years. During drought years, the City will rely on the Water Shortage Contingency Plan (WSCP) which outlines the City's drought response and plan for changes or shortages in water supplies. These documents were most recently updated and adopted in June 15, 2021.

Decreased Fog



Coastal fog, critical to the City and region's climate, has decreased as much as 33 percent in some areas over the past 60 years.²² Across the state of California, fog is expected to decline by an additional 12–20 percent by 2070.²³ In addition to being affected by changes in local and global atmospheric patterns due to climate change, fog is reduced in urban areas due to urban land use and pollution. Warmer nighttime temperatures, as a result of impervious surfaces and the urban heat island effect, can reduce fog, highlighting the importance of land use policies and urban tree canopies in maintaining fog cover, and thus lowering temperatures. Plants and wildlife depend on fog and redwood forests obtain as much as a third of their water from fog.

Increased Impact on Energy Systems



The Bay Area electrical grid, on which the City relies, is vulnerable to power outages during wind and wildfire events such as Public Safety Power Shutoffs (PSPS) – planned power outages to prevent occurrences of electrical equipment starting wildfires.²⁴ Many of our natural gas pipelines are located along waterways and will be impacted by flooding from sea-level rise and extreme storm events. California's transportation fuel sector, which distributes oil from refineries to end users, will be increasingly exposed to extreme weather events such as flooding and wildfire.



Financial Impact of Climate Change

As climate-related natural disasters become more frequent and intense, costs for disaster response and relief are anticipated to increase. With flooding, storms, droughts, wildfires, and other climate-related natural disasters becoming more common, flood insurance and flood prevention costs will grow.²⁵

Working with the San Mateo County Health System

The San Mateo County Health System, in accordance with the Centers for Disease Control, serves a number of functions to reduce health risks related to climate change. These include informing cities about the risk to public health from climate change, creating tools that support decision-making and capacity building related to mitigating adverse health outcomes from climate change, and serving as a credible leader in planning for the public health impacts of climate change. East Palo Alto intends to work with the San Mateo County Health System to mitigate public health dangers and maintain or improve long-term health by encouraging residents and workers to be part of the solution.

Research shows that individuals who live in mixed-use and walkable communities have a 35 percent lower risk of obesity.²⁶ Another study estimates that the walking associated with transit use saves an individual \$5,500 over the course of their life by reducing obesity-related medical costs.²⁷ East Palo Alto and the San Mateo County Health System will support programs that promote more walkable and bikeable cities, which not only promote healthier lifestyles, but also decrease reliance on vehicles that contribute to climate change.



Climate change is anticipated to impact public buildings, storm water infrastructure, transportation infrastructure, community services, and land-use planning and development. Climate damage to homes and businesses could negatively impact the economy and reduce East Palo Alto's income from property and sales taxes, not to mention damage the quality of life for all community members.

If East Palo Alto allocates resources and invests in climate-protecting strategies now, it will be insurance against some of the most costly effects of a hotter planet in the future.

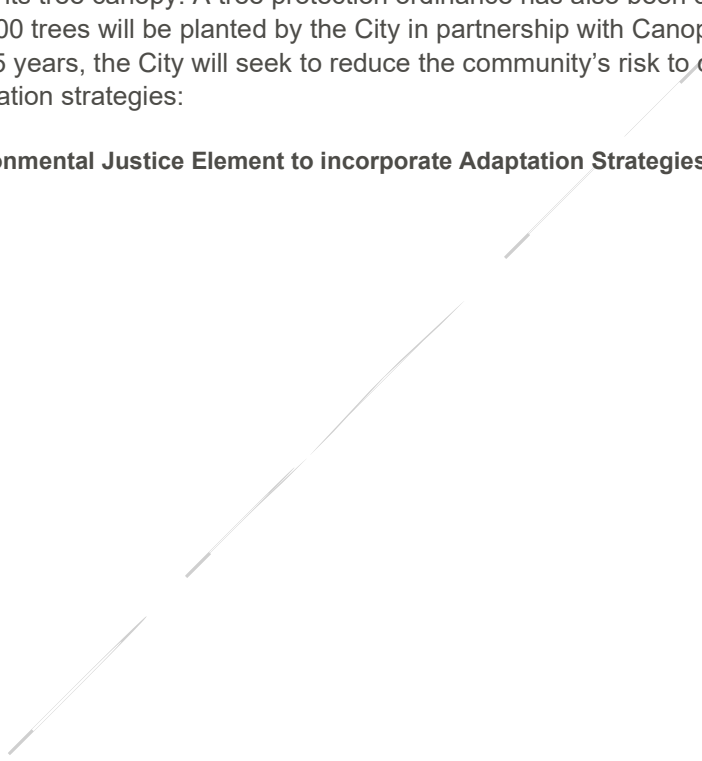
Adaptation Strategies

As noted earlier in *Chapter 7, Impacts of Climate Change and Climate Adaptation*, the climate is changing rapidly. In 2019, the average temperature across global land and ocean surfaces was 1.71°F (0.95°C) above the 20th century average. This was the second highest among all years in the 1880–2019 record and just 0.07°F (0.04°C) less than the record value set in 2016. The five warmest years have occurred since 2015; nine of the 10 warmest years have occurred since 2005.²⁸

Even if we stopped emitting greenhouse gasses tomorrow, the climate would continue to change due to the length of the carbon cycle — the ability of the Earth to absorb excess carbon in the ocean and plants. Therefore, climate change is inevitable, and our communities must adapt.

Adaptation planning is most effective at the local level. The City of East Palo Alto intends to prioritize adaptation planning over the next five years. Already, the City has recognized the threat of extreme heat on its residents and has begun to prepare for the increased intensity and frequency of heat by developing an Urban Forest Master Plan to manage and expand its tree canopy. A tree protection ordinance has also been developed to achieve target canopy cover rates. 100 trees will be planted by the City in partnership with Canopy, a local nonprofit organization. Over the next 5 years, the City will seek to reduce the community’s risk to climate change by pursuing the following adaptation strategies:

Table 7.1: AJ-1 Update Environmental Justice Element to incorporate Adaptation Strategies.



| Action | Implementation Considerations | Time-frame | Lead | Community Partner |
|---|--|------------|-----------------------------------|---|
| Consider updating the General Plan Safety and Health & Equity Elements and zoning codes based on California Ocean Protection Council (OPC) sea level rise projections and incorporate known climate change risks to East Palo Alto, along with adaptation strategies the City will implement to support community members in the event of an anticipated climate change hazard. | The OPC recommends using mid-high risk projections in planning for larger and more complex infrastructure projects such as roads, wastewater treatment plants, and hazardous waste sites. The extreme risk projections indicate that the City may experience the mid-level scenario (3.3 feet of sea level rise) as early as 2060 and the high-end scenario by 2080. Alternative evacuation and/or shelter sites may be required in areas not subject to inundations; due to the substantial risks present in East Palo Alto, and facilities that are potentially impacted, this may require support from outside agencies, such as the One Shoreline (San Mateo County Flood and Sea Level Rise Resiliency District). More details noted * below. | 2025 | Public Works | One Shoreline, Developers, San Mateo County |
| Recommend the City adopts a resolution declaring a climate emergency in East Palo Alto to highlight the increasingly urgent need for action to address the climate crisis. | Over 1,000 national, international, and local jurisdictions have prepared similar declarations. The resolution can be prepared to call for a City climate action plan (CAPs) for government operations to achieve carbon neutrality in advance of the soft Citywide target of 2045 and expand coordination with local partners in addressing the climate crisis. This can include direction to City Staff to develop a more extensive environmentally preferable purchasing policy to align with the proposed goals to be established by the City Council, along with an outreach campaign to bring awareness to the community. | 2023 | Environmental Programs | |
| Provide outreach through the City Manager Office, the City's website, and other communication channels about how the City is preparing for climate change and ways the community can get involved in reducing emissions and personally preparing for the impacts of climate change. | The City will also conduct outreach through these communication channels during the implementation process so community members may provide ongoing feedback. | 2023 | City Hall, Environmental Programs | |

| | | | | |
|--|---|-------------|--|--|
| <p>Update the City's local Hazard Mitigation Plan to incorporate climate change and adaptation strategies strengthening the City's response to climate emergency preparedness detailing discrete projects such as microgrid facilities, upgrades at critical emergency response and government facilities, and to prepare facilities with appropriate equipment required to provide support to residents in jeopardy under climate change related hazards.</p> | <p>Such climate emergencies may include floods, extreme heat, low water pressure/ SFPUC system collapse, smoke from fires and utility failures/damage. More details noted ** below.</p> | <p>2025</p> | | |
| <p>Continue to implement Urban Forest Master Plan and consider amendments that increase tree coverage on an earlier timeframe as funding sources allow.</p> | <p>To reduce urban heat, prioritize disadvantaged neighborhoods, expand the urban forest to the maximum extent feasible, restore native trees where possible, and reduce impervious surfaces to provide for rainfall absorption and reduced runoff and shading areas where active transportation can be safely utilized, to reach the City Council adopted 100-year goal of 30% tree cover.</p> | <p>2023</p> | | |
| <p>Implement the updated Tree Protection Ordinance to retain existing and expanded trees.</p> | <p>Consider expanded community outreach strategies to reduce the incidence of unnecessary tree removal including those identified in the updated ordinance, and more specifically implement a robust community information program and enhanced educational materials to ensure that community members are aware of the protections in place and the penalties for unpermitted removal of a protected tree.</p> | <p>2022</p> | | |
| <p>Implement the Green Infrastructure Plan (adopted by Resolution 82-2020),</p> | <p>Update Parks Master Plan and specific park master plans with stormwater detention opportunities, along with all new development projects to reduce impervious surfaces throughout the community and providing shading in areas where active transportation can be safely accessed, while improving riparian habitat along San Francisquito Creek and the Bay Trail to expand resilience to sea level rise.</p> | <p>2023</p> | | |

| | | | | |
|--|--|------|--|----------------------------------|
| <p>The Safer Bay project, in conjunction with San Francisquito Creek Joint Powers Authority, through set policy, consider prioritizing the design and installation of a horizontal levee, as feasible.</p> | | TBD | Public Works | OneShoreline |
| <p>Develop climate resilient infrastructure</p> | <p>Upgrade existing infrastructure to meet anticipated and current San Francisco Bay and San Francisquito Creek water intrusion. This includes updating storm drain outfalls to exclude water intrusion into the public storm drain systems, and working with private property owners, Caltrans, BCDC, and other jurisdictions to update outfalls currently on properties where the City does not have land use authority. Develop maintenance easements for such sites.</p> | 2024 | Public Works, CEDD | |
| <p>Prioritize expansion of and access to the Bay trail and installation of trails along other public properties</p> | <p>The City will continue to increase pedestrian access along eastern portions of the Bay Trail and develop linear parks along San Francisquito Creek, as well as improve access to restrooms and water bottle refill stations where feasible. This will improve public access to active transportation and enhance the resilience capacity of these waterways and baylands (i.e., blue carbon storage).</p> | 2024 | Public Works and Transportation Dept. , Community Services | MidPeninsula Open Space Preserve |

| | | | | |
|---|--|-------------|-------------------------------|--|
| <p>Develop or adopt waste reduction ordinances to reduce emissions through transportation of waste and waste byproducts.</p> | <p>a. Reduce plastic single use packaging including polystyrene ban for take-out foods at restaurants, such as adoption of a Disposable Food Service Ware Ordinance consistent with the <u>San Mateo County Ordinance No. 4860</u> to align with State laws.</p> <p>b. Consider the reduction of trash bin size and larger organic/compost and recycling bins to accommodate higher diversion rates from the landfill to align with State laws while maximizing capture of emission byproducts.</p> <p>c. Expand local community access to hazardous waste disposal options including increased drop-off events within the jurisdiction of East Palo Alto to reduce the incidence of illegal dumping of toxic substances and related emissions.</p> <p>D. Consider Move-in move-out solid waste drop-off vouchers in-lieu of bulky waste drop-off to reduce the incidence of illegal dumping due to housing transitions.</p> | <p>2024</p> | <p>Environmental Programs</p> | |
| <p>Partner with local non-profit entities and public agencies to expand and develop projects and programs geared at enhancing local use of organic compost from post-consumer content, including local gardening programs with educational components about full-system cycling and locally grown food.</p> | | <p>2024</p> | <p>Environmental Programs</p> | <p>ReThink Waste, Recology, Fresh Approach</p> |

| | | | | |
|---|---|------|---------------------------------------|---|
| Partner with local organizations to remove impervious surfaces on private property. | Support the installation of pervious driveways and walkways that drain to landscaping, install cisterns, and raised garden beds. Expand urban agriculture, tree, and native plant installations to expand the availability of stormwater absorption and/or capture with a goal of 40% of the City's geography being pervious by 2050, in alignment with the Urban Forest Master Plan. | 2024 | | |
| Partner with local organizations to expand the community's access to indoor and outdoor air quality monitoring | Encourage education to interpret and reduce local air quality impacts and support the replacement of indoor sources of poor air quality such as gas appliances and installation of air purifiers and weather stripping. | 2022 | Environmental Programs | Climate Resilient Communities, Sustainable Silicon Valley |
| Expand drought resilience. | Within the City's drinking water system, expand local water storage, encourage the use of residential emergency water storage, expanded conservation strategies that implement Phase II of the City's Water Shortage Contingency Plan as a standard practice. | 2022 | Public Works | |
| Consider resiliency strategies such as expansion of local wetlands and geographic land to buffer the community from rising San Francisco Bay water. | Consider potential sites for horizontal levees, wetland expansion, and recreational amenities that will maximize to feasible extents the availability of blue carbon action and land absorbency. More details noted *** below. | TBD | Public Works | |
| Develop plans for responding to the likelihood of sea water intrusion into local water wells | Develop exclusion practices to eliminate contamination of emergency water resources as increased sea level rise results in saltwater intrusion into groundwater aquifers; support programs that enable testing of local residential wells to address the potential for salt-water intrusion and potential suspension of currently encapsulated contaminants. | TBD | Public Works and Transportation Dept. | OneShoreline |

Note *:

*a. The California Ocean Protection Council (OPC) is a State council that was created pursuant to California Ocean Protection Act (COPA) in 2004. The mission of the OPC is to maintain healthy, resilient, and productive ocean and coastal ecosystems for the benefit of current and future generations. In addition, they provide guidance to decision makers in planning for resilient infrastructure as sea level rises in California.

*b. Include the critical infrastructure along with plans for microgrids for critical emergency response and government facilities.

- 1 electric substation
- 1.4 miles of transmission lines
- 5 water outfalls (many submerged by Bay mud)
- 1 stormwater pump station requiring upgrades
- 4 miles of storm drains (many lack positive hydraulic flow)
- 0.9 miles of natural gas pipeline
- 14.6 miles of road
- 1 underground chemical storage tank

*c. The following facilities would also be impacted under a mid-level scenario:

- 7 emergency shelters,
- 6 schools
- 39 hazardous material sites
- 1 outpatient health care facility

Note **:

**a. Update the O'Connor Pump Station to accommodate Ocean Protection Council sea level rise projections, utilizing high efficiency pumps with low GHG emissions and/or expansion of the electric pumps.

**b. Consider working jointly with San Mateo County and One Shoreline to establish zoning and design strategies for waterfront properties along the East Palo Alto and San Mateo County shoreline to maximize building and infrastructure resilience and reduce the climate change impact on buildings, in coordination with BCDC to support countywide standards and consideration of adoption of zoning similar to Burlingame's Zoning Ordinance "25.12.050 – Public Access, Flood and Sea Level Rise Performance Guidelines" to set minimal best management practices as a comprehensive approach is developed; see . https://www.burlingame.org/document_center/Planning/25.12.050%20-%20Adopted.pdf

**c. Consider that the Ravenswood Specific Plan Update integrates best practices into development opportunities via mandatory policy and funding to enhance the coastal ecosystem and build nature-based features such as:

1. Expansion of Green Infrastructure along all new and existing roadways (where not presently included).
2. Consider creating buffer zones with transition zone appropriate habitat between new development and the San Francisco Bay to detain stormwater and suppress peak flooding with co-benefits that encourage active transportation.

Note ***: Blue Carbon

The City will refer to the following integrated set of policies and tools as it continues to develop adaptation strategies that effectively prepare residents for the impacts of climate change:

- California Adaptation Planning Guide from the California Office of Emergency Services (still in draft form: <https://www.caloes.ca.gov/HazardMitigationSite/Documents/APG2-FINAL-PR-DRAFTAccessible.pdf>)
- Safeguarding California Plan: California's Climate Adaptation Strategy (2018 Update)

- Cal-Adapt 2.0 (released October 2017 and updated regularly, most recently in January 2020)
- California’s Climate Change Assessment (most recently updated in 2018)
- State of California General Plan Guidelines (updated periodically, most recently updated in 2017)
- Adaptation Clearinghouse
- State Hazard Mitigation (2018 Update)

In addition, the County of San Mateo has embarked on a multi-sector adaptation strategy, Climate Ready San Mateo County, to plan, assess, and implement strategies to address sea-level rise and flooding, changes in precipitation, extreme heat, and wildfires in San Mateo County.²⁹ East Palo Alto plans to coordinate closely with the County on adaptation planning efforts.

8. Environmental Justice



8

ENVIRONMENTAL JUSTICE

Environmental Justice and Equity

California law defines “Environmental Justice” as the fair treatment of people of all races, incomes, and ethnicities with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies (California Government Code, Section 65040.12[e]). In California, environmental justice includes, but is not limited to, the availability of a healthy environment for all people and the reduction of pollution burdens for populations that are disproportionately experiencing the adverse effects of that pollution (California Government Code, Section 65040.12[e]).

The same inequitable systems (economic, transportation, land use, etc.) that result in higher greenhouse gas emissions (which contribute to climate change) simultaneously contribute to poor health outcomes and health disparities. Low-income communities and communities of color are more likely to live in polluted areas and face climate change impacts that exacerbate existing vulnerabilities (OEHHA 2010). Most East Palo Alto residents are members of a historically disadvantaged community. Recognizing these inequities, the City of East Palo Alto seeks to strategically direct investments in improving living conditions for communities that experience disproportionate health impacts due to environmental conditions.

In 2016, the State of California passed Senate Bill 1000 (SB 1000)—the Planning for Healthy Communities Act—requiring cities and counties to address environmental justice in their general plans. Cities and counties may choose to adopt a separate stand-alone environmental justice element (EJ Element) or address environmental justice throughout other elements of the General Plan. The purpose is to develop objectives and policies to minimize pollution and its effects on all communities and to ensure residents are provided the opportunity to provide input on decisions that affect their quality of life. In 2016, the City of East Palo Alto updated its General Plan to fulfill the requirements of SB 1000 by adding a Health and Equity Element. This chapter of the Climate Action Plan seeks to provide a gap analysis of the Existing Conditions Assessment of the General Plan with respect to environmental justice topic areas, and provide supplemental strategies and policies aimed at reducing GHG emissions and promoting environmental justice.

