CITY OF PARAMOUNT

Climate Action Plan

July 2021

PARAMOUNT
THE CITY
Safe, Healthy, and Attractive

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Major Contributors

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Glossary of Terms and Acronyms

TERM/ACRONYM	DEFINITION
AB 32	Assembly Bill 32, the California Global Warming Solutions Act of 2006, establishes a comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, cost-effective reductions of greenhouse gases for the state of California. Makes the California Air Resources Board responsible for monitoring and reducing statewide greenhouse gas emissions, with a target to reduce emissions to 1990 levels by 2020.
AB 1550	Assembly Bill 1550, requires 25 percent of proceeds from the Greenhouse Gas Reduction Fund to go to projects that are located within and benefit disadvantaged communities, and requires an additional 10 percent to go to low-income households or communities.
Adjusted BAU	An adjusted emissions forecast that includes the effects of state-wide emissions reductions measures such as updates to building energy standards and implementation of programs to decrease emissions from on-road vehicles
AHSC	Affordable Housing and Sustainable Communities Program, a state program that funds land-use, housing, transportation, and land preservation projects to support infill and compact development that reduce greenhouse gas emissions.
ARRA	American Recovery and Reinvestment Act
ATP	Active Transportation Program, a suite of legislative actions signed by Governor Brown on September 26, 2013, that is intended to encourage the increased use of active modes of transportation (i.e., walking and biking)
Baseline Inventory	The base year for assessment of GHG trends against which future progress can be measured for a single calendar year (e.g., 2010)
BAU	Business as Usual, a scenario that assumes that no new local actions will be taken to reduce energy usage or associated greenhouse gas emissions from current and future residents and businesses within the City
BIPOC	Black, Indigenous, People of Color, the term to acknowledge that not all people of color face equal levels of injustice. BIPOC is significant in recognizing that Black and Indigenous people are severely impacted by systemic racial injustices.
C&D	Construction and demolition debris is waste that is generated during construction activities
CAFE	Corporate Average Fuel Economy, federal fuel-efficiency standards enacted in 1975 to improve the average fuel economy of cars and light trucks produced for sale in the United States
CalEnviroScreen	CalEnviroScreen is a mapping tool that helps identify California communities that are most affected by many sources of pollution, and where people are often especially vulnerable to pollution's effects.
CalEPA	California Environmental Protection Agency
CALGreen	Refers to CALGreen component of the California Building Code. See California Building Code
California Building Code	California Code of Regulations Title 24, also known as the California Building Standards Code (composed of 12 parts). Title 24, Part 6, sets forth California's energy-efficiency standards for residential and nonresidential buildings and was established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy-efficiency technologies and methods.
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CanESM2	Canadian Earth System Model (CanESM2), global climate model developed by the Canadian Centre for Climate Modelling and Analysis (CCCma), which integrates an atmosphere-ocean general circulation model, a land-vegetation model and 5 terrestrial and oceanic interactive carbon cycle.
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association, an association of air pollution control officers that represents all thirty-five local air quality control agencies in California
CAPG	California Adaptation Planning Guide, which includes a step-by-step process for local and regional climate vulnerability assessment and adaptation strategy development

TERM/ACRONYM	DEFINITION
CARB	California Air Resources Board
CBMWD	Central Basin Municipal Water District
CCA	Community Choice Aggregation, sometimes referred to as Community Choice Energy (CCE), a type of energy supply program that allows cities and counties to aggregate the buying power of individual customers within a jurisdiction to secure alternative energy supplies
CCE	Community Choice Energy, sometimes referred to as Community Choice Aggregation (CCA)
CCI	California Climate Investments is a statewide initiative that puts the state's Cap-and-Trade revenue to work reducing greenhouse gas emissions.
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEESP	California Long-Term Energy-Efficiency Strategic Plan, a plan adopted by the California Public Utilities Commission in 2008 that presents a single roadmap to achieve maximum energy savings across all major groups and sectors in California. This comprehensive plan for 2009 to 2020 is the state's first integrated framework of goals and strategies for saving energy, covering government, utility, and private-sector actions, and holds energy efficiency to its role as the highest priority resource in meeting California's energy needs.
CEQA	California Environmental Quality Act
CFCs	Chlorofluorocarbons
CFL	Compact fluorescent light
CH_4	Methane
City	City of Paramount
ClearPath	An online application that calculates, tracks, and manages GHG emissions at the government operations (i.e., municipal) and community scales.
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent, a metric measure used to compare the emissions of various greenhouse gases based upon their global warming potential (GWP). The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP factor. For example, the GWP factor for methane is 25. This means that emissions of 1 million metric tons (MT) of methane are equivalent to emissions of 25 million $MTCO_2e$.
Community-wide	Refers to all activities within a community or city's geographic boundary.
CPA	LA County Clean Power Alliance
CPUC	California Public Utilities Commission
DAC	Disadvantaged Community
Demand Response	Mechanism for managing end-user electricity consumption in response to energy supply conditions, especially during summer periods when electricity demand on the California power grid is high.
Direct Access Electricity	Direct access service is when customers elect to purchase electricity and other services from an electric service provider (ESP), instead of from a public or private utility company
DOE	United States Department of Energy
DOF	California Department of Finance
DOT	California Department of Transportation
EIR	Environmental impact report
EJ	Environmental justice refers to the equitable distribution of environmental benefits and burdens
ELP	Gateway Cities Energy Leader Partnership, a local government partnership program between cities and energy providers, Southern California Edison and Southern California Gas Company, to develop and execute projects that increase energy efficiency in municipal facilities and operations.

TERM/ACRONYM	DEFINITION
ENERGY STAR	A joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy to provide consumers with energy efficiency information and incentives to purchase the most energy-efficient products available.
ESA	Environmental Science Associates
ESCO	Energy service company
EV	Electric vehicle, a vehicle that uses an electric battery to operate
FCEV	Fuel cell electric vehicle, a vehicle that is powered by hydrogen fuel cell technology
FEMA	Federal Emergency Management Agency, a part of the U.S. Department of Homeland Security (DHS)
FHA	Federal Housing Administration
First Cost	Immediate purchase and installation cost, first costs do not include lifecycle or long-term operating costs, which may result in long-term cost savings from increased efficiency, reduced maintenance, and other factors.
FY	Fiscal year
GCCOG	Gateway Cities Council of Governments
GGRF	Greenhouse Gas Reduction Fund, an account established by the State of California to receive Cap-and-Trade auction proceeds to support programs that reduce greenhouse gas emissions. Funds are administered by the California Climate Investments (CCI) program.
GHG	Greenhouse gases, gases that cause heat to be trapped in the atmosphere, resulting in warming effects for the earth
GIS	Geographic information system, designed to capture, store, analyze, manage, and present spatial or geographic data
gpcd	gallons per capita-day
Green Building	Sustainable or “green” building is a holistic approach to design, construction, and demolition that minimizes the building’s impact on the environment, the occupants, and the community.
Green Team	A formal or informal group of people within an organization or community that promotes more environmentally sustainable practices and sustainability plans and management approaches
Greenhouse Gas Inventory	A greenhouse gas inventory provides estimates of the amount of greenhouse gases emitted to and removed from the atmosphere by human activities. A city or county that conducts an inventory looks at both community emissions sources as well as emissions from government operations.
GWh	Gigawatt-hour, a unit of electricity
GWMA	Gateway Water Management Authority
GWP	Global warming potential is a relative measure of how much heat a greenhouse gas traps in the atmosphere.
HCD	California Department of Housing and Community Development
HFCs	Hydrofluorocarbons
HOV	A high-occupancy vehicle (HOV) lane is a restricted traffic lane reserved for the exclusive use of vehicles with a driver and one or more passengers, including carpools, vanpools, and transit buses.
HPS	High-pressure sodium, a type of lamp commonly used for street lighting
HUD	U.S. Department of Housing and Urban Development
HVAC	Heating, ventilation, and cooling
ICLEI	International Council for Local Environmental Initiatives is an international association of local governments and national and regional local government organizations that have made a commitment to sustainable development.
ILG	Institute for Local Government
IPCC	Intergovernmental Panel on Climate Change is a scientific intergovernmental body under the auspices of the United Nations.
JPA	Joint Powers Agency/Authority

TERM/ACRONYM	DEFINITION
kWh	Kilowatt-hour, a unit of energy equivalent to 1 kilowatt (kW) of energy used for an hour. For example, if an appliance requires a kW of energy to function, leaving the appliance on for one hour would consume 1 kWh of energy.
LA Metro	Los Angeles County Metropolitan Transportation Authority (MTA or Metro)
LADWP	Los Angeles Department of Water and Power
LCFS	Low-carbon fuel standard, requires fuel providers in the state to decrease lifecycle fuel carbon intensity by 2030.
LED	Light-emitting diode
LEED	Leadership in Energy and Environmental Design, an internationally recognized green building certification system that provides third-party verification that a building or community was designed and built using sustainable approaches, with particular regard to energy savings, water efficiency, CO_2-emissions reductions, and improved indoor environmental quality, among others.
LHMP	Local Hazard Mitigation Plan
LID	Low-impact development
LiHEAP	Low-Income Home Energy Assistance Program, a state program that provides assistance with energy costs to families in California
Metro	Los Angeles County Metropolitan Transportation Authority (MTA or Metro)
MGD	Million gallons per day
mpg	Miles per gallon
MPO	Metropolitan Planning Organization
MTA	Los Angeles County Metropolitan Transportation Authority (MTA or Metro)
$MTCO_2e$	Metric tons of carbon dioxide equivalent
Municipal	Refers to energy use and greenhouse gas emissions from City-owned and operated facilities and equipment.
MWD	Metropolitan Water District
N_2O	Nitrous oxide
NAS	National Academy of Sciences
NOAA	National Oceanic and Atmospheric Administration
NREL	National Renewable Energy Laboratory
NSHP	California Energy Commission's New Solar Homes Partnership, part of the comprehensive statewide solar program, known as the California Solar Initiative
OED	Office of Economic Development, which serves as California's single point of contact for economic development and job creation efforts
OPR	California Governor's Office of Planning and Research
PACE	Property-Assessed Clean Energy, a form of long-term financing that creates municipal finance districts to provide loans to homeowners and businesses for energy-efficient retrofits and renewable energy system installations. Loans are repaid through an annual surcharge on property tax assessments.
PEV	Plug-in-battery electric vehicle
PFCs	Perfluorocarbons
POU	Publically owned utility
PPA	Power purchase agreement
ppm	Parts per million, a measurement unit of concentration
PV	Photovoltaic, refers to method of converting solar energy into direct current electricity using semiconducting materials.

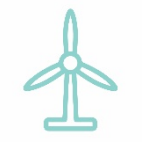
TERM/ACRONYM	DEFINITION
Rebate	Offered by the state, utility, or local government to promote the installation of renewables and energy efficiency projects.
Renewable Energy	Energy from sources that regenerate and are less damaging to the environment, such as solar, wind, biomass, and small-scale hydroelectric power
RMC	The San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy
RPS	California's Renewable Portfolio Standard requires utility providers to increase the portion of generated energy that comes from renewable sources.
RTP/SCS	Regional Transportation Plan/Sustainable Community Strategy, a plan that identifies transportation projects across an entire region, with the aim of reducing vehicle trips and associated GHG emissions.
RTPA	Regional Transportation Planning Agency
SB 32	California Senate Bill 32 (2016) expands upon AB 32 to mandate statewide GHG emissions reduction of 40 percent below 1990 levels by 2030
SB 97	Senate Bill 97 (2007) requires the Governor's Office of Planning and Research to develop and adopt CEQA guidelines for the mitigation of GHG emissions.
SB 100	Senate Bill 100 (2018) increases the California RPS requirement to 60 percent eligible renewables by 2030 and 100 percent by 2045.
SB 350	Senate Bill 350 (2015) requires California to (1) generate half of its electricity from renewable energy sources; (2) double energy efficiency for both electricity and natural gas end uses in all buildings by 2030; and (3) substantially improve the infrastructure for electric vehicle transportation.
SB 375	Senate Bill 375 (2008) enhances California's ability to reach its climate stabilization goals by planning more sustainable communities.
SB 379	Senate Bill 379 (2015) requires that climate adaptation be addressed in the safety element of a city's general plan and/or in the Local Hazard Mitigation Plan (LHMP)
SB 535	Senate Bill 535 (2012) requires 25 percent of the Greenhouse Gas Reduction Funds to go to projects that provide benefits to disadvantaged communities, and requires CalEPA to identify such communities.
SBEA	Small Business Energy Alliance
SBx707	The Water Conservation Bill of 2009
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCS	Sustainable Community Strategy
SEEC	California State-wide Energy Efficiency Collaborative
SF_6	Sulfur hexafluoride, a powerful greenhouse gas
SGC	Strategic Growth Council
SLCP	Short-Lived Climate Pollutant, a greenhouse gas that persists for a relatively short time in the atmosphere but has a significant atmospheric warming impact.
SoCalGas	Southern California Gas Company
SoCalREN	Southern California Regional Energy Network
SOI	Sphere of influence
SOVs	Single-occupancy vehicles
TCC	The Strategic Growth Council's Transformative Climate Communities (TCC) Program funds community-led development and infrastructure projects that achieve major environmental, health, and economic benefits in California's most-disadvantaged communities.

TERM/ACRONYM	DEFINITION
TDM	Transportation demand management, the application of strategies and policies to reduce travel demand
TEA-21	Transportation Equity Act for the 21st Century) program, a federal program administered through the state and regional governments
TIRCP	Transit and Intercity Rail Capital Program was created by Senate Bill 862 to provide grants from the Greenhouse Gas Reduction Fund to fund transformative capital improvements that will modernize California's intercity, commuter, and urban rail systems, and bus and ferry transit systems to reduce GHG emissions by reducing congestion and vehicle miles traveled throughout California.
Title 24	California Code of Regulations Title 24, also known as the California Building Standards Code (composed of 12 parts). Title 24, Part 6, established California's energy efficiency standards for residential and nonresidential buildings. See California Building Standards.
U.S. EPA	United States Environmental Protection Agency
USDA	U.S. Department of Agriculture
UWMP	Urban Water Management Plan
VMT	Vehicle miles traveled
WWTP	Waste water treatment plant
ZEV	Zero-emissions vehicle
ZNE	Zero net energy, for buildings, use of no more energy over the course of a year than can be generated on site through renewable resources such as solar, wind, or geothermal power.

List of Measures

ENERGY EFFICIENCY AND CONSERVATION (EE)

E1: Improve Energy Efficiency of Existing Buildings
E2: Promote Green Building
E3: Improve Efficiency of Municipal Operations and Public Infrastructure



RENEWABLE ENERGY (RE)

R1: Increase Local Renewable Energy Generation
R2: Promote Community Choice Energy (CCE) and Utility Renewable Energy
R3: Promote Conversion from Natural Gas to Clean Energy

SUSTAINABLE TRANSPORTATION (TR)

TR1: Support the Transition to Electric and Zero-Emissions Vehicles
TR2: Improve Pedestrian and Bicycle Infrastructure
TR3: Expand Public Transit Options and "Last-Mile" Connectivity
TR4: Expand Car Sharing, Bike Sharing, and Ride Sharing
TR5: Improve Traffic Safety and Flow
TR6: Support Transportation Demand Management

LAND USE & COMMUNITY DESIGN (LU)

LU: Promote Smart Growth, TOD, and Complete Neighborhoods

WATER AND WASTEWATER SYSTEMS (WA)

WA1: Promote Water Conservation
WA2: Promote Water Recycling and Greywater Use

WASTE REDUCTION AND RECYCLING (WR)

WR1: Promote Solid Waste Diversion

GREEN INFRASTRUCTURE, PARKS, URBAN FORESTRY, AND AGRICULTURE (GA)

GA1: Support Urban Tree-Planting, Park Access, and Green Infrastructure
GA2: Support Local Agriculture and Food Production

GREEN BUSINESS AND INDUSTRY (GB)

GB1: Engage with Partner and Local Industries and Businesses to Reduce Emissions
GB2: Grow the Local Green Economy

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CHAPTER 1

Introduction and Background

Given the scientific consensus that anthropogenic or "man-made" greenhouse gas (GHG) emissions are contributing to global climate change, and the GHG reduction policies established by the State of California, the City of Paramount (City) is joining an increasing number of California local governments committed to addressing climate change at the local level. The City recognizes the risk that climate change poses to its residents, business owners, and visitors, and is acting now to reduce the GHG emissions from both its government operations and the community at-large through the strategies set forth in this Climate Action Plan (CAP). Although state and regional policies and programs are being implemented to reduce GHG emissions, ultimately local action is needed to ensure that the City of Paramount is doing its part to mitigate climate change and adapt to its current and future effects. This CAP takes a common sense approach to reducing GHG emissions in the City of Paramount, with policies and cost-effective programs that the City itself, as well as its residents and businesses, can implement to reduce GHG emissions associated with energy consumption, transportation, water use, and solid waste sent to local landfills.

Purpose

This CAP outlines strategies, goals, and actions for reducing City of Paramount's municipal and community-wide GHG emissions and for preparing the community for the anticipated impacts of climate change. It is designed to ensure that Paramount does its part to contribute to the goals of California's Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32), and its successor bill Senate Bill (SB) 32, while remaining consistent with the City's General Plan vision for future growth. The

reduction of GHG emissions can ultimately establish the City as a leader in addressing the root causes of climate change within its own community.

AB 32 directs the state to reduce statewide GHG emissions to 1990 levels by 2020, while SB 32 deepens that commitment to 40 percent below 1990 levels by 2030. To achieve these reductions, the California Air Resources Board (CARB) and the state Office of Planning and Research (OPR) recommend that local governments develop community-wide targets that are consistent with these statewide targets. This CAP sets a 2030 community-wide GHG target for the City, outlines the strategies and actions the City will take to reduce GHG emissions and track progress towards reaching that target.

In developing this CAP, the City of Paramount considered many potential GHG-reduction strategies and actions. Best-suited measures were chosen primarily based on community support, their ability to reduce GHG emissions, and cost-benefit characteristics, with additional considerations for funding availability and feasibility of implementation. As the City is in the early stages of shifting towards a low-carbon economy, high priority was also given to strategies and actions that support local economic development by creating new jobs, boosting existing and creating new local green businesses, reducing energy costs, increasing energy security, and reducing traffic congestion. Additional considerations included public health impacts, energy security, air quality impacts, and quality of life impacts.

The measures in this CAP address energy consumption and generation, transportation, land use, solid waste disposal, and water use. For each GHG reduction measure, the CAP presents performance goals, strategies, and specific actions for reducing emissions. The Plan also identifies local co-benefits such as improved air quality, cost savings, social equity, and community health, as well as promotion of sustainable economics and increased resilience to the impacts of climate change. Guidance for implementation, monitoring, and future updates is also provided.

Plan Organization

The CAP is organized into the following chapters, as described below:

- **Chapter 1: Introduction and Background.** This chapter provides an overview of the document, the purpose and scope of the CAP, the basic science behind climate change, and importance of considering equity when taking action. In addition, Chapter 1 provides a brief explanation of potential impacts of climate change in the City of Paramount, as well a discussion of the state and local actions to reduce GHG emissions.
- **Chapter 2: Greenhouse Gas Emissions Inventory and Forecasts.** This chapter presents the community-wide inventory of GHG emissions for the 2010 base year. Using projections of population, employment, and new residential and commercial development, future emissions for the years 2030 and 2050 are estimated for business-as-usual (BAU) conditions.
- **Chapter 3: Greenhouse Gas Targets and Reduction Plan Overview.** This chapter establishes the community's GHG emissions targets for future years, quantifies the emissions reductions expected from statewide and regional measures, and summarizes the reductions from local measures the City will take, as detailed in Chapter 4.
- **Chapter 4: Local GHG Reduction Measures.** Achieving the community GHG reduction targets will require taking action at the local level regarding energy use, transportation and land use, solid waste diversion, and water consumption. Chapter 4 addresses each of these sectors, summarizing their contribution to total city-wide emissions and describing the strategies and actions that will be implemented to reduce emissions from each category over time. Emissions reduction estimates are provided for individual strategies and actions through the year 2030.

- **Chapter 5: Community Resilience and Adaptation.** This chapter presents an overview of the impacts the City of Paramount is expected to experience due to projected changes in the climate, and what the City can do to begin preparing for them. It describes expected local impacts and vulnerabilities, and adaptation planning strategies.
- **Chapter 6: Implementation and Monitoring.** This chapter outlines recommended steps for implementing the GHG reduction strategies described in Chapter 4, and for monitoring the progress of implementation. It assigns implementation and monitoring responsibility to specific City departments and presents a schedule for implementation. **Appendix C** also discusses potential funding sources, and partnerships the City may enter into to leverage existing work and local resources for each GHG reduction measure discussed in Chapter 4.

Community Engagement

Meaningful climate planning and action is grounded in the needs and priorities of community members. The City of Paramount partnered with the Institute for Local Government (ILG) to complete a virtual public engagement process that included a combination of online surveying and phone interviews designed to facilitate participation from diverse community members during the COVID-19 pandemic on climate planning priorities related to clean water, air quality, clean transportation, energy, and more.

Both the online survey and phone interviews served as tools to shape the direction and policies of this CAP. The City of Paramount faces environmental challenges by virtue of its location in relation to freeways and industry; however, the City can overcome these challenges and positive environmental change is possible through the community. Community values, efforts, and choices helped guide the City in deciding how to fund and prioritize projects and programs that would reduce GHG emissions in Paramount. Community engagement also illuminated opportunities for increased and ongoing engagement, education, and action within the City related to climate and sustainability. It is clear that air quality, affordable housing, land use planning, and clean energy are important topics that should be addressed to increase health, safety, and resiliency for the City and its residents. The youth are emerging leaders in the community and are motivated and eager to take action pertaining to climate topics. There are also opportunities to form a community sustainability committee that would partner with the City to make progress towards achieving climate action goals. The City and ILG look forward to further engagement with community members to bring this CAP to fruition and build a more vibrant, sustainable Paramount together.

Climate Science

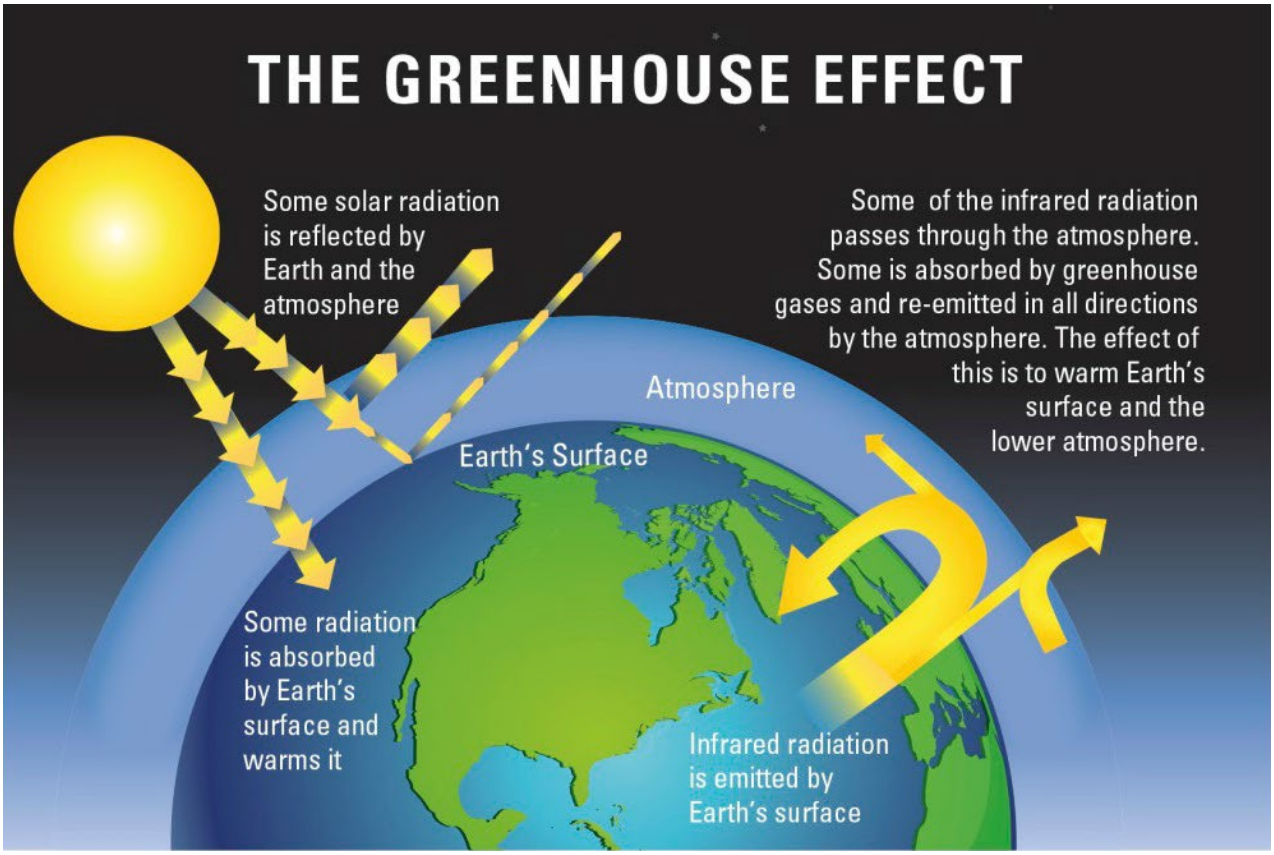
Climate change is described as a significant and lasting change in the planet's weather patterns over a long time period. The science of global climate change is well-established. Over the past two centuries, enough GHGs have been released into the atmosphere to increase the global average temperature. Increasing temperatures have been changing the climate worldwide and, if left unchecked, threaten to dramatically disrupt our current way of life, locally and globally. According to the Intergovernmental Panel on Climate Change (IPCC), "Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, and sea level has risen."[1] Regional changes in climate, particularly temperature increases and changing precipitation patterns, are already affecting natural systems worldwide, and will have widespread impacts on

[1] Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2014: Synthesis Report, Contribution of Working Groups I, II, and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 2014. https://www.ipcc.ch/report/ar5/syr/.

water availability, food production, ecosystem biodiversity, and human health. These changes are having significant impacts to the health, economy, and environment of the City of Paramount and beyond.