The City of East Palo Alto seeks to 1) understand existing conditions with respect to environmental justice topic areas, 2) develop effective policies and strategies that reduce pollution burden for residents, improve public health outcomes, and promote environmental justice. In addition, the Climate Action Plan aims to prepare and protect East Palo Alto residents, prioritize nature-based solutions where possible, and promote community resilience.

Environmental Justice Existing Conditions Assessment

Gap Analysis

In June 2020, the Governor’s Office of Planning and Research (OPR) released updated guidelines (OPR’s EJ Element Guidelines) for the preparation of EJ elements in compliance with SB 1000. The OPR EJ Element Guidelines recommend that local agencies prepare an existing conditions assessment to understand unique or compounded health risks experienced by the community by analyzing the community’s access to environmental justice topics, listed in Table 8.1 (OPR 2020). In the City’s 2016 General Plan update, the City assessed existing conditions with respect to several environmental justice topics throughout several elements, as listed in Table 8.1.

Table 8.1: Existing Conditions EJ Gap Analysis

| Environmental Justice Topic | General Plan Element |
|--|---|
| Access to clean air and water (i.e. pollution exposure) | n/a ⁿ |
| Access to public facilities and services | Infrastructure, Services and Facilities |
| Access to transit | Transportation |
| Access to active transportation | Transportation |
| Access to health care | Health and Equity |
| Access to parks | Parks, Open Space and Conservation |
| Access to healthy locally sourced food | Health and Equity |
| Access to safe and sanitary homes | n/a ^o |
| Access to physical activity and recreational opportunity | Parks, Open Space and Conservation |

As shown in Table 8.1, General Plan does not provide an existing conditions assessment with respect to pollution exposure (access to clean air and water) or housing quality (access to safe and sanitary homes). Pollution exposure is not only a central environmental justice topic, but also highly relevant to the discussion of climate action, as policies aimed at reducing greenhouse gas emissions often have the co-benefit of reducing air and water pollution. Similarly, housing quality is central to the discussion of climate action, because adequate and reliable housing protects residents from air pollution, heat, inclement weather, and reduces the risk of fire/particulate matter by removing the need for unhoused residents to build fires for cooking and warming. Residents that do not have their basic needs met are less likely to pursue strategies that reduce greenhouse gas emissions. Moreover, housing improvements can include those that make residences more energy efficient.

This Environmental Justice Existing Conditions Assessment seeks to fill the gaps of the General Plan's existing conditions assessments by providing an analysis of pollution exposure and housing quality consistent with OPR's EJ Element Guidance. In addition, the City has conducted a supplementary analysis on economic justice, that while is not required by SB 1000, is relevant to the community of East Palo Alto.

Disadvantaged Communities

Per OPR EJ Element Guidance, the first step in preparing an Existing Conditions assessment is to screen for, identify, and characterize disadvantaged communities. The State of California defines "disadvantaged communities" as low-income areas that are disproportionately affected by environmental pollution and other hazards that can lead to negative health effects, exposure, or environmental degradation (California Government Code, Section 65302[h][4][A]). To identify disadvantaged communities within a city or county, the OPR recommends that cities utilize the computer mapping tool CalEnviroScreen.

CalEnviroScreen

CalEnviroScreen is a computer-mapping tool published by the Office of Environmental Health Hazard Assessment (OEHHA) that identifies communities that are most affected by pollution and are especially vulnerable to its adverse effects (OPR 2020). CalEnviroScreen uses several factors, called "indicators," to determine whether a community is disadvantaged and disproportionately affected by pollution. These indicators

ⁿ The Health and Equity Element includes goals and policies to reduce pollution exposure, but the existing conditions analysis does not identify areas with heightened exposure to air and water pollution. Additionally, The Infrastructure, Services and Facilities Element of the City's General Plan includes an existing conditions assessment of potable water quality and supply, but the following analysis supplements the existing assessment using indicators recommended by OPR's EJ Element Guidance.

^o The Health and Equity Element includes discussion of affordable housing, but not quality of housing.

fall into two main categories labeled “pollution burden” and “population characteristics.” Pollution burden indicators include exposure indicators that measure different types of pollution that residents may be exposed to, and the proximity of environmental hazards to a community. Population characteristics represent characteristics of the community that can make them more susceptible to environmental hazards (such as poverty, low educational attainment, and linguistic isolation). These main categories can be separated into four distinct sub-categories: 1) Exposure, 2) Environmental Effect, 3) Sensitive Population, and 4) Socioeconomic Factor. A summary of the CalEnviroScreen indicators and how they relate to environmental justice is outlined in Table 8.2.

Table 8.2: CalEnviroScreen Categories and Indicators

| Category | Rationale | Sub-Category | Indicator |
|-----------------------------------|--|----------------------|--|
| Pollution Burden | Exposure to hazardous substances can cause and/or worsen certain health conditions. | Exposure | Ozone concentrations in air |
| | | | PM 2.5 concentrations in air |
| | | | Diesel particulate matter emissions |
| | | | Drinking water contaminants |
| | | | Use of high-hazard, high-volatility pesticides |
| | | | Toxic releases from facilities |
| | | Environmental Effect | Traffic density |
| | | | Toxic cleanup sites |
| | | | Groundwater threats from leaking underground storage |
| | | | Hazardous waste facilities and generators |
| Population Characteristics | People with lower income levels, educational attainment, and fluency in English tend to live in areas that are more affected by air pollution and other environmental toxins. In addition, certain health conditions may be caused or worsened by toxins in the environment. | Sensitive Population | Asthma emergency department visits |
| | | | Cardiovascular disease (emergency department visits for heart attacks) |
| | | | Low birth-weight infants |
| | | Socioeconomic Factor | Educational attainment |
| | | | Housing burdened low-income households |
| | | | Linguistic Isolation |
| | | | Poverty |
| | | | Unemployment |

Source: CalEPA 2017.

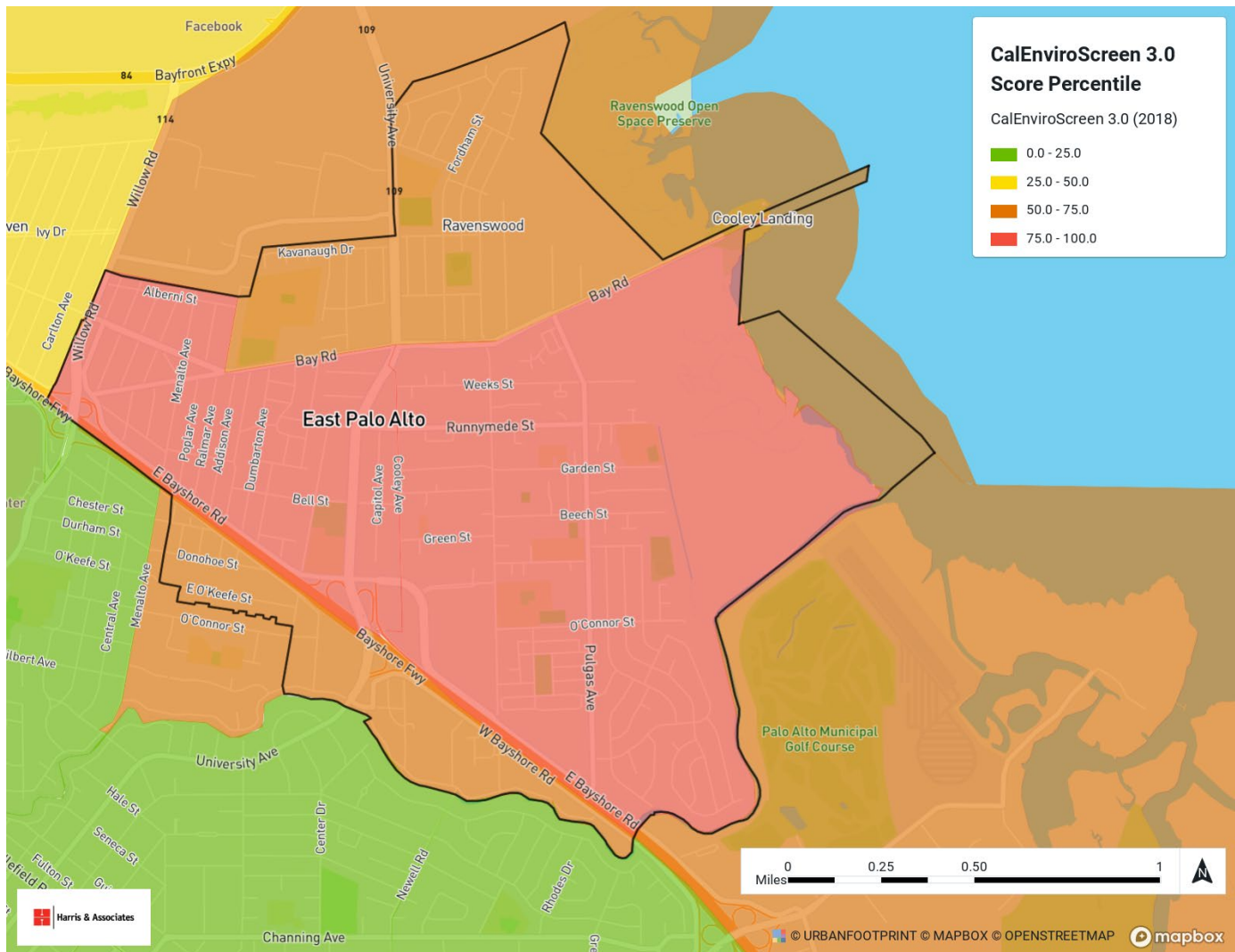
CalEnviroScreen uses a weighted scoring system to derive average pollution burden and population scores for each census tract, and arrives at the final CalEnviroScreen score by multiplying the pollution burden and population characteristics components together.^P CalEnviroScreen converts indicator scores to percentiles that provide an indication of how the census tract compares with other areas throughout the state. In general, the

^P The CalEnviroScreen website can be found at <https://oehha.ca.gov/calenviroscreen>.

higher the score or percentile, the more impacted a community is compared to other areas of the state. For example, a 75th percentile score means that the census tract is higher (more burdened) than 75 percent of other census tracts in California. Census tracts in the highest quartile of scores (75 to 100) are considered to be disadvantaged communities, per California law (SB 1000).

As shown on Figure 8.1, two census tracts in the City of East Palo Alto exceed the 75th percentile and, therefore, are considered to be disadvantaged communities. The average percentile score for the City is 75.

Figure 8.1: CalEnviroScreen Scores for City of East Palo Alto



Pollution Exposure

Pollutants can be found in the environment in which people live, work, and recreate. Disadvantaged communities, by definition, can often face disproportionate exposure to pollutants. To minimize the potential impact of pollution exposure in the community, the City seeks to 1) identify areas within the City that experience greater exposure to pollution and 2) understand the factors and conditions that contribute to heightened exposure in disadvantaged areas.

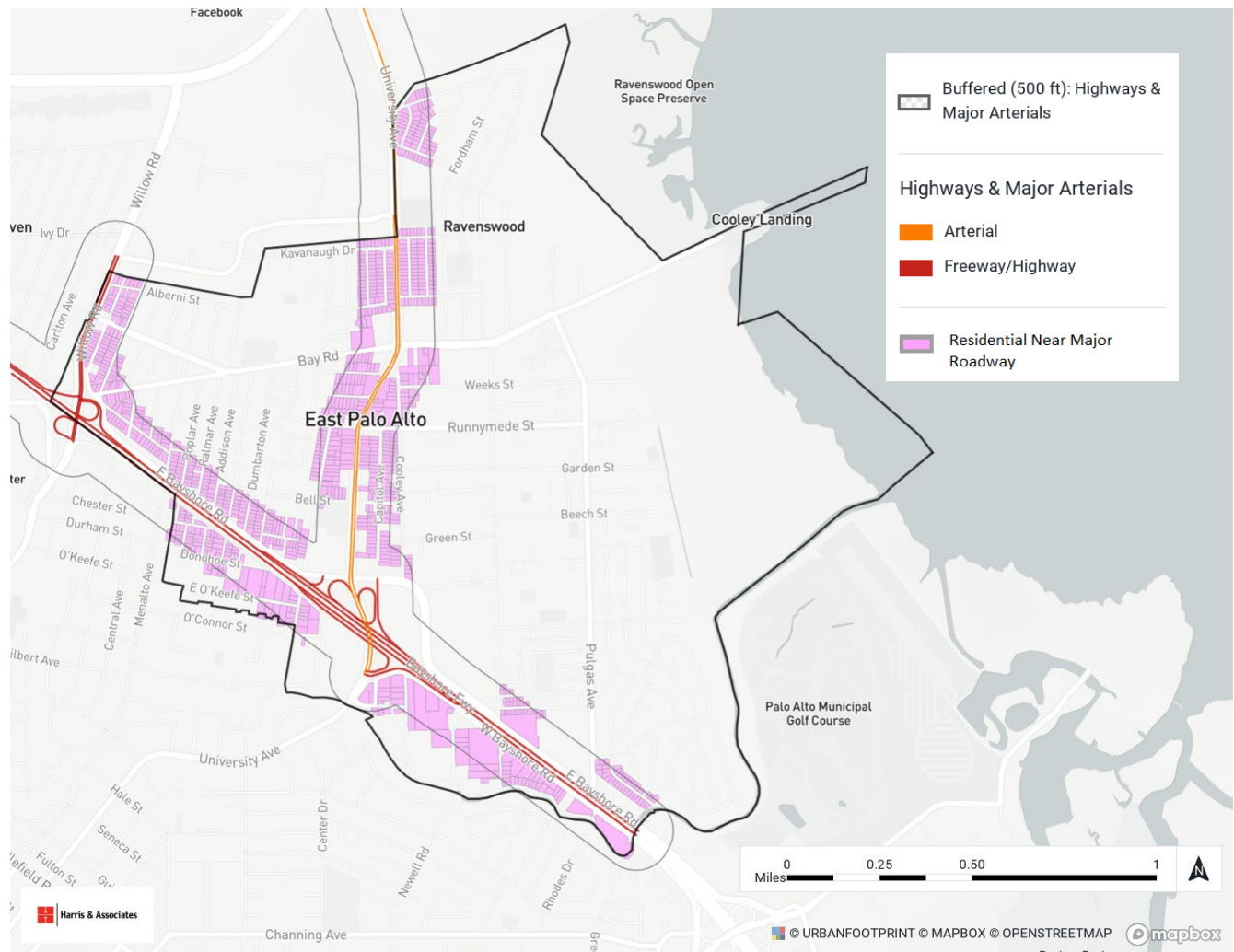
Air Quality

The City of East Palo Alto is located in the Bay Area Air Quality Management District (BAAQMD) within the San Francisco Bay Area Air Basin. Federal and state ambient air quality standards have been set to protect public health and the climate. “Attainment” status for a pollutant means that the BAAQMD meets the standard set by the U.S. Environmental Protection Agency (federal) or California Environmental Protection Agency (state). The San Francisco Bay Area Air Basin is not in attainment for 1-hour or 8-hour ozone, PM₁₀, or PM_{2.5} ambient air quality standards (BAAQMD 2020). High concentration of PM_{2.5} can cause various health effects such as respiratory issues and cardiovascular issues. More information on air quality in the region can be found in the 2017 Bay Area Clean Air Plan (BAAQMD 2017). Although air quality is generally regarded as a regional issue, there are also local contributors to air pollution in and near the City of East Palo Alto. Proximity to high-volume roadways, hazardous waste sites, and industrial/agricultural land use types and other high-emission sources can result in adverse health impacts. The City of East Palo Alto is geographically positioned to encounter the worst of this pollution because it sits along one of the main corridors for traffic to get from the east bay to Silicon Valley and back. As a result, residents of East Palo Alto are subjected to adverse air quality due to proximity to polluting activities and are more likely to have underlying medical conditions that may be worsened by pollution.

Poor air quality can result in negative health outcomes ranging from higher rates of asthma to cardiovascular disease and even premature death (CARB 2020). Children living in East Palo Alto are 2.5 times more susceptible to asthma than any other San Mateo County resident (SSV 2020). To determine areas with heightened air pollution exposure, the City identified residentially zoned areas in close proximity (500 feet) to major roads and industrial/agricultural activities. The California Air Resources Board recommends siting new sensitive land uses, such as residential housing, 500 feet away from a freeway or urban roads with 100,000 vehicles per day. The Bayshore Freeway near University Avenue averages approximately 217,000 vehicles per day, more than double the CARB threshold. University Avenue near the intersection with Bay Rd. averages 30,000. 8.2, there are many residential zoned areas within 200 feet of a highway, representing approximately 22 percent of the residentially zoned parcels in the City.

Major alterations to the atmosphere and climate have an impact on the human environment. Increased concentrations of greenhouse gases, especially carbon dioxide have already warmed the planet, causing more severe and prolonged heat waves, temperature variability, increased length and severity of the pollen season, air pollution, forest fires, droughts, and heavy precipitation events and floods, all of which put respiratory health at risk. Respiratory health effects include asthma, rhinosinusitis, COPD, and respiratory tract infections. The severity of these impacts are unknown, but will affect individuals with pre-existing cardiopulmonary diseases. Areas of lower economic opportunities and lacking medical care will have increasingly severe impacts and are likely to include disadvantaged groups.³⁰

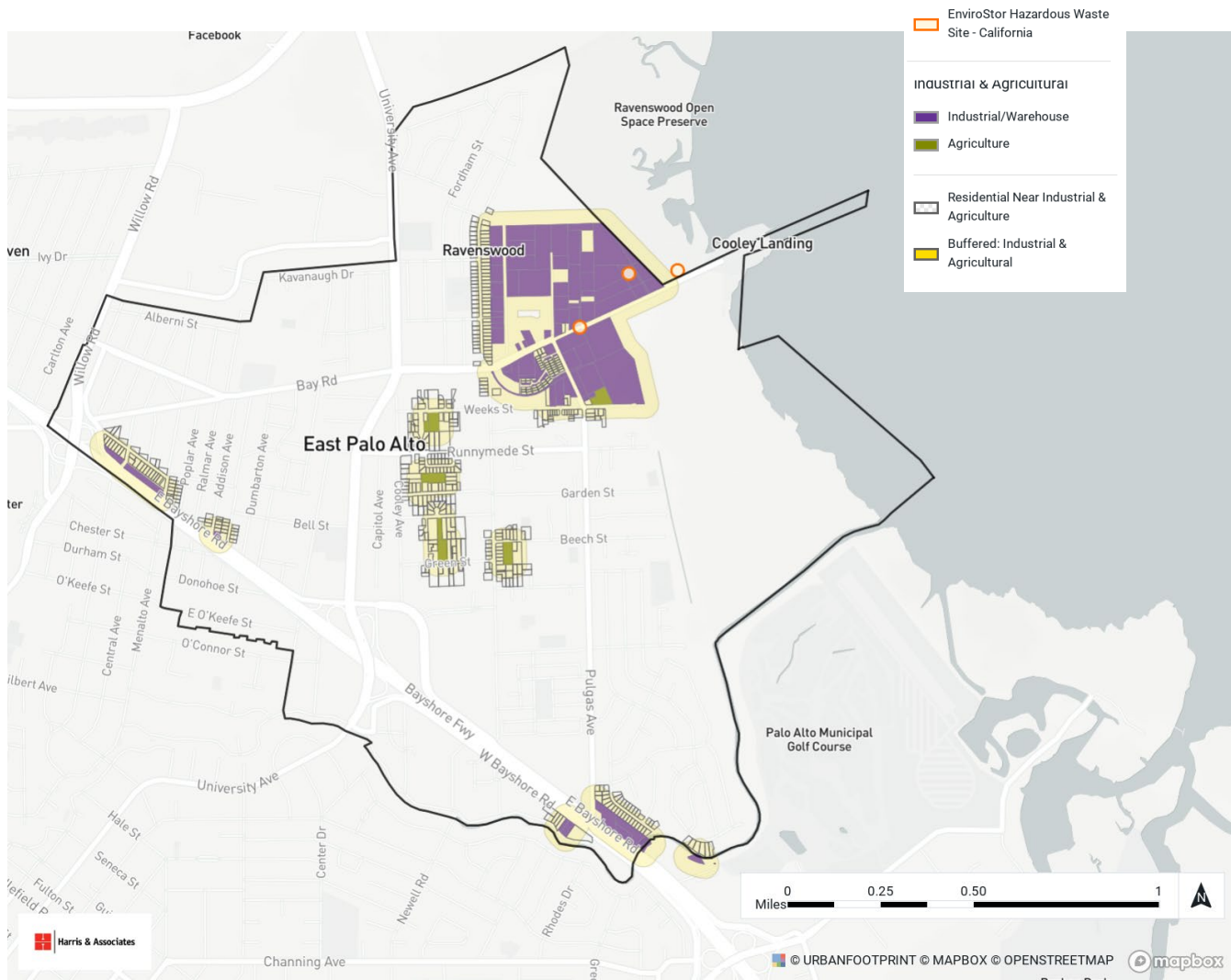
Figure 8.2: Residentially Zoned Parcels within 500 Feet of Major Roadway



In addition to mobile sources, East Palo Alto has stationary sources of air pollution, which are usually associated with large manufacturing and industrial facilities. In 1964, Palo Alto annexed land directly to the south of East Palo Alto that was intended to be developed into a golf course, but instead was turned into the Romic Environmental Technologies Corporation (or “Romic”) waste management facility. Figure 8.3 lists the location of the hazardous waste sites, now closed, that were part of the waste management facility. The facility processed hazardous chemicals from semiconductor and hardware production in Silicon Valley for decades. During occasional accidents, the facility leaked or sprayed toxic chemicals in the City of East Palo Alto (Cutler 2015). The Romic facility was shut down after the Department of Toxic Substances Control ordered Romic to cease handling hazardous wastes in 2007, due in part to the advocacy of several environmental justice advocacy organizations (Reimagine 2009).

To assess existing conditions with respect to stationary air pollution, the City identified residentially zoned parcels within 200 feet of an industrial or agricultural land use designated area. As shown on Figure 8.3, there is a significant portion of industrial land use types concentrated in the northeastern portion of the City. Approximately 10 percent of residentially zoned areas are within 200 feet of an industrial or agricultural zoned area. These areas are more likely to be the sites of air-polluting activities and should be prioritized when implementing pollution exposure reduction policies identified in the Health and Equity Element of the General Plan.

Figure 8.3. Residentially Zoned Parcels within 200 Feet of Industrial and Agricultural Land Uses



Equitable Electrification

Building Electrification

Building electrification is a key piece of the state's strategy for achieving carbon neutrality by 2045. Aside from greenhouse gas emission reduction, electrification is associated with many co-benefits that intersect with equity, including community health and long-term energy affordability. For example, equitable electrification can improve indoor air quality for communities that are more likely to live in older, energy-inefficient homes with structural deficiencies, outdated appliances, and faulty energy systems.⁹ Equitable electrification also avoids leaving these communities behind to cover increasing costs of the natural gas grid. Natural gas bills are projected to be 3-10 times higher by 2050.[†] Packaging electrification with other building and community improvements, like improved building insulation, installation of solar, and better access to green space, amplifies the benefits of electrification.

Existing building electrification can come with high up-front infrastructure improvement costs, which presents a hurdle to policy adoption for cities. The building electrification measures in this CAP include multiple programs for addressing equity and cost to make building electrification for residential and non-residential buildings more feasible.

⁹ https://www.greenandhealthyhomes.org/wp-content/uploads/2021-GHHI-Leading-with-equity_wp_Final.pdf

[†] https://www.ethree.com/wp-content/uploads/2019/04/E3_Residential_Building_Electrification_in_California_April_2019.pdf

Transportation

Reducing GHG emissions in the transportation sector is achieved through improved active transportation, public transit, and electric vehicle access. Building out and upgrading active and public transit systems can make transportation easier in the City. Lowering the accessibility bar for electric vehicles will be key to equitable transportation in East Palo Alto. Community members have pointed to the potential Dumbarton Rail as a tool to support transportation to and from the East Bay and seek advocacy for a rail stop in East Palo Alto to encourage the use.

Water Quality, Accessibility and Affordability^s

Low-income communities can be disproportionately exposed to drinking water contaminants (VanDerslice 2011). Hundreds of communities across the state currently lack access to safe and affordable drinking water. Furthermore, for communities that lack political and economic power, securing adequate supply of water can pose a challenge, as has been the case for East Palo Alto. In addition to providing a sufficient supply of clean water to its residents, the City seeks to ensure water is affordable for all residents.

The City of East Palo Alto Water provides water for about 30,000 residents living in the East Palo Alto area. A private water contractor, Veolia North America, is contracted by the City of East Palo Alto to operate the City's water utility for about 4,000 connections. East Palo Alto purchases water from the San Francisco Regional Water System, which is owned and operated by the San Francisco Public Utilities Commission (City of East Palo Alto 2016a). The major water source is the Hetch Hetchy Reservoir. Hetch Hetchy water is supplemented with surface water from two local watersheds: Alameda Watershed and Peninsula Watershed (Layton and Johnson 2019).

The O'Connor Tract Co-Operative Water Company located in Menlo Park provides ground water service to private accounts from two deep water wells to East Palo Alto properties located on East O'Keefe Street and the even side of Donohoe Street on the west side of the City. Approximately thirty-four multi-family homes and approximately twenty-three single-family homes/duplexes accounts are served by this water company. This water system was noted as having 3,129 violations from 2006-2021 for various analytes.

The Palo Alto Park Mutual Company is located in East Palo Alto and provides ground water service to private accounts from five source wells with thirty-one metered residential accounts and 656 unmetered residential accounts in the service area generally west of University, south of Bay Road and north of highway 101, with some accounts between Donohoe Street and West Bayshore Road on the west side of highway 101. The company's website indicates 2,900 customers are served by Palo Alto Park Mutual. This water system was noted as having an excessive aluminum violation in 2018.

The State Water Resources Control Board maintains a Human Right to Water portal that includes data, maps, grant programs, and other information that should be considered in local analyses of existing conditions and potential actions to address water quality issues in disadvantaged communities. OEHHA also recently published a Human Right to Water tool for assessing water quality, affordability, and accessibility that should be considered for use by local agencies. The tool provides draft scores for water quality, accessibility, and affordability. Draft scores range from 0 to 4, with higher scores indicating better outcomes.

^s The Infrastructure, Services and Facilities Element of the City's General Plan includes an existing conditions assessment of potable water quality and supply, but the following analysis supplements the existing assessment using indicators recommended by OPR's EJ Element Guidance.

Water Quality

The City of East Palo Alto's water system scored 3.11 out of 4 for water quality. Table 8.3 lists scores for each indicator with respect to levels of water contaminant concentrations and a high level of compliance with regulatory standards. More information on the methodology for each indicator can be found in the 2019 Achieving the Human Right to Water in California: Assessment of the State's Community Water Systems (CalEPA 2019).

As shown in Table 8.3, the City had one contaminant violation during the OEHHA study period. In June 2014, the City of East Palo Alto failed to comply with the Maximum Contaminant Level (MCL) for total coliform (California Water Boards 2014). According to the U.S. EPA, total coliforms are *not* harmful to humans (EPA n/a). From April 2016 to March 2019, the City complied with all drinking water standards. The City of East Palo Alto strives to continue to provide reliably safe drinking water to its residents and businesses.

Table 8.3. OEHHA Right to Water, Water Quality Indicator Scores

| Sub-Component | Indicator | Description | Score | Score Explanation |
|---------------|--|--|-------|---|
| Exposure | High Potential Exposure | Identifies how many contaminants (out of 19) had at least one year with an average annual concentration above MCL. | 3 | The system had 1 contaminant with potential high exposure. |
| | Presence of Acute Contaminants | Identifies if any of the contaminants for which there was high potential exposure are acute contaminants as defined by regulatory standards. | 4 | The system had 0 acute contaminants. |
| | Maximum Duration of High Potential Exposure | Identifies for how long high potential exposure occurred for each of the 19 contaminants. | 3 | The system had a Maximum of 1 year of high potential exposure. |
| | Data Availability | Identifies whether data exists for 14 contaminants that should have data following monitoring requirements | 4 | The system had all 14 contaminants with the minimum required data in the time period. |
| Compliance | Non-compliance with primary drinking water standards | Counts how many contaminants received an MCL violation at least once from 2008 to 2016, for 17 out of 19 contaminants. | 3 | The system had 1 contaminant with at least 1 MCL violation in the study period. |
| | Presence of Acute Contaminants | Identifies if any of the contaminants for which there was a non-compliance event are acute contaminants as defined by regulatory standards. | 4 | The system had 0 acute contaminants with relevant MCL violations. |
| | Maximum Duration non-compliance | Sums the total number of years for which a system had at least 1 MCL violation in a given year (from 2008 to 2016), across contaminants. | 3 | The system had a Maximum of 1-year non-compliance. |

Source: CalEPA 2019.

Water Accessibility

The OEHHA Right to Water Framework also assesses water accessibility, defined by the City's ability to provide sufficient and continuous amounts of water to meet everyday household needs (CalEPA 2019). The City of East

Palo Alto's water system scored 2.75 out of 4 for water accessibility. Table 8.4 lists the scores for each indicator, which measures to what extent the City is equipped to meet household demand for all residents.

Table 8.4: OEHHA Right to Water, Water Accessibility Indicator Scores

| Sub-Component | Indicator | Description | Score | Score Explanation |
|------------------------------------|---|--|-------|--|
| Physical Vulnerability | Physical Vulnerability to Water Outages | Examines the system's main water source and how many permanent and back up sources a system could use in the case of emergency | 2 | The system is a GW, GW-SW, or SW only system with 3–4 sources. |
| | Institutional Constraints | This indicator uses the combination of a system's size and the economic resources available to the community to jointly define a system's potential institutional constraints. | 3 | The system is medium-sized. |
| Institutional Vulnerability | Managerial Constraints | Estimate the system's managerial constraints by summing the total number of monitoring or reporting violations a system received | 4 | The system had 0 monitoring and reporting violations. |

Source: CalEPA 2019.

The City of East Palo Alto has historically struggled to provide an adequate supply of water for its residents and community to grow and develop. The City's water demand has exceeded its available supply several times since 2001. In 2017, the Silicon Valley Community Foundation prepared a case study of [East Palo Alto's Water Supply](#). The report detailed how residents of East Palo Alto have historically lacked influence in land-use and water-allocation decisions made by its neighbors. As neighboring jurisdictions continued to grow and develop, the City failed to attract new investments and attract jobs due in large part to the inability to secure adequate water supply (Layton and Johnson 2019).

Even though East Palo Alto's per capita water consumption was among the lowest in the region and the state, its allocation from the San Francisco Regional Water System, the City's primary water source, did not provide nearly enough water to meet East Palo Alto's needs. Meanwhile, nearby jurisdictions had more than enough water to meet demand and would benefit from development projects (often industrial and or/manufacturing) in East Palo Alto. However, agreements governing the allocation of water from the San Francisco Regional Water System made it difficult for these neighbors to share resources.

In September 2016, the City Council appointed two council members to a "water allocation transfer" subcommittee to work with City staff members to coordinate with neighboring jurisdictions on potential water transfers. Many of East Palo Alto's neighbors do not use their full water allocations. As a result, the subcommittee sought and successfully secured a commitment from Mountain View and Palo Alto to transfer some of their "surplus" to East Palo Alto (Layton and Johnson 2019). The City continues to advocate for its residents in securing sufficient water and seeks to allocate water to grow sustainably and benefit all residents.

The City anticipates future redevelopment of currently vacant or low-density sites. Various efforts are moving forward to determine the future land use density of the Ravenswood/Four Corners Specific Plan area, the largest geographic area in the City with vacant sites. The City may intensify efforts to provide new sources of water to areas of new/redevelopment, which may include the use of recycled water.

The City has successfully encouraged construction permittees, along with City Contractors to use reclaimed water for non-potable uses including street sweeping, watering trees (when irrigation is lacking), dust control, and other

such uses, with access at the Palo Alto Water Quality Control Plant. The City will continue to support expansion of the reclaimed/recycled water network.

Water Affordability

Another important aspect of environmental justice is ensuring residents can afford to pay for water to meet their household needs, taking into consideration other living expenses (CalEPA 2019). As shown in Table 8.5, the City of East Palo Alto's water system scored 0 out of 4 for water affordability.

Table 8.5. OEHHA Right to Water, Water Affordability Indicator Scores

| Indicator | Description | Score | Score Explanation |
|---|---|-------|---|
| Affordability Ratio for Median Household Income (MHI) | Measures the annual system-wide average water bill for 6 hundred cubic feet relative to the annual MHI of the water system | 1 | The average water bill ranges from 1.5% to 2% of the MHI. |
| Affordability Ratio for County Poverty Threshold (CPT) | Measures the annual system-wide average water bill for 6 hundred cubic feet relative to the County poverty threshold for the water system's County. | 0 | The average water bill is greater than or equal to 2.5% of CPT. |
| Affordability Ratio for Deep Poverty Threshold (DPT) | Measures the annual system-wide average water bill for 6 hundred cubic feet relative to the County deep poverty threshold for the water system's County | 0 | The average water bill exceeds 2.5% of the DPT. |

Source: CalEPA 2019.

The City's water system scores lower on water affordability due to the high number of low-income populations in the City. Low-income populations spend a greater percentage of their income on utility bills, and many struggle to afford their water bill. The U.S. Environmental Protection Agency defines water affordability as a rate below 4 percent of median household income (MHI) – 2 percent for water and 2 percent for wastewater. As shown in the Affordability Ratio for Median Household Income, the average water bill ranges from 1.5 percent to 2 percent of the MHI. Therefore, the City is right at the threshold limit for federal water affordability standards.

The City has provided direct support for tenants through the California Rent and Utility Relief Assistance program for low-income households to pay their utility bill. Other resources exist for low-income households. For example, the Low-Income Home Energy Assistance Program serving San Mateo County sends payments to the utility or energy company directly on behalf of eligible families (ESSMC 2017). Additional support from local partnerships is also available through the City's current "Core Service Provider" Samaritan House South, as well as El Concilio, Ecumenical Hunger Program, One East Palo Alto, The Barbara A. Mouton Multicultural Wellness Center, and Community Legal Services, along with various programs offered through local faith-based programs in the community.

The City endeavors to increase the affordability of water for the community by increasing overall access to economic opportunity for its residents, with the goal of leveraging future development with employment training programs geared at higher wages for those with low incomes.

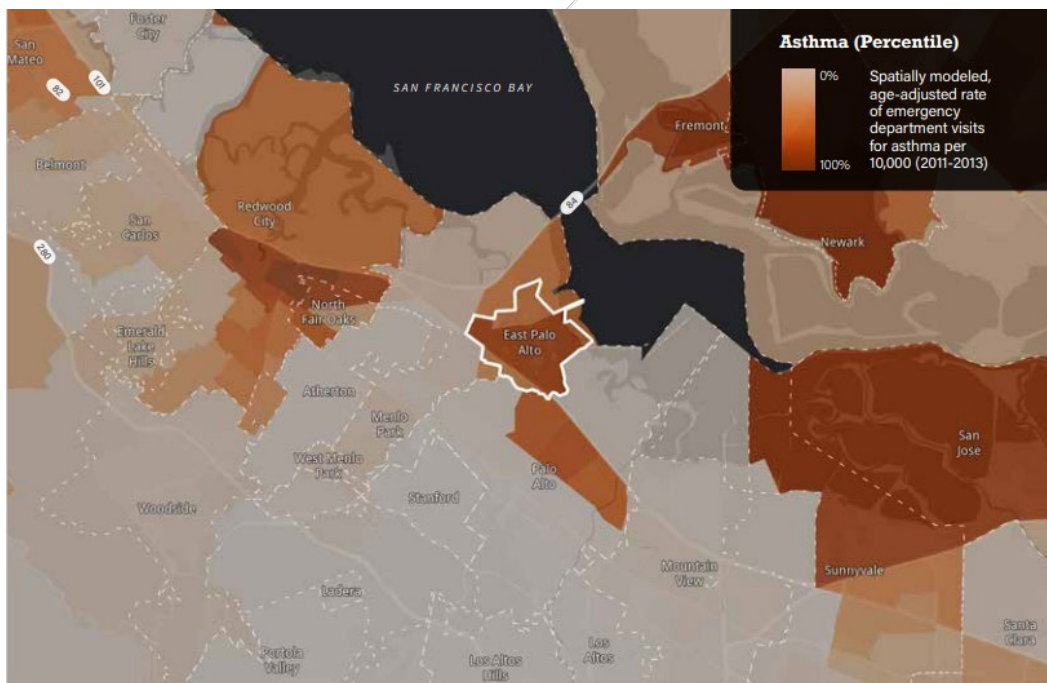
Safe and Sanitary Homes

The Health and Equity Element of the City’s 2016 General Plan acknowledges the importance and challenge of providing affordable housing to residents in East Palo Alto. However, the OPR EJ Element Guidance recommends conducting an analysis not just of housing affordability, but also the quality of existing housing stock.