The Greenhouse Effect is a natural phenomenon whereby GHGs trap heat in the atmosphere and regulate the earth's temperature (**Figure 1-1**). This natural effect is responsible for maintaining a habitable climate, but over the last century human activities have greatly increased atmospheric concentrations of GHGs. This increase of human-generated GHG emissions, which has accelerated since the mid-20th century, is a primary cause of climate change. Atmospheric concentrations of GHG emissions now far exceed the average of the past several thousand years. Land use changes, burning of fossil fuels, and agricultural practices have all contributed to this observed increase. Global climate models clearly show that human activity is having an effect on global temperatures.

FIGURE 1-1 The Greenhouse Effect[2]



The most prevalent GHGs are carbon dioxide (CO_2) and water vapor. Other important GHGs are methane (CH_4), nitrous oxide (N_2O), chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These gases are emitted through a variety of natural processes and human activities, as follows:

- CO_2 and N_2O are byproducts of fossil fuel combustion;
- N_2O is associated with agricultural operations, such as fertilization of crops;

[2] Figure from The Royal Society. https://royalsociety.org/topics-policy/projects/climate-change-evidence-causes/basics-of-climate-change/.

- CH_4 is commonly created by off-gassing from agricultural practices (e.g., manure from cows), anaerobic composting, and landfills;
- CFCs were widely used as refrigerants, propellants, and cleaning solvents; their production has been mostly eliminated by international treaty, but past emissions remain in the atmosphere due to their long lifespan;
- HFCs are now used as a substitute for CFCs in refrigeration and cooling; and
- PFCs and SF_6 emissions are common byproducts of industries such as aluminum production and semi-conductor manufacturing.

By the end of the 21st century, GHGs in the atmosphere are expected to exceed known levels going back more than 1 million years. Climate models cited by the IPCC predict that without major reductions in emissions, the increase in annual average global temperature relative to preindustrial times could reach 7°F (4°C) or more by 2100.[3] With significant reductions in emissions, the increase can be mitigated. To limit warming to 2°C, atmospheric GHG concentrations must be stabilized at less than 450 parts per million (ppm). This requires reducing GHG emissions globally by about 80 percent below 1990 levels by the year 2050. A target this aggressive is made especially challenging due to the current rapid rise of emissions in the developing world. Climate dynamics are complex, and predictions about our future climate include a level of uncertainty. Even so, current observations are consistent with modeling predictions and in many cases prove that the models are conservative.

An expanding body of scientific research supports the theory that human activity is a major contributor to observed increases in atmospheric CO_2 and other GHGs. In 2018, a consortium of U.S.-based science organizations led by the National Oceanic and Atmospheric Administration (NOAA) released its fourth comprehensive National Climate Assessment, indicating that global annually averaged surface air temperature has increased by about 1.8°F (1.0°C) over the last 115 years (1901–2016), representing the warmest period in the history of modern civilization. The report concludes, based on extensive evidence, that it is extremely likely that human activities, especially emissions of GHGs, are the dominant cause of the observed warming since the mid-20th century, stating "For the warming over the last century, there is no convincing alternative explanation supported by the extent of the observational evidence."[4]

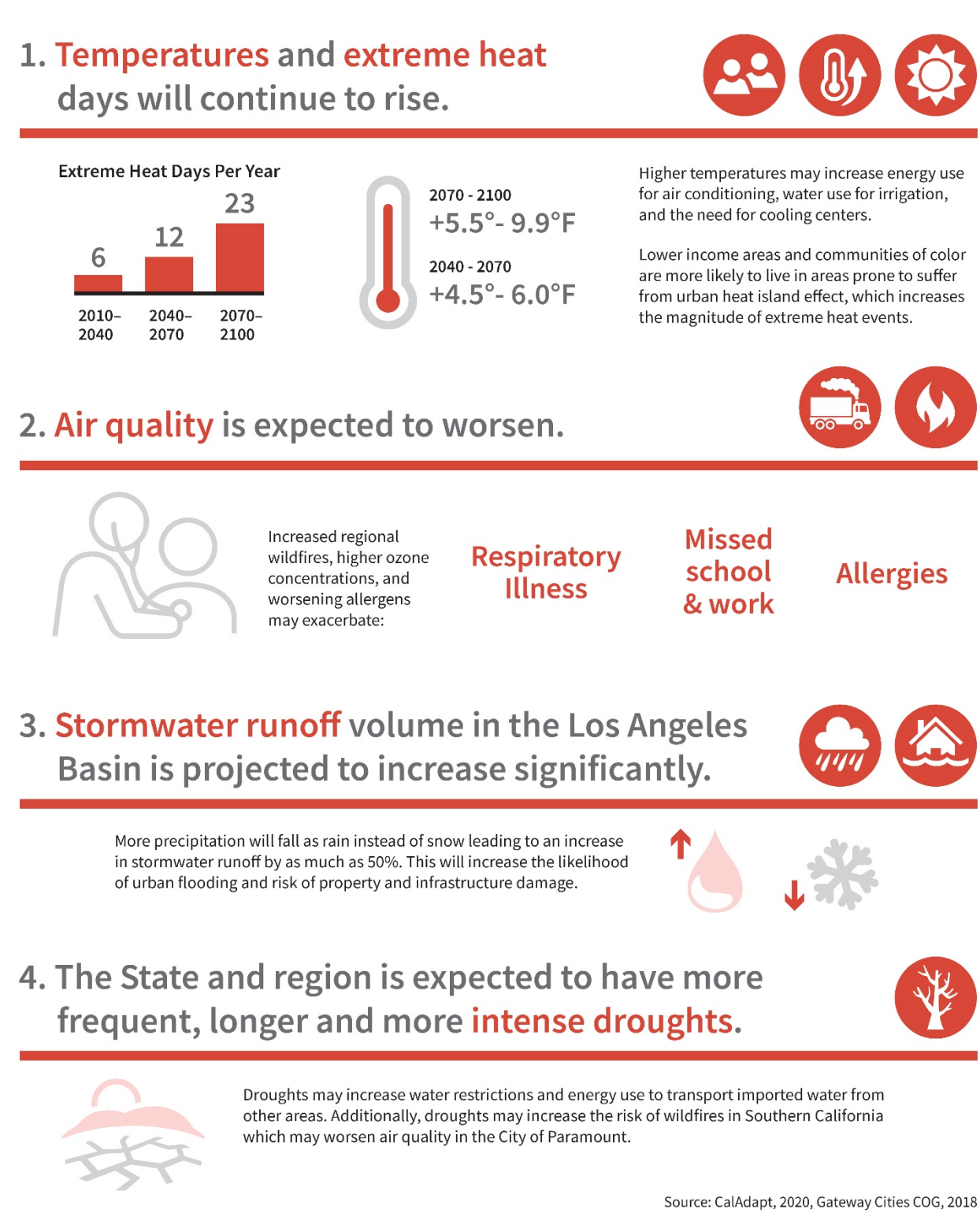
Climate Impacts in Paramount

The City of Paramount, like other communities in California, is likely to face serious economic, social, and environmental challenges in the 21st century due to climate change. **Figure 1-2** summarizes how climate change is expected to impact the temperatures, air quality, storms, and droughts that are experienced by the City of Paramount.

[3] IPCC, *Climate Change 2014: Synthesis Report, Contribution of Working Groups I, II, and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 2014. https://www.ipcc.ch/report/ar5/syr/.

[4] U.S. Global Change Research Program, *Fourth National Climate Assessment (NCA4)*, Volume 1, 2018. https://science2017.globalchange.gov/.

FIGURE 1-2 **Climate Impacts Expected in the City of Paramount**



Equity Considerations

The CAP serves as a roadmap for the City of Paramount to reduce GHG emissions, create jobs, and prepare for the impacts of climate change on public health, infrastructure, the economy, ecosystems, and public spaces in our community. Through climate action planning, Paramount can take a comprehensive approach to addressing longstanding health, environmental and social disparities, including acknowledging and responding to the circumstances of the Paramount community's close proximity to industrial sites and major freeways. Paramount looks to broaden the scope of climate action planning beyond reducing GHG emissions in order to enable all people to thrive in a community without toxic pollution, poor air quality, environmental degradation, or lack of access to opportunity.

This CAP incorporates climate equity strategies to address socio-economic aspects of sustainability and reduce the disparities and unequal burdens faced by the City's most vulnerable populations. Climate equity ensures the fair distribution of the benefits of climate action and resilience efforts as the community transitions to a low carbon future. This also means not making existing disparities worse and striving to reduce disparities.

Climate Impacts on Vulnerable Populations

Climate change presents significant threats to community health and wellbeing, from more extreme heat events, worsening air quality, changes in precipitation levels, to increased transmission of infectious diseases. These threats will not affect everyone equally. Vulnerable groups such as the elderly, low- income families, undocumented immigrants, Black, Indigenous, (and) People of Color (BIPOC) communities, and individuals already suffering from chronic diseases will be disproportionately impacted by these changes. The City of Paramount is home to large populations of vulnerable communities, as illustrated in **Figure 1-3**. Vulnerable communities experience heightened risk and increased sensitivity to climate change and have less capacity and fewer resources to cope with, adapt to, or recover from climate impacts. This sensitivity may be influenced by a number of factors such as income, racism, living conditions, age, health, language barriers, or location. Additionally, the City of Paramount experiences higher than average levels of pollution for fine particulate matter and diesel particulate matter. This existing pollution burden makes the City more vulnerable to additional climate related air quality impacts and the resultant health impacts.

Our most vulnerable community often have less access to healthy and energy-efficient housing, transit, or safe bicycling and walking routes. Vulnerable communities live, work, and play in locations that are exposed to multiple environmental hazards, high levels of air pollution, and other stressors. These impacts can be exacerbated by reduced access to key information and available programs and services that transcend language, cultural, or geographic barriers. Strategies to reduce GHG emissions and to improve environmental conditions must reduce these disparities while ensuring the most vulnerable communities experience the benefits of climate planning.

Vulnerable Populations

Vulnerable communities experience heightened risk and increased sensitivity to climate change and have less capacity and fewer resources to cope with, adapt to, or recover from climate impacts.

Low-income

53%

Individuals have an income below the federal poverty threshold.

94%

K-12 students are eligible for a free and reduced meal program

Homeless

Identify as a Person of Color

95%

Renters

60%

Undocumented Immigrants

Single-female Head of Household

26%

Compared to 15% for Los Angeles County

Children

7%

Under 5 years old

Also pregnant & nursing mothers

High Level of Pollution Burden

High exposure to PM 2.5: City is in the top 20% of polluted cities in the state

High exposure to Diesel PM: City is in the top 10% of polluted cities in the state

High level of toxic releases, solid waste sites, groundwater threats, hazardous waste

Health

32%

Lacking health insurance: Working adults do not have health insurance

10% of population have asthma

17% of adults reported mental health not being good recently

6% of infants born have low birth weights

High rate of heart attack ER Admissions

Non-English Speakers

16%

Households have no one over the age of 14 that speaks English well

75%

Residents 5 years and over speak a language other than English at home

Educational Attainment

92%

Of adults have less than a 4-year college degree

Source: Healthy Places Index, 2020; U.S. Census Bureau, 2018

Opportunities and Co-benefits

Climate equity strategies can help to overcome deeply interrelated challenges community members face. For example, if affordable housing is located far from job centers, workers must commute long distances, increasing vehicle miles traveled and worsening air quality for all. Locating housing near services or key destinations can enable community members to take advantage of healthy and environmentally friendly mobility options such as biking or walking.

Vulnerable communities face higher health costs from exposure to worsening air quality, and at the same time pay a greater percentage of their income and time using unreliable public transit services. More frequent and clean transportation options can improve health outcomes and access to regional employment. Industrial manufacturing and waste disposal also contribute to health and climate inequities. Creating pathways for new jobs in composting, recycling and reuse, and edible food recovery that are well paying and do not require higher education can address food insecurity, reduce community exposure to toxins, and increase economic opportunity.

Strategies that invest in building energy efficiency improvements can improve public health and reduce utility bills and maintenance costs. By investing in skilled workers and new low carbon technologies like clean energy and renewable materials, Paramount can develop new engines for green job growth and sustainable economic prosperity.

Many of the actions that address climate change can improve the health and wellbeing of vulnerable communities. By instituting measures to deal with climate impacts such as extreme heat and air quality impacts, Paramount can plan for climate change in a way that protects vulnerable populations and provides an equitable distribution of costs, benefits, and opportunities for all members of the community. The City of Paramount has an important role, in partnership with public agencies and community-based organizations, to alleviate historic disparities, educate and engage the public on climate change issues, and to promote community involvement in actions to reduce climate change risks, using linguistically and culturally responsive approaches that are effective to improving resiliency for diverse populations.

Climate-related policies and regulations are generating economic change. The state recognizes that reaching its ambitious GHG reduction targets requires innovation, public and private investments, and market adoption of new technologies in energy, transportation, materials, agriculture, water, waste management, and land management. New economic opportunities are emerging as state and regional agencies direct investment, policy, and planning resources toward reducing GHG emissions. Electrification of the transportation and building sectors, decarbonization of electricity supply, and designing new buildings to be net energy producers are just three examples of the transformative developments required for the state to meet its long-term GHG targets. The CAP recognizes local economic development and GHG reduction as synergistic planning goals. The CAP's measures represent local business opportunities related to renewable energy generation, energy efficiency improvements, waste reduction, and mobility, to name a few. By investing in skilled workers and new low carbon technologies like clean energy, renewable materials, and bio-based fuels, the City can develop new engines for job growth and sustainable economic prosperity.

The CAP is not just a plan to reduce emissions; it is a plan for a sustainable and equitable Paramount community. From housing to transportation to waste and urban greening, it is important to incorporate principles of equity throughout the plan to ensure all community members benefit from climate planning.

Relationship to Local Plans

This CAP, in presenting measures for reducing community GHG emissions and increasing resilience to climate change, is closely aligned with the goals and policies outlined in the City of Paramount General Plan (adopted in 2007), the Paramount Municipal Code, and other City plans and policies related to sustainability. The CAP is a standalone policy document and will help the City meet its long-term planning goals.

City of Paramount General Plan

The City of Paramount General Plan, most recently updated comprehensively in 2007, is intended to guide the growth of the City in a manner that best serves its citizens. Five of the City's General Plan elements—Land Use, Transportation, Resource Management, Economic Development, and Public Facilities—include policies that are directly related to the reduction of GHG emissions. As outlined below:

- **Policy LU.10:** The City of Paramount will continue to promote the development of larger, more efficient, commercial retail shopping centers as opposed to small "strip commercial" centers.
- **Policy LU.13:** The City of Paramount will continue to provide safe, convenient pedestrian linkages across and along streets containing commercial centers and uses.
- **Policy RM.4:** The City of Paramount will require new larger residential developments to provide sufficient open space (including pedestrian and bicycle linkages) to meet the local need.
- **Policy RM.15:** The City of Paramount will seek to establish a comprehensive bikeway and pedestrian trail system for the City.
- **Policy TR.1:** The City of Paramount will increase the efficiency of the local street system by reducing the conflicts associated with through traffic.
- **Policy TR.6:** The City of Paramount will continue to support the development and expansion of the region's public and mass transit system.
- **Policy TR.9:** The City of Paramount will continue to support the maintenance and expansion of the existing public transit system.
- **Policy TR.10:** The City of Paramount will encourage new and existing businesses to include those improvements that will promote the use of alternative forms of transit.
- **Policy TR.11:** The City of Paramount will continue to support the local public transit system and ongoing efforts to improve conditions with other regional transit facilities and services (MTA bus service, Long Beach Transit, Green Line, etc.)
- **Policy ED.4:** The City of Paramount will encourage mixed-use projects in key locations to provide additional market support and patronage of local businesses. This concept will be encouraged in the future infill development of underutilized and blighted commercially zoned parcels. This development concept will also be effective in eliminating strip commercial land use and development patterns.
- **Policy PF.4:** The City of Paramount will protect, conserve, and enhance water resources through implementation of the Water Master Plan.

CITY OF PARAMOUNT HOUSING ELEMENT UPDATE

The City of Paramount most recently updated its Housing Element in 2014. Housing elements are regularly updated to assess and respond to local demand for residential development. An update ("6th Cycle") is now in progress and will be completed by October 2021. The City of Paramount must provide additional units, including affordable housing that aligns with the Regional Housing Needs Assessment (RHNA) allocation established by the Southern California Association of Governments (SCAG). The Housing Element identifies housing programs that will aid Paramount in meeting the housing allocation in a manner that best serves their citizens.

CITY OF PARAMOUNT HEALTH AND SAFETY ELEMENT

The City of Paramount is in the process of updating their Health and Safety Element, which is anticipated to be complete by November 2021. The update will incorporate the findings from this CAP and will identify the health-related co-benefits of GHG reduction and climate resiliency measures.

CITY OF PARAMOUNT ENVIRONMENTAL JUSTICE ELEMENT

The City of Paramount is in the process of adding an Environmental Justice Element to their General Plan in accordance with SB 1000. The Environmental Justice Element would identify objectives and policies to reduce pollution exposure, improve air quality, promote public facilities, improve food access, advance access to housing, and increase physical activity in identified disadvantaged communities. The Environmental Justice Element is anticipated to be complete by November 2021.

BELLFLOWER-PARAMOUNT BIKE AND TRAIL MASTER PLAN

The Cities of Bellflower and Paramount worked with SCAG to develop a joint Bike and Trail Master Plan (Master Plan), which was adopted by the City of Paramount in 2016. The Master Plan provides a guide for the future development of bicycle infrastructure projects, policies, and programs throughout and between the two cities, creating a regionally connected bicycle network. The Master Plan makes recommendations to the cities regarding infrastructure, policies, and programs, all of which support the expansion of the local bike network and promote bicycling, a carbon-free transportation mode, amongst citizens.

BELLFLOWER-PARAMOUNT ACTIVE TRANSPORTATION PLAN

The 2019 Bellflower-Paramount Active Transportation Plan (ATP) was jointly developed to identify ways to make active transportation safer, more enjoyable, and more prevalent in the neighboring cities. The ATP identifies the following goals: identify barriers to bicycling and walking and provide opportunities through outreach and improvement projects to remove barriers to active transportation, improve community health through increased exercise and collision reduction as access to active means of transportation is further developed, provide disadvantaged communities with social equity, and increase community pride as a result of community engagement, social interaction, and achievement of a common goal.

CITY OF PARAMOUNT URBAN WATER MANAGEMENT PLAN

The City of Paramount is an urban retail water supplier that serves 98 percent of Paramount. The City's 2015 Urban Water Management Plan (UWMP) discusses existing and forecasted water demand, supply, and reliability. The UWMP also discusses the City's connection with the Central Basin Municipal Water District (CBMWD), their wholesaler, as relevant to the scope of the UWMP. An update to the UWMP is now in progress.

CITY OF PARAMOUNT WATER MASTER PLAN

The City of Paramount most recently updated their Water Master Plan (WMP) in 2015. It serves as a mid-planning period update for the years 2007 through 2022, with a focus on identification of recommended improvements for increased water supply efficiency, economy, and reliability. The WMP includes strategies to increase the percentage of demand that is supplied by local groundwater, as opposed to imported water, which likely has a lower carbon footprint when considering the embodied carbon associated with imported water. Additionally, the WMP identifies a recommended project to increase the municipal use of recycled water, which has a lower carbon footprint than both local groundwater and imported water.

Climate Action in California

Strategies for monitoring and addressing climate change have emerged at the international, national, and state levels, but California has been a leader in developing mitigation and adaptation strategies. Since 2005, California has been developing policy and passing legislation that seeks to control emissions of gases that contribute to global warming. These have included regulatory approaches, such as mandatory reporting for significant sources of GHG emissions and caps on emission levels, as well as market-based mechanisms, such as market-based cap-and-trade. Some regulations apply at the state level, but others are state-imposed mandates that are applicable at the municipal level and are required of local agencies and jurisdictions.

The major components of California's climate change initiative are identified below, and described in detail in **Appendix A**:

- Executive Order (EO) S-3-05;
- Global Warming Solutions Act of 2006 (AB 32);
- California's Cap-and-Trade Program;
- Low-Carbon Fuel Standard (LCFS);
- SB 32 and the 2017 Scoping Plan Update;
- Pavley Regulation (AB 1493), Advanced Clean Cars (ACC), and the California Mobile Source Strategy;
- Renewables Portfolio Standard;
- SB 350;
- California Building Code;
- SB 375; and
- SB 535 – Greenhouse Gas Reduction Fund and Disadvantaged Communities.

Through these state regulations, in addition to local government action, CARB anticipates that the state will be able to achieve its GHG reduction goals set by AB 32 and SB 32. AB 32 required that emissions statewide GHG emissions be reduced to 1990 levels by 2020, a goal that was achieved in 2017, three years prior to the 2020 goal; while SB 32 codified the 2030 target set by EO B-30-15 (40 percent below 1990 levels by 2030) and is intended to ensure that California remains on track to achieve the 2050 goal of 80 percent below 1990 levels. SB 32 states the intent of the legislature to continue to reduce GHGs for the protection of all areas of the state and especially the state's most disadvantaged communities, which are disproportionately impacted by the deleterious effects of climate change on public health.

CHAPTER 2

Paramount's GHG Emissions

The City of Paramount GHG inventory quantifies the annual GHG emissions resulting from activities within the City by residents, businesses, and local governments. The community inventory provides an understanding of where GHG emissions are originating and informs development of the effective strategies and actions to reduce emissions.

The City's baseline community GHG Inventory for 2010 forms the basis for setting emissions reduction targets and measuring future progress. Forecasts of the City's future emissions are based on current best estimates for population, households, and job growth within the City under BAU conditions, and under an 'adjusted' forecast scenario that includes the effect of state-mandated GHG reduction programs.

The 2010 community GHG inventory was developed as part of the Gateway Cities Climate Action Planning Framework project. The boundaries of analysis, along with the methodology and assumptions used to develop Paramount's GHG inventory and future projections, can be accessed through the Gateway Cities CAP Framework online dashboard.[5]

[5] http://www.gatewaycog.org/initiatives-and-projects/air-quality/climate-action-planning-framework

Baseline Community Emissions Inventory

The emission sources and activities chosen for inclusion in the City of Paramount community (city-wide) inventory are based on the reporting framework for local governments developed by the international Council for Local Environmental Initiatives (ICLEI) in their U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions. As such, emissions in the community inventory include those that derive from sources located within the jurisdiction and from activities by community members for which the local government has significant influence to mitigate. This generally includes activities taking place within the City's geopolitical boundary where the local government has jurisdictional authority, as well as community-related activities taking place outside the City limits that are attributable to community activities (e.g., landfill waste from City residents).

Paramount's community GHG emissions breakdown for the year 2010 is the City's baseline emissions inventory. The inventory reflects the manufacturing and industrial complex that is so characteristic of the Gateway Cities region. Many of the region's large stationary sources are regulated by the CARB under the state's Cap and Trade program, which requires that power generators, refineries, and other large stationary emitters that emit more than 25,000 metric tons of carbon dioxide equivalents per year ($MTCO_2e$) reduce their emissions over time in line with the California Global Warming Solutions Act of 2006 (AB 32).[6] With CARB as the enforcing agency, cities generally do not have jurisdictional authority over these sources. For this reason, cities with large stationary sources typically remove those sources from their baseline GHG inventory and BAU forecast when developing a CAP, in order to focus on sources over which they have jurisdictional control or influence.

Community Inventory Including Large Stationary Sources

Table 2-1 lists the large stationary sources that are regulated by the Cap and Trade program, as reported under CARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (MRR).[7] As shown in **Table 2-2**and **Figure 2-1**, these sources contributed approximately 36.2 percent of the City's total GHG emissions in 2010.