The quality of available housing stock has direct health implications. Older housing that has not been maintained or updated can lead to unsafe conditions due to pest infestation, water intrusion, mold, poor insulation, and exposure to toxins, such as lead and second- and third-hand smoke. Water intrusion, poor insulation, and mold can exacerbate respiratory illnesses such as asthma and chronic obstructive pulmonary disease. Exposure to lead, a known neurotoxin, can have lifelong health consequences for young children. The age of existing housing stock is used as an indicator for housing stock quality. Figure 8.5 maps the residential housing stock by year built. As shown on Figure 8.5, older residential buildings are scattered throughout the western portion of the City, into the city center. In general, areas with older housing stock are also in areas with higher asthma rates. Excessive moisture and dampness, poor heating and ventilation systems, and deteriorated carpeting, all of which are associated with older, substandard housing, may contribute to asthma prevalence in the City (Krieger 2010).

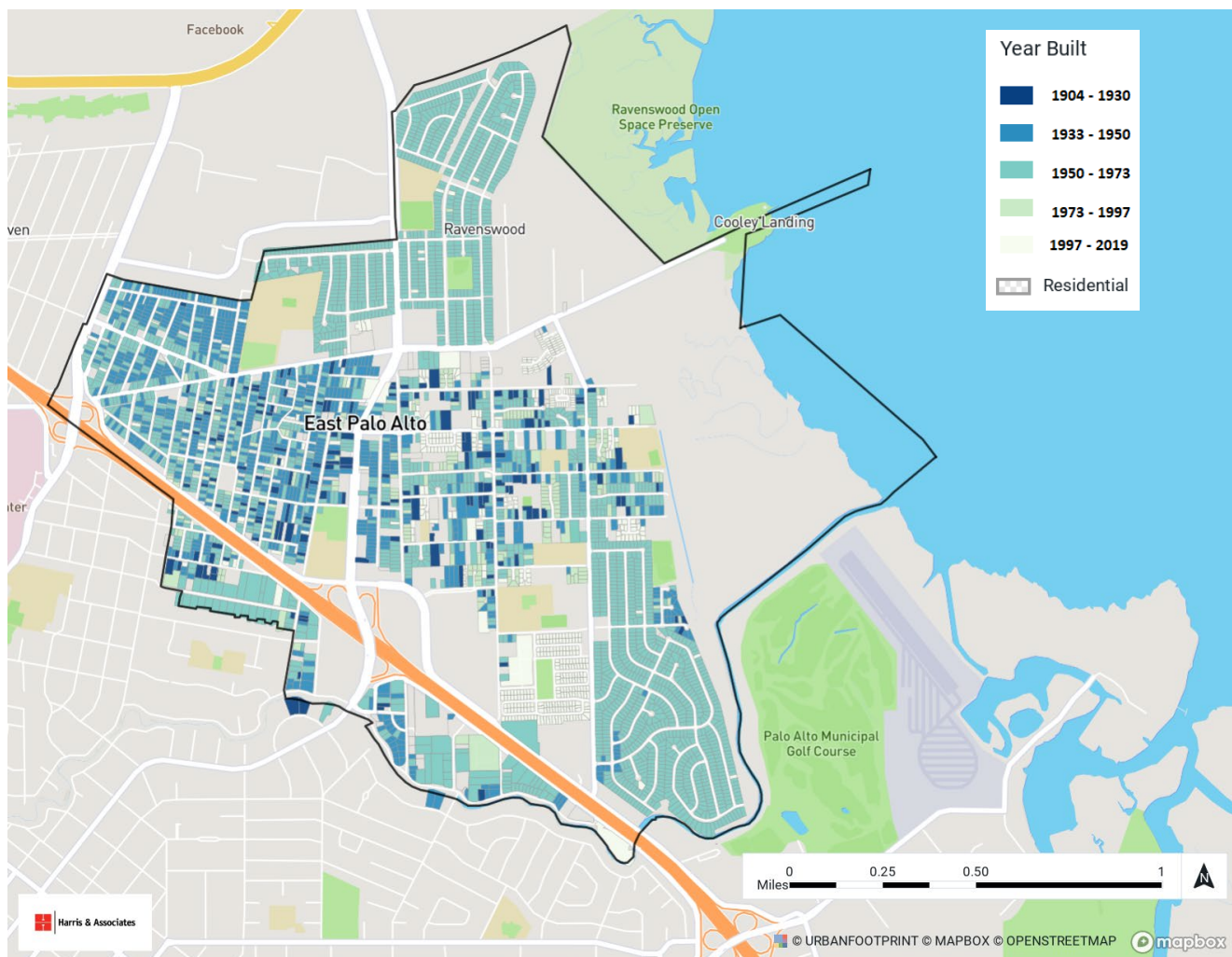
Residents experience the highest rates of asthma in San Mateo County and report concerns about air pollution associated with traffic and emissions on US 101 Highway (San Mateo County, 2021a). In the survey associated with this project (see Chapter 5), 91% of respondents reported being slightly or very concerned about air pollution in the city. Over 15% of residents reported poor mental health over the previous two weeks in a 2018 survey, the highest of any city in the county, and in the highest 25% for California cities overall (San Mateo County, 2021b). Trees and other green infrastructure have potential to alleviate some of these health and wellbeing concerns in the city.¹

Figure 8.4: Map representing relative rates of emergency department visits for asthma between 2011 and 2013 (OEHHA, 2017)



¹ City of East Palo Alto Urban Forest Master Plan, pg 18

Figure 8.5: Housing Stock, Year Built



Economic Justice

The General Plan acknowledges the history of housing discrimination and community disinvestment that has hampered the City's ability to develop equitably. And while not mandated by California law, the 2016 General Plan update included an Economic Development Element. The Economic Development Element's Existing Conditions Assessment addresses employment, workforce skills and education, job access, new development, and municipal fiscal health (City of East Palo Alto 2016b). This assessment provides historical context to the Economic Development Element of the General Plan and acknowledges the role of discrimination in the City's economic development trajectory.

Central to the discussion of economic development and economic justice in the City of East Palo Alto is the history of housing discrimination. Explicit and legal housing discrimination in the 1950s and 1960s prevented residents of East Palo Alto from securing housing (Moore et. Al 2015). Even with the passage of the State's first fair housing law in 1963, housing discrimination remained intact, albeit in different forms. For example, for decades the Federal Housing Administration and private banks engaged in a practice of redlining, where they would back mortgage lending to affluent, predominantly white neighborhoods and excluded others that housed minorities.

Similarly, the late 1960s saw a wave of growth-control movements throughout the Bay Area that limited the number of houses that were built per year and put protections on undeveloped land. Though supporters of the movement purported their intention was to protect the environment, in practice it served to protect property values and prevented affluent suburban governments from having to accommodate lower-income residents with multi-unit housing (Cutler 2015). Discriminatory practices including redlining and growth control resulted in East Palo Alto residents facing tremendous barriers to becoming homeowners.

Homeownership is one of the primary ways Americans grow their wealth and governments grow their tax base to support public services. Therefore, discriminatory housing practices in East Palo Alto excluded entire groups of people from capital accumulation and resulted in a stagnant, local economy and under-resourced local government. Underfunded schools, for example, could not prepare kids for an increasingly limited blue-collar job market. And the loss of manufacturing jobs in the 1970s meant that there were few alternative job or economic opportunities in East Palo Alto.

Today, East Palo Alto is highly vulnerable to gentrification as the Silicon Valley region continues to support the growth of the technology sector by enabling the development of new office and tech campuses which has resulted in substantial new high paying jobs, while not providing an equal number of new housing units to the market. The Bay Area jobs to housing ratio has often resulted in East Palo Alto residents being displaced by tech sector employees as Silicon Valley has added one home for every six new jobs in the last decade, resulting in soaring housing costs³¹.

The City of East Palo Alto represents the last piece of land that is relatively affordable compared to neighboring communities—“an island among a growing plenty” (Cutler 2015). The City’s median home price in 2015 was \$534,000, which has since grown to approximately \$947,000 in 2020, and remains significantly lower compared to \$3 million median home value in Palo Alto, \$6.5 million in Atherton, \$2.5 million in Menlo Park and \$1.7 million in Mountain View. Throughout the Peninsula, ever-increasing home prices continues to place ever-increasing demand on relatively lower-priced, often rent-controlled homes found in East Palo Alto. Along with cultural values that often prioritize family, residents facing ever-increasing housing costs look to multi-generational living as a means to offset housing costs by way of adding accessory dwelling units, or converting spaces in the home to additional livable bedrooms, generally intensifying the use of single and multi-family dwellings.

While the tech industry ostensibly provides support to the community through philanthropic gifts and job market pipeline opportunities for East Palo Alto residents, it remains unclear the extent to which large tech companies have positively impacted the economic development of the City. For example, Facebook is a major charitable force in East Palo Alto that supports several dozen non-profits. However, its campus presence adjacent to the City may eventually price out the community it intends to help as employees from higher socio-economic classes move in. Similarly, Google, though a high philanthropic donor and employer, relies on extremely low-wage labor in East Palo Alto for Google Shipping Express (Cutler 2015). Furthermore, a 2015 study found that the Bay Area staffs of 33 of the leading Silicon Valley firms on average are about 4 percent black and 7 percent Latino (Anguin et al. 2015).^u

Therefore, the City seeks to take a more active role in the development of businesses and economic models that build the wealth of residents, especially people of color, and allow them greater influence in determining the types of economic activity that address the needs of their community, while encouraging intensification of housing to accommodate growing families, multi-generational living, and stabilized housing costs.

^u Blacks and Latinos make up 8 percent and 14 percent of the Bay Area labor force, respectively.

Environmental Justice

Goals and Policies Gap Analysis

As indicated above, SB 1000 requires local jurisdictions identify objectives and policies that:

(A) Reduce the unique or compounded health risks in disadvantaged communities by means that include, but are not limited to, the reduction of pollution exposure, including the improvement of air quality, and the promotion of public facilities, locally sourced food access, safe and sanitary homes, and physical activity.

(B) Promote civic engagement in the public decision-making process.

(C) Prioritize improvements and programs that address the needs of disadvantaged communities.

The City's General Plan already includes goals and policies designed to help the City achieve some environmental justice goals. Table 8.6 lists the General Plan goals relevant to each EJ topic area relevant to SB 1000 and any additional goals this CAP will add, and indicates if the CAP will be adding additional strategies in support of any existing or new goals.

Table 8.6. General Plan Goal Gap Analysis

| EJ Topic Area | # | General Plan Goal | New CAP Strategy? |
|--|-------|--|-------------------|
| Pollution Exposure | HE-10 | Improve respiratory health throughout the City and strive to reduce incidence of asthma and other respiratory illnesses. | Yes |
| | HE-4 | Safely and systemically, address toxics, legacy pollutants, and hazardous materials. | No |
| | ISF-2 | Ensure a sustainable, clean, long-term water supply | No |
| Access to public facilities and services | ISF-8 | Provide high-quality public and civic facilities for the community. | No |
| Access to transit | T-5 | Continue to work with regional partners to expand access to public transit, enabling ease of access for commuters. Support local and regional transit that is efficient, frequent, convenient, and safe. | Yes |
| Access to active transportation | HE-3 | Create land use patterns, a transportation network, and a parks system that encourages physical activity, promotes healthy living, and reduces chronic illnesses. | Yes |
| | T-1 | Improve safety through the design and maintenance of sidewalks, streets, intersections, and other roadway improvements. | No |
| | T-3 | Create a complete, safe, and comfortable pedestrian network for people of all ages and abilities. | No |

| EJ Topic Area | # | Goal | New CAP Strategy? |
|---|-------|--|-------------------|
| Access to health care | HE-8 | Strive for all residents to have access to affordable, quality health care, mental health care and social services. | No |
| Access to parks | POC-1 | Create new parks and expand open spaces throughout the City. | No |
| | POC-2 | Improve and enhance existing parks and trails. | No |
| Access to healthy, locally-sourced food | HE-6 | Improve access to healthy locally sourced food for all East Palo Alto Residents. | Yes |
| Access to safe and sanitary homes | HE-13 | All housing is designed and built in a way that facilitates health, sustainability, and efficiency. | Yes |
| Access to physical activity | T-4 | Build a comprehensive and well-used bicycle network that comfortably accommodates bicyclists of all ages and skill-levels. | Yes |
| | POC-2 | Improve and enhance existing parks and trails. | No |
| Promote civic engagement | HE-11 | Ensure that all citizens, regardless of race or ethnicity, feel welcome and included in the community. | No |
| | HE-12 | Maintain transparency and integrity in East Palo Alto's decision-making process. | No |



Supplemental Strategies

During the development of the Climate Action Plan, the City identified additional strategies related to climate action and environmental justice that the City would like to add to the City's General Plan to help achieve the goals listed in Table 8.7.

Table 8.7: HE-10. Improve respiratory health throughout the City and strive to reduce incidence of asthma and other respiratory illnesses.

| Strategy | IMPLEMENTATION CONSIDERATIONS | TIME-FRAME | LEAD | COMMUNITY PARTNER |
|--|---|--------------------------------------|------------------------|---|
| Expand community-based air monitoring in EPA for a suite of industrial pollutants | Installation of 12 blue-air monitors at private residences throughout the community. Encourage the installation of additional devices near highway 101, the Palo Alto airport, and areas identified by San Mateo County with highest respiratory disease rates. Track respiratory disease rates while seeking strategies to reduce health impacts. | 2022-2030 | Environmental Programs | Homeowners of EPA and property owners of high-density housing. |
| Participate in studies opportunities for residents to track indoor air pollution. | Participate in study with Stanford, supported by CRC, to enable up to 420 families in East Palo Alto to monitor indoor air pollution, providing tools to reduce indoor air quality emissions, and develop strategies to support the community with lessons learned through this project. Track respiratory disease rates while seeking strategies to reduce health impacts. | 2022-2025 | Environmental Programs | Climate Resilient Communities, Stanford, with other local partners. |
| Analyze and re-designate truck routes away from areas with high asthma rates and sensitive land | Truck Routes have been eliminated throughout the City including University Avenue, Bay Road (from Gloria Way to eastern City limits), East Bayshore Road (entire length) and West Bayshore Road (from Newell Road to eastern city limit). The Public Works Director has further limited truck routes with signage restricting passage through the City. Strong consideration will be given to further limit truck routes through formal codification. | 2019 | Public Works | Public Works and Transportation Committee |
| Include the community in decisions regarding brownfield site risk assessment, cleanup alternatives, and end uses | Ongoing; sites under consideration for development are currently under public comment including 1990 Bay Road (former Catylitica Energy Systems/ Rhone Poulenc Inc Zoecon Corp, a Superfund site considered "active"), 2020 Bay Road (former Romic Environmental Technologies, a Superfund site considered "active"), and Calmac Chemical (a superfund site considered "archived" by the EPA, but if soil is disturbed this site can become a concern for adjacent residential and schools) | As pre-development submissions occur | Public Works, Planning | YUCA, Climate Resilient Communities |

Goal T.5: Support local and regional transit that is efficient, frequent, convenient, and safe.

| Strategy | Implementation Considerations | Time-frame | Lead | Community Partner |
|--|---|-------------------------------|-----------------------|---|
| Implement a local shuttle service to complement a robust transit network | Work with local developers/employers and SamTrans to consider integration of updated shuttle programs for new and existing employment sectors, providing linkages to the Dumbarton Express, Caltrain, and beyond. | Ongoing as development occurs | Public Works/ CEDD | SamTrans, Santa Clara County |
| Work with appropriate partners to provide subsidized monthly passes for low-income riders and increase accessibility to bus pass vendors | Work with SamTrans, non-profits, local employers and developers to support expansion of subsidized or free monthly transit passes for various user groups to reduce local traffic. | 2025 | Public Works and CEDD | El Comité, Ravenswood Family Health Center, San Mateo County, SMC Library, SamTrans, EPACenter Arts, etc. |

HE-3. Create land use patterns, a transportation network, and a parks system that encourages physical activity, promotes healthy living, and reduces chronic illnesses.

| Action | Implementation Considerations | Time-frame | Lead | Community Partner |
|--|---|------------|---|---|
| Place housing of all income levels in high-opportunity areas with access to community gardens, parks, quality schools, libraries, and health services | Update Parks Master Plan and Martin Luther King Jr Park, SMC Library Master Plan, to ensure locations provide adequate access to all user groups. | 2022-2024 | Administrative Services, City Hall | San Mateo County Library |
| Continue to implement and update the First Source Hiring Ordinance requiring 20% of the workforce to be hired from the pool of residents of East Palo Alto, connecting residents to local employment opportunities in additional sectors that do business in East Palo Alto. | Ensure the First Source Hiring Policy is administered correctly; expand to include City Funded Projects and Properties in addition to the original First Source Hiring Ordinance that included City-supported developments and the occupants on those sites. Emissions reduced due to implementation of this ordinance will be quantified by compiling the annual summary from program oversight. | 2022-2030 | Community and Economic Development Department | All City funded projects over \$250,000 and subsidized properties |

T-4. Build a comprehensive and well-used bicycle network that comfortably accommodates bicyclists of all ages and skill-levels.

| Action | Implementation Considerations | Time-frame | Lead | Community Partner |
|---|---|------------|--------------------------------------|---|
| Implement the Bicycle Master Plan (c.2017) by maximizing Class I facilities and prioritizing the installation of facilities to build-out this plan. | Through Affordable Housing and Sustainable Communities (AHSC) funds and other grants, maximize the bicycle connectivity throughout the City using the Bicycle Master Plan as a guideline, implementing best practices. | 2022-2025 | Public Works | Live in Peace (LIP), Ravenswood City School District (RCSD), large employers. |
| Support and expand educational resources and outreach about safe and active transportation that represent the preferred languages and cultures of residents | Work with Safe Routes to School Program, all local schools, Ravenswood City School District, Live in Peace, and San Mateo County to expand access to active transportation options. Increase way-finding throughout the City to encourage use of bike/ped facilities. | 2023+ | Environmental Programs, Public Works | SR2S, SMC, RCSD, LIP, etc. |
| Provide subsidized bike sharing programs and low-cost or free bicycle ownership | Work with Live in Peace and other partners to expand opportunities that enable residents and employees to obtain free or low-cost bicycles through programs offered. Encourage employers and low-income housing programs to support the expansion of these programs. | 2023+ | Environmental Programs | LIP, bike shops, philanthropic. |
| Work with local schools and employers to promote bicycle commuting | Participate in Bike to Work Day and Bike/Walk to School Day events | 2023-2030 | Public Works, Admin Services | LIP, RCSD, Charter Schools, Private Schools, Amazon, and any employer with over 100 employees, etc. |
| Designate and maintain an advisory committee to evaluate planning and implementation of the City's bike and pedestrian goals and plans | Request the City Council designates an advisory group(s) to evaluate ongoing implementation of the Bike/Ped Master Plan, Green Infrastructure Plan, Climate Action Plan, and Urban Forest Master Plan. | 2023 | Public Works Department | LIP, Schools, RCSD, churches, etc. |