TABLE 2-1 City of Paramount Large Stationary Sources

SOURCE	2010 GHG EMISSIONS ($MTCO_2e$)[a]
Carlton Forge Works	26,075
Paramount Petroleum Corporation[b]	186,803
Total Emissions	**212,878**

NOTE:
a – $MTCO_2e$ represents metric tons of carbon dioxide equivalent.
b – This is now the AltAir/World Energy refinery, a facility that has eliminated petroleum-based products and focuses on renewable fuels production.

SOURCE: CARB, Mandatory GHG Reporting Data, Emissions Reported for Calendar Year 2010, 2015. https://www.arb.ca.gov/cc/reporting/ghg-rep/reported-data/2010-ghg-emissions-2015-06-15.xlsx?_ga=2.244283980.833670168.1607626629-522716994.1589488173, accessed December 2020.

[6] Collectively, these sources represent approximately 85 percent of the state's total emissions.
[7] California Air Resources Board (CARB), Mandatory GHG Reporting Data, 2010. https://ghgreport.arb.ca.gov/eats/carb/.

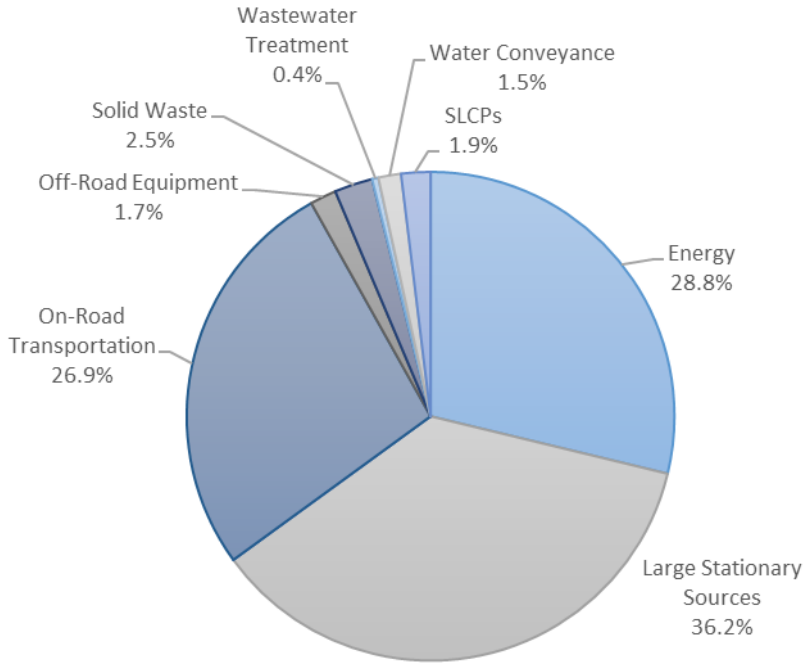
TABLE 2-2 City of Paramount 2010 GHG Emissions – Including Large Stationary Sources

SECTOR	EMISSIONS ($MTCO_2e$)[a]	PERCENT OF TOTAL
Residential Electricity	15,432	2.6%
Residential Natural Gas	17,318	2.9%
Commercial/Industrial Electricity	55,336	9.4%
Commercial/Industrial Natural Gas	81,024	13.8%
Large Stationary Sources (Regulated by Cap-and-Trade)	212,878	36.2%
On-Road Transportation	157,856	26.9%
Off-Road Equipment	10,252	1.7%
Agriculture	—	0.0%
Solid Waste	14,896	2.5%
Wastewater Treatment	2,459	0.4%
Water Conveyance	8,842	1.5%
Short-Lived Climate Pollutants (SLCPs)	11,382	1.9%
Total Emissions	**587,675**	**100%**

NOTE:
a – $MTCO_2e$ represents metric tons of carbon dioxide equivalent.

SOURCES: Los Angeles Regional Collaborative for Climate Action and Sustainability (LARC); UCLA Energy Atlas; CARB, Mandatory GHG Reporting Data (2010); and CARB, OFFROAD Emissions Model (2007)

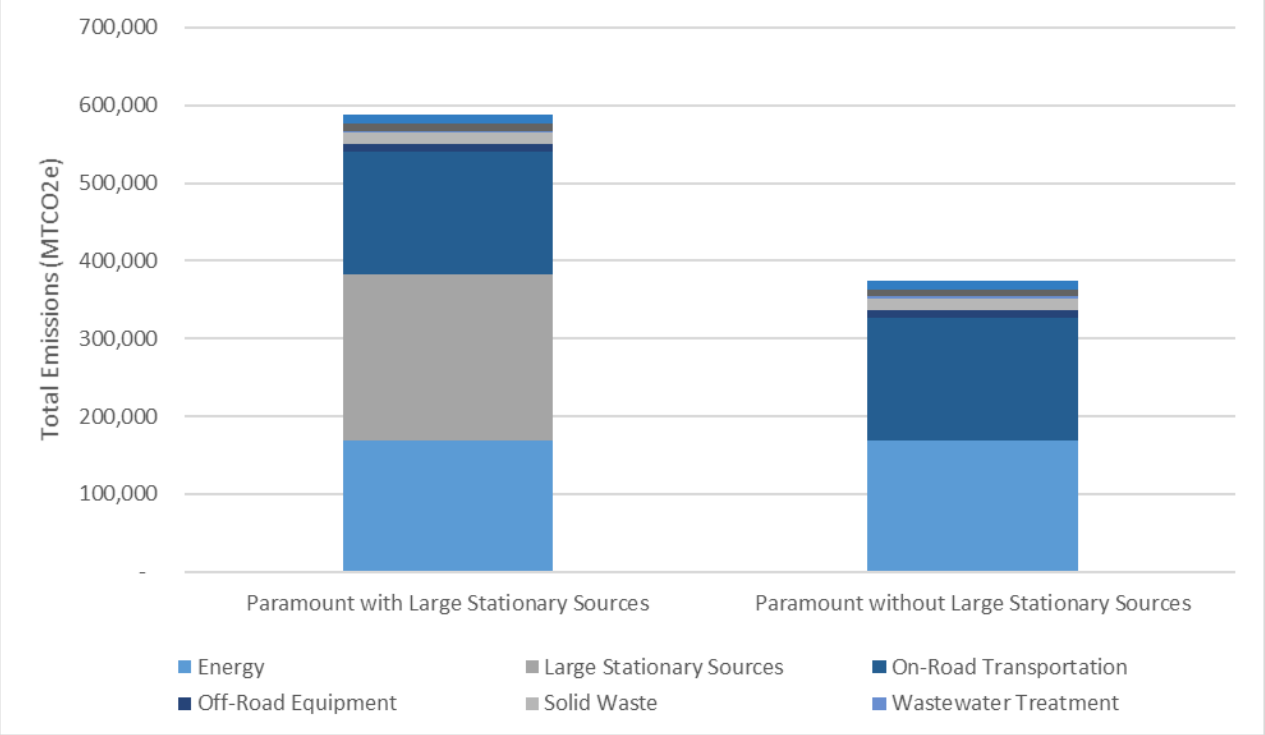
FIGURE 2-1 2010 Community Emissions by Sector – Including Large Stationary Sources



Community Inventory Excluding Large Stationary Sources

For climate action planning, local jurisdictions typically focus on GHG emissions sources that they control or influence. **Figure 2-2** provides a comparison of the City's 2010 emissions inventory with and without large stationary sources that are regulated under Cap and Trade.

FIGURE 2-2 City of Paramount 2010 GHG Inventory with and without Large Stationary Sources



The City of Paramount's 2010 GHG Inventory without large stationary sources is considered the City's baseline GHG inventory for planning purposes. **Table 2-3** summarizes the 2010 baseline inventory, by sector. With large stationary sources removed, on-road transportation is the greatest contributor to total emissions, making up 42.1 percent of the City's emissions. Total energy (electricity and natural gas) used by commercial/industrial buildings is the second biggest contributor to the adjusted inventory (36.4 percent), followed by total energy used by residential buildings (8.7 percent).[8] **Figure 2-3** provides a graphical depiction of each sector's contribution to the adjusted inventory.

[8] Note that industrial energy emissions refer to the energy purchased and consumed by industrial uses and is differentiated from large stationary source emissions, which refer to emissions as a result of industrial processes.

TABLE 2-3 City of Paramount 2010 GHG Emissions – Excluding Large Stationary Sources

SECTOR	EMISSIONS ($MTCO_2e$)[a]	PERCENT OF TOTAL
Residential Electricity	15,432	4.1%
Residential Natural Gas	17,318	4.6%
Commercial/Industrial Electricity	55,336	14.8%
Commercial/Industrial Natural Gas	81,024	21.6%
On-Road Transportation	157,856	42.1%
Off-Road Equipment	10,252	2.7%
Agriculture	—	0.0%
Solid Waste	14,896	4.0%
Wastewater Treatment	2,459	0.7%
Water Conveyance	8,842	2.4%
Short-Lived Climate Pollutants (SLCPs)	11,382	3.0%
Total Emissions	**374,797**	**100%**

NOTE:
a – $MTCO_2e$ represents metric tons of carbon dioxide equivalent.

SOURCES: Los Angeles Regional Collaborative for Climate Action and Sustainability (LARC); UCLA Energy Atlas; CARB, Mandatory GHG Reporting Data, 2010; and CARB, OFFROAD Emissions Model, 2007.

FIGURE 2-3 2010 Emissions by Sector – Excluding Large Stationary Sources

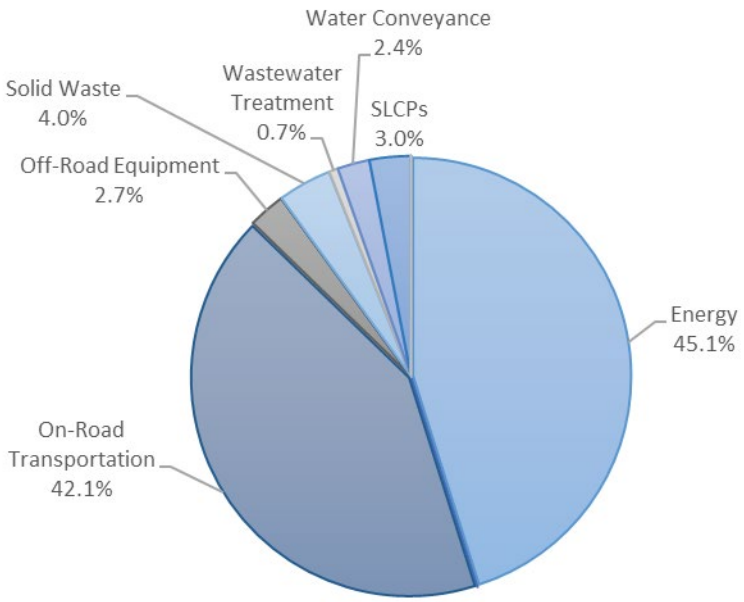


Figure 2-4 provides additional detail for the energy emissions in the City's adjusted inventory, while **Figure 2-5** provides additional detail by vehicle class for on-road emissions. On-road emissions were estimated using CARB's EMFAC2017.

FIGURE 2-4 **Energy Breakdown, Excluding Large Stationary Sources**

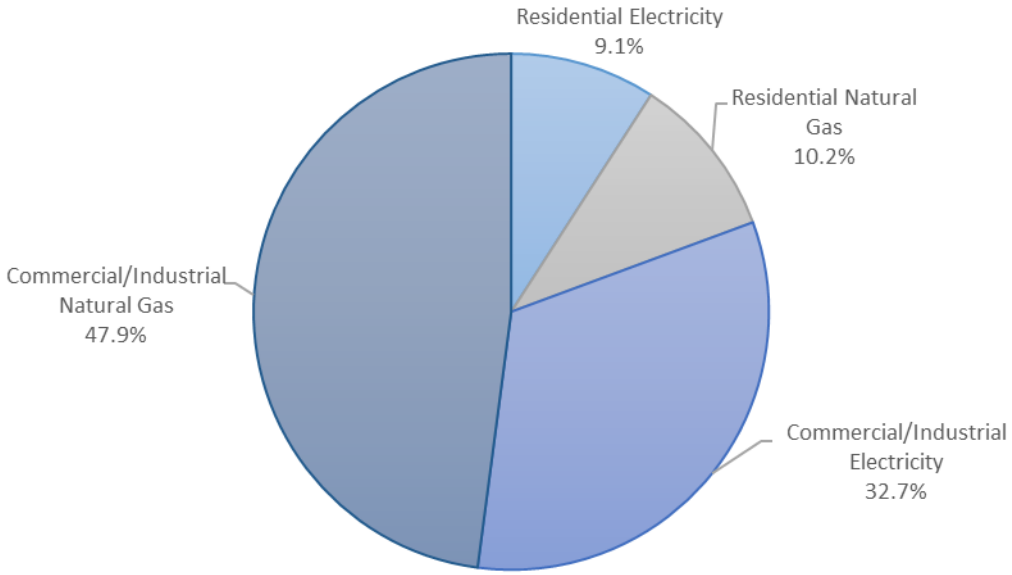
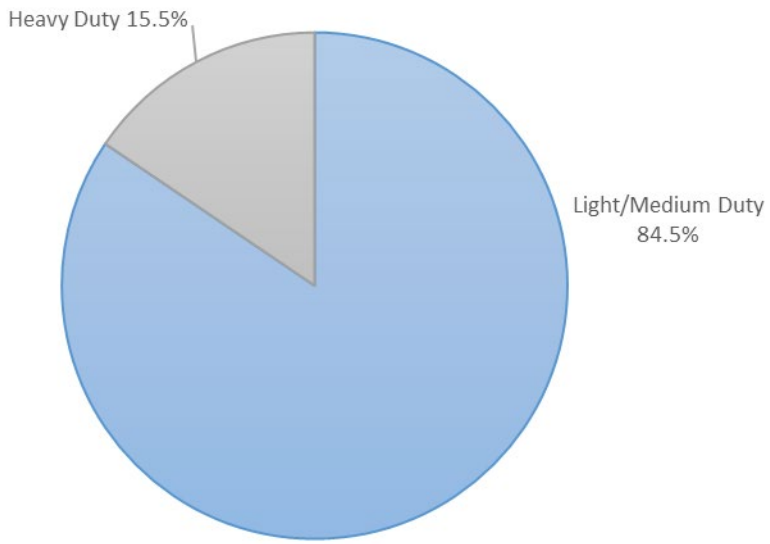


FIGURE 2-5 **On-Road Emissions Breakdown by Vehicle Class**



Emissions Forecasts

The BAU community emission forecasts for the City of Paramount are based purely on the effect that local growth (population, jobs, and housing) would have on the City's baseline emissions in the absence of GHG reduction programs. BAU forecasts are useful in climate action planning because they provide the basis against which GHG reduction programs can be quantified in terms of their ability to reduce emissions at key planning horizons. The City of Paramount is part of the Greater Los Angeles Area, spanning 4.8 square miles, and is bordered by South Gate and Downey to the north; Bellflower to the east; Long Beach to the south; and Compton, Lynwood, and unincorporated areas of Los Angeles County to the west. **Table 2-4** details the 2010 population, housing, and employment demographics and the projected demographics for 2020 through 2050 years. [9] As of 2018, approximately 80.8 percent of the population of Paramount identified as Hispanic/Latino, 9.8 percent of the population identified as Black or African American, 2.6 % of the population as Asian American, and 4.8 % of the population identified as white alone. (U.S. Census Bureau, 2018b).[10]

TABLE 2-4 City of Paramount Socioeconomic Data

DEMOGRAPHIC	SOCIOECONOMIC DATA					GROWTH RATES			
	2010	2020	2030	2040	2050	2010-2020	2010-2030	2010-2040	2010-2050
Population	54,467	55,077	56,301	58,109	59,026	1.1%	3.4%	6.7%	8.4%
Housing	13,871	14,116	14,425	14,867	15,144	1.8%	4.0%	7.2%	9.2%
Employment	19,272	20,941	21,572	22,355	23,505	8.7%	11.9%	16.0%	22.0%

NOTE: 2050 socioeconomic data was linearly forecasted by extending the same growth rates expected from 2030 through 2040.

SOURCE: Southern California Association of Governments Regional Transportation Plan/Sustainable Communities Strategy and travel demand model. Date processed and organized by Fehr & Peers.

In Paramount, total emissions generated by community activities in 2010 were 374,797 $MTCO_2e$. Using the socioeconomic growth forecasts provided in Table 2-4, BAU forecasts were developed at ten-year intervals out to 2050, as shown in **Table 2-5**.[11] As shown in **Figure 2-6**, BAU forecasts of community emissions are 394,684 $MTCO_2e$ for 2020, 406,971 $MTCO_2e$ for 2030, 420,381 $MTCO_2e$ for 2040, and 436,468 $MTCO_2e$ for 2050, representing increases of 8.6 percent, 12.2 percent, and 16.5 percent, respectively, from 2010 levels. Note that the BAU forecasts do not include the large stationary sources listed in Table 1 since the City does not have jurisdiction over those sources.

[9] U.S. Census Bureau, Paramount, CA – ACS Demographic and Housing Estimates, 2010. https://data.census.gov/cedsci/table?q=Parmount,%20CA&tid=ACSDP5Y2019.DP05&hidePreview=false, accessed December 2020.
[10] U.S. Census Bureau, Table DP03 American Community Selected Economic Characteristics, 2013–2018 5-Year Estimates, 2018. https://data.census.gov/cedsci/table?q=dp03&g=1600000US0655618&tid=ACSDP5Y2018.DP03&hidePreview=true.
[11] 2040 represents the planning horizon of SCAG's 2017 Regional Transportation Plan.

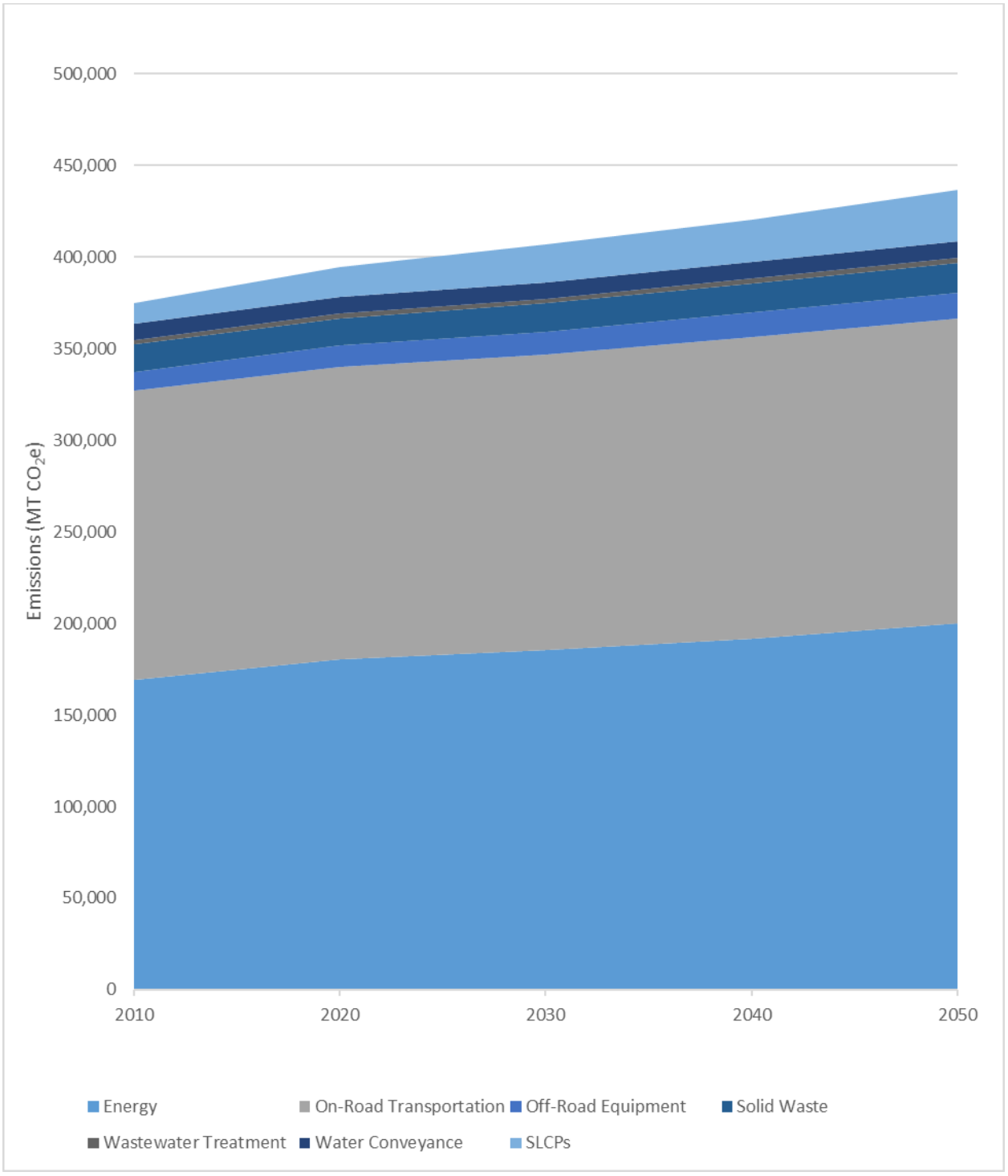
TABLE 2-5 BAU Forecasts for GHG Emissions ($MTCO_2e$, without large stationary sources)

SECTOR	2010	2020	2030	2040	2050
Residential Electricity	15,432	15,404	15,742	16,224	16,379
Residential Natural Gas	17,318	17,623	18,010	18,561	18,907
Commercial/Industrial Electricity	55,336	58,978	60,756	62,960	65,670
Commercial/Industrial Natural Gas	81,024	88,164	90,822	94,117	99,016
On-Road Transportation	157,856	160,056	161,553	164,427	166,276
Off-Road Equipment	10,252	11,384	12,364	13,305	14,361
Agriculture	0	0	0	0	0
Solid Waste	14,896	15,062	15,397	15,892	16,142
Wastewater Treatment	2,459	2,487	2,542	2,624	2,665
Water Conveyance	8,842	8,813	9,009	9,298	9,382
Short-Lived Climate Pollutants (SLCPs)	11,382	16,713	20,776	22,973	27,670
Total Emissions	**374,797**	**394,684**	**406,971**	**420,381**	**649,346**

NOTE: 2050 BAU emissions are forecasted by extending the same growth rates expected from 2030 through 2040.

It is important to reiterate that BAU forecasts assume no change to the vehicle efficiency standards, building energy standards (i.e., Title 24, Part 6), and grid electricity emission factors that were in place in 2010. Since 2010, vehicles have become more fuel efficient, Title 24 building standards have become more stringent, and grid electricity has become less carbon intensive. Thus, the BAU forecasts presented here represent a conservative estimate of future emissions.

FIGURE 2-6 **BAU Emissions Forecasts (without large stationary sources)**



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CHAPTER 3

Emissions Target and Reduction Plan

This chapter describes the City's GHG emissions reduction target and provides an overview of the City's plan to reduce emissions over time, including reductions anticipated from state and regional measures, and from implementation of the local measures that are described in detail in Chapter 4.

Community 2030 Emissions Reduction Target

In local planning for GHG emissions reduction, it is common to describe an efficiency metric that divides total emissions in the planning area by its "service population," which is the sum of the number of jobs and the number of residents. The use of efficiency metrics to evaluate emissions trends and consistency with California's statewide GHG targets is supported by the CARB in its 2017 Climate Change Scoping Plan Update, which outlines the state's plan to achieve a statewide target of 40 percent below 1990 levels as required by SB 32. The Scoping Plan states that "it is appropriate for local jurisdictions to derive evidence-based local per capita goals based on local emissions sectors and population projections that are consistent with the framework used to develop the statewide per capita targets."[12] An efficiency target accounts for a jurisdiction's size in

[12] CARB, *California's 2017 Climate Change Scoping Plan*, published November 2017, p. 100.

terms of population and employment and does not penalize it for economic growth, particularly if that growth is energy efficient. This approach supports the intent of SB 32 to accommodate population and economic growth in California, while also achieving a lower rate of GHG emissions and meeting the statewide target for 2030. It is also consistent with case law regarding the evaluation of GHG emission impacts under the California Environmental Quality Act (CEQA).[13]

The City of Paramount CAP establishes a community-wide reduction target for 2030 of 40 percent below baseline emissions (2010), consistent with California's statewide goal to achieve a 40 percent reduction by 2030, as mandated by SB 32, and with guidance from OPR.[14] **Table 3-1** shows the derivation of Paramount's 2030 GHG target.