T-4. Improve access to healthy locally sourced food for all East Palo Alto residents.

| Action | Implementation Considerations | Time-frame | Lead | Community Partner |
|--|--|------------|---|---|
| Establish demonstration gardens, sponsor classes, and other educational materials to encourage the establishment and expansion of home, community, and school gardens, as well as edible landscapes. | Provide guidance with respect to appropriate species for local climate, water conservation measures, and the use of organic or greener fertilizers and integrated pest management methods. Installation of 25 rain garden water cistern systems for low-income East Palo Alto residents. | 2022-2025 | Environmental Programs | Climate Resilient Communities, YUCA, Live in Peace, Collective Roots |
| Encourage participation in community-supported agriculture and fishing programs by becoming host sites. | Fish located at Cooley Landing has a high amount of toxins unhealthy for human consumption. Partnering with neighboring locations for fishing programs along with establishing community gardens throughout the City is of broad interest in the community. Gardening programs will be hosted by Collective Roots, Climate Resilient Communities and likely other local organizations presently conducting programs. Consider adopting a local policy position to address fishing along local waterways. | 2022-2026 | Environmental Programs | Climate Resilient Communities, Collective Roots |
| Offer incentives and/or reduce barriers to run a healthy, locally sourced mobile food business | This may include discounts on permit fees, reserved spots at preferred locations, or additional sites for commissaries and sites to provide urban agriculture for locally sourced food, and opportunity for developers to add as community benefit at reduced market rate fees for local businesses. | 2023 | Community and Economic Development Department | Developers, local home-based food businesses |
| Encourage residents to share surplus backyard produce with others or donate surplus backyard produce to the local food bank and other non-profit organizations | Collaborate with other agencies and non-profits or apps to promote and provide temporary locations for residents to share their homegrown produce with other gardeners and local food banks | 2024 | Environmental Programs | Rethink Waste and Recology, Fresh Approach/Collective Roots, Live in Peace, CRC |
| Encourage local businesses and food serving institutions to adopt food-purchasing policies that promote women and minority-owned agricultural businesses and require a percentage of food purchased to be grown locally from small to midsize farmers. | The City Council may consider establishing a local ordinance/ resolution regarding an expanded sustainable purchasing policy which can include promoting those companies identified locally that meet these CAP goals. The City can also include a list of local businesses who have adopted such policies as a promotional incentive. | 2024 | CEDD | Local Businesses |

9. Carbon Sequestration



9

CARBON SEQUESTRATION

Carbon Sequestration



Our forests and oceans are natural carbon sinks, each absorbing 25 percent³² of the carbon dioxide that is released into the atmosphere.^v The process of capturing and storing this atmospheric carbon is known as carbon sequestration, and it is a strategy that – when combined with other efforts – can help combat climate change.

There are several processes that can capture and store carbon:

- **Biological Sequestration:** The process of planting trees and other vegetation in forests, grasslands, and rangelands. Reforestation is one of the cheapest sequestration processes and helps support biodiversity. In our cities, encouraging residents, businesses, and parks to maintain or plant new trees can help to pull carbon dioxide from the atmosphere. The City’s Urban Forest Master Plan promotes biological sequestration and is expected to achieve increased canopy cover from 13.5% to 40% by 2122.
- **Biochar:** This process involves the burning of organic materials to create biochar, a compound that can hold carbon for long periods, rather than releasing it into the atmosphere as it degrades. Research shows that biochar will not break down for at least 100 years and possibly up to 1,000 years.³³ This type of carbon sequestration may be a solution for landfill and wastewater treatment applications.
- **Biogas:** A methane and carbon dioxide gas produced from anaerobic digestion of agriculture waste products, landfills, and wastewater systems. Biogas can be used for heating, electricity, or transportation fuel; it is currently widely produced by wastewater treatment plants in California. Biogas plants can be retrofitted with a carbon dioxide capture system.
- **Carbon Capture and Storage (CCS):** CCS is a three-part process that involves capturing carbon dioxide, transporting the carbon dioxide, and storing it underground typically through geologic sequestration.
- **Geologic Sequestration:** Carbon is captured and injected into underground rock formations for long-term or permanent storage.
- **Technological Sequestration:** Scientists are working to develop new and innovative ways to capture carbon. Some technologies are looking at capturing carbon directly from the air. Other potential technologies include repurposing carbon for use in other technologies.
- **Trees End of Life Sequestration:** A portion of the carbon dioxide trapped in trees during growth is released after they are cut down during the decomposition process. To avoid releasing this carbon dioxide, carbon can be stored for longer timeframes by locking carbon into wood products, such as lumber or furniture, or creating biochar. When urban trees fall or are purposefully removed, residents and local municipalities should consider these end-of-life use cases to prevent the carbon dioxide from being re-emitted into the atmosphere.

It’s not yet clear what role carbon sequestration will have in East Palo Alto’s long-term climate action strategy, but it’s something the city will evaluate and support moving forward. For the time being, the City has passed a Local Tree Protection Ordinance to keep existing trees in the ground and expand the urban tree canopy.

^v A healthy ocean has what is known as positive and negative “flux;” the former when CO₂ from the ocean is released into the atmosphere, and the latter when CO₂ is absorbed. Today, in large part due to human activity, the oceans absorb more CO₂ than they release. It is projected that by 2100, the oceans will be a CO₂ sink. The increase of CO₂ from fossil fuels is significantly impacting the acidity of the ocean, ultimately affecting not only the sea life, but also the air we breathe.

10. Conclusion



10
CONCLUSION

Conclusion

The challenge of preparing for and mitigating the effects of climate change is unprecedented in its scale and potential disruption to our way of living. Recent climate disasters have given us a preview of what could become the “new abnormal.”

We must act now. Climate change waits for no one. However, in the face of daunting headlines, we remain hopeful and resolved, and know what we need to do to move forward. We have the solutions to reduce emissions, increase efficiency, promote economic vitality, and improve our quality of life.

This CAP provides an overarching, strategic framework for East Palo Alto to achieve the goal of reducing per capita GHG emissions by 55 percent by 2030. While developing and publishing this CAP is an important step, it's even more critical that this CAP remain a living document, to be updated as technology and policies progress.

This CAP not only supports the City's efforts to manage its own GHG emissions, it's a call-to-action to residents, community institutions, and businesses to take an active part in our transition to a low-carbon future and clean economy. In this process, East Palo Alto will foster a vibrant economy, increase its resiliency, and support a collective vision for a livable and sustainable community for generations to come.

11. Appendix



11

APPENDIX

Appendix

A. Glossary of Abbreviations

| | |
|-------------------|---|
| AB 32 | Assembly Bill 32, The California Global Warming Solutions Act of 2006 |
| BAAQMD | Bay Area Air Quality Management District |
| CARB | California Air Resources Board |
| CAP | Climate action plan |
| CEC | California Energy Commission |
| CEQA | California Environmental Quality Act |
| CO ₂ | Carbon dioxide |
| CO ₂ e | Carbon dioxide equivalent |
| CPUC | California Public Utilities Commission |
| EV | Electric vehicle |
| GHG | Greenhouse gas |
| ICLEI | Local Governments for Sustainability |
| IPCC | <u>Intergovernmental Panel on Climate Change</u> |
| KPI | Key performance indicator |
| kWh | kilowatt hour |
| MT | Metric ton |
| MMT | Million metric tons |
| PCE | Peninsula Clean Energy |
| PG&E | Pacific Gas and Electric Company |
| RPS | Renewable portfolio standard |
| TOD | Transit-oriented development |
| U.S. EPA | United States Environmental Protection Agency |
| VMT | Vehicle miles traveled |
| WRI | World Resources Institute |

B. Climate Change

B.1 Global Goal to Limit Warming to 1.5°C

The Intergovernmental Panel on Climate Change (IPCC), the leading international scientific body on climate change, released a report³⁴ in mid-2018 shifting the threshold at which significant and potentially irreversible climate change impacts occur from 2°C to 1.5°C of average global temperature increase above pre-industrial levels. The IPCC report promotes immediate actions to meet the 1.5°C threshold to prevent or slow these impacts. Many of the impacts of warming up to and beyond 1.5°C, and some potential impacts of mitigation actions required to limit warming to 1.5°C, fall disproportionately on low income and socially vulnerable people.

Substantial changes in regional climate occur between 1.5°C and 2°C of global average temperature increase. For example, the number of people exposed to severe heat waves triples. Keeping temperatures at 1.5°C as compared to a 2°C warming would result in global reductions in risk, including:

- **Sea level rise:** Decreasing global rate of rise by approximately 3.9 inches
- **Heat waves:** Decreasing the number of people being frequently exposed by 420 million worldwide
- **Heavy precipitation and drought:** Reducing intensity and frequency worldwide
- **Drinking water:** Lowering the number of people without access to drinking water by 50 percent

Limiting warming to 1.5°C will require changes by 2050, including:

- Eliminating GHG emissions in our cities
- Deep reductions in global emissions of non-CO2 climate pollutants, particularly methane
- Reducing oil use by 32–74 percent
- Reducing natural gas use by 13–60 percent
- Leveraging renewables to supply 36–97 percent of energy
- Making buildings and transportation energy efficient
- Implementing adaptation options through mandatory policy, including coastal defense and hardening, efficient irrigation, green infrastructure, and disaster risk management

B.2 State and Local Goals

California has some of the most aggressive climate action goals in the United States. The State has set a goal of emissions reductions to 40 percent below 1990 levels by 2030 (or 49 percent below 2005 levels). To achieve this, California has created the following strategies:

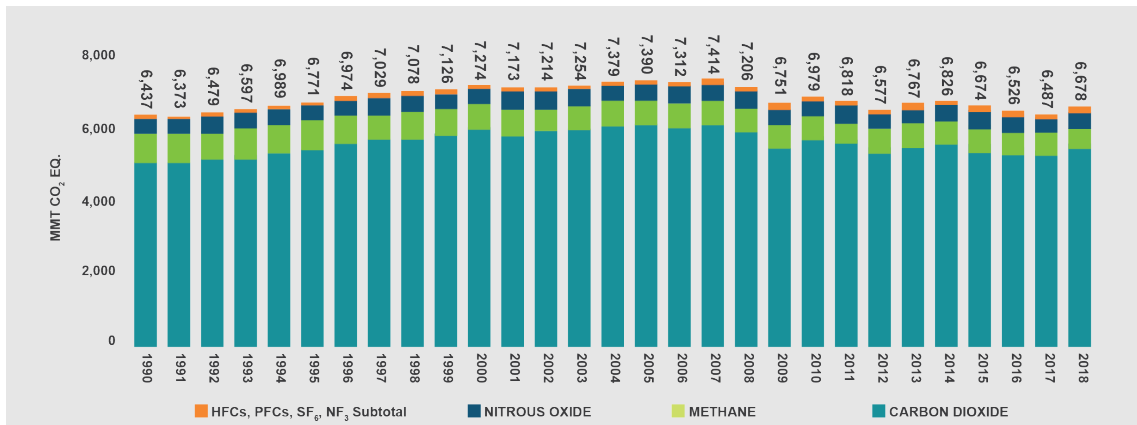
- Increase renewable electricity production to 50 percent
- Reduce petroleum use by 50 percent in vehicles
- Double energy efficiency savings at existing buildings
- Reduce GHG emissions from natural and working lands
- Reduce short-lived climate pollutants such as black carbon, methane, tropospheric ozone, and fluorinated gases
- Make California more resilient to climate change in accordance with California's 2018 *Safeguarding California Plan*

B.3 Trends in National and State Emissions

National Emissions

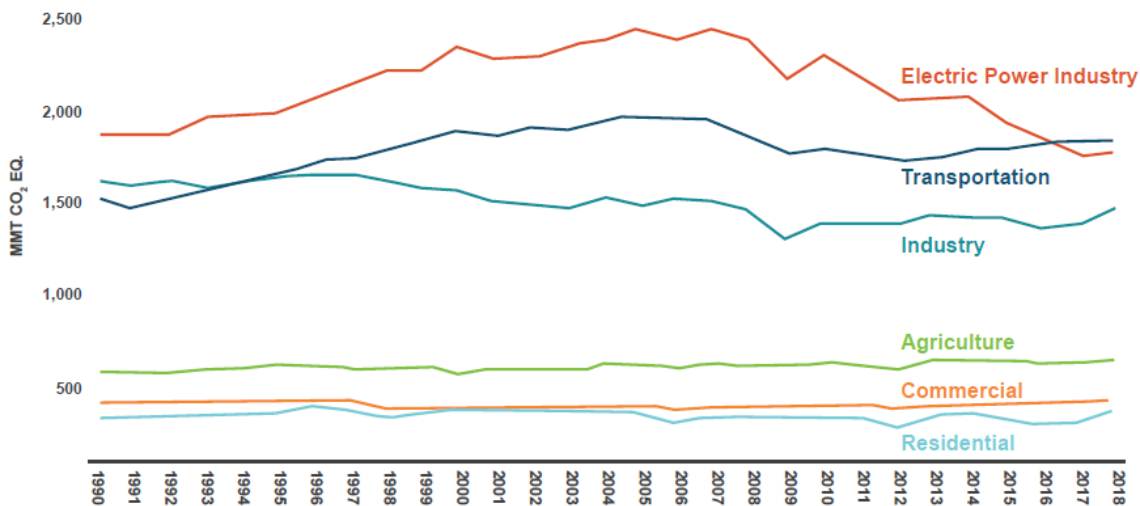
According to the U.S. EPA, gross total U.S. GHG emissions in 2017 were 6,456.7 million metric tons (MMT) of CO₂ equivalent (CO₂e), representing a 12 percent decrease below 2005 levels.³⁵ Emissions have also decreased 4.5 percent since 2014, largely driven by transitioning power plants from using coal to natural gas, as well as warmer winter conditions. CO₂, the largest component of man-made GHGs, made up 81.6 percent of total U.S. GHG emissions in 2017, followed by methane at 10.2 percent, nitrous oxide at 5.6 percent, and fluorinated gases at 2.6 percent (Figure 11.1).

Figure 11.1: Gross U.S. GHG Emissions by Gas: 1990–2018³⁶



In 2018, the industrial sector contributed the largest share of GHG emissions (29.1 percent), followed by transportation (27.9 percent), commercial (16.2 percent), residential (15.6 percent), and agriculture (10.5 percent). Land use and forestry offset 11 percent of total gross emissions. Of the five main sectors, transportation has seen the largest increase in emissions since 1990 (22 percent increase), while industrial emissions have seen the largest decrease (15.5 percent decrease) (Figure 11.2).

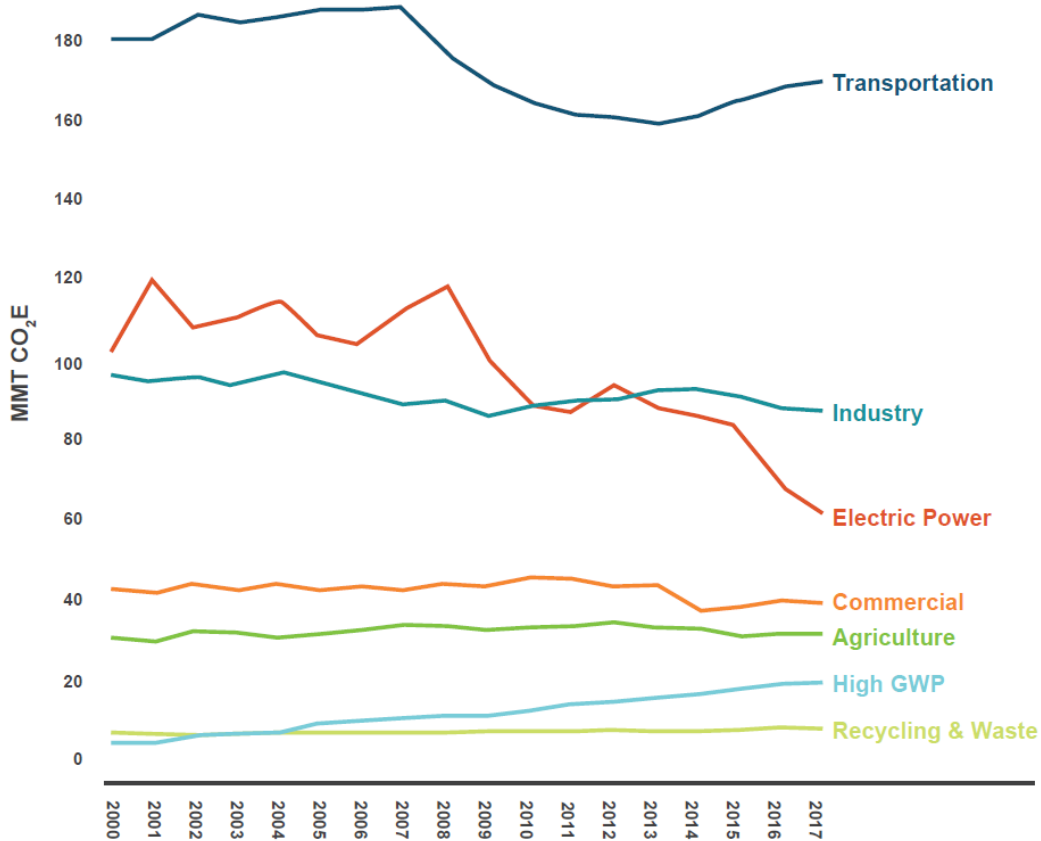
Figure 11.2: U.S. GHG Emissions by Economic Sector³⁷



California Emissions

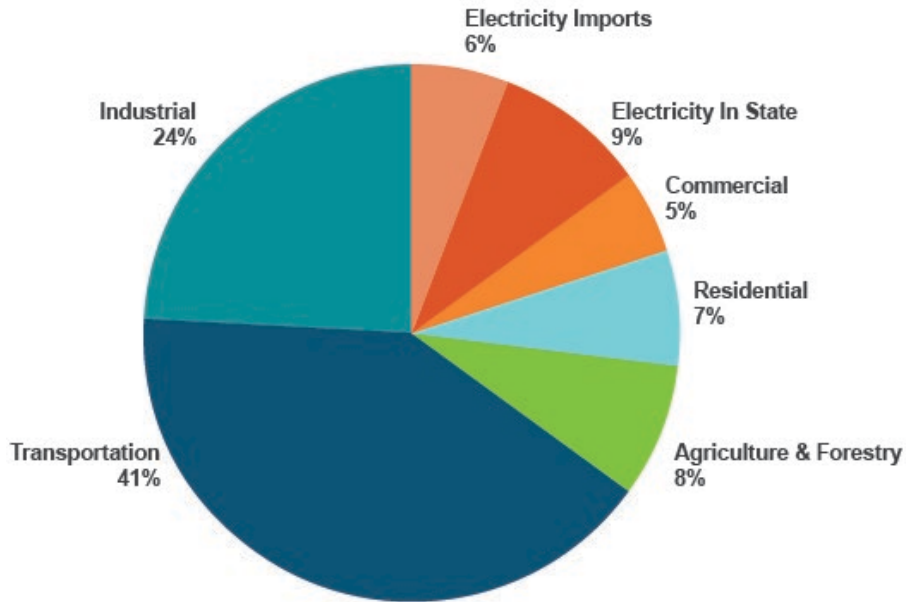
Similar to the national trend, total GHG emissions in California have decreased in recent years. According to the California Air Resources Board (CARB), total California GHG emissions in 2017 were 424 million metric tons (MMT) of CO₂e, representing a 2 percent decrease below 1990 levels and a 13 percent decrease below 2005 levels (Figure 11.3).³⁸

Figure 11.3: California GHG Emissions by Sector: 2000–2017



California has seen an overall decrease in carbon intensity of electricity generation, driven by a large increase in zero-GHG and renewable energy resources due in part to California’s Renewable Portfolio Standard (RPS)³⁹ and Cap-and-Trade Program.⁴⁰ In 2017, the transportation sector contributed the largest share of GHG emissions (41 percent), followed by industrial (24 percent), in-state electricity (9 percent), agriculture and forestry (8 percent), residential (7 percent), imported electricity (6 percent), and commercial (5 percent) (Figure 11.4).