TABLE 3-1 Derivation of 2030 GHG Emissions Target for Paramount CAP

	$MTCO_2e$[a]
2010 Baseline Community Emissions ($MTCO_2e$)	374,797
40 Percent Reduction	-149,919
2030 Target	**224,878**

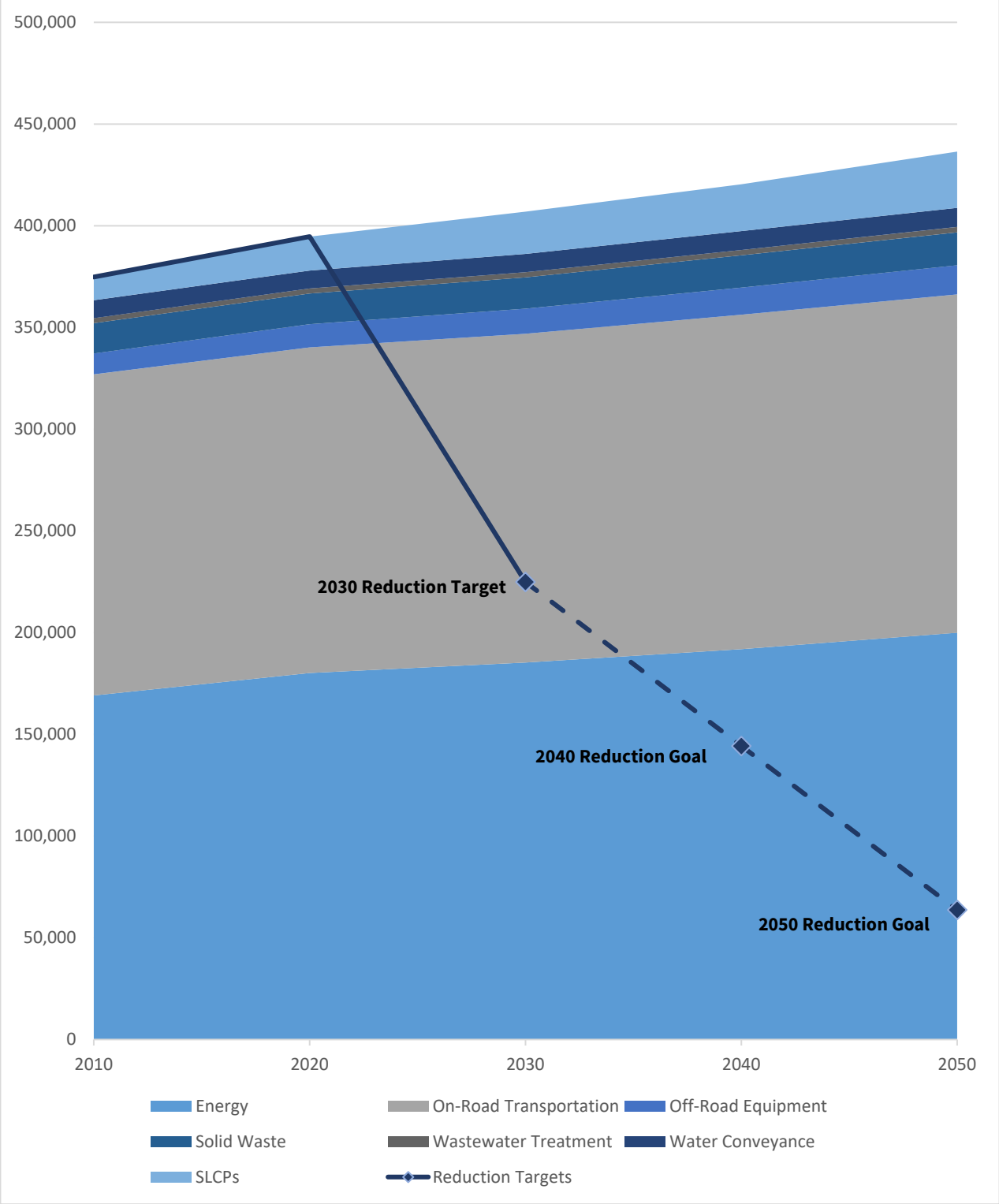
NOTES:
a – $MTCO_2e$ represents metric tons of carbon dioxide equivalent.

The City's target for community GHG emissions in 2030 is depicted graphically in **Figure 3-1**. The CAP does not currently establish a reduction target for 2050; however, as can be seen in Figure 3-1, the 2030 target puts the City on a trajectory that is in line with the state's long-term target established by EO S-3-05, recognizing that the manner in which technologies, regulations, and markets develop between now and then will greatly affect the emissions trajectory and the role that local governments must play in meeting that target.

Longer term, the City is committed to reducing emissions in line with state climate stabilization goals, including EO S-3-05 to reduce emissions statewide 80 percent below 1990 levels by 2050. The City will track the implementation of the CAP and update it over time as state policies, programs and targets evolve, as described in Chapter 6.

[13] In *Center for Biological Diversity v. California Department of Fish and Wildlife and Newhall Land and Farming* (2015), also known as the "Newhall Ranch" case, the California Supreme Court acknowledged GHG efficiency metrics as a superior approach for CEQA evaluation of and use projects, based on the recognition that California population will continue to grow, while at the same time GHG emissions must be reduced.
[14] Governor's Office of Planning and Research, *General Plan Guidelines*, 2017. Chapter 8: Climate Change, pp. 222–233.

FIGURE 3-1 **BAU Emissions Forecast and City Reduction Target and Goals**



Reductions from State Measures

Significant emissions reductions in community GHG emissions are anticipated as a result of state programs and regulations, including the efficiency standards for passenger vehicles (e.g., Pavley II/ACC standards), reduction in carbon content of transportation fuels (e.g., the LCFS), and minimum renewable energy requirements for utilities (e.g., the Renewables Portfolio Standard). Measures regulated and implemented by the state and federal government achieve reductions without additional action by the city. For example, even if the vehicle miles traveled (VMT) within the city remain constant over time, resulting GHG emissions would decrease because as new vehicles are purchased, as they would in general be more GHG-efficient than those they replace.

Some state programs also require local action within communities. The California Green Building Standards Code (CALGreen) requires, at a minimum, that new buildings and renovations throughout California meet certain design standards. New residential and commercial buildings must meet certain baseline efficiency and sustainability standards. Additional voluntary building code provisions, known as Tier 1 and Tier 2 requirements, can be adopted locally, providing even greater energy savings and emissions reductions.

The collective impact of state-wide measures on the City of Paramount emissions forecast is shown in **Figure 2-7.** By 2030, these measures are expected to reduce community emissions by approximately 112,471 $MTCO_2e$, or an estimated 21.4 percent from the BAU forecast. By 2040, state-wide measures are expected to reduce community emissions by approximately 158,868 $MTCO_2e$, or an estimated 30.2 percent from the BAU forecast. By 2050, state-wide measures are expected to reduce community emissions by approximately 215,967 $MTCO_2e$, or an estimated 41.2 percent from the BAU forecast.

The Adjusted BAU emissions forecast for the City accounts for the local impact of the following state measures designed to reduce GHG emissions. These measures, included in the Gateway Cities CAP Framework, are listed in **Table 3-2** and described in more detail below. The collective impact of state-wide measures on the City's BAU emissions forecast is shown in **Figure 3-2**. By 2030, these measures are expected to reduce community emissions by approximately 112,471 $MTCO_2e$, or an estimated 21.4 percent from the BAU forecast. The resulting projection is referred to as the City's Adjusted BAU forecast.

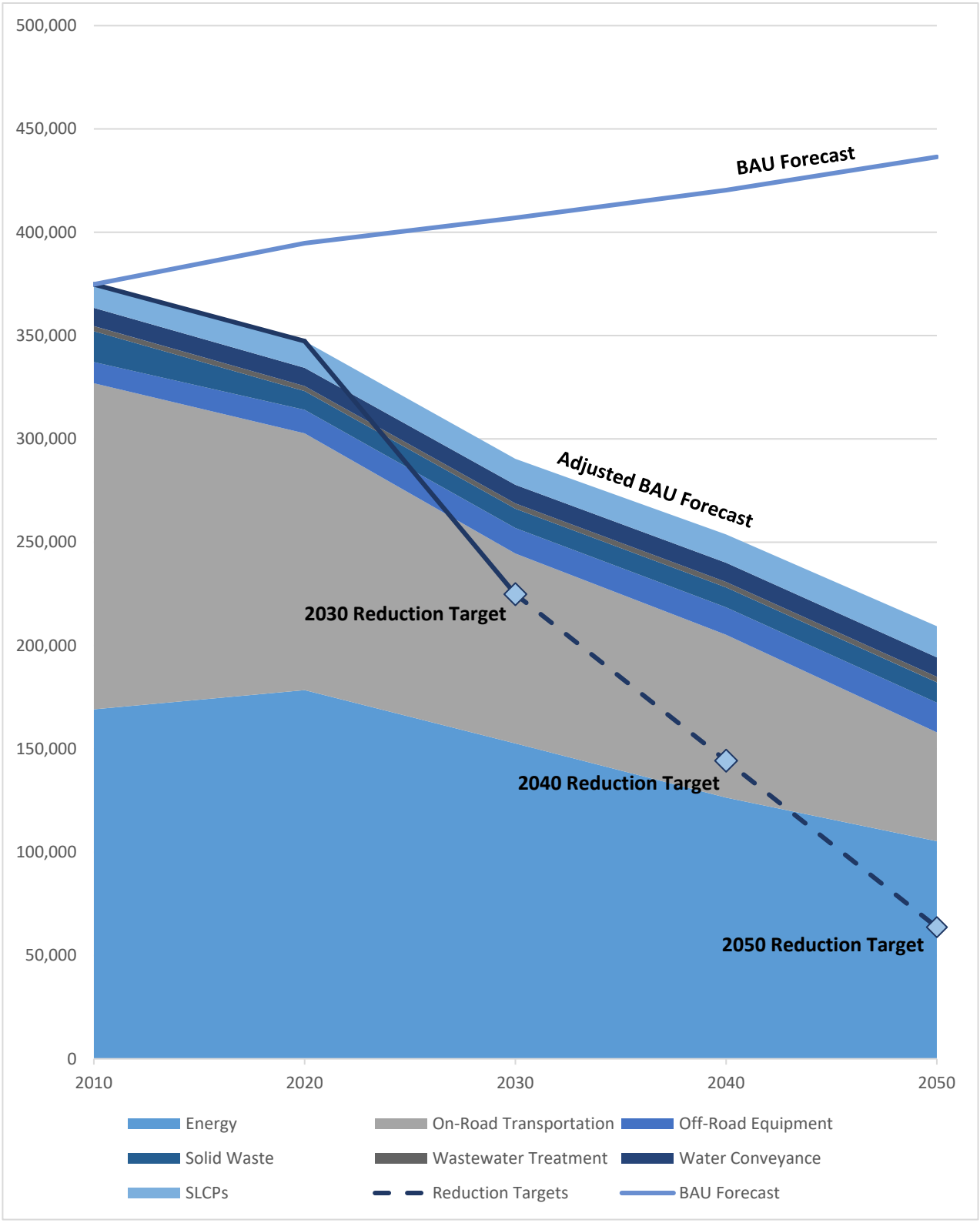
TABLE 3-2 Annual GHG Reductions from State Measures by 2030

STATE MEASURE	2030 ANNUAL REDUCTIONS ($MTCO_2e$/YEAR)[a]
S1: Renewables Portfolio Standard and SB 350	31,449
S2: Pavley Vehicle Standards and the Mobile Source Strategy	65,563
S3: CALGreen (Title 24 Building Standards)	1,199
S4: California SLCP Plan Measures	8,188
S5: Waste Diversion Mandates	6,022
Total Reductions	**112,471**

NOTES:

Totals may not add up due to rounding.
a – $MTCO_2e$ represents metric tons of carbon dioxide equivalent.

FIGURE 3-2 **Adjusted BAU Emissions Forecast for the City of Paramount**



S1: Renewables Portfolio Standard and SB 350

California's Renewables Portfolio Standard (RPS) was established in 2002 under SB 1078, requiring the renewable energy portion of a utility's portfolio to be at least 20 percent by 2020. In 2011, SB 2 increased the RPS to 33 percent by 2020. SB 350, passed in 2015, increased the RPS to 50 percent by 2030 and requires a doubling of energy efficiency of existing buildings statewide by 2030. SB 100, passed in 2018, increases the RPS requirement to 60 percent eligible renewables by 2030 and 100 percent by 2045. The emissions reductions associated with these energy performance goals are reflected in the City's Adjusted BAU forecast.

S2: Pavley Vehicle Standards and the Mobile Source Strategy

Transportation measures in particular are designed to achieve consistent GHG emissions reductions across the state by increasing vehicle efficiency and reducing the carbon intensity of fuels used by the statewide vehicle fleet. These measures include the Pavley II/CAFÉ (Corporate Average Fuel Economy) Vehicle standards (known as the ACC initiative in California), the LCFS, the Tire Pressure Program, the Tire Tread Standard, and the Heavy Duty Vehicle Emission Reduction Program. Collectively, these measures are expected to reduce statewide transportation emissions in the City by 65,563 $MTCO_2e$ from the 2030 BAU forecast.

S3: CALGreen (Title 24 Building Energy Efficiency Standards)

Under California's green building standards (CALGreen), Title 24, Part 6 (Building Energy Efficiency Standards for Residential and Non-residential Buildings), establishes statewide building energy efficiency standards to reduce California's energy consumption. The provisions include mandatory requirements for efficiency and design of energy systems, including space conditioning (cooling and heating), water heating, and indoor and outdoor lighting systems and equipment, and appliances. California's Building Energy Efficiency Standards are updated on an approximately three-year cycle as technology and methods have evolved. The most recent Title 24 update (2019) focuses on integrating solar photovoltaic (PV) and other renewables with energy storage, taking Title 24 another step closer toward the state's zero net energy (ZNE) goals as spelled out in the California Energy Efficiency Strategic Plan. The emissions reductions associated with Title 24 compliance are reflected in the City's Adjusted BAU forecast.

S4: California SLCP Plan Measures

SB 1383, passed in 2016, requires statewide reductions in short-lived climate pollutants (SLCPs) across various industry sectors. The SLCPs covered under AB 1383 include CH_4, fluorinated gases, and black carbon – all GHGs with a much higher warming impact than CO_2 and with the potential to have detrimental effects on human health. SB 1383 requires the CARB to adopt a strategy to reduce CH_4 by 40 percent, HFC gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The CH_4 emission reduction goals include a 75 percent reduction in the level of statewide disposal of organic waste from 2014 levels by 2025. The emissions reductions associated with SB 1383 compliance are reflected in the City's Adjusted BAU forecast.

S5: Waste Diversion Mandates

Recycling or reusing materials rather than disposing of them in landfills reduces GHG emissions by reducing the need to harvest and transport new raw construction materials. Recycled materials can be locally repurposed and reused. Products that are repaired, reused, or designed to last longer avoid the emissions associated with the harvesting of virgin materials and manufacturing of new products. Composting organic waste keeps it from decomposing anaerobically in landfills to create CH_4, and composting helps build healthy soils and plants which serve as reservoirs for carbon that would otherwise be released into the atmosphere. State regulations to reduce GHG emissions associated with solid waste include SB 1383 which sets a statewide goal of diverting at least 75% of organic waste from landfills by 2025, including the recovery of 20% of edible food waste for human consumption. AB 341 established a statewide goal of 75% recycling through source reduction, recycling, and composting by 2020, and requires commercial businesses, multi-family dwellings with 5 or more units, and public entities that generate 4 cubic yards or more of waste per week to have a recycling program in place. In addition, AB 1826 requires businesses and multi-family complexes that generate two or more cubic yards of solid waste, recycling, and organic waste combined per week to arrange for organics collection services.

Reductions from Regional Measures

Two important regional initiatives, summarized in **Table 3-3**, have implications for reducing GHG emissions from local sources. One is SCAG's *Connect SoCal Plan*, also known as the agency's *2020 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS) which is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. The RTP/SCS seeks to develop compact communities in existing urban areas, expand public transit, establish more efficient goods movement, provide more opportunities for walking, biking and other forms of active transportation, and preserve more of the region's remaining natural lands for recreation and other community benefits. A major objective of the RTP/SCS is to reduce vehicle miles traveled (VMT) from passenger vehicles. GHG emissions reductions associated with implementation of SCAG's 2016 RTP/SCS[15] are quantified as Regional Measure R1, described in more detail in Chapter 4.

The second major regional measure affecting the region's GHG emissions is the state's Cap and Trade program. Authorized by the California Global Warming Solutions Act of 2006 (AB 32), California's Cap and Trade program is the cornerstone of the state's strategy to meet its statewide GHG reduction targets for 2020 and 2030, and ultimately achieve an 80 percent reduction from 1990 levels by 2050. Due to the nature of the Cap and Trade program it can't be known with certainty where the actual emissions reductions will occur, because the large industrial facilities that are regulated can purchase or sell allowances in the carbon market as needed to meet their emissions obligation. Thus, Regional Measure R2 (Engage and Partner with Large Industrial Facilities to Reduce Emissions) is considered a supporting measure with no associated emissions reductions, which aims to encourage regulated facilities to implement local GHG reduction measures that provide air quality co-benefits, rather than meet their GHG obligations using market-based mechanisms that result in those benefits occurring elsewhere. Regional Measure R2 is described in more detail in Chapter 4.

[15] For the purposes on climate action planning in the Gateway Cities region, the GHG reduction impact of implementing SCAG's 2020 RTP/SCS (Connect SoCal) has not yet been modeled. The modeling results are thus based on implementation of the 2016 RTP/SCS.

TABLE 3-3 Annual GHG Reductions from Regional Measures by 2030

REGIONAL MEASURE	2030 ANNUAL REDUCTIONS ($MTCO_2e$/YEAR)[a]
R1: Implement the SCAG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)	4,116
R2: Engage and Partner with Large (Cap and Trade) Industrial Facilities to Reduce Emissions	NA (supporting)
Total Reductions	**4,116**

NOTE:
a – $MTCO_2e$ represents metric tons of carbon dioxide equivalent.

Reductions from Local Measures

While state and regional measures are critical to meet the City's emission reduction goals, local programs and policies, as well as choices made by the City's residents and businesses, will determine the City's ability to achieve its emissions reduction target for 2030. Through outreach campaigns, incentives, zoning changes, ordinances, infrastructure investments, and changes in local government operations, the City will achieve the additional local reductions identified in the CAP.

Local reduction measures in the CAP are organized into eight major categories:

ENERGY EFFICIENCY AND CONSERVATION (EE)

WATER AND WASTEWATER SYSTEMS (WA)

RENEWABLE ENERGY (RE)

WASTE REDUCTION AND RECYCLING (WR)

SUSTAINABLE TRANSPORTATION (TR)

GREEN INFRASTRUCTURE, PARKS, URBAN FORESTRY AND AGRICULTURE (GA)

LAND USE & COMMUNITY DESIGN (LU)

GREEN BUSINESS AND INDUSTRY (GB)

Through locally-implemented measures, the City of Paramount anticipates reductions of 45,128 $MTCO_2e$ from the City's 2030 Adjusted BAU emissions forecast. **Table 3-4** summarizes the anticipated GHG reductions from local measures by 2030.

Chapter 4 provides a more in-depth discussion of each of these local measures, describing specific implementing actions, performance goal(s), anticipated GHG reductions, community co-benefits, and implementation responsibilities.

TABLE 3-4 Annual GHG Reductions from Local Measures by 2030

MEASURE		2030 ANNUAL REDUCTIONS ($MTCO_2e$)[a]
Energy Efficiency		
EE1	Improve Energy Efficiency of Existing Buildings	4,029
EE2	Promote Green Buildings	n/q
EE3	Improve Efficiency of Municipal Operations and Public Infrastructure	27
Renewable Energy		
RE1	Increase Local Renewable Energy Generation	2,912
RE2	Promote and Maximize Community Choice Energy (CCE) and Utility Renewable Energy Offerings	17,857
RE3	Promote Conversion from Natural Gas to Clean Electricity	n/q
Sustainable Transportation		
TR1	Support Fuel Efficient and Alternative Fuel Vehicles	9,388
TR2	Improve Pedestrian and Bicycle Infrastructure	n/q
TR3	Expand Public Transit Options and "last mile" Connectivity	n/q
TR4	Expand Car Sharing, Bike Sharing, and Ride Sharing	n/q
TR5	Infrastructure to Improve Traffic Flow and Efficiency	n/q
TR6	Support Transportation Demand Management	n/q
Land Use & Community Design		
LU1	Promote Smart Growth, TOD, and Complete Neighborhoods	n/q
Water and Wastewater Systems		
WA1	Promote Water Conservation	10,915
WA2	Promote Water Recycling and Greywater Use	n/q
Waste Reduction & Recycling		
WR1	Solid Waste Diversion Programs	n/q
Green Infrastructure, Parks, Urban Forestry, & Agriculture		
GA1	Support Urban Tree-Planting, Park Access, and Green Infrastructure	Supporting
GA2	Support Sustainable Food and Urban Farming	Supporting
Green Business & Industry		
GB1	Engage and Partner with Local Industries and Businesses to Reduce Emissions	Supporting
GB2	Grow Green Economy/Increase Green Jobs	Supporting
Total Reductions		**45,128**

NOTES:
n/q –not quantified
a – $MTCO_2e$ represents metric tons of carbon dioxide equivalent.

GHG Reduction Plan Summary

With the implementation of state, regional, and local measures, the City of Paramount anticipates its total community GHG emissions will be reduced to approximately 158,071 $MTCO_2e$ per year by the year 2030, as summarized in **Table 3-5**. This reduction of approximately 34 percent from current (2010) levels would fall approximately 20,377 $MTCO_2e$ short of the City's 2030 target. Future updates of the CAP will determine how the City will close this gap.

TABLE 3-5 City of Paramount 2030 Greenhouse Gas Reduction Summary

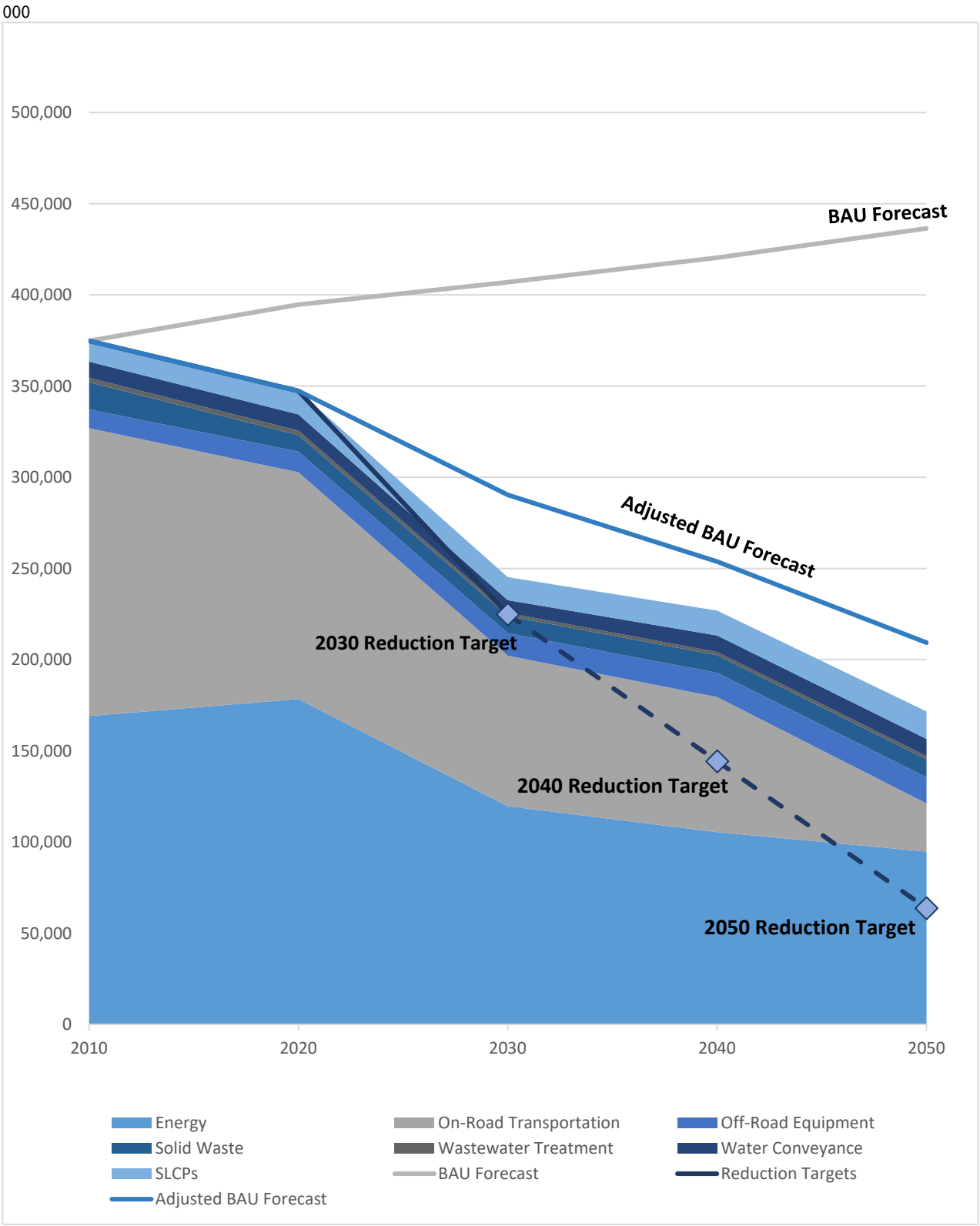
DATA/METRIC	2030 ($MTCO_2e$)[a]
BAU Forecast	406,970
Total Reductions from State Measures	- 112,471
Total Reductions from Regional Measures	- 4,116
Total Reductions from Local Measures[a]	- 45,128
Resulting Community Emissions with CAP Implementation[b]	245,255
2030 Emissions Target	224,878
Additional Reductions Needed to Reach 2030 Target	**20,377**

NOTES:

Totals may not add up due to rounding.
a – $MTCO_2e$ represents metric tons of carbon dioxide equivalent.

Figure 3-3 depicts the City's GHG reduction pathway toward the 2030 target and the expected emissions trends after 2030 in the absence of additional reduction measures. To achieve reductions in line with the State of California's longer term goals (e.g., EO S-3-05 that calls for an 80 percent reduction from 1990 levels by 2050), additional state and local measures will be needed. The City anticipates that updates to the CAP will address these goals once they are formally established by law as targets.

FIGURE 3-3 **City of Paramount Anticipated GHG Reductions from CAP Implementation**



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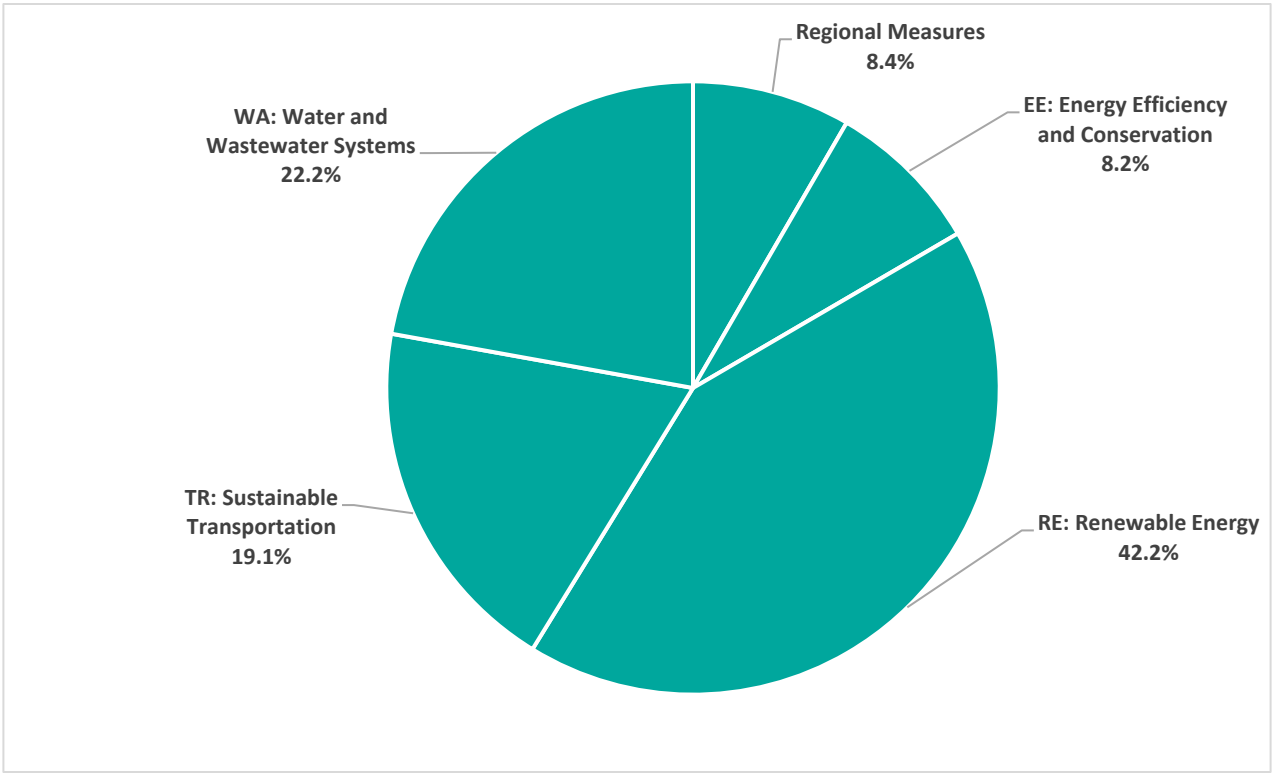
CHAPTER 4

Greenhouse Gas Reduction Measures

State measures are critical to meet the City's emission reduction goals; however, local and regional programs and policies, as well as choices made by the City's residents and businesses, will determine the City's ability to achieve its 2030 emissions reduction target. This chapter describes the local and regional measures that will be implemented by the City, outlining for each the performance goals, expected emissions reductions, community benefits, current relevant programs, reduction strategies and implementing actions. **Figure 4-1** presents a summary of the GHG emissions reductions that would be achieved from the regional measures, as well as the local measure sectors including energy efficiency, renewable energy, sustainable transportation, and water and wastewater systems.

FIGURE 4-1 **Regional and Local GHG Reduction Contribution in 2030**



Community Co-benefits

Selecting and prioritizing GHG reduction measures involves consideration of the financial impact to the City, the local economic and public health co-benefits, and the measure's synergy with existing City and regional plans and policies. The following objectives were considered in selecting the measure and prioritizing them for implementation and are discussed in more detail below.

Improve Air Quality

Increasing concentrations of GHG emissions result in elevated temperatures, more extreme weather events, degraded air quality, and increased drought conditions. With higher temperatures and a changing climate, Southern California is anticipated to have more wildfires, more allergens, and an increase in conditions conductive to formation of ground-level ozone – a major component of smog. Degraded air quality can aggravate a wide range of health problems, including asthma and other debilitating and costly respiratory and cardiovascular diseases. Often these health impacts fall disproportionately on populations that include the poor, the elderly, communities of color, immigrant groups, persons with preexisting medical conditions, and people living in highly industrialized areas that are already burdened by environmental pollution.[16]

[16] California Natural Resources Agency, *Safeguarding California: Reducing Climate Risk, an Update to the 2009 California Climate Adaptation Strategy*, 2014.

Improve Public Health

Climate change presents a significant risk to the health of Paramount residents. Fortunately, many GHG reduction measures and climate adaptation efforts can bring multiple health and equity co-benefits to City residents, while addressing the region's persistent inequities. For example, reducing VMT by increasing safe and accessible walking and bicycling infrastructure can increase physical activity, reduce air pollution, and lower injury collisions. These health co-benefits can produce an array of cascading benefits, including reducing chronic disease, lowering obesity levels, reducing respiratory diseases, and improving mental health.

Promote Sustainable Economics

California's climate-related policies and regulations are generating significant economic change. The state recognizes that reaching its aggressive GHG reduction targets requires innovation, public and private investments, and market adoption of new technologies in energy, transportation, agriculture, water, waste management, and land management.

New economic opportunities are emerging as state and regional agencies direct investment, policy, and planning towards reducing GHG emissions. Electrification of the transportation and building sectors, decarbonization of electricity supply, and designing new buildings to be ZNE consumers are just three examples of the transformative developments required for the State of California to reach its long term GHG targets. Economic development and GHG reduction are synergistic planning goals, and GHG reduction strategies can align with opportunities in "cleantech", green products and services, energy efficiency, low-carbon transportation, and renewable materials. Support for green and cleantech businesses offer an opportunity to boost local employment growth, enhance regional economic competitiveness, and advance sustainability goals while reducing community-wide GHG emissions. Through the right mix of local ordinances, funding sources, and small business incubators, the City can promote local cleantech businesses that are selling into rapidly growing global markets for low-carbon products, services, and business solutions. Furthermore, a net reduction in fixed expenses by residents and businesses associated with energy and resource conservation programs allows for higher discretionary spending and injects more dollars into local retail and service economies.

Provide Cost Savings

Many of the GHG reduction strategies discussed below would result in cost savings to residents, businesses, and the City. These savings are achieved through participation in the multitude of programs that are aimed at increasing energy efficiency, water efficiency, use of public transportation, and utilization of renewable energy sources. Increased energy and water efficiency provides cost savings in the form of lower utility bills while use of public transportation can reduce costs associated with gasoline-use and vehicle maintenance costs. Renewable energy generation would also provide cost savings to residents and business owners within the City, as these buildings would not need to purchase as much electricity from utility providers.

Improve Social Equity

Los Angeles County, including the City of Paramount, has social, economic, and health disparities. Many cities and neighborhoods within Los Angeles County consistently rank among the most educated, wealthiest, and healthiest in California. Other cities and neighborhoods, however, struggle with high levels of environmental burden, relatively low life expectancies, and the largest gaps in educational attainment and wealth between racial and ethnic groups. Furthermore, the impacts of climate change – from flooding and extreme weather events, to deteriorated air quality, to severe droughts – typically fall hardest on those who are historically over-burdened and under-resourced, including the elderly, infants and children, BIPOC communities, and people living in poverty.

GHG reduction measures and climate adaptation efforts can directly benefit disadvantaged communities. Not only can cities prioritize limited resources for these neighborhoods to increase affordable housing, improve local access to parks and recreation, and increase mobility options; they can leverage climate action programs to increase access to jobs, education, and training and support community health programs that reduce the root causes of inequity.

Increase Community Resilience

Resilient communities anticipate and adapt to changing climate conditions and extreme weather events by implementing measures that ensure access to basic necessities, such as security, health care, and shelter; improve the reliability of systems and infrastructure; enhance quality of life; and safeguard economic prosperity for all residents.

Cities routinely take steps to reduce people's exposure to natural hazards (hazard mitigation programs), ensure that systems are in place to respond to emergencies (emergency management), and improve assistance after a hazard event (emergency operations). Adaptation actions, such as strengthening emergency management and operations, incorporating climate change conditions into planning, maintenance, and capital improvements, and conserving water and energy will help people and businesses prepare for changing climate conditions. Many of these measures, like conserving water and energy, also have positive benefits for GHG reduction and cost savings.

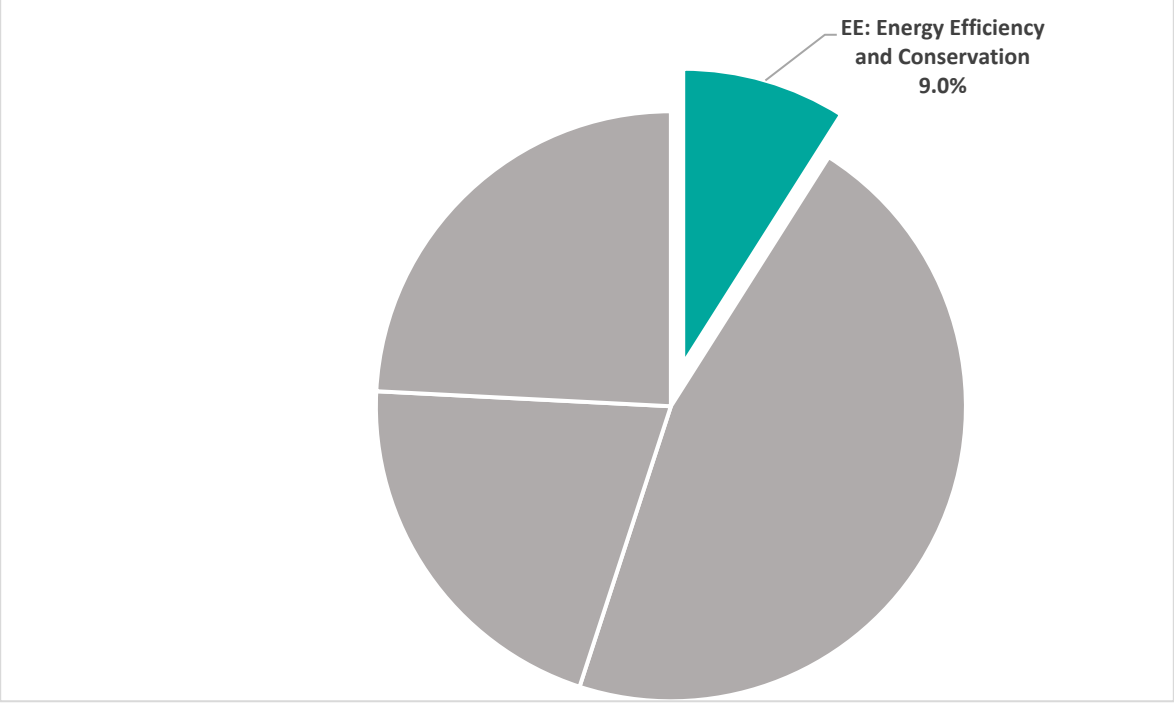
Likewise, the following GHG reduction measures can increase the resilience of Paramount residents, businesses, and systems to climate change. For example, distributed, renewable energy systems may be better able to withstand equipment system failure during extreme heat events, localized flooding, wildfire, or other climate events. Similarly, supporting lower-income residents and small businesses through income-qualified energy efficiency programs reduces utility bills, freeing up more funds for healthier food, preventative health care, or housing.


Boulevard of Heroes

Regional Measures (R)

Regional programs are those developed or administered at a level of government above the local jurisdiction but below the state. They require local participation but do not require local administration to achieve GHG reductions. Regional measures account for existing plans and measures that are designed to reduce GHG emissions at the scale of the Gateway Cities region, and are implemented or influenced by the actions of the Gateway Cities Council of Governments (COG). As introduced in Chapter 3, one regional measure (R1) is the implementation of SCAG's *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy* (2016 RTP/SCS), and the other (R2) is engagement with large industrial facilities to reduce emissions, many of which are subject to the state's Cap and Trade Program. The 2016 RTP/SCS is a long-range visioning plan that seeks to reduce vehicle miles traveled (VMT) from passenger vehicles, while the Cap and Trade program is the main strategy to help the state meet its GHG reduction targets for 2020 and 2030. Emissions reductions that would occur from implementation of R1 encompass the emissions reductions from measures TR2 through TR6; and measure R2 is considered a supporting measure with no associated emissions reductions. The portion of the CAP's emissions reductions that would be achieved through implementation of the Regional Measures is presented in **Figure 4-2**.

FIGURE 4-2 GHG Reduction Contribution in 2030 Relative to all Local and Regional Measures



REGIONAL MEASURE R1:

Implement the SCAG Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS)

GOAL: *Reduce emissions associated with transportation and land use through coordinated local and regional strategies.*

COMMUNITY BENEFITS

- Improve Air Quality
- Improve Public Health
- Promote Sustainable Economics
- Provide Cost Savings
- Improve Social Equity
- Increase Community Resilience

Annual GHG Reduction Potential by 2030

4,116 $MTCO_2e$

DESCRIPTION

SCAG's Connect SoCal Plan, also known as the agency's 2020 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. The RTP/SCS seeks to develop compact communities in existing urban areas, expand public transit, establish more efficient goods movement, provide more opportunities for walking, biking and other forms of active transportation, and preserve more of the region's remaining natural lands for recreation and other community benefits.

A major objective of the RTP/SCS is to reduce vehicle miles traveled (VMT) from passenger vehicles. As mandated by SB 375 (the Sustainable Communities and Climate Protection Act of 2008), CARB sets regional targets for GHG emissions reductions from passenger vehicle use. Each of California's Metropolitan Planning Organizations (MPOs) must prepare a "sustainable communities strategy" (SCS) as an integral part of its regional transportation plan (RTP), to demonstrate how land use, housing, and transportation strategies will allow the region to meet its GHG emission reduction targets. Once adopted by the MPO, the RTP/SCS guides the transportation policies and investments for the region. SCAG, as the Gateway Cities' MPO, estimates that its 2016 RTP/SCS will result in an 8 percent reduction in GHG emissions per capita from passenger vehicles by 2020 and a 19 percent reduction by 2035—compared to 2005 levels. This exceeds the targets the CARB established in 2010, which are 8 percent by 2020 and 13 percent by 2035.

Measure R1 accounts for the VMT and GHG emissions reductions that result from the following regional actions included in the RTP/SCS. In terms of quantified emissions reductions, Measure R1 encompasses local transportation measures TR2 through TR6, which are identified as "supporting measures" because they have no additional GHG reduction benefit beyond what is accounted for in Measure R1:

- Expanding regional transit (i.e., LA Metro)
- Adding highway express lanes

- Implementing transit-oriented development (TOD) and roadway network improvements
- Reducing emissions from goods movement (truck and rail) and waste hauling
- Improving pedestrian and bicycle infrastructure (Local Measure TR2)
- Expanding local public transit options (Local Measure TR3)
- Expanding car sharing, bike sharing, and ride sharing (Local Measure TR4)
- Congestion management programs; improving infrastructure to improve traffic flow and efficiency (Local Measure TR5)
- Supporting transportation demand management (included in CAP Framework as supporting Local Measure TR6)

WHAT'S ALREADY HAPPENING

There are a variety of state and regional programs and funding opportunities available to help achieve the goals set by the 2016 RTP/SCS. The **State Transit Assistance Program (STAP)** allocates funds to regional and local transit agencies for operating and capital costs, while Caltrans allocates **Sustainable Communities Planning (SCP) Grants** to encourage local and regional transportation and land use planning to further the RTP/SCS. These funding sources help to increase the availability of transit opportunities throughout the region. Furthermore, with the passage of Measure M in 2016, **LA Metro** is responsible for implementing a $120 billion expenditure plan of capital, operating, and maintenance projects over the next 40 years that will transform and expand the transportation system across Los Angeles County. Other opportunities to improve the public transportation system and reduce VMT in line with the 2016 RTP/SCS goals are provided by Los Angeles County funding. Each of the Gateway Cities receives an annual portion of the "Local Allocation" or "Local Return" component defined in the ordinances which can be used to fund Bus Operating & Capital, Highway Capital & Transportation Demand Management (TDM), Bus & Rail Operating and Capital, and Highway Capital & TDM.

The RTP/SCS is also furthered by the **California Transportation Commission (CTC)**, which implements the **Local Partnership Program (LPP)** to provide local and regional transportation agencies with funds for road maintenance and rehabilitation, sound walls, and other transportation improvement projects. Infill and transit-oriented development projects are also supported by the Strategic Growth Council's **Affordable Housing and Sustainable Communities Program (AHSC)**, which funds land use, housing, transportation, and land use preservation projects to support infill and compact development that reduce GHG emissions.

STRATEGIES

Effective strategies and local actions to support implementation of the SCAG RTP/SCS are outlined in the following table. Additional supporting actions are outlined in Local Measures TR2–TR6.

STRATEGIES	
Strategy R1a	Partner with GCCOG to Implement the Gateway Cities Strategic Transportation Plan
• Coordinate with Metro and Caltrans on freeway improvements, including working within current rights of way. • Collaborate with GCCOG to implement a Complete Streets Corridor program addressing economic development and urban design issues along with transportation deficiencies. • Coordinate with Metro on the implementation of new fixed-guideway transit lines to serve new areas of the Gateway Cities and investment in park-and-ride facilities. • Collaborate with Los Angeles County, Metro, cities, and municipal transit providers to invest in safety features and first mile / last mile bicycle and pedestrian connections around transit stations. • Collaborate with Caltrans and the Ports of Long Beach and Los Angeles on freeway and technology improvements benefitting goods movement industries. • Pursue cap-and-trade revenues to fund Intelligent Transportation Systems (ITS) technology improvements to freeway and arterial highway systems and to further implement zero-emissions technologies. • Utilize the analytic tools developed by the Gateway Cities Strategic Transportation Plan as projects continue to evolve in the region, significantly reducing a project's funding and schedules.	
Strategy R1b	Engage with GCCOG and SCAG on the “Bottom-Up Local Input and Envisioning Process”
• Review the City's Data/Map Books and give feedback on base land use, anticipated population/household/employment growth, resource areas, sustainability practices, and local transit-supportive measures. This information is used to develop potential scenarios for the RTP/SCS and as part of the regional housing need determination process with the California Department of Housing and Community Development (HCD). • Collaborate with SCAG to identify candidate projects for inclusion in the RTP/SCS.	
Strategy R1c	Collaborate with SCAG, Metro, Caltrans, and transportation authorities, and engage in an ongoing process of communication and consultation on transportation planning efforts.
• Engage in SCAG Technical Advisory Committees and Working Groups. • Encourage local elected officials to participate in SCAG Policy Committees. • Collaborate with Metro to identify candidate projects for inclusion in Metro's Call for Projects.	

REGIONAL MEASURE R2:

Engage and Partner with Large Industrial Facilities to Reduce Emissions

GOAL: *Reduce GHG emissions from large industrial facilities, including those regulated by Cap and Trade.*

COMMUNITY BENEFITS

- Improve Air Quality
- Improve Public Health
- Improve Social Equity

Annual GHG Reduction Potential by 2030

Not quantified

DESCRIPTION

The City of Paramount can engage with Gateway Cities COG, the CARB, the South Coast Air Quality Management District (SCAQMD), and local community-based organizations to promote compliance with California's Cap and Trade GHG emissions reduction targets for regulated industrial facilities, and to encourage regulated facilities to implement local GHG reduction measures that provide air quality co-benefits, rather than meet their GHG obligations using market-based mechanisms that result in those benefits occurring elsewhere. In addition, the COG can engage with stakeholders on the implementation of AB 617, the important new legislation that complements the implementation of Cap and Trade by focusing emissions reductions efforts in environmental justice communities across the state (described in more detail below).

California's Cap-and-Trade Program

Authorized by the California Global Warming Solutions Act of 2006 (AB 32), California's Cap and Trade program is the cornerstone of California's strategy to meet its GHG reduction targets for 2020 and 2030, and ultimately achieve an 80 percent reduction from 1990 levels by 2050. The Cap and Trade Program is designed to reduce GHG emissions from large industrial sources (deemed "regulated entities") by setting a firm cap on statewide GHG emissions and employing market mechanisms to achieve emissions reductions. An inherent feature of the Cap and Trade program is that it does not direct GHG emissions reductions in any discrete location or by any particular source. Rather, GHG emissions reductions are assured on a statewide basis. Under the Cap and Trade program, an overall limit is established for emissions from capped sectors (e.g., electricity generation, petroleum refining, cement production, fuel suppliers, and large industrial facilities that emit more than 25,000 metric tons CO2e per year) and declines over time. Regulated entities can purchase or sell allowances in the carbon market as needed to meet their emissions obligation. The statewide emissions cap declines approximately 3 percent each year to further incentivize investments in clean technologies. The cap under California's program is flexible and can be tightened if the state's other measures to reduce GHG emissions have less impact than anticipated. The Cap and Trade program therefore acts as a backstop to ensure that the state's overall GHG targets are met.

AB 617

On July 17, 2017 the California legislature passed AB 398, extending the Cap-and-Trade program through 2030. Concurrent with AB 398, the legislature passed AB 617 with the stated goal to improve air quality in environmental justice communities. AB 617 requires local air districts to take "community focused" actions to reduce air pollution and toxic air contaminants from commercial and industrial sources in disadvantaged communities most impacted by air pollution, by accelerating the adoption of best-available retrofit control technology (BARCT) by industrial facilities, and to enhance emissions reporting and community monitoring.

The state's funding for AB 617 implementation in 2018 includes: [17]

- $27 million for AB 617 Implementation, including $10.7 million for SCAQMD to develop community emissions reduction plans, conduct community monitoring and analysis, and implement BARCT for facilities in the Cap-and-Trade program.
- $5 million for Community Air Grants to community groups for enhancing education and outreach regarding AB 617, monitoring, and improving their air quality. This CARB program allows flexibility for community-based organizations to participate in the AB 617 process and to build their own capacities to become active partners with government to identify, evaluate, and ultimately reduce exposure to harmful air emissions in their communities.
- $250 million for mobile source emission reduction, including $107.5 million for SCAQMD. This represents new funding for eligible projects under the Carl Moyer Program, with a majority of this funding allocated to projects that are located in environmental justice and low income communities. Projects funded by the Carl Moyer Program include heavy-duty trucks and buses, construction equipment, agricultural equipment, cargo handling equipment and marine vessels.

WHAT'S ALREADY HAPPENING

Funds generated by California's cap-and-trade program are deposited into the state's Greenhouse Gas Reduction Fund (GGRF), now branded by the state as California Climate Investments. As of 2018, more than $8 billion dollars have been appropriated by the Legislature to state agencies implementing GHG emission reduction programs and projects. The funds are administered by state and local agencies to further the goals and actions outlined in the Scoping Plan and other state climate and energy plans, through a variety of GHG reducing programs for energy efficiency, public transit, low-carbon transportation, and affordable housing. Short-Lived Climate Pollutants (SLCPs) including CH_4, black carbon (soot) and fluorinated gases are also targeted for reductions.