Figure 11.4: California 2017 GHG Emissions by Sector 8



B.4 Four Scenarios Show What Climate Change Will Do to the Earth, From Pretty Bad to Disaster

The following is a reprint of an article that was published in Fast Company on August 26, 2014.⁴¹

Four Scenarios Show What Climate Change Will Do To The Earth, From Pretty Bad To Disaster

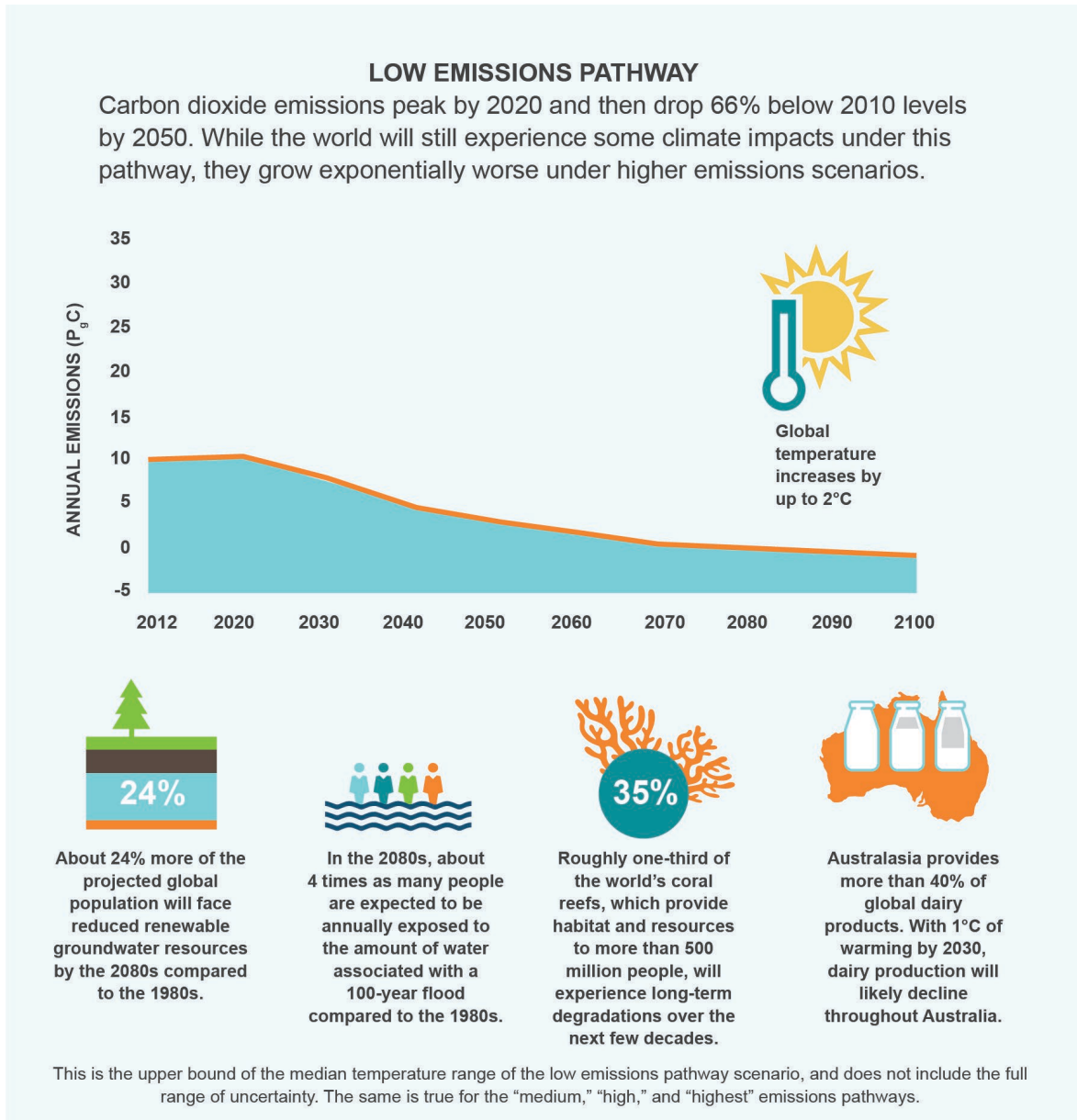
Climate change is going to do a lot of damage. How bad that damage will be is still under debate.

The most recent Intergovernmental Panel on Climate Change (IPCC) report left no doubt about the future of the world if we don't slow the rate at which we release heat-trapping gases into the atmosphere. In a word, it's going to get bad.

But exactly how bad is still an open question, and a lot depends not only on how we react, but how quickly. The rate at which humans cut down on greenhouse gas (GHG) emissions—if we do choose to cut them—will have a large bearing on how the world turns out by 2100, the forecasts reveal.

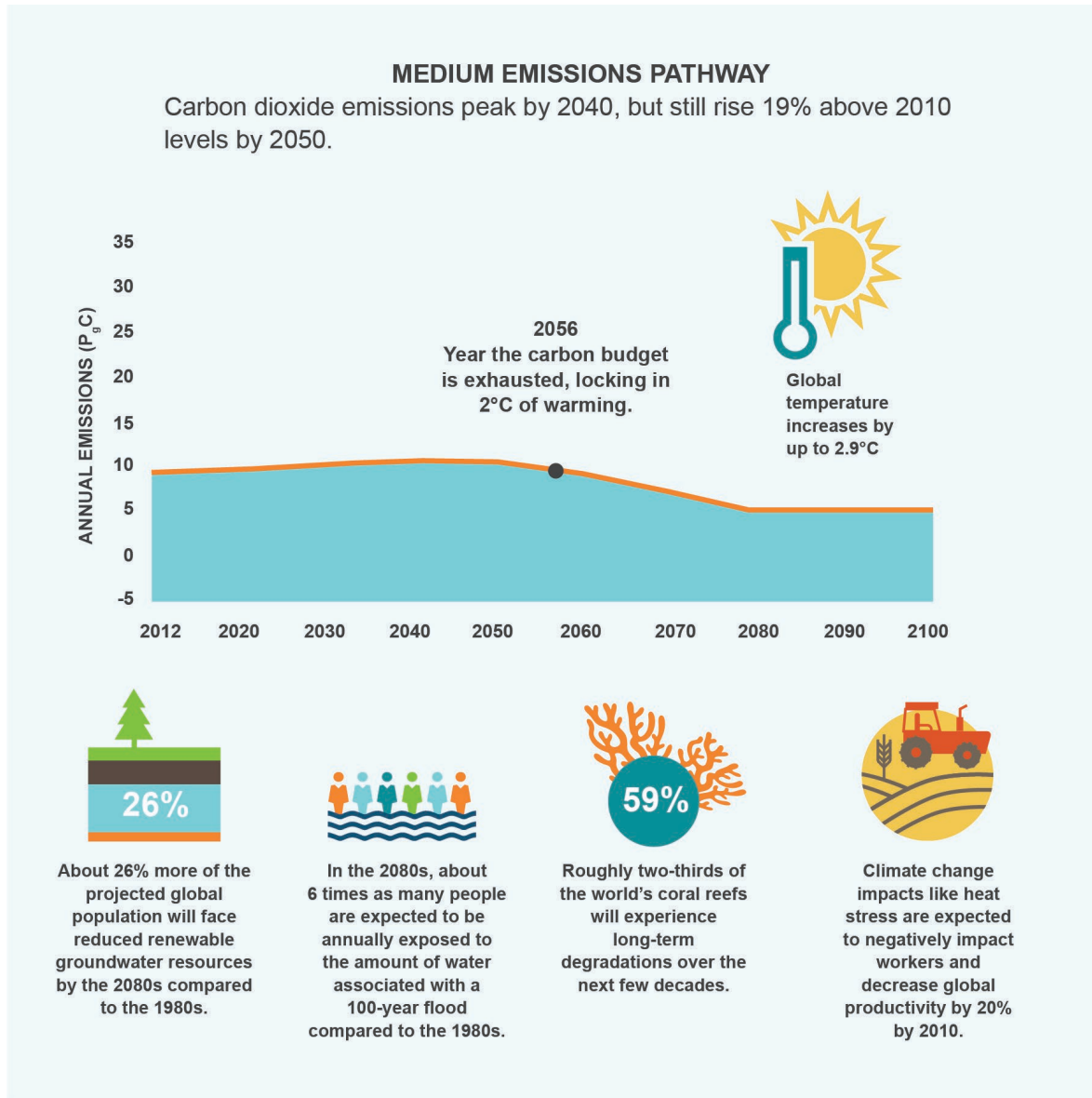
This graphic from the World Resources Institute gives a sense of the dynamics at play. It presents four “emissions pathways,” ranging from the very optimistic to the highly pessimistic.

WE ACTUALLY DO SOMETHING ABOUT CLIMATE CHANGE



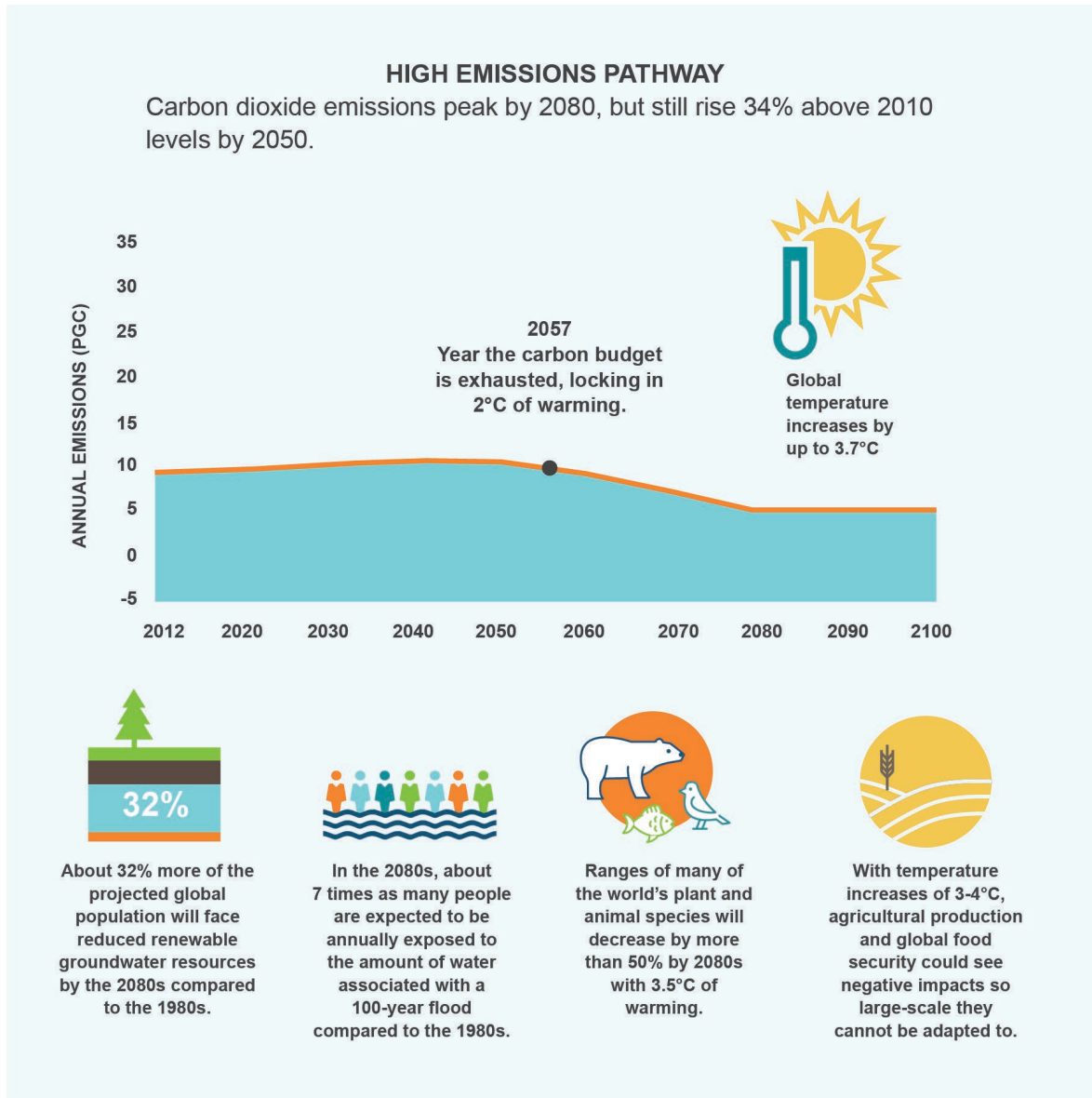
The first "Low Emissions" scenario is for a 66 percent drop in greenhouse emissions by 2050 compared to 2010 levels. It's what we might call a soft landing, because under those conditions scientists believe we'll be relatively safe. The world would have warmed only by 2 degrees C over pre-industrial levels (the level set by various international agreements). Still, almost of the quarter of the world would suffer depleted groundwater supplies by 2080, and many more people will face extreme flooding, the WRI says. So, life wouldn't be peachy.

WE KEEP DOING WHAT WE'RE DOING



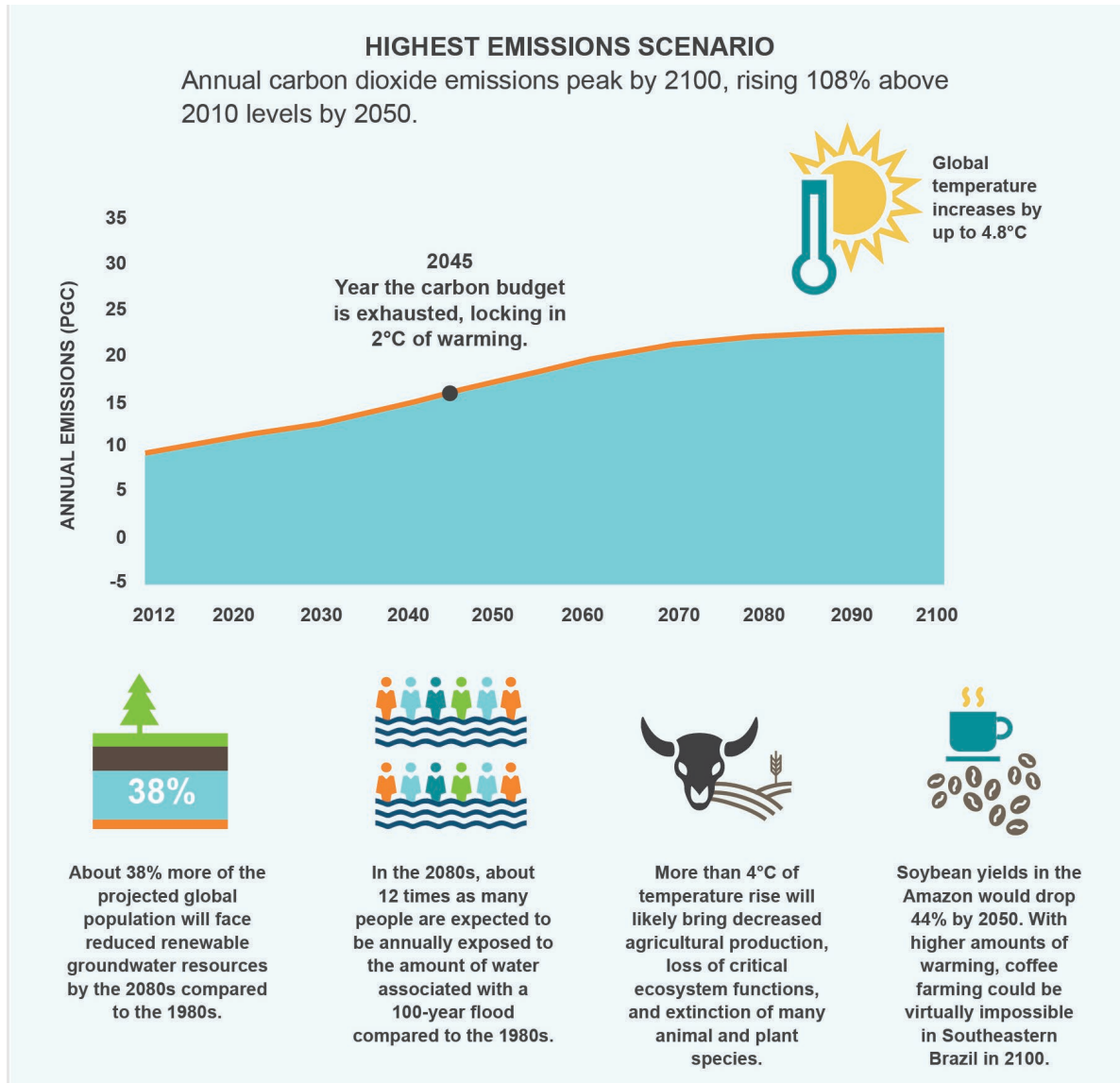
The “Medium Emissions” scenario sees increases in emissions until 2040 and the world exceeding its “carbon budget”—the level at which it should stay within the 2 degrees limit—by 2056. By 2100, the planet has warmed by 2.9 degrees, and economic productivity has fallen by 20 percent. By the 2080s, six times as many people are experiencing catastrophic flooding as the 1980s.