Table 4-1 lists the large stationary sources in the City of Paramount that are regulated by California's Cap and Trade program, as reported under CARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (MRR).[18]

[17] For more information related to SCAQMD's efforts related to AB 617, see http://www.aqmd.gov/nav/about/initiatives/environmental-justice/ab617-134.
[18] CARB, *2019 GHG Emissions Data*, 2020. https://ww2.arb.ca.gov/mrr-data.

TABLE 4-1 Paramount's Large Stationary Sources Regulated by Cap and Trade

SOURCE	2019 GHG EMISSIONS ($MTCO_2e$)
AltAir Paramount LLC	27,502
AltAir Paramount LLC – Fuel Supplier	52,582
Carlton Forge Works	39,179
Press Forge Co	22,021
Weber Metals	24,231

SOURCE: CARB, 2019 GHG Facility and Entity Emissions, November 4, 2020. https://www.arb.ca.gov/cc/reporting/ghg-rep/reported-data/2019-ghg-emissions-2020-11-04.xlsx?_ga=2.7627248.370724788.1607451421-522716994.1589488173.

CARB is working with local air districts, community groups, community members, environmental organizations, and regulated industries to implement AB 617 through the Community Air Protection Program (CAPP), which includes community air monitoring and community emissions reduction programs. The California Legislature has appropriated funding for early actions to address localized air pollution through targeted incentive funding to deploy cleaner technologies in highly impacted communities, as well as grants to support community participation in the AB 617 process. AB 617 also includes new requirements for accelerated retrofit of pollution controls on industrial sources, increased penalty fees, and greater transparency and availability of air quality and emissions data, which will help advance air pollution control efforts throughout the Gateway Cities region.

Leading by Example – Best Practices in Paramount

World Energy Converts Paramount Refinery to Renewable Fuels. In 2018, World Energy, an international leader in bio- and renewable-fuel production, acquired California diesel producer AltAir Paramount LLC and announced it would convert its refinery in Paramount into the world's first renewable jet fuel refinery. The project will convert current processes to create only renewable jet fuel, diesel, gasoline, and propane—also known as "biofuels." Biofuel comes from food processing, such as non-edible animal fat and agricultural waste. Unlike fossil fuel, biofuel creates fewer carbon emissions and less jet exhaust in the atmosphere. The new production processes will reduce pollutants at the refinery site up to 70% and eliminate the emission of GHGs. Further, World Energy Paramount will utilize cleaner technologies to move products in and out of the property.

"This project will transform the Paramount facility into California's most important hub for the production and blending of advanced renewable fuels," said Bryan Sherbacow, Chief Commercial Officer of World Energy. "This investment will better enable us to deliver much needed low-carbon solutions to our customers." Though the creation and usage of biofuel is still relatively new, public agencies like the Los Angeles International Airport and the U.S. Navy have begun utilizing the product along with other renewable energy sources. Once complete, World Energy Paramount will be one of only three renewable diesel plants in the country. "I am pleased to support World Energy Paramount in their mission to create energy jobs that will help our local economy while improving our environment," stated Paramount Mayor Diane J. Martinez. "We look forward to their positive commitment to our community for the long term."[19]

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https://www.sdcwa.org/sites/default/files/community_engagement_fs_single.pdf

[19] Paramount Environmental Information Portal, *World Energy Converts Paramount Refinery to Renewable Fuels*, November 20, 2018. https://paramountenvironment.org/world-energy-converts-paramount-refinery-to-renewable-fuels/.

STRATEGIES

Effective strategies and implementing actions for engaging and partnering with large industrial facilities are outlined in the following table.

STRATEGIES	
Strategy R2a	Establish partnerships with public agencies that have an interest in reducing emissions from large industry.
• Continue close partnership between City and SCAQMD that includes shared resources, extended communication, and technical assistance. • Work with SCAQMD and/or CARB to raise awareness of Gateway Cities regional air quality concerns, in collaboration with cities and community-based organizations. • Work with SCAQMD to help ensure that AB 617 funding is spent in the most beneficial way to improve regional air quality and reduce greenhouse gas emissions, e.g., help ensure early action success to make the case for continued funding.	
Strategy R1b	Serve as a forum to assist SCAQMD in disseminating information to local large industrial facilities on available emissions reductions programs and funding sources.
• Track funding programs available from federal and state agencies and disseminate information to chambers of commerce, small business groups, and other economic development-related groups. • Continue implementation of the City's Administration Actions to maintain inventory of heavy manufacturing companies and limit growth.	

Lessons Learned – Engaging with Large Industries

Other Factors Affecting Air Quality

In the fall of 2016, the City of Paramount staff and the local community became aware of significantly elevated levels of hexavalent chromium being emitted primarily by a metal heat treating business and a metal anodizing/coating business located in the City's industrial core. This air quality investigation led to the City immediately embarking on a community-wide effort to address the cause of the elevated hexavalent chromium levels, and respond to its resident's concerns and questions.

What came in the next year was a series of community meetings with residents, and the various agencies like the Southern California Air Quality Management District (SCAQMD), the state Office of Environmental Health Hazard Assessment, and the Los Angeles County Department of Public Health. This would be the beginning of an interagency collaborative effort to get to the root of the elevated hexavalent chromium levels and figure out a way to reduce them. One of the biggest lessons learned through this process is how little control local municipalities have over large industrial businesses or how they operate. Air emissions are not regulated by local governments, but by regional agencies that are usually not located within the community where the emissions are taking place.

Within the next two years the City Council, with the guidance of the newly created Air Quality Subcommittee, would approve a Zoning Ordinance Text Amendment which enacted substantial and sweeping changes to City regulations for Paramount manufacturing zones. These changes included new ministerial approvals for all existing metal manufacturing/processing businesses that have SCAQMD permits. This City administrative permit process would require them to provide a detailed inventory of equipment, materials, uses, and imposed performance standards to ensure that a business meets existing, new development, and maintenance expectations.

While the ongoing hexavalent chromium issue in the City does not affect the community's GHG emissions, it is representative of the link between climate change and environmental equity. Every community has the right to feel protected from environmental hazards that affect the health of the residents. Because of that need for fairness and basic concern for human health, it is important to prioritize changes to those sectors that will make marked reductions to community greenhouse emissions as well as those pollutants affecting the health of the local community. The City over the last few years has shown a strong commitment to both

Local Measures

While state and regional measures are critical to meet the City's emission reduction goals, local programs and policies, as well as choices made by the City's residents and businesses, will determine the City's ability to achieve its emission reduction targets for 2020 and 2030. Through outreach campaigns, incentives, zoning changes, ordinances, infrastructure investments, and changes in local government operations, the City will achieve the additional local reductions identified in the CAP.

The local GHG reduction measures are categorized into eight categories:

- Energy Efficiency and Conservation;
- Renewable Energy;
- Sustainable Transportation;
- Land Use and Community Design;
- Water and Wastewater Systems;
- Waste Reduction and Recycling;
- Green Infrastructure, Parks, Urban Forestry and Agriculture; and
- Green Business and Industry.

Of the 20 local measures described below, GHG reductions can be quantified for seven of them. Six of the measures are quantified collectively by Regional Measure R1 (Implement the SCAG RTP/SCS), which encompasses these measures at the regional scale and accounts for the synergistic effects of land use and transportation measures that reduce GHG emissions. Other measures related to waste reduction and recycling; green infrastructure, parks, urban forestry, and agriculture; and green business and industry are not quantified. These measures are included as "supporting measures" as they are difficult to quantify and overlap with some degree to Regional Measure R2.

In selecting GHG reduction measures for the CAP, the City of Paramount considered the financial impact to the City along with the local, economic, and public-health co-benefits and the measure's synergy with existing City and regional plans and policies. As discussed in Chapter 3, co-benefits can help educate and engage the public on climate change issues, build political support, and promote community involvement in actions to reduce emissions and build resiliency to climate change.

A general description of each measure is provided along with the implementing actions that the City will take to implement the measure.

Energy Efficiency & Conservation (EE)

Commercial and industrial building stock represents an important opportunity for energy efficiency and conservation programs, as 5 percent of City land use is for commercial activities and 23 percent is for industrial. Opportunities exist to reduce energy demand and maximize efficiency as well as develop new programs and strategies to encourage energy-efficient construction and building improvements.

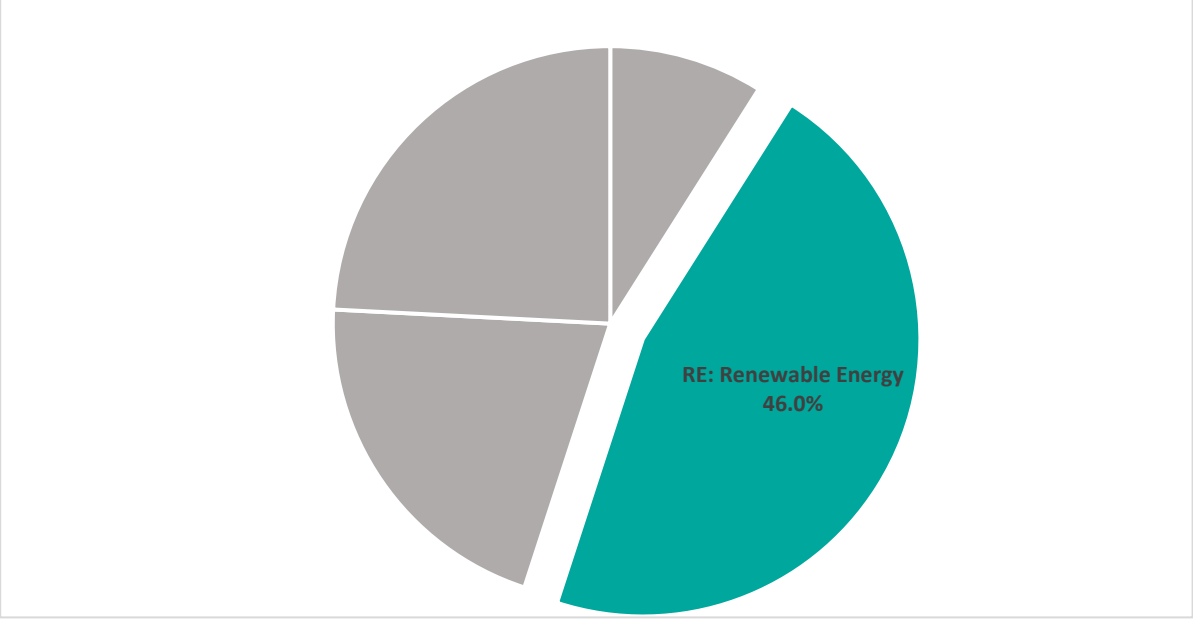
Fifty-two percent of the City is developed with residential uses. According to the City's Housing Element, adopted February 4, 2014, single-family detached units make up 45.4 percent of the local housing stock in the City of Paramount, while single-family attached units comprised 11.7 percent of total housing in the City. Multi-family housing units with 2 to 4 units make up 6.5 percent of the housing stock within the City, multi-family housing with 5 or more units make up 38.9 percent of housing, and mobile homes make up 7.8 percent of housing stock in Paramount. Housing units are evenly split between the number of renters and homeowners, with 45.2 percent of homes owner-occupied, and 54.8 percent of homes renter-occupied. Approximately 68 percent of the City's homes were built before 1980.[20] Older homes are typically less efficient, resulting in both higher energy bills and higher associated GHG emissions. These homes were built prior to when California current building energy efficiency standards went into effect, which ensure that new and existing buildings maximize energy efficiency and preserve outdoor and indoor environmental quality.

Paramount has a high percentage of households that are low income, renter occupied, and housing cost burdened, making them vulnerable to rising energy costs. These are families that pay more than 30 percent of their income on housing, meaning they have limited disposable income, making it difficult to make energy retrofit and climate ready upgrades. Lower-income residents also tend to live in older, less efficient buildings that are less likely to have energy-efficient features and appliances, and it is more challenging for these households to invest in longer-term cost saving energy efficiency upgrades.

Targeting energy upgrades to low-income residents living in older homes is one of the most cost-effective strategies to improve energy efficiency while providing multiple co-benefits to the community. Energy efficiency upgrades reduce utility bills and increase financial stability, thereby freeing up funds for essential needs such as healthy food and healthcare. In addition, promoting energy-efficient buildings and facilities will provide many health and equity co-benefits for Paramount residents. Through energy-efficient measures such as sealing drafty leaks, installation of improved ventilation and duct systems, and testing of carbon monoxide levels caused by appliances, buildings can achieve improved air quality. These improvements can also control moisture, reducing mold and other indoor allergens that contribute to and exacerbate asthma.

[20] City of Paramount, *City of Paramount Housing Element Update, 5th Cycle, 2014–2021*, 2014. http://www.paramountcity.com/home/showpublisheddocument?id=192, accessed February 2021.

FIGURE 4-3 **GHG Reduction Contribution in 2030 Relative to all Local and Regional Measures**



MEASURE EE1:

Improve Energy Efficiency of Existing Buildings

GOAL: *Improve the energy efficiency of existing community buildings (residential, commercial, municipal, and industrial) by 15 percent by 2030, from a 2010 baseline, consistent with the state goal.*[21]

COMMUNITY BENEFITS

- Improve Air Quality
- Improve Public Health
- Promote Sustainable Economics
- Provide Cost Savings
- Improve Social Equity
- Increase Community Resilience

Annual GHG Reduction Potential by 2030

4,029 $MTCO_2e$

DESCRIPTION

The use of energy by residential, commercial and industrial buildings is a major source of GHG emissions within the City of Paramount (City). It accounted for approximately 45 percent of the City's GHG emissions in 2010. Implementing energy-efficiency measures is often the most cost-effective action building owners can take to reduce energy bills and GHG emissions. Smart, cost-effective retrofits will benefit buildings for decades, create local green jobs, and lower energy bills. Energy-efficient buildings also reduce the region's contribution to global warming and create healthier, more comfortable spaces. The City of Paramount can significantly reduce energy consumption per square foot across all building types. The City will improve energy efficiency of existing buildings through coordination with agencies and organizations, as well as public outreach to inform residential, commercial, and industrial building owners of opportunities to leverage energy efficiency incentive programs.

The 2019 California Energy Efficiency Action Plan is the state's roadmap for an energy-efficient and low-carbon future for buildings. It identifies statewide cumulative savings targets for electricity and natural gas use in buildings that represent approximately 15 percent of statewide energy use in 2015. Energy efficiency is a key piece of California's efforts to lessen the impacts of climate change, reduce the economic burden of energy consumption on low-income populations, and complement sustainability efforts in the state. The California Energy Commission's (CEC) 2019 EE Action Plan charts the progress toward doubling energy efficiency savings in buildings, industry, and agriculture; achieving increased energy efficiency in existing buildings; and reducing GHG emissions from buildings.

With the passing of AB 802 in 2015, California now has a statewide energy benchmarking ordinance that requires all commercial buildings over 50,000 sf and meeting specific criteria to disclose annual energy consumption to the CEC. Starting

[21] California Energy Commission (CEC), *California Energy Efficiency Action Plan*, November 2019. CEC-400-2019-010-SF.

in 2019, AB 802 also required benchmarking for buildings that have 17 or more residential utility accounts. Energy utilities are required to provide owners with the whole-building data they need to comply with the ordinance.

WHAT'S ALREADY HAPPENING

There are many tools and programs available to educate residents and business-owners of opportunities to reduce energy-use within the City, including incentive programs to finance energy-efficiency improvements and clean energy-use. These tools include the GRID Alternatives' Energy for All program, the United States Environmental Protection Agency's (U.S. EPA's) ENERGY STAR® Portfolio Manager®, and California Public Utilities Commission's (CPUC's) Energy Upgrade California, that can be used to connect residents and business owners to opportunities for energy savings and clean energy.

The City of Paramount promotes a variety of federal, state, and regional programs to incentivize energy-efficient building upgrades. The Energy-Efficient Mortgage (EEM) program is federally recognized, can be applied to most home mortgages, and provide borrowers with special benefits when purchasing a home that is energy efficient, or can be made energy efficient through the installation of energy-saving improvements. The California Low Income Weatherization Program (LIWP) and the Low Income Home Energy Assistance Program (LIHEAP) provide opportunities to low-income households to make energy efficiency improvements, save energy, and lower utility costs. Southern California Edison (SCE) offers the Energy Savings Assistance program, the Mobile Home Upgrade program, and the Direct Install program to businesses and residents with an SCE service account. Southern California Gas Company (SoCalGas) implements their Energy Savings Assistance Program (ESA), Mobile Home Upgrade Program, and Residential Direct Install to incentivize energy-efficient retrofits that benefit low-income and disadvantaged communities. Furthermore, energy-efficient appliance rebates are available to City residents through the SoCalGas Marketplace and the South Coast Air Quality Management District's (SCAQMDs) Electric Lawnmower Rebate Program and CLEANair Furnace Rebate Program. Additionally, SoCalREN is available to Los Angeles County residents and has led to more than four billion dollars in rebates paid to homeowners who have made energy efficiency upgrades and installation of energy efficiency upgrades in 7,330 multifamily units throughout Southern California.

In addition to promoting programs to improve energy efficiency, the City implements its own program to incentivize building upgrades. The City's Home Improvement Program supports energy-efficient retrofits such as cool roofs, energy-efficient windows, and air conditioning units by offering grants for low-to-moderate income households in owner-occupied single-family homes. See Appendix C for more information on available sources of funding and financing for energy efficiency improvements.

STRATEGIES

The City will pursue the following actions to improve the energy efficiency of existing buildings.

STRATEGIES	
Strategy EE1a	Energy partnerships – Establish long-term partnerships to coordinate equitable access to energy efficiency resources, incentives, assistance, financing, outreach, education and other tools to residents and businesses.
• Inform residential, commercial and industrial building owners of opportunities to leverage incentive programs using tools such as the U.S. EPA ENERGY STAR Portfolio Manager and the Energy Upgrade California initiative. • Enhance multi-departmental coordination and outreach including rebates and incentives for existing building upgrades and direct installation programs. Coordinate with SCE, SoCalGas, SCAQMD, CEC, FHA and other agencies to promote energy-efficient upgrades. • Maximize participation in relevant programs for City owned and/or operated facilities, schools, and public housing developments.	
Strategy EE1b	Building energy performance benchmarking – Implement energy performance tracking and reporting program for residential and commercial buildings so that owners, tenants, and prospective buyers can make informed decisions about energy costs and carbon emissions.
• Support improved access to utility data for building owners and managers seeking to improve energy and water efficiency, through utilization of the ENERGY STAR Portfolio Manager and Energy Upgrade California tools. • Develop policy package (e.g., benchmarking, audits, retro-commissioning, energy-efficient project identification) to address energy consumption in the city's largest buildings (public and private). • Expand and improve access to financing for energy-efficiency (e.g., PACE programs, green bank, private-sector lending, etc.). • Make workforce training investments to meet increased demand for building professionals.	
Strategy EE1c	Prepare for energy code upgrades.
• Develop outreach and training on Title 24 compliance for major renovations including education regarding the most cost-effective ways to achieve compliance.	
Strategy EE1d	Lead by example through reduced energy consumption in municipal buildings (see Strategy EE3 for more details).
• Pilot retrofits for existing buildings to achieve Zero Net Energy. • Adopt municipal target for energy reduction in City buildings. • Continue to implement systems and gather data to understand City energy use at the actionable level (e.g., energy audits to identify areas for energy efficiency improvements). • Utilize facility checklists of energy efficiency measures.	

Energy Performance Tracking and Transparency Make Energy Efficiency More Visible

Tracking energy performance annually helps building owners and operators identify the best opportunities to improve environmental performance, especially for multi-tenant buildings where utility data is not easily accessible. Commercial building owners in the City of Paramount can track their energy performance using **Energy Star Portfolio Manager**, a free tool provided by the U.S. Environmental Protection Agency (EPA) that scores energy performance between 1 and 100. EPA's initial analysis of annual energy performance tracking with Portfolio Manager suggests these practices result in average energy savings of 7 percent over three years (EPA 2012). It also helps cities connect owners to resources that can help them save energy.

Clean Energy Programs Should Benefit Households Vulnerable to Cost Burdens

Making homes and buildings more efficient and able to produce their own energy on-site are critical actions for reducing carbon emissions. Energy efficiency and renewable energy contribute to less air pollution; better respiratory health; lower energy costs for households and businesses; and more dollars reinvested in the local economy.

However, if not carefully designed, energy efficiency and renewable energy programs may fail to serve low-income households. Energy costs are part of housing costs, which disproportionately burden lower-income households. "Housing burden" is often understood to mean households spending 30 percent or more of their income on housing costs. The costs to provide energy for heating, lighting and appliances are strongly influenced by the efficiency of homes and apartments. Many low-income families live in less-efficient buildings with outdated heating systems and appliances. Data on energy costs borne specifically by low-income households in the City of Paramount are not readily available. However, when looking at the proportion of income spent on home energy costs, low-income households may pay up to three times as much as median-income households. If investments are made in energy efficiency and renewable energy, the need to ensure that those investments do not have unintended negative consequences for tenants such as higher rental rates.

To ensure that energy efficiency upgrades do not result in increased cost burden to low-income populations and communities of color that are already under financial stress, programs must be designed with disproportionate cost burdens in mind.

MEASURE EE2:
Promote Green Building in New Construction and Major Renovations

GOAL: *Increase the number of new community and municipal buildings in the City that exceed minimum Title 24 standards; and increase the number of community and municipal buildings achieving LEED or EnergyStar® certification.*

COMMUNITY BENEFITS

- Improve Air Quality
- Improve Public Health
- Promote Sustainable Economics
- Provide Cost Savings
- Improve Social Equity
- Increase Community Resilience

Annual GHG Reduction Potential by 2030

Not quantified

DESCRIPTION

The concept of green building encompasses ways of designing, constructing, and maintaining buildings to decrease energy and water usage, improve the efficiency and longevity of the building systems and decrease the impacts that buildings impose on the environment and public health. Sustainable building practices go beyond energy and water conservation to incorporate site selection, environmentally sensitive site planning, resource efficient building materials, and superior indoor environmental quality.

Green, high-performance buildings deliver measurable and significant environmental and fiscal benefits. When compared to structures built to conventional construction methods, green buildings:

- Consume less energy;
- Account for fewer GHG emissions;
- Require lower maintenance costs; and
- Yield higher occupant satisfaction.

Building green doesn't have to cost a penny more. Investments in green buildings pay dividends and reap rewards, on average resulting in:[22]

- 6.6% improvement on return on investment;
- 8%–9% reduction in operating costs;
- 7.5% increase in building value;
- 3.5% increase in occupancy ratio; and
- Building green also creates quality jobs.

[22] U.S. Green Building Council®, "Green Building for Cool Cities, A Guide to Advancing Green Building Policies," 2011.

An important element to any green building program is continuing education and outreach efforts which are essential to ensure that achievements are shared and everyone is aware of process changes, especially in voluntary programs. To complement a shift toward greener building, ongoing education and training is needed for those who create buildings and those who occupy them. Successful programs increase their effectiveness by developing relationships and buy-in with key stakeholders and making a concerted outreach effort through promotion, information transfer, and training.

WHAT'S ALREADY HAPPENING

Organizations are already promoting green building practices within the region including the **Gateway Cities Energy Partnership**, a collaborative effort between five Southern California cities, SCE, and SoCalGas to educate communities about green building programs.

Other private organizations are incentivizing green buildings and LEED-certified buildings through programs such as **Fannie Mae's Multifamily Green Initiative**, **Freddie Mac's Multifamily Green Advantage Program**, and the **Federal Housing Administration's Multifamily Mortgage Insurance Program**, which offer discounted financing solutions for LEED-certified buildings, including interest rate reductions, increased loan proceeds, and rebates and reduced mortgage insurance premiums. The **Home Depot Foundation's Affordable Housing Built Responsibly grant program** and the **Bank of America Charitable Foundation's grant program** also provide funding for green buildings. In addition, **Enterprise Green Communities** focuses on disadvantaged communities and provides grants, financing, tax credit equity, and technical assistance to developers to create environmentally friendly affordable housing.

The United States Environmental Protection Agency (U.S. EPA) manages the **ENERGY STAR® Portfolio Manager®** that can be used to connect residents and business owners to opportunities for green building practices. Through the Portfolio Manager, the U.S. EPA determines ENERGY STAR scores for many types of buildings. ENERGY STAR scores of 75 or higher can receive an ENERGY STAR certification verified by a third party.

In addition, the City of Paramount has developed an "Energy" tab on the City of Paramount's environmental sustainability website (paramountenvironment.org) that includes information about energy-efficient upgrades, incentives, and available programs. The webpage also includes information regarding Clean Energy Projects that are underway in Paramount including the City's GHG Inventory, sustainable buildings in Paramount, and sustainability awards that have been granted to the City.

STRATEGIES

Effective strategies and implementing actions to promote green building are outlined in the following table.

STRATEGIES	
Strategy EE2a	Promote education, awareness, and training to the public regarding the benefits of Green Building.

- Work with media partners (news, radio, and television) to raise awareness and promote green building opportunities, best practices, and benefits, including the health benefits associated with HVAC systems. Use these outlets to also promote opportunities and share lessons learned.
- Create a webpage so that residents can take an online pledge to lower energy usage or make upgrades.
- Conduct energy-efficiency workshops, green building clinics, and seminars in multiple languages.
- Develop and make available a one-page "Homeowners' Green Building Check List" with additional information detailing energy efficiency options at City Hall, the Public Library, and the Paramount Community Center/Senior Center.
- Explore partnerships to promote a non-profit Green Building Resource Center that can provide a list of green builders, a list of sources or suppliers of green materials and technical assistance to homeowners and residential contractors.
- Feature or highlight local model homes that have utilized energy efficiency programs or incentives as an educational tool.
- Highlight LEED-certified buildings [Starbucks soon to be certified].

Strategy EE2b	Work with local contractors and homeowners to develop a marketing campaign.

- Develop logo, yard signs, window decals, etc., highlighting residents/businesses taking a pledge to become for energy efficient.
- Distribute promotional kits of simple upgrades that homeowners can make without spend too much money.

Strategy EE2c	Incorporate energy-efficient building requirements in specific plans.

- Incorporate energy-efficient building requirements in development for areas adjacent to upcoming West Santa Ana Branch light-rail stations.

Amend the Multiple Listing Service to Increase Demand for Green Real Estate

The increasing costs and environmental impact of creating energy are driving a social and economic demand for greater efficiency. Properties with efficient and healthy attributes are increasingly desirable if listing agents have the ability to represent environmentally friendly aspects and/or any green certifications that have been awarded to the property to buyers through the Multiple Listing Service (MLS). A green MLS benefits everyone, from the homeowner investing in better attic insulation to large builders employing new energy-efficient construction techniques. Being able to quantify the return on green investments and having a stronger method to market green properties can also motivate more people to become energy and resource efficient. Cities can partner with the real estate industry to promote a greener MLS. For more information about greening the MLS and for tools and resources, please visit http://www.greenthemls.org/.

MEASURE EE3:

Improve Efficiency of Municipal Operations and Public Infrastructure

GOAL: *Decrease energy use by existing municipal buildings by 15 percent by 2030 from a 2010 baseline, consistent with the 2019 California Energy Efficiency Action Plan.*[23]

COMMUNITY BENEFITS

- Improve Air Quality
- Improve Public Health
- Promote Sustainable Economics
- Provide Cost Savings
- Improve Social Equity
- Increase Community Resilience

Annual GHG Reduction Potential by 2030

27 $MTCO_2e$

DESCRIPTION

Energy can account for as much as 10 percent of a local government's annual operating budget (U.S. DOE 2010), a proportion that is likely to grow as energy prices rise. Improving the energy efficiency of municipal facilities and operations is a cost-effective strategy to help stimulate the economy, create jobs, expand markets for energy-efficient technologies, and reduce emissions of air pollutants and GHGs) Local governments can also lead by example and achieve multiple benefits by improving the energy efficiency of their new, existing, and renovated facilities and their day-to-day operations, motivating the private sector and other stakeholders to follow suit. Engaging the private sector in municipal energy efficiency improvements can also leverage a greater pool of expertise, providing opportunities for education and outreach, and fostering a community-wide discussion about saving energy, money, and the environment.

The 2019 California Energy Efficiency Action Plan is the state's roadmap for an energy-efficient and low-carbon future for buildings. It identifies statewide cumulative savings targets for electricity and natural gas use in buildings that represent approximately 15 percent of statewide energy use in 2015. Energy efficiency is a key piece of California's efforts to lessen the impacts of climate change, reduce the economic burden of energy consumption on low-income populations, and complement sustainability efforts in the state. The CEC's 2019 EE Action Plan charts the progress toward doubling energy efficiency savings in buildings, industry, and agriculture; achieving increased energy efficiency in existing buildings; and reducing GHG emissions from buildings.

With the passing of AB 802 in 2015, California now has a statewide energy benchmarking ordinance that requires all commercial buildings over 50,000 sf and meeting specific criteria to disclose annual energy consumption to the CEC. Starting

[23] The 2019 California Energy Efficiency Action Plan is the state's roadmap for an energy-efficient and low-carbon future for buildings; it represents the CEC's plan for meeting the state's goal to double the energy efficiency of existing buildings by 2030, as expressed by SB 350.

in 2019, AB 802 also requires benchmarking for buildings that have 17 or more residential utility accounts. Energy utilities are required to provide owners with the whole-building data they need to comply with the ordinance.

WHAT'S ALREADY HAPPENING

The City is already taking steps to reduce energy consumption within municipal operations and public infrastructure. The City continually installs motion sensors and multi-level switches at facilities when feasible, and when doing facility upgrades, the City replaces all lighting with LED bulbs. In addition, the City is actively participating in **Southern California Regional Energy Network (SoCalREN) Public Agency programs** to better understand its energy usage at City facilities and identify energy-saving projects and measures. Energy usage of City facilities has been ranked and an audit of Paramount Park has been completed. The results of the audit were used to develop approximately 10 projects that could help make the Paramount Park facility more energy efficient.

Other programs are available through local utilities as well as state and federal initiatives. Both SCE and SoCalGas offer tools and resources to help local governments manage costs, identify areas for energy efficiency improvements, and lower energy costs. In addition, the **Energy Conservation Assistance Act (ECAA) – Low Interest Loans** program is available to finance energy efficiency projects.

STRATEGIES

Effective strategies and implementing actions to improve efficiency of municipal operations and public infrastructure are outlined in the following table.

STRATEGIES	
Strategy EE3a	Conduct audits and assessments of municipal buildings.
• Audit energy use of agency buildings to identify opportunities for energy savings through efficiency and conservation measures. • Benchmark energy use of major agency buildings using ENERGY STAR® Portfolio Manager or similar. • Use energy management software to monitor real-time energy use in agency buildings to identify energy usage patterns and abnormalities. • Conduct commissioning (for new buildings) and retro-commissioning (for existing building) to optimize performance of equipment such as heating, ventilation and air conditioning (HVAC) and lighting systems and ensure they are operating as designed and installed.	
Strategy EE3b	Establish internal policies and procedures for municipal operations.
• Establish an energy efficiency and conservation policy that provides employees with behavioral and operational guidelines for energy-efficient use of the facility, including lights, copiers and computers, thermostat, and personal equipment etc. • Establish energy efficiency and conservation protocols for building custodial and cleaning services and other contract employees. • Adopt ENERGY STAR® purchasing standards for all new computer equipment, appliances, and equipment. • Participate in voluntary sustainability and climate change recognition programs. • Prepare and implement an Energy Action Plan for agency facilities and require new agency buildings to meet or exceed Title 24, California's energy efficiency building standard and be net zero. • Implement off-peak scheduling of pumps, motors, and other energy intensive machinery where possible. • Implement a revolving loan fund or other mechanism to finance future energy investments in agency buildings and operations. • Develop and implement shading requirements for agency buildings. • Require agency funded or supported affordable housing projects to incorporate energy efficiency features, equipment, and appliances and ensure compliance through the building inspection process.	
Strategy EE3c	Perform municipal building retrofits and upgrades.
• Develop and implement a schedule to address no cost/low cost energy retrofit projects. • Develop and implement a schedule to address capital intensive energy retrofit projects.	

- Reduce energy demand by capturing “day lighting” opportunities.
- Replace incandescent lights, exit signs, and other lighting with more energy-efficient lighting, such as compact fluorescents, overhead fluorescent lights or light-emitting diodes (LEDs). Install motion sensors, photocells, and multi-level switches to control room lighting systems.
- Add vending misers to cold beverage machines.
- Upgrade pumps, motors, and other energy intensive machinery where feasible and upgrade with high efficiency units.
- Replace agency appliances and equipment such as vending machines, refrigerators, and washing machines, with energy-efficient models.
- Replace and/or tint windows in agency-owned buildings to reduce heating by sunlight.
- Install cool roof systems on existing and new agency buildings.
- Install smart meters on agency buildings.
- Optimize energy management software on staff computers for maximum energy savings.
- Utilize facility energy efficiency checklists and other resources from the Southern California Regional Energy Network (SoCalREN)

Strategy EE3d	Energy-efficient outside lighting for municipal buildings and public facilities.

- Replace incandescent traffic signals and crosswalk lights with energy-efficient lighting such as light-emitting diodes (LEDs).
- Replace outdoor lights with energy-efficient alternatives, such as LEDs.
- Use “de-lamping” techniques to reduce lighting levels at parks, sports fields, and parking lots, where appropriate for the location and use, considering security and decorative lighting issues.
- Change holiday or decorative lighting to LEDs or other energy-efficient lighting systems.
- Select energy-efficient exterior signage that operates on LEDs, such as signage with programmable, automatically changing messages.

Tip: Purchase Energy-Efficient Products

Action	Annual Energy Cost Savings	Annual CO_2 Savings (Tons)	Lifetime (Years)	Life-Cycle Energy Cost Savings	Life-Cycle CO_2 Savings (Tons)
Replace 5,000 computers and monitors with ENERGY STAR labeled products and activate power management	*$290,210*	*2,177*	*4*	*$663,428*	*8,708*
Replace 10 conventional commercial dishwashers with ENERGY STAR labeled products	*$8,690*[b]	*57*	*10*	*$60,483*[b]	*567*
Replace 50 conventional vending machines with ENERGY STAR labeled products[c]	*$8,544*	*64*	*14*	*$90,250*	*894*
Replace 100 conventional water coolers with ENERGY STAR labeled coolers	*$3,722*	*28*	*10*	*$30,188*	*278*
Replace 500 incandescent exit signs with ENERGY STAR labeled LED exit signs	*$16,737 in energy costs plus $33,696 in maintenance costs*	*125*	*10*	*$484,800 in energy and maintenance savings net price differential*	*1,251*

[a] Figures obtained from calculators on the ENERGY STAR Purchasing & Procurement Web site http://www.energystar.gov/purchasing using default settings and an electricity rate of 10.3¢ per kWh (EIA, 2009). Annual costs exclude the initial purchase price and installation cost. All costs are discounted over the product's lifetime using a real discount rate of 4 percent.

[b] Value includes water savings.

[c] Vending machines assumed to have capacities of less than 500 cans.

Some local governments are making a procurement policy for efficient products an explicit part of their energy policy. Purchasing energy-efficient products can make comprehensive energy efficiency upgrades more cost-effective by reducing building energy loads (and the size of the systems needed to meet those loads), typically by as much as 5 to 10 percent. The table (above) summarizes the potential energy and GHG savings associated with purchasing energy-efficient products for five product categories. More information and local government examples on energy-efficient product procurement are provided in EPA's Energy-Efficient Product Procurement guide in the Local Government Climate and Energy Strategy Series.

Renewable Energy (RE)

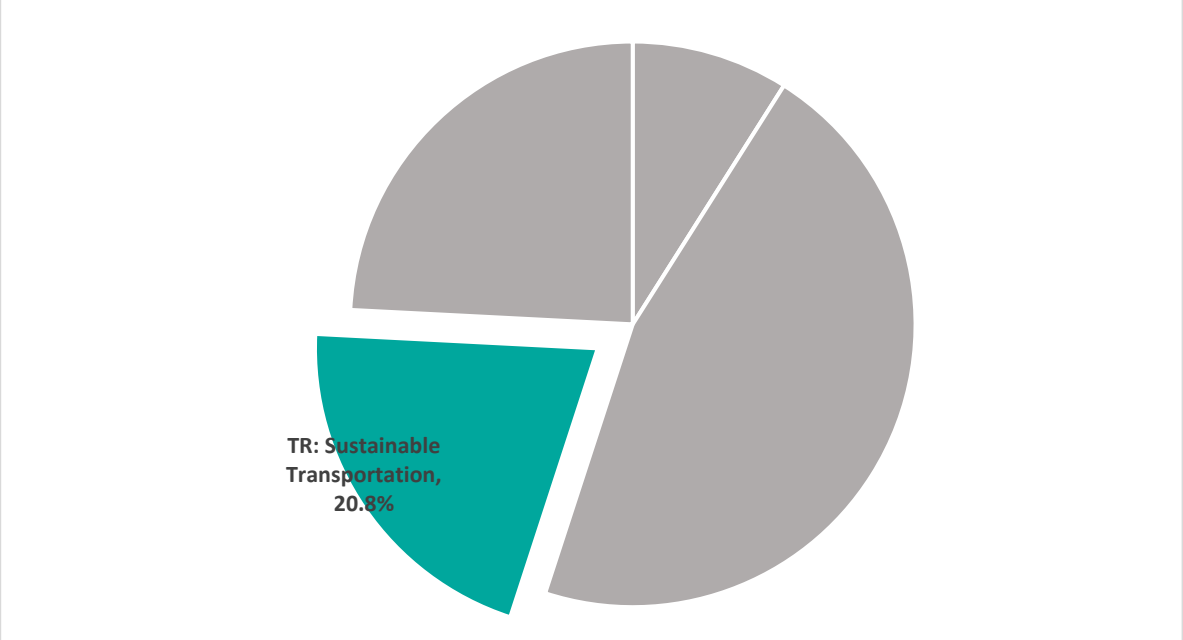
Renewable energy sources include solar, wind, and alternative fuels that aim to replace energy generated by fossil fuels. Renewable energy systems should be combined with cost-effective efficiency and conservation measures to maximize cost savings and community co-benefits.

Generating renewable energy within the City reduces dependency on fossil fuels and benefits the community by creating local green jobs, improving health, increasing community resilience, providing cost savings, improving social equity, and improving air quality. Generating electricity from renewable sources also reduces harmful air pollutants and benefits public health, especially for people living and working near power plants. Replacing fossil fuels with renewable energy improves air quality and can result in direct health benefits such as decreased respiratory ailments, lost workdays, and overall healthcare costs, as well as indirect health benefits such as local, green jobs that support Paramount residents. Renewable energy can also make the City of Paramount more resilient to power outages. Distributed energy systems spread throughout the community are better able to withstand equipment system failure during earthquakes, extreme heat events, localized flooding, or other natural or human-caused disasters.

Investments in renewable energy will ensure that a broad range of Paramount residents have access to the improvements. The equity benefits and impacts of these programs can be addressed through measures that target low-income qualified populations, workforce development for green jobs, and partnerships with local community-based organizations.

Natural gas is used extensively throughout Paramount for residential, commercial, and industrial energy applications, accounting for 26 percent of the 2010 baseline Community GHG Inventory (excluding large stationary sources). A good portion of natural gas emissions can be reduced by efficiency improvements outlined in the energy efficiency strategies outlined above; however, the City recognizes that to meet its GHG reduction goals, it must promote conversion of natural gas systems to solar thermal systems or electric systems that are powered with renewable electricity.

FIGURE 4-4 **GHG Reduction Contribution in 2030 Relative to all Local and Regional Measures**



MEASURE RE1:

Increase Local Renewable Energy Generation

GOAL: *Increase local rooftop solar PV installations by 250 to 500 residential buildings by 2030 from a 2010 baseline; and increase local rooftop solar PV installations by 50 commercial buildings by 2030 from a 2010 baseline.*

COMMUNITY BENEFITS

- Improve Air Quality
- Improve Public Health
- Promote Sustainable Economics
- Provide Cost Savings
- Improve Social Equity
- Increase Community Resilience

Annual GHG Reduction Potential by 2030

2,912 $MTCO_2e$

DESCRIPTION

Renewable energy resources such as solar, wind, biomass, hydropower, and landfill gas reduce GHG emissions by replacing fossil fuels. Renewables also reduce emissions of conventional air pollutants, such as sulfur dioxide, that result from fossil fuel combustion. In addition, renewable energy can create jobs, open new markets for the local economy, and can be used as a hedge against price fluctuations of fossil fuels.

Local governments can promote renewable energy by using it to help meet their own energy needs in municipal operations, and by encouraging its use by local residents and businesses. By installing equipment that captures energy from sunlight, wind, water, and other renewable energy sources, local governments and communities can achieve substantial energy, environmental, health, and economic benefits. The City of Paramount will promote the installation of distributed, small-scale solar photovoltaic systems (solar PV), as well as other renewable energy generation systems, in existing buildings and new construction.

WHAT'S ALREADY HAPPENING

The City has already begun installing renewable energy systems that may encourage local residents and businesses to follow suit. The City installed solar panels on the roof of the warehouse at its City Yard in 2010. In 2016 the City Council adopted a Small Residential Solar Energy Systems ordinance which streamlines the permitting and inspection process of small residential solar systems in compliance with AB 2188. In addition, the City plans to further review the Paramount Municipal Code to ensure that requirements regarding the installation of solar panels are not overly restrictive.

There are already a variety of programs available to the City, local businesses, and residents to incentivize renewable energy installations. For example, GRID Alternatives **Energy for All** provides no-cost solar to homeowners that qualify as low income, offers access to cost-saving community solar power through development of shared solar arrays, and provides no-cost technical assistance and low-cost design and installation services for affordable housing owners and developers who provide

housing and services to low-income renters. Their **Single Family Affordable Solar Homes (SASH)** program also provides single-family homeowners with access to solar technology. GRID Alternatives and the City entered into a memorandum of understanding in 2018 to collaborate on a **Clean Energy Campaign**; through this program, an average of three households per year have installed solar panels. In addition, GRID Alternatives partnered with the CARB to offer the **One-Stop-Shop Pilot Project**, which addresses barriers to access that make it difficult for low-income families participate in climate equity programs. This program provides opportunities for consumers to access state incentives for technology such as charging infrastructure and solar energy.

As a sample benchmark, in 2020 a total of 30 permits were issued for 30 solar projects (27 residential and 3 commercial) with a total of 384 solar panels. Of the 30 permits issued, 3 were issued to GRID Alternatives.

STRATEGIES

Strategies and implementing actions to increase local renewable energy generation are outlined in the following table.

STRATEGIES	
Strategy RE1a	Provide regulatory tools to facilitate local renewable energy production.
• Adopt local building energy codes which include requirements to design new buildings to maximize potential for on-site renewable energy generation. • Modify zoning ordinances to facilitate renewable energy generation projects. • Adopt a siting ordinance for solar photovoltaic systems proposed on easements and open space lands. • Review Paramount Municipal Code further to ensure that requirements for solar installation are not overly restrictive.	
Strategy RE1b	Provide incentives for on-site renewable energy generation.
• Establish financial incentives for residents and businesses to install renewable energy generation equipment. • Facilitate commercial and residential on-site renewable energy projects for residents by expediting permitting processes.	
Strategy RE1c	Enhance the effectiveness of on-site renewable energy generation at local government facilities and throughout the community.
• Evaluate energy generation capacity. Because some renewable energy generation technologies have higher generation capacities in certain regions (e.g., wind power and solar PV), conduct an evaluation of renewable energy generation potential for facilities. • Bundle on-site renewable energy generation with energy efficiency improvements and green power purchases. • Purchase solar photovoltaic systems or enter into power purchase agreements (PPAs) to meet all or part of the electrical energy requirements of buildings and facilities owned, leased, or operated by the agency. • Install solar generation at City bus shelters and over large parking lots at City facilities.	
Strategy RE1d	Promote local renewable energy generation.
• Develop a map that residents and businesses can access online that identifies where solar projects are located in the community. • Conduct renewable energy workshops for residential, commercial, and industrial property owners as a way to provide resources and information on permitting assistance for those interested in renewable energy for their properties. • Work with solar photovoltaic system providers to establish a discounted bulk purchasing program for residents and businesses that wish to purchase and install solar photovoltaic systems on their buildings.	

Streamlined Permitting for Solar PV Systems

California AB 2188 passed in 2014, required that local governments adopt an ordinance to streamline the permitting and installation of solar PV systems. In addition, the CALGreen building code requires all new buildings to be "solar ready" and include necessary infrastructure to install solar PV systems. In 2001 legislation was passed that prohibits local ordinances that unnecessarily impede the permitting of small wind energy projects. The law effectively requires local governments to permit projects that meet standards set forth in the legislation. Paramount adopted such an ordinance, which is codified in Chapter 15.08 of the Paramount Municipal Code.

MEASURE RE2:

Promote and Maximize Community Choice Energy (CCE) and Utility Clean Energy Offerings

GOAL: *Maintain community enrollment in municipal and community electricity accounts in Clean Power Alliance; and enroll 20% of the community in "Clean" or "100% Green" Clean Power Alliance Options.*

COMMUNITY BENEFITS

- Improve Air Quality
- Improve Public Health
- Promote Sustainable Economics
- Provide Cost Savings
- Improve Social Equity
- Increase Community Resilience

Annual GHG Reduction Potential by 2030

17,857 $MTCO_2e$

DESCRIPTION

Renewable energy is produced without generating GHG emissions, typically from solar, wind, geothermal, biogas, biomass, or low-impact hydroelectric sources and includes utility products (i.e., clean power purchased from the utility through the electricity grid).

Through a series of legislation that began in 2002, California has placed requirements on electric utilities to procure a portion of their energy from renewable sources. The standard, known as the Renewables Portfolio Standard (RPS), applies to investor-owned utilities, publicly-owned utilities, electricity service providers, and community choice electricity aggregators. To comply with the legislation,[24] utilities and community choice aggregators (CCAs) in California must procure a minimum of 33 percent of their retail electricity sales from qualifying renewable sources by 2020, 60 percent by 2030, and 100 percent by the end of 2045. As of July 2018, SCE sourced 32 percent of its retail sales from renewable sources.[25]

Generating large quantities of clean, renewable energy reduces dependency on fossil fuels and benefits the community by creating local green jobs, improving health, and increasing community resilience. Generating electricity from renewable sources also reduces emissions of harmful air pollutants, which leads to air quality improvements and has benefits for public health, especially for people living and working near power plants. Health benefits associated with good air quality include decreased respiratory ailments, lost workdays, and overall healthcare costs. Renewable energy can also make cities more resilient to power outages. Distributed energy systems spread throughout the community are better able to withstand equipment system failure during earthquakes, extreme heat events, localized flooding, or other natural or human-caused disaster.

[24] In particular, SB 350, 2015, and SB 100, 2018.
[25] Southern California Edison, "2017 Power Content Label," July 2018.

WHAT'S ALREADY HAPPENING

To tap into SCE's deeper renewable energy offerings without installing solar panels on their roofs, SCE customers can voluntarily participate in one of two programs: **Green Rate Program** or **Community Renewables Program**. In the Green Rate Program, SCE purchases renewable energy from local developers on the customers' behalf. The customer then purchases this renewable power (equal to 50 percent or 100 percent of electricity use). In the Community Renewables Program, the customer enters into an agreement with a local renewable energy provider to buy a share of their energy output. SCE purchases the electricity that is produced under the customer agreement—up to 120 percent of the power forecasted to meet usage needs—and SCE pays the customer directly, via bill credits.

Starting in February 2019 for residential customers and May 2019 for non-residential customers, the Clean Power Alliance (CPA) became a new electricity provider for the City of Paramount. CPA is a Community Choice Energy (CCE) program that increases renewable energy choices for local businesses and residents in the City. CPA procures electricity from renewable sources—solar, wind, bioenergy, geothermal, and small hydro—and then partners with SCE to deliver electricity to homes and businesses. Each local government that joins CPA can select a default rate option of 36 percent (**Lean Power**), 50 percent (**Clean Power**), or 100 percent (**100% Green Power**) renewables to begin service. Customers within that city will be automatically enrolled based on the city's choice. Customers have the ability to change their rate at any time. The City has chosen Lean Power as the default product for the community at the lowest possible cost. This program allows for local management and control, and is 1 to 2 percent cheaper than SCE's default rate.

STRATEGIES

The City's strategies and implementing actions to promote and maximize CCE and utility clean energy offerings are outlined in the following table.

STRATEGIES	
Strategy RE2a	Offer a Community Choice Aggregation program for residents and businesses.
• Join the Clean Power Alliance or another available CCA • Lead by example and enroll all municipal accounts with the CCA at 100% renewable energy service (or SCE's 100% Green Rate Program)	
Strategy RE2b	Promote education and awareness of the benefits of a CCA and/or utility clean energy programs (e.g., Southern California Edison's Green Rate Program and Community Renewables Program).
• Provide information regarding CPA and SCE on the City's Environmental webpage. • Work with media partners (news, radio and television) to raise awareness of clean energy program opportunities and benefits. • Distribute information detailing clean energy program options at City Hall, the Public Library, the Community Center/Senior Center and through mailings (e.g., information could be inserted into sewer, water & tax bills). • Provide pamphlets, mailings, trainings, etc. in Spanish to cater to the City's large Latino population.	
Strategy RE2c	Collaborate with both SCE and CPCAs to increase the percent of electricity that is sourced from renewable systems.
• Identify and promote local sources of clean power for purchase by SCE or CPA. • Provide letters in support of SCE or CPA clean power purchase contract. • Speak at the California Public Utility Commission hearings in support of SCE or CCA clean power purchase contracts.	