WE REV THE ENGINES



The “High Emissions” scenario doesn’t see emissions peaking until 2080, while global temperatures jump 3.7 degrees C by 2100. The carbon budget is exhausted in 2057. The impact on agricultural production is so heinous that adaption is no longer viable, the WRI predicts.

WE DESTROY THE PLANET



As if that’s not bad enough, there’s one last “Highest Emissions” scenario. It sees the carbon budget obliterated in 2045 and global temperatures increasing a whopping 4.8 degrees by century’s end. Many animals have become extinct and farming in some places, like southern Brazil, has become impossible.

But won’t we adapt to the new conditions, you might ask? Well, maybe. The scenarios here assume flat technology development, not the leaps forward in innovation that we can hope for. We could have drought-resistant crops and new ways of recycling and desalinating water, for instance, that could make these predictions less forceful.

The easier course, though, is to cut emissions. To have a fighting chance of coping with climate disorder, we have to cut greenhouse gases quickly, not just wait until it’s convenient.

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C. Policy

C.1 Global Policy



United Nations Sustainable Development Goal #13: Climate Action

The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries—developed and developing—in a global partnership. Goal

#13 is “Take urgent action to combat climate change and its impacts.”⁴²

C.2 State Policy and Regulatory Context

The State of California has been a leader in developing and implementing policies and regulations to directly address the risk of severe climate change. Below we summarize the key statewide legislation aimed at reducing greenhouse gas (GHG) emissions and adapt to climate impacts. There are many supporting pieces of legislation and other related initiatives that are sector specific.

Assembly Bill 32 (AB 32), California Global Solutions Act, 2006

In September 2006, the California legislature passed Assembly Bill 32 (AB 32), which set the goal of reducing GHG emissions back to 1990 levels by 2020. AB 32 finds and declares that “global warming poses a serious threat to economic well-being, public health, natural resources and the environment of California.” The legislation granted authority to the Air Resources Board to establish multiple mechanisms (regulatory, reporting, voluntary, and market) to achieve quantifiable reductions in GHG emissions to meet the statewide goal.

Senate Bill 97, CEQA Guidelines for Addressing GHG Emissions, 2007

In August of 2007, Senate Bill (SB) 97 was signed into law, expressly recognizing the need to analyze GHG emissions as a part of the California Environmental Quality Act (CEQA) process. SB 97 required the Office of Planning and Research (OPR) to develop, and the California Natural Resources Agency to adopt, amendments to CEQA Guidelines addressing the analysis and mitigation of GHG emissions. Those amendments became effective in March of 2010. Proposed projects that must comply with CEQA regulations include General Plans, Specific Plans and specific types of development projects.

Senate Bill 350, Clean Energy and Pollution Reduction Act, 2015

In October of 2015, Senate Bill 350 (SB 350) was signed into law, establishing new clean energy, clean air and greenhouse gas reduction goals for 2030 and beyond. SB 350 codified Governor Jerry Brown’s aggressive clean energy goals and established California’s 2030 greenhouse gas reduction goal of 40 percent below 1990 levels. To achieve this goal, SB 350 increases California’s renewable electricity procurement goal from 33 percent by 2020 (legislation originally enacted in 2002) to 50 percent by 2030. Renewable resources include wind, solar, geothermal, wave, and small hydroelectric power. In addition, SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030.

Senate Bill 100, the 100 Percent Clean Energy Act, 2018

In September of 2018, Governor Brown signed Senate Bill 100 (SB 100), requiring the State’s load serving entities (including energy utilities and community choice energy programs) to achieve 50 percent renewable resources target by December 31, 2026, to achieve a 60 percent target by December 31, 2030 and supply 100 percent of retail sales of electricity to California end-use customers and 100 percent of electricity procured to

serve all state agencies by December 31, 2045. At the same time, Governor Brown also signed Executive Order B-55-18, requiring California to achieve carbon neutrality as soon as possible, and no later than 2045, and to maintain negative emissions thereafter.

Senate Bill 1477, Low Emissions Buildings and Sources of Heat Energy, 2018

In September 2018, Governor Brown signed Senate Bill 1477 (SB 1477), that requires the California Public Utilities Commission (CPUC) to oversee two new low-carbon heating programs, investigate potential pilot programs to build all-electric, zero-carbon buildings in areas damaged by wildfires, coordinate with the California Energy Commission on updates to the State's building (Title 24) and appliance (Title 20) energy efficiency standards, and establish a building decarbonization policy framework. The bill authorizes \$200 million over four years to be invested in programs to advance low-carbon space and water heating technologies in both new and existing buildings. Funding for the programs is slated to come from natural gas utility carbon allowance proceeds from California's cap-and-trade program.

Bay Area Air Quality Management District CEQA Guidelines

The Bay Area Air Quality Management District (BAAQMD) encourages local governments to adopt a GHG Reduction Strategy that is consistent with AB 32 goals. The GHG Reduction Strategy may streamline environmental review of community development projects. According to the BAAQMD, if a project is consistent with a GHG Reduction Strategy, then it can be presumed that the project will not have significant GHG impacts. This approach is consistent with the following CEQA Guidelines, Section 15183.5.a:

“Lead agencies may analyze and mitigate the significant impacts of greenhouse gas emissions at a programmatic level, such as...a plan to reduce greenhouse gas emissions. Later project-specific environmental documents may tier from and/or incorporate by reference that existing programmatic review. Project-specific environmental documents may rely on an [Environmental Impact Report] containing a programmatic analysis of greenhouse gas emissions.”

This CAP provides a foundation for future development efforts in the community. It is expected that environmental documents for future development projects will identify and incorporate all applicable voluntary and mandatory actions from CAP for projects undergoing CEQA review.

C.3 State-Level Programs

The City is not expected to make all the reductions on its own. The following programs help cities meet their climate goals.

California Advanced Clean Cars Program

In 2012, CARB adopted a set of regulations to control emissions from passenger vehicles, collectively called Advanced Clean Cars. The program was developed in coordination with the U.S. EPA and National Highway Traffic Safety Administration (NHTSA) and combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of regulations. ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program

California Low Carbon Fuel Standard Program

The Low Carbon Fuel Standard (LCFS) is designed to encourage the use of low-carbon fuels, encourage the production of those fuels, and therefore, reduce GHG emissions. Currently, the LCFS calls for a 20 percent decline in the carbon intensity of diesel fuels below 2010 levels by 2030. ww3.arb.ca.gov/fuels/lcfs/lcfs.htm

Caltrain Electrification

Caltrain Electrification is a key component of Caltrain Modernization Program (CalMod). The current project will electrify the corridor from San Francisco to San Jose, including all track in San Mateo County, and will replace 75 percent of Caltrain's diesel service with electric. The project will lower GHG emissions, improve regional air quality, and reduce noise. <https://calmod.org>

California Renewable Portfolio Standard

The Renewable Portfolio Standard (RPS), originally established in 2002, required 20 percent of electricity retail sales to be served by renewable sources by 2017. The program was accelerated in 2015 with SB 350, which mandated a 50 percent RPS by 2030. SB 100, enacted in 2018, accelerated the program further, establishing renewable energy targets of 50 percent by 2026, 60 percent by 2030, and 100 percent by 2045.

www.cpuc.ca.gov/rps

California Long Term Energy Efficiency Strategic Plan

Published in 2008 and updated in 2011, the California Long Term Energy Efficiency Strategic Plan outlines goals and strategies for key market sectors (i.e., commercial, residential, industrial, and agricultural) and crosscutting initiatives (e.g., heating, ventilation and air conditioning, codes and standards, research, and technology). While the Plan has not been updated since 2011, it is still referenced in numerous State documents and reports. The Plan embraces four specific programmatic goals, known as the Big Bold Energy Efficiency Strategies. These goals are:

- All new residential construction in California will be zero net energy by 2020.
- All new commercial construction in California will be zero net energy by 2030.
- The Heating, Venting and Air Conditioning (HVAC) industry will be re-shaped to deliver maximum performance HVAC systems.
- All eligible low-income customers will have an opportunity to participate in the LIEE program and will be provided all cost-effective energy efficiency measures in their residences by 2020.

More information on California's zero net energy goals can be found online at: www.cpuc.ca.gov/ZNE

Organic/Food Waste Diversion

In 2016, Senate Bill 1383 (SB 1383) established methane emissions reduction goals in a statewide effort to reduce emissions of short-lived climate pollutants in various sectors of California's economy. SB 1383 establishes target to achieve a 50 percent reduction in the level of statewide disposal of organic waste from 2014 levels by 2020 and a 75 percent reduction by 2025. The law grants CalRecycle the regulatory authority required to achieve the organic waste disposal reduction targets. More information about SB 1383 can be found online at:

<https://www.calrecycle.ca.gov/climate/slcp>

The City intends to move this further by seeking opportunities for urban agriculture throughout the community to ensure as much as possible, food in East Palo Alto is locally sourced.

C.4 Local Policy

In September 2019, the San Mateo County Board of Supervisors adopted a resolution declaring a climate emergency in San Mateo County to highlight the increasingly urgent need for action to address the climate crisis. The County of San Mateo joined over 1,000 national, international, and local jurisdictions with similar declarations. The resolution calls for the County to create climate action plans (CAPs) for its government operations and

unincorporated community that will achieve carbon neutrality in advance of the State of California's 2045 goal, and coordinate with the cities and other local partners in addressing the climate crisis.⁴³

D. Partners

In addition to the partners listed here, the newly launched Bay Area Climate Action Mapping Project (<https://www.bayareaclimateactionmap.org/>) lists additional organizations actively working on climate action.

D.1 Public Sector

| Organization | Description |
|--|---|
| <p>Bay Area Regional Energy Network (BayREN)</p>  | <p>Led by the Association of Bay Area Governments (ABAG), BayREN provides regional-scale energy efficiency programs, services, and resources for single-family and multi-family homes, and small and medium-size businesses. BayREN supports cities in developing reach codes, and local building departments in complying with the Energy Code through trainings, events, and compliance tools. A water bill savings program is launching in 2020. In San Mateo County, the program is administered by the County of San Mateo Office of Sustainability. www.bayren.org</p> |
| <p>CALFIRE</p>  | <p>The mission of the California Department of Forestry and Fire Protection's Urban Forestry Program is to lead the effort to advance the development of sustainable urban and community forests in California. Trees provide energy conservation, reduction of storm-water runoff, extend the life of surface streets, improve local air, soil and water quality, reduce atmospheric carbon dioxide, improve public health, provide wildlife habitat and increase property values. In short, they improve the quality of life in our urban environments which, increasingly, are where Californians live, work, and play. The program also administers State and Federal grants throughout California communities to advance urban forestry efforts.</p> |
| <p>CALTRANS</p>  | <p>Caltrans manages more than 50,000 miles of California's highway and freeway lanes, provides inter-city rail services, permits more than 400 public-use airports and special-use hospital heliports, and works with local agencies. Caltrans carries out its mission with six primary programs: Aeronautics, Highway Transportation, Mass Transportation, Transportation Planning, Administration and the Equipment Service Center.</p> |

C/CAG is a council of governments consisting of the County of San Mateo and its 20 cities and towns. The organization deals with topics such as transportation, air quality, stormwater runoff, hazardous waste, solid waste and recycling, land use near airports, abandoned vehicle abatement, and issues that affect general quality of life. C/CAG supports several sustainability initiatives including:

San Mateo County Energy Watch. A local government partnership between PG&E and C/CAG to promote energy efficiency in municipal and non-profit buildings. It is managed and staffed by the County of San Mateo Office of Sustainability.

<https://smcenergywatch.org/>

Congestion Management Agency. C/CAG serves as the Congestion Management Agency for San Mateo County to identify strategies to respond to future transportation needs, develop procedures to alleviate and control congestion, and promote countywide solutions. <https://ccag.ca.gov/programs/transportation-programs/congestion-management/>

Sustainable Communities Strategy/Regional Transportation Plan. C/CAG is collaborating with local governments and regional agencies to develop a Sustainable Communities Strategy (SCS) in compliance with the requirements of SB 375. The SCS will facilitate more focused development in priority development areas near public transit stations. The aim of the San Mateo County SCS is to better integrate land use with public transportation in order to reduce GHG emissions. The San Mateo Countywide Transportation Plan was adopted by the C/CAG Board of Directors in February 2017. The Plan can be found online at: <https://ccag.ca.gov/programs/countywide-transportation-plan/>

San Mateo County Energy and Water Strategy 2025. This Plan provides a comprehensive roadmap for addressing challenges in the energy and water sectors in San Mateo County through 2025. It was developed by the County of San Mateo Office of Sustainability and the City/County Association of Governments of San Mateo County (C/CAG) with extensive input from expert local stakeholders from other public agencies, community-based organizations, and the private sector.

San Mateo Countywide Water Pollution Prevention Program (SMCWPPP). The program is a partnership of C/CAG, each incorporated city and town in the County, and the County of San Mateo, which share a common National Pollutant Discharge Elimination System (NPDES) permit. The goal of the collaboration is to reduce the pollution carried by stormwater into local creeks, the San Francisco Bay, and the Pacific Ocean. Permittees developed Green Infrastructure Plans to prompt specific reductions in mercury and PCBs (polychlorinated biphenyls) from entering the Bay via stormwater by 2040.

City/County Association of
Governments of San Mateo
County (C/CAG)



County of San Mateo Office of Sustainability



The Office of Sustainability (OOS) strives to improve the sustainability of the County's operations and the greater community by administering programs and developing policies in the areas of renewable energy and energy efficiency, water conservation, alternative transportation, affordable housing, waste reduction, and greenhouse gas (GHG) emission reductions. OOS also leads the following regional collaborations:

Climate Ready SMC. Brings together leaders from across sectors and jurisdictions to foster collaboration and collectively find solutions to make San Mateo County climate ready. The Collaborative is facilitated by the County of San Mateo Office of Sustainability. The Collaborative seeks to help leaders from non-profit and community-based organizations local government, businesses, and other key partners. <https://www.smcsustainability.org/climate-ready>

Home for All Initiative. Builds on the work and momentum of the Closing the Jobs/Housing Gap Task Force. Led by Supervisors Don Horsley and Warren Slocum, the Home for All Initiative is working to inspire community action and promote closure of the County's 16:1 jobs/housing gap. The Initiative's members include representatives from all sectors of the community and are focused on creating a future where everyone in San Mateo County has an affordable home. <https://homeforallsmc.org/>

Regionally Integrated Climate Action Planning Suite (RICAPS). A set of tools and a collaboration of all 20 incorporated cities and the County in climate action planning and implementation. <https://smcenergywatch.org/local-governments/>

OneShoreline



OneShoreline The San Mateo County Flood and Sea Level Rise Resiliency District is a coordinated, cross-jurisdictional collaborative to face impending coastal erosion, sea-level rise, and flooding threats as we look toward 2100. Comprised of the 20 incorporated cities, City/County Association of Governments, and the County of San Mateo, the purpose of this entity is to create a unified voice, to cost-effectively implement resilient infrastructure to face these challenges. The District initiates new countywide efforts to address sea-level rise, flooding, coastal erosion, and large-scale stormwater infrastructure improvements through integrated regional planning, project implementation and long-term maintenance. <https://oneshoreline.org/>

ICLEI – Local Governments for Sustainability



ICLEI is an international organization of local and regional governments that have made a commitment to sustainable development. They provide guides and frameworks that support climate action. <https://iclei.usa.org/>

Institute for Local Government



ILG empowers local government leaders and delivers real-world expertise to help them navigate complex issues, increase their capacity, and build trust in their communities. With a mission for a California where all local government leaders are trusted by the people they serve because of exceptional leadership and an endless pursuit towards thriving and resilient communities in which to live and work

Local Government Commission (LGC)



LGC works to build livable communities and local leadership by connecting leaders via innovative programs and network opportunities, advancing policies through participation at the local and state level, and implementing solutions as a technical assistance provider and advisor to local jurisdictions. <https://www.lgc.org/>

Metropolitan Transportation Commission



This Public Agency oversees the following agencies relevant to Climate Action in the City of East Palo Alto:

Bay Area Housing Financing Authority, a regional authority created to address the Bay Area’s chronic housing challenges

Bay Area Infrastructure Financing Authority: oversees the financing, planning and operation of MTC Express Lanes and related transportation projects.

Peninsula Clean Energy



Peninsula Clean Energy (PCE) was launched collaboratively by the County of San Mateo and all 20 of its cities and towns in 2016 to help the environment through cleaner energy, while helping customers save money through lower rates. PCE currently offers two electricity options to all residents, businesses, and municipalities in San Mateo County. Customers are automatically enrolled in the ECOplus rate that consists of 50.5 percent renewable and 99 percent greenhouse gas-free energy and can “opt up” to the ECO100 rate that consists of 100 percent renewable energy that is Green-e certified. PCE has a stated goal of sourcing 100 percent of electricity from California Renewable Portfolio Standard (RPS) eligible renewable energy by 2025. PCE is also supporting programs that reduce GHG emissions and deliver benefits to San Mateo County communities. www.peninsulacleanenergy.com

RethinkWaste



Also known as the South Bayside Waste Management Authority (SBWMA), RethinkWaste is a joint powers authority formed by 12 local government jurisdictions: Town of Atherton, City of Belmont, City of Burlingame, City of East Palo Alto, City of Foster City, Town of Hillsborough, City of Menlo Park, City of Redwood City, City of San Carlos, City of San Mateo, the County of San Mateo and the West Bay Sanitary District. SBWMA owns and manages the Shoreway Environmental Center in San Carlos, California, which receives all the recyclables, green waste, and garbage collected from the Member Agencies. <https://rethinkwaste.org/>

San Mateo County Public Health, Policy and Planning (HPP)



This County department protects the health of everyone who lives, works, learns, and plays in San Mateo County by preventing the spread of communicable diseases, delivering targeted health care services, providing public health laboratory testing, and building communities that make it easy to stay healthy. HPP is happy to partner with local governments working on climate action planning processes. <https://www.smchealth.org/division-public-health-policy-and-planning>

San Mateo County Transit District (SamTrans)



SamTrans provides public transit and transportation programs in San Mateo County: SamTrans bus service, including Redi-Wheels and RediCoast paratransit service, Caltrain commuter rail, and the San Mateo County Transportation Authority. <https://www.samtrans.com/>

San Mateo County’s Transportation Demand Management Agency (Commute.org)



This public agency aims to reduce the number of drive-alone vehicles traveling to, from, or through San Mateo County. Its goal is to help residents and commuters find alternatives to driving alone that are less stressful, less costly, and better for the environment. The agency provides information and commute planning assistance to employees, offers employer programs, and supports city transportation demand management partnerships. <https://commute.org/>

D.2 Non-Profit Organizations

| Organization | Description |
|--------------|-------------|
|--------------|-------------|

Acterra



Acterra builds alliances between community residents, local government programs, and community-based organizations in low-income areas in San Mateo County to create resilience against the coming impacts of climate change. <https://www.acterra.org/>, and Climate Resilient Communities hosting the Community Climate Change Team (CCCT).

Building Decarbonization Coalition



The Building Decarbonization Coalition unites building industry stakeholders with energy providers, environmental organizations, and local governments to help electrify California's homes and workspaces with clean energy.

Through research, policy development, and consumer inspiration, the BDC is pursuing fast, fair action to accelerate the development of zero-emission homes and buildings that will help California cut one of its largest sources of climate pollution, while creating safe, healthy, and affordable communities. www.buildingdecarb.org/

Business Council on Climate Change (BC3)



The Business Council on Climate Change (BC3) is a San Francisco-based multi-sector partnership dedicated to incubating, scaling, and sharing world-leading solutions to address climate change. It helps companies pool their buying power to move markets and improve the economics of sustainable purchasing decisions, share knowledge about sustainability programs that work, coordinate multi-company or multi-sector partnerships, and create opportunities for cross-sector dialogue to advance Bay Area climate policy. <https://www.bc3sfbay.org/>

Canopy



A non-profit based in Palo Alto with a mission is to grow urban tree canopy in Midpeninsula communities for the benefit of all. Their vision is a day when every resident of the Midpeninsula can step outside to walk, play, and thrive under the shade of healthy trees. Canopy prioritizes tree planting and stewardship, education, and advocacy in communities where people do not have a thriving urban forest due to limited resources, competing priorities, and historical development and urbanization patterns.

Grassroots Ecology



Grassroots Ecology is a 501(c)(3) nonprofit organization dedicated to caring for public lands and waters across Santa Clara and San Mateo Counties. In collaboration with public landowners, governments, schools, corporations, and other nonprofits, each year GRE engages thousands of people in hands-on education and service that improves our local environment. Core programs are Habitat Restoration, Community Science, Urban Ecology, Environmental Education, and our Native Plant Nursery.

GRID Alternatives



The nation's largest nonprofit solar installer, GRID develops and implements solar projects that serve low-income households and communities. The organization partners with affordable housing organizations, job training groups, government agencies, municipalities, utilities, tribes, and local communities to make solar a win for everyone. <https://gridalternatives.org/>

Joint Venture: Silicon Valley Network



Established in 1993, Joint Venture provides analysis and action on issues affecting the Silicon Valley economy and quality of life. The organization brings together established and emerging leaders—from business, government, academia, labor, and the broader community—to spotlight issues, launch projects, and work toward innovative solutions. Joint Venture is actively involved in Silicon Valley's regional response to climate change. It is engaged with dozens of regional and local public and private agencies, municipalities, businesses, and other stakeholders in programs and activities designed to reduce greenhouse gas (GHG) emissions, promote sustainable energy, and improve the quality of life for all. www.jointventure.org

Peninsula Interfaith Climate Action

Peninsula Interfaith Climate Action (PICA) is a Regional Working Group of California Interfaith Power and Light. To carry forward this local interfaith approach, PICA was formed in 2014 with members from about a dozen congregations from the San Francisco Bay Peninsula area, including Trinity Episcopal in Menlo Park and the Unitarian-Universalist Fellowship of Redwood City. PICA members work to reduce the carbon footprint at their facilities by sharing information and best practices on energy, water, and resource conservation. <https://www.interfaithpower.org/get-involved-3/pica/>

Rising Sun Center for Opportunity



Rising Sun runs Climate Careers, a summer youth employment and residential water and energy efficiency program in the Bay Area. Climate Careers hires young people (ages 15 to 22) to become Energy Specialists, serving their communities with a free Green House Call. Energy Specialists perform audits, install free energy and water saving devices, and provide personalized recommendations and education for further savings in the home. Climate Careers was designed to serve hard-to-reach residents including renters, non-English speaking households, and low- to moderate-income households. <https://risingsunopp.org/>

San Mateo County Association of Realtors (SAMCAR)



SAMCAR is a trade association organized to ensure professionalism, protect property rights, promote the ownership of real property, and help members achieve success. <https://www.samcar.org/>

San Mateo County Economic Development Agency (SAMCEDA)



SAMCEDA was founded in 1953 to promote business issues that enhance and sustain the economic prosperity of our region and its local communities. <https://www.samceda.org/>

Sustainable San Mateo County (SSMC)



SSMC supports multiple programs to promote energy efficiency, alternative transportation, and education on sustainability concepts that focus on the intersections of the environment, economy, and social equity. SSMC's core programs include an Indicators Report that has been produced annually since 1997 and the Sustainable San Mateo County Awards Event, which has been held annually since 1999. The most recent Indicators Report can be found online at: <https://sustainablesanmateo.org/home/indicators/>

Sustainable Silicon Valley (SSV)



SSV is a collaboration of businesses, governments, and non-governmental organizations that are identifying and addressing environmental and resource pressures in Silicon Valley. As its first initiative, SSV engages Silicon Valley organizations to work towards a goal of reducing regional carbon dioxide emissions 20 percent below 1990 levels by 2010. SSV's Net Positive Bay Area 2050 goals are to: 1) produce more renewable energy than we consume, 2) sequester more carbon than we emit, and 3) optimize water resources to ensure water resilience. Their current strategy focuses on facilitating measure projects, education, events, and policies that deliver solutions by activating SSV's member network to reach the Net Positive Bay Area goals. www.sustainablesv.org

**Thrive, The Alliance for
Nonprofits of San Mateo
County**



A robust, trusted network of 200+ nonprofit organizations, government entities, foundations, businesses, and community leaders with a shared commitment to strengthening the nonprofit sector, thereby improving the quality of life in San Mateo County. Thrive unites the voice and influence of nonprofits, helps build their capacity, and enables effective cross-sector collaboration.

<https://www.thrivealliance.org/>

E. Summary of Funding Sources

For implementation of the CAP, East Palo Alto must evaluate strategies for financing climate protection actions and provide adequate, reliable, and consistent long-term program funding. This appendix provides an overview of available funding sources to help determine appropriate potential program funding sources and funding levels to support existing and new programs outlined in this plan. Other funding sources may be available that are not listed here.

E.1 Federal Funding

Inflation Reduction Action Electrification Rebate Savings Calculator via Rewiring America -
<https://www.rewiringamerica.org/app/ira-calculator>

Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grants program <https://www.transportation.gov/BUILDgrants>

Transportation Secretary Elaine L. Chao announced that in fiscal year 2020 over \$1 billion will be available for transportation projects that “have significant local or regional impact.” Cities can apply for a BUILD grant to fund road, rail, transit, and port projects. In the first two years of the BUILD Grants Program, other cities in California were awarded grants for zero-emission, battery-electric buses and chargers, as well as roadway improvements to enhance walkability and bikeability.

E.2 State Funding

Energy Conservation Assistance Act (ECAA) Program Loans

<http://www.energy.ca.gov/efficiency/financing/index.html>

Since 1979, more than \$399 million has been allocated to more than 850 recipients through ECAA Program Loans. The program offers loans with a one percent interest rate to finance energy efficiency improvements. The maximum loan amount is \$3 million per application. Eligible projects include lighting system upgrades, pumps and motors, streetlights and LED traffic signals, energy management systems and equipment controls, building insulation, energy generating infrastructure including renewable and combined heat and power projects, HVAC equipment, water and waste water treatment equipment, and load shifting projects.

E.3 Utility Programs

Peninsula Clean Energy (PCE) and Pacific Gas and Electric Company (PG&E) offer a full suite of energy efficiency rebates to support its customers in saving energy and money.

Rebates

For households: https://www.pge.com/en_US/residential/save-energy-money/savings-solutions-and-rebates/rebates-by-product/rebates-by-product.page?

PCE's income-qualified Home Upgrade Program (average of \$6,500 for home repairs, energy efficiency, and electrification measures): <https://www.pencleanenergy.com/home-upgrade-program>

PCE'S heat pump water heater rebate (up to \$3,500 for new heat pump water heaters and electrical panel upgrades): <https://www.pencleanenergy.com/heat-pump-water-heater>

PCE & Sunrun's solar + battery backup (up to \$500 incentive): <https://www.pencleanenergy.com/POP-homeowner>

PCE's Used EV Rebate Program (income-qualifying residents can get up to \$6000 for the purchase of a used electric vehicle. All residents, regardless of income, are eligible for a rebate of up to \$1000): <https://pencleanenergy.com/usedEV>

For small and medium businesses: https://www.pge.com/en_US/business/save-energy-money/business-solutions-and-rebates/product-rebates/product-rebates.page

For large businesses: https://www.pge.com/en_US/large-business/save-energy-and-money/business-solutions-and-rebates/product-rebates.page

Zero Percent Interest Financing

PCE'S Zero Percent Loan Program (customers who install electric appliances and energy efficiency improvements in their homes may be eligible for loans of up to \$10,000, at zero percent interest with no money down, for a term of up to 10 years, and no credit check required. To qualify, actions taken must include either a heat pump water heating or a heat pump space heating measure): <https://www.peninsulacleanenergy.com/zero/>

For businesses: https://www.pge.com/en_US/small-medium-business/save-energy-and-money/energy-efficiency-financing.page

E.4 Other Funding Opportunities

American Forests Global ReLeaf Grant Program

<http://www.americanforests.org/discover-american-forests/our-work/>

American Forests is a non-profit organization founded in 1875 that promotes forest conservation. American Forest's Global ReLeaf Program provides grants to fund tree-planting projects in urban and natural areas.

Large Landscape Audit

<http://bawasca.org/consERVE/programs/audits>

BAWSCA and its participating member agencies offer this audit program to select large landscapes within the service area free of charge. This program includes the development and monthly distribution of landscape water budgets for selected accounts and actual large landscape surveys to assess landscape watering needs. A key component of the program is ongoing monitoring/tracking of actual water use and estimated water savings for the sites surveyed. For water conservation related questions, please call (650) 349-3000 or send an email to bawasca@bawasca.org. Also check with your local water company; some offer water audits for no charge.

Waste Audits by Recology

<https://www.recology.com/index.php/commercial-beyond-the-cart/84-commercial>

Recology offers a free waste audit to its business customers. A Waste Zero Specialist will come to your facility to advise you on the size/type of bins you could use and make other recommendations to help you reduce the amount of waste generated. To make an appointment, call (650) 595-3900.

F. Adaptation Planning for Climate Impacts

Effective adaptation planning and management entails dealing with uncertainty. It is a long-term process that should allow immediate action when necessary and adjust to changing conditions and new knowledge. East Palo Alto plans to initiate an inclusive planning process that ensures the resulting actions are feasible and widely accepted. Adaptation will likely be an ongoing process of planning, prioritization, and specific project implementation.

Five important steps to effective adaptation planning are summarized below:

1. Increase Public Awareness, Engage and Educate the Community

It is critical that the public understand the magnitude of the challenge and why action is needed. It is also important for the community to be aware of win-win opportunities that can improve quality of life, protect community members, and potentially generate more jobs. The planning process should be inclusive of all stakeholders. Local outreach campaigns are needed to promote awareness of the dangers of heat exposure, flooding, and recommend low-cost and low-GHG adaptation strategies. These efforts should leverage similar efforts undertaken at the regional, state, and federal levels. The efforts should be inclusive of community organizations (especially those with socially vulnerable community members), and include community needs early on in the process.

2. Assess Vulnerability

Understanding vulnerability to sea-level rise and other climate change impacts is critical to developing adaptation effective strategies. In 2020, Acterra, a non-profit partner of the City of East Palo Alto, in conjunction with Urban Permaculture Institute, the San Mateo County Office of Sustainability, and Ecology and Environment, Inc. prepared the "Acterra Community Based Vulnerability Planning Pilot Project Report to understand specific vulnerabilities and adaptive strategies related to climate change in the diverse East Palo Alto community. The Pilot found compelling evidence that East Palo Alto (EPA) is among the most vulnerable communities in San Mateo County to climate change and sea-level rise. Further, it found that the community is facing many challenges from displacement to environmental problems. The rapidly increasing housing costs have had a detrimental impact, and the rise of the sea will add to the burden and exacerbate vulnerabilities.

To understand community vulnerability and adaptive capacity, Acterra, with support from San Mateo County Office of Sustainability and guidance from the East Palo Alto Climate Change Community Team, enabled a unique project to engage the community to assess vulnerabilities and identify adaptation strategies through a community-based planning methodology. The Pilot Project sought to empower socially vulnerable communities in EPA to respond to climate change, sea-level rise, and other climate change-driven stressors, to develop the following outcomes:

- a. Increase the commitment of key stakeholders to taking roles and responsibilities in sea level rise and climate change-driven vulnerability planning by and for the East Palo Alto community.
- b. Increase representation of socially vulnerable EPA community members in sea-level rise and climate change adaptation planning efforts by county and city.
- c. Identify preliminary community-defined priorities and adaptation strategies.

This Pilot Project leveraged a previous San Mateo County Community Resilience Grant, which created a Community Climate Change Team (CCCT) for East Palo Alto. The CCCT is a cross-sector group of community and city leaders responsible for advising on climate change issues through Acterra's Climate Resilient Communities Program.

The Pilot Project resulted in community-noted vulnerabilities which projected change for East Palo Alto centered around flooding due to rainfall and sea-level rise. The city has already been experiencing

flooding from rainfall and this is projected to increase with climate change. With sea level rise, the city is exposed and vulnerable to flooding and inundation with some areas expected to be covered by 3 to 6 feet by 2030. Warmer and high heat days are projected to increase in the coming decades from annually experiencing 2 to 3 heat days by 2030 to as high as 6 heat days by 2070 (Climate Ready SMC Web Visualization Tool).

A predicted increase in flooding and high heat days will directly affect human health not only from heat stress but also because of the amplified vulnerability to possible outbreaks of vector borne and water-borne diseases. Flooding and increased rainfall events result in increased exposure to mold and poor air quality. Coastal flooding and erosion can greatly impact coastal areas and threaten the inundation of homes and increase displacement. The high heat days may trigger heat-related health problems for the elderly population.

The community recognizes that there are issues that need addressing to help their community to address vulnerabilities to both climate change and the current social, economic circumstances. To take action to curb the impacts and build resilience, the CCCT noted efforts and investment should focus on housing, water insecurity, transportation, food security, locally sourced foods, safety, education, and economic opportunities for the local population. To successfully address the insecurities, the CCCT noted a greater need and ask to help heal and build trust between the community leaders and the project in East Palo Alto through a deep public engagement process.

To address capacity building and awareness, community planning fatigue, the project took action to implement a demonstration project to address flooding, drought, and food security with Youth United for Community Action. The demonstration was successful as it now stands as a hub for the community to learn, see, and touch small, but meaningful, adaptation strategies that can be community-driven and can be implemented at a household level.

The pilot recognizes the role and value of community organizations in EPA. Across the focus groups, community organizations are supporting families and providing services for the most vulnerable families with fewer resources. In this frame, it is critical for the community to be informed and have a deeper understanding of climate change and how it can impact their lives and further burden their ability to respond to extreme events and impacts of climate change. Based on the pilot, it is evident that the community-level approach to assessment is crucial in understanding vulnerabilities, building trust when and where necessary and as a window to organize and build collaboration in the community to plan for climate change. So, this process needs more time and financial support to continue the conversation while elevating community capacity and expertise to build consensus on adaptation priorities.

While the report is an excellent beginning at understanding vulnerabilities and assessing strategies to a more resilient East Palo Alto, a detailed vulnerability analysis has been further explained in the 2021 Multijurisdictional Local Hazard Mitigation Plan vol 2. Planning Partner Annexes (Reso. 161-2021)⁴⁴, a collective document which details a countywide identification of hazards within the San Mateo County boundary, with which East Palo Alto reaches the southeastern terminus. Updated to assess potential climate change impacts to infrastructure and natural systems. With the support of Climate Ready SMC an interactive map of climate impacts for all cities and unincorporated County was developed and integrated into the Hazard Mitigation Plan. Of the Hazard Risk Rankings, Climate Change/ Sea Level Rise was identified as the first (and highest risk) item for hazards in East Palo Alto, with flooding ranked second. Future goals should include climate-change specific vulnerability analysis that integrates the EPA CAP 2030, the Hazard Mitigation Plan, and incorporates the work from the “Acterra Community Based Vulnerability Planning Pilot Project Report” to further implementation of resilience building.

Establish Goals, Criteria, and Planning Principles

Engage with stakeholders to establish planning priorities, determine decision criteria, and build community support for taking action. Include community-based organizations in this process to ensure that these priorities and criteria will reflect their needs as well. Rank physical and natural assets for preservation efforts. Where possible, look for situations where a mitigation action has adaptation co-benefits (e.g., planting trees to reduce urban heat islands while sequestering carbon and providing habitat). **Develop Adaptation Plan**

Identify specific strategies, develop actions and cost estimates, and prioritize actions to increase local resilience of City infrastructure and critical assets, including community-identified and natural systems like wetlands and urban forests. Look for synergies between natural processes and engineering solutions. There is a continuum of strategies available to manage climate change impacts. An adaptation plan should include a prioritized list of actions (e.g., projects) with a timeline, capital expenditure plan, and framework for monitoring and adaptive management. Efforts should be made to integrate capital projects, existing infrastructure, emergency planning, and community services.

3. Ongoing Monitoring and Adaptive Management

Reassess climate change vulnerabilities on a regular basis and modify actions accordingly. This includes monitoring the effectiveness of current policies, strategies, and actions, and keeping up with changing science, funding opportunities, and regulatory actions. When reassessing, consider the most updated science available, and the timing of the impact.

Climate Ready SMC has developed a set of climate adaptation strategies and tools for use in planning. These tools will continue to be updated as new ones are available, including tools for developing climate adaptation plans, incorporating climate adaptation into General Plans, Local Hazard Mitigation Plans, Capital Improvement Plans, and community engagement and social equity. For the latest information on climate impacts and adaptation strategies, visit the Climate Ready SMC site: <https://www.smcsustainability.org/climate-ready>.

12. Endnotes



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ENDNOTES

Endnotes

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