Paramount
PIRATES

MEASURE RE3:

Promote Electrification of Buildings and Appliances

GOAL: *Increase the number of natural gas appliances (e.g., water heaters, stoves, clothes dryers) replaced with electric or solar alternatives; and decrease number of new buildings and major renovations connecting to natural gas infrastructure.*

COMMUNITY BENEFITS

- Improve Air Quality
- Improve Public Health
- Promote Sustainable Economics
- Provide Cost Savings
- Increase Community Resilience

Annual GHG Reduction Potential by 2030

Not quantified

DESCRIPTION

Natural gas is a major remaining source of the state's GHG emissions, much of which is used in our homes and commercial buildings. Nearly 90 percent of the homes in the state rely on gas to run appliances, amounting to roughly 13 million homes and buildings that depend on gas combustion for water heating, space heating, clothes drying, and cooking. There is a growing consensus among climate experts that continued use of gas to heat our buildings is unequivocally incompatible with a safe climate and clean air.[26] Studies show that phasing out natural gas appliances in over 10 million homes and buildings across the state is essential for achieving GHG reduction goals, and improving indoor air quality.[27]

California's 2017 Scoping Plan Update includes high level objectives to reduce fossil fuel use in general and states that reducing use of fossil natural gas wherever possible will be critical to achieving the state's long-term climate goals. Greening the residential and commercial buildings sector, by converting natural gas stoves to electric inductive; converting water heating to solar; converting space heating to electric, is a vital part of the equation toward meeting those goals. Increasing the production and use of natural gas is another effective strategy for reducing emissions from fossil natural gas. Gas providers like SoCalGas are working towards state emission goals by developing "zero carbon" fuels like renewable natural gas (RNG) and hydrogen. SoCalGas aims to make 20% of its natural gas supply renewable by 2030.

WHAT'S ALREADY HAPPENING

Existing programs are in place to incentivize a transition from fossil-fuel powered equipment to electric equivalents. For example, the Southern California Air Quality Management District (SCAQMD) has established a Residential Electric Lawn Mower Rebate Program to offset the cost of an electric lawn mower when residents turn in their old gasoline lawn mower to an approved dismantler for permanent destruction. Other local governments across California are working to promote

[26] E3 California Pathways Study; LBNL Scenarios for Meeting California's 2050 Climate Goals; UN Deep Decarbonization Pathways Project.
[27] The Sierra Club, "Gas Heaters: The Skeleton in California's Closets," July 2017.

electrification of buildings and appliances through the development of Reach Codes that exceed the Title 24 Building Energy Efficiency Standards. For example, the City of San Luis Obispo's proposed building code would require additional energy efficiency and electrification readiness and adds a small fee for new mixed-fuel buildings based on expected gas consumption. Furthermore, cities such as Menlo Park are limiting natural gas use for specific appliances.

The City is leading by example and is transitioning to equipment powered by renewable energy. The City purchased electric John Deere gator utility vehicles for general use by Community Recreation Services and Public Works staff at City parks and park facilities. Additionally, the City supplements its vehicle fleet with hybrid or alternate fuel vehicles whenever it's possible. Ultimately, the goal of the City is to install electric vehicle (EV) charging stations at all of its facilities to be able to supplement its fleet with electric vehicles where possible. Having the EV charging infrastructure at its facilities and throughout the City also sends the message to its employees and residents that electric vehicles are welcome in the City.

STRATEGIES

Effective strategies and implementing actions to promote conversion from natural gas to clean energy are outlined in the following table.

STRATEGIES	
Strategy RE3a	Promote education and awareness of the benefits of converting natural gas appliances and heating systems to clean energy.
• Provide workforce development opportunities to plumbers and electricians to help be the change agents needed to jumpstart the market and install super-efficient electric heat pump water and space heaters. • Work with media partners (news, radio, and television) to raise awareness of clean energy program opportunities and benefits. • Distribute information at City Hall, the Public Library, the Community Center/Senior Center and through mailings detailing the benefits of converting to natural gas (e.g., information could be inserted into sewer, water, and tax bills). • Provide pamphlets, mailings, trainings etc. in Spanish to cater to the City's large Latino population.	
Strategy RE3b	Incentivize replacement of gas with super-efficient electric appliances.
• Update local energy code to reflect current technology and grid conditions and incentivize use of super-efficient electric appliances like electric "heat pump" water and space heaters. • Offer energy efficiency rebates to homeowners, contractors, and plumbers to replace gas appliances with super-efficient electric models.	

Sustainable Transportation (TR)

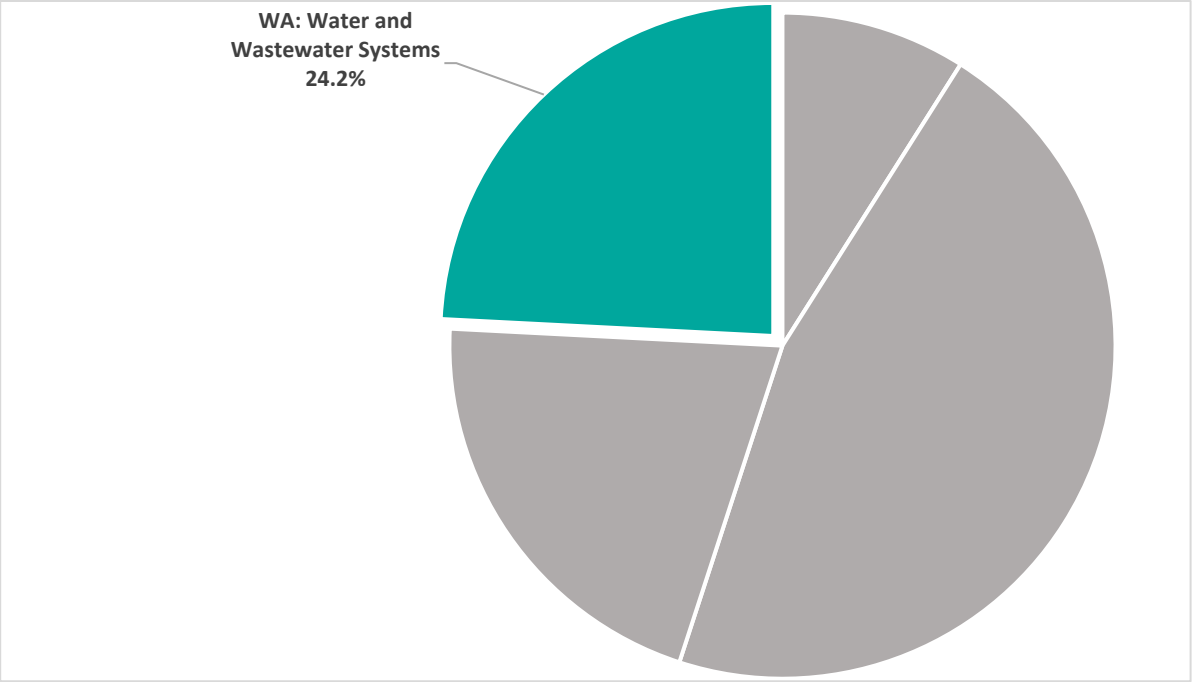
Other than emissions from large industrial sources, the transportation sector is the largest contributor to the City's GHG emissions. In 2010, GHG emissions associated with the transportation sector represented approximately 42.1 percent of city-wide emissions. The majority of transportation emissions (64.5 percent) were generated by passenger and medium duty vehicles. The remainder was generated by heavy duty trucks (15.5 percent).

The strategies and actions in the Paramount CAP will help the City shift from an auto-dependent culture that relies on personal motor vehicle trips to one that relies more on walking, biking, and public transit, and building on the City's existing transportation policies, such as those in the City of Paramount General Plan, the Bellflower-Paramount Bike & Trail Master Plan, and the Bellflower-Paramount Active Transportation Plan. The resulting reductions in vehicle miles traveled (VMT), in conjunction with state and regional policies and programs mandating more fuel efficient vehicles and lower carbon fuels, are expected to result in significant GHG savings, decreased smog and toxic air pollutants, and reduced automobile engine oil runoff into local ecosystems.

Expanding public transportation options and improving multi-modal network connectivity is a key component of achieving sustainable transportation goals through expansion of pedestrian and bicycle infrastructure as well as car-sharing and bicycle-sharing programs. Zero-emissions vehicles (ZEVs) and charging stations are becoming increasingly common in the Gateway Cities Region. ZEVs include plug-in battery electric vehicles (PEVs) and hydrogen fuel cell electric vehicles (FCEVs). The availability of new vehicle models, improved battery storage, increased availability of charging infrastructure and vehicle range coupled with incentives such as carpool access lane stickers, federal tax credits, and state and air district rebates have contributed to an expanding market for PEVs. Transportation Demand Management (TDM) describes strategies to reduce demand for roadway travel, particularly in single-occupancy vehicles, or to redistribute this demand in space or in time. TDM strategies can change travel behavior patterns through either voluntary incentives or requirements.

In addition to reducing GHG emissions, improving the City's transportation and land use systems can provide benefits to the economy, public health, air quality, equity, and community resilience, while also providing cost savings. Residents who choose active transportation such as walking, biking, and utilizing public transit save on costs from purchasing a motor vehicle, insurance, and maintenance, and may indirectly reduce healthcare costs. Lower rates of car ownership can free up parking spaces for wider sidewalks, "parklets," and other beneficial uses of urban property. Having fewer cars on the road also reduces air pollution and noise (thereby improving physical and mental health), and alleviates traffic jams.

FIGURE 4-5 **GHG Reduction Contribution in 2030 Relative to all Local and Regional Measures**



MEASURE TR1:

Support Fuel-Efficient and Alternative-Fuel Vehicles

GOAL: *Increase the number of plug-in electric vehicles (PEVs) and other zero-emissions vehicles (ZEVs) in the community to a level in line with state goals, including the Mobile Source Strategy and Governor's Orders calling for 5 million ZEVs in the state by 2030; increase miles driven by ZEVs in the community; and increase the number of electric vehicle charging stations within the city.*

COMMUNITY BENEFITS

- Improve Air Quality
- Improve Public Health
- Provide Cost Savings
- Improve Social Equity
- Increase Community Resilience

Annual GHG Reduction Potential by 2030

9,388 $MTCO_2e$

DESCRIPTION

Mobile sources account for well over half of the emissions that contribute to ozone and particulate matter (PM) and nearly 40 percent of the GHG emissions in California. For the City of Paramount, on-road vehicles contributed approximately 42 percent to the 2010 community inventory (excluding large stationary sources). In order to meet California's health based air quality standards and GHG reduction goals, the cars we drive must transition away from petroleum-based fuels. To that end, this measure promotes the use of plug-in electric vehicles (PEVs), hydrogen fuel cell vehicles (FCEVs), and other ZEVs in municipal operations and throughout the greater community.

The availability of new vehicle models, improved battery storage, and increased availability of vehicle charging infrastructure, coupled with incentives such as carpool lane access stickers, federal tax credits, and state and air district rebates have contributed to an expanding market for PEVs. In addition to the GHG savings and the clean air co-benefits, consumers are beginning to realize that PEVs are fun to drive and can satisfy a large percentage of their daily transportation needs.

On September 23, 2020, Governor Newsom issued EO N-79-20 which includes the following goals:

- By 2035, 100% of all in-state sales of new passenger cars and trucks will be ZEVs;
- By 2045, 100% of all medium- and heavy-duty vehicles in the state be zero-emissions for all operations where feasible (and the same goal for drayage trucks by 2035); and
- By 2035, the state will transition to 100% zero-emissions off-road vehicles and equipment (where feasible).

In January 2018, Governor Brown signed EO B-48-18, setting ambitious targets of 200 hydrogen fueling stations and 250,000 electric vehicle chargers to support 1.5 million ZEVs on California roads by 2025, on the path to 5 million ZEVs by 2030. The

state's Zero-Emission Vehicle Action Plan, published in 2016, contains over 200 specific action items for state agencies to accelerate ZEV adoption in California, by expanding charging and fueling infrastructure, raising consumer awareness of ZEV options and benefits, maximizing economic and job opportunities related to ZEV technologies, and making ZEVs a more affordable and attractive option for drivers and passengers. The Zero-Emission Vehicle Action Plan was updated in 2018 to help expand private investment in ZEV infrastructure, particularly in low-income and disadvantaged communities.

To prepare for EV charging stations required by EO B-48-18, the Southern California Association of Governments (SCAG) has developed a regional PEV readiness plan. This plan identifies viable locations for charging stations, changes to development codes, and other strategies to encourage the purchase and use of electric vehicles. Through this plan and local outreach efforts, alternative-fuel vehicles will be promoted as a strategy to reduce GHG emissions associated with passenger vehicles.

WHAT'S ALREADY HAPPENING

The City of Paramount (City) has already begun implementing vehicle charging infrastructure to promote electric vehicles. The City installed two public EV chargers located in the Civic Center on the south side of the Clearwater Building at 16401 Paramount Boulevard; and at the Sheriff's Substation, located at 15001 Paramount Boulevard. Installation costs were funded through a grant from the Mobile Source Air Pollution Reduction Review Committee, while monthly energy costs are funded through partnerships with the South Coast Air Quality Management District (SCAQMD) and the state. The City is also in the process of approving new EV charging stations on private property including one at 14318 Downey Avenue, one at 7359 Rosecrans Avenue, and six charging stations at 15147 Colorado Avenue. Of these, the two stations along Rosecrans Avenue would be available to the public. In addition to the installation of EV charging stations, the City is leading by example and has implemented an "eco-friendly" fleet of vehicles. As of September 2018, 35 of the City's 108 total vehicles were gas/electric hybrids or burned compressed natural gas (CNG). The City has plans to convert 50% of its fleet to alternative fueled vehicles to reduce pollutant emissions. The City has also established a contract with the City of Long Beach's Long Beach Transit (LBT) which replaced the City's aging diesel-run fleet with LBT's zero-emissions fleet.

There are a variety of federal, state, regional, and local programs available to residents and businesses within the City to promote EV use including the **Plug-In Electric Drive Vehicle Credit**, the **California Vehicle Rebate (CVRP)**, and the **Clean Vehicle Assistance** programs. In addition to programs that incentivize purchase of EVs, the **California Capital Access Program (CalCAP)** and the **California Electric Vehicle Infrastructure Project (CALeVIP)** are incentive programs implemented by the CEC to promote the installation of EV chargers. Installation of EV charging stations throughout the state would provide owners of EVs with convenient access to required EV infrastructure, encouraging California residents to consider purchasing EVs.

Regionally, the SCAQMD administers the **Replace Your Ride Program** and the **Residential Electric Vehicle Charging Incentive Pilot Program** to incentivize replacement of older, higher-emissions vehicles with newer hybrid or electric vehicles and promote installation of EV charging equipment. To encourage SCE and SoCalGas customers to purchase alternative-fuel vehicles, SCE offers **Time-of-Use rate plans** to customers who charge EVs during non-peak hours; while SoCalGas offers a special **Natural Gas Vehicle (NGV) Billing Rate** to customers who refuel their natural gas vehicles at home, thereby reducing costs associated with natural gas vehicles.

STRATEGIES

The City will pursue the following strategies and implementing actions for supporting fuel efficient and alternative fuel vehicles.

STRATEGIES	
Strategy TR1a	Support the use of alternative fueled vehicles and transit.

- Develop a city-wide zero-emissions vehicle action plan.
- Incorporate zero-emissions vehicle expansion strategies in new specific plans and comprehensive specific plan updates.
- Establish and implement a policy and timeline to convert government fleets, including government owned, leased, and operated vehicles to alternative or fuel-efficient vehicles and continue purchasing new alternative or fuel efficient fleet vehicles.
- Use regional purchasing options or the CA Department of General Services bulk purchasing program to buy green fleet vehicles from local auto dealers.
- Include information on the city website about state and federal clean vehicle rebates.

Strategy TR1b	Advance alternative fuel vehicle infrastructure.

- Adopt an EV charging station ordinance that establishes minimum EV charging standards and streamlines the permitting process for all new residential and commercial developments.
- Develop and implement an electric or alternative fuel vehicle infrastructure plan for the community.
- Encourage and/or install infrastructure for alternative fuel vehicles for use by government and community vehicles. Provide preferential parking for those who use alternative fuel vehicles in public and private parking lots, structures and on-street. Apply for grants to secure funding for implementation of additional publicly accessible EV charging stations.

Clean Cities Coalition

As part of the U.S. Department of Energy's (DOE) Vehicle Technologies Office (VTO), the Clean Cities Coalition works with vehicle fleets, fuel providers, community leaders, and other stakeholders to save energy and promote the use of domestic fuels and advanced vehicle technologies in transportation.

The SCAG (or Southern California) Clean Cities Coalition coordinates the activities of both private and public sector proponents of alternative fuel vehicles (AFVs) by providing a forum to discover commonalties, collaborate on public policy, investigate opportunities for joint projects, leverage scarce resources, and cooperate on promoting the benefits of AFVs throughout the region.

The SCAG Clean Cities Coalition maintains a continued partnership with the e4Mobility Advanced Transportation Center administered by the Los Angeles Economic Development Council to engage key businesses for the adoption of alternative fuels, and expansion of PEV charging networks.

MEASURE TR2:

Improve Pedestrian and Bicycle Infrastructure

GOAL: *Increase miles dedicated to pedestrian and bicycle paths; and increase number of trips taken by bicycle.*

COMMUNITY BENEFITS

- Improve Air Quality
- Improve Public Health
- Provide Cost Savings
- Improve Social Equity
- Increase Community Resilience

Annual GHG Reduction Potential by 2030

Quantified in R1

DESCRIPTION

By providing more bicycle lanes and pedestrian walkways, as well as better connections between existing bicycle and pedestrian infrastructure, the City can increase the viability of bicycling and walking as emission-free commute options. Implementing bicycle and pedestrian infrastructure increases alternative transportation options and can reduce vehicle miles traveled and congestion for vehicles. Community health benefits from increased bicycling and walking include improved air quality through reduction of automobile emissions, increased physical activity, and mental health benefits.

Other benefits that a city can expect from investing in bicycle and pedestrian infrastructure include: reduced costs from not building expensive car parking lots, people who ride bikes or walk save their company money on healthcare costs, and lower travel costs for bicyclist and pedestrians means more money to spend on local businesses. To increase the numbers of people using bikes and walking within the City, infrastructure improvements are needed to ensure that bicyclists and pedestrians feel safe riding in urban areas and alongside cars.

This strategy maintains and accelerates implementation of the **Paramount-Bellflower Bike & Trail Master Plan (MP)** and **Paramount-Bellflower Active Transportation Plan (ATP)**. It also provides actions that support pedestrian and bicyclist safety and comfort, expands the bicycle and pedestrian network, and increases amenities for those using these alternative modes of transportation.

WHAT'S ALREADY HAPPENING

The City has already begun implementing increased bicycle and pedestrian infrastructure to improve safety and encourage use of these alternative modes of transportation. Renovations to the City's downtown area along Paramount Boulevard implemented transportation design features such as sidewalk bulb-outs to slow automobile traffic, new street and pedestrian lighting, expansion of two existing crossings at the north and south end of the project area, and installation of two new signalized pedestrian crossings to improve walkability as well as enhance pedestrian and bicyclist safety in the downtown

area. The City has also identified various policies described in the **Paramount General Plan**, the City's joint MP and the City's joint ATP to increase bicycle infrastructure and improve the pedestrian network within the City.

In addition to actions that have been taken by the City to improve bicycle and pedestrian facilities, there are a variety of funding sources and programs to incentivize bicycle and pedestrian path improvements. Organizations such as **People for Bikes**, the **Robert Woods Johnson Foundation**, and **Advocacy Advance** provide support for bicycle and pedestrian infrastructure projects. The **Los Angeles County Bicycle Coalition (LACBC)** promotes development of healthy and safe bicycle facilities, with a focus on improving transit opportunities for vulnerable populations. The California Department of Transportation (Caltrans) also provides funding for projects that support alternative modes of transportation through its **Active Transportation Program (ATP)**, **Sustainable Communities Planning (SCP) Grants**, and through **Transportation Development Act (TDA) Title 3 (SB 821)** funding. Furthermore, the **Affordable Housing and Sustainable Communities Program (AHSC)** and **AB 2766 Clean Air Funds** program provide funding for projects that reduce GHG emissions and improve air quality.

STRATEGIES

Effective strategies and implementing actions for improving bicycle and pedestrian infrastructure are outlined in the following table.

STRATEGIES	
Strategy TR2a	Planning: Prepare a comprehensive set of policies and plans to ensure better options for biking and walking.
• Develop standards for bicycle, pedestrian, and trail improvements and amenities in new development and redevelopment projects. Include requirements for adequate, safe, and accessible bicycle parking, drinking fountains, public restrooms, benches, landscaping and lighting. Consider weather and low-light conditions when mapping routes and designing bicycle paths. • Use form or design-based codes and guidelines to support waking including standards for walkway width, planters, tree pits, curb cuts, lighting, pavement material, service access, sidewalk furniture, landscaping, waste receptacles, public art, bus stops, kiosks, etc. • Implement transportation planning strategies that consider demand management solutions for biking and walking growth equally with strategies to increase automobile capacity. • Develop a non-motorized connectivity plan to ensure that bicycle paths and walkways connect to neighborhood destinations such as schools, parks, light rail stations, and essential services. • Include bicycle and pedestrian facilities as part of public works projects where appropriate to create complete streets. • Reduce parking requirements for developments that provide bicycle and pedestrian connections to the larger network and promote it as an alternative mode of travel. • Create citywide signage plan for bicyclists and pedestrians at buildings, transit stops, and major intersections showing the distance, time, route, and calories burned along routes. Publish the signage plan on the City website. • Require bicycle parking near transit stops, schools, parks, open space, and other key services. • Adopt an ordinance mandating bicycle racks for a variety of businesses, organizations, and residential uses for new and some existing development, including affordable housing developments. • Maintain an advisory committee to evaluate planning and implementation of the City's bike and pedestrian goals and plans.	
Strategy TR2b	Infrastructure: Advance pedestrian and bicycle infrastructure improvements and safety.
• Increase the number of bicycle lane miles, racks, locker/shower facilities, paths, and signage throughout the community. • Enhance pedestrian and bicycle environments through shading and energy-efficient pedestrian-scale lighting and shading to promote active transportation. • Implement bicycle infrastructure design elements that are safe and protected including bike boulevards, separate bike lanes where feasible, traffic lights, bike boxes, etc. • Implement additional traffic calming measures throughout the City to provide more safety for children, seniors, and people with disabilities. • Purchase additional bicycles for local travel by government employees.	

- Establish a "bike barn"/bike share program to encourage City employees to borrow a bike to use for local meetings.
- Explore the potential to designate pedestrian priority areas near and within downtowns, recreation destinations, commercial and mixed-use areas, transit stations, and schools.
- Install "Share the Road" signs along all bicycle routes in the City to heighten driver awareness of bicyclists.
- Work with local schools to promote bicycle commuting by installing secure bike parking at all school facilities.
- Provide resources and incentives for businesses to provide amenities that promote active transportation such as secured bicycle parking, showers, and lockers.
- Promote equitable commuting options for workers and improve multi-modal access to existing and planned low- and middle-wage job centers/job-training institutions.

Strategy TR2c	Programs: Support partnerships and programs to promote biking and walking and increase safety.

- Offer government employees incentives to bike or walk to work such as parking cash-out and flexible schedules.
- Incentivize businesses to offer employees incentives to bike or walk to work.
- Partner with a private bike sharing company to launch a bicycle sharing program in the community.
- Offer education programs in the community to share the economic, health, and environmental benefits to walking and biking. Ensure that educational resources are offered in the preferred languages of cultures and residents.
- Partner with healthcare industry to offer incentives to encourage walking and biking.
- Partner with schools and other agencies to host walk audits and identify Safe Routes to Schools.
- Create and distribute maps of Safe Routes to Schools, walking trails, and biking routes to community members through collaboration with local business, service organizations, and schools.
- Allocate resources toward projects and programs in low-income communities with high pedestrian/bicycle collision rates, prioritizing near schools.

Caltrans Active Transportation Programs

The Caltrans Active Transportation Program (ATP) is a significant source of funds dedicated to increasing bicycling and walking in California. At $120 million per year, it represents approximately 1 percent of the state's annual transportation budget. ATP funds a variety of planning and infrastructure projects that increase biking and walking mode of travel. The purpose of ATP is to encourage increased use of active modes of transportation by achieving the following goals:

- Increase the proportion of trips accomplished by biking and walking;
- Increase safety and mobility for non-motorized users;
- Advance the active transportation efforts of regional agencies to achieve GHG reduction goals, pursuant to SB 375 and SB 341;
- Enhance public health;
- Ensure that disadvantaged communities fully share in the benefits of the program; and
- Provide a broad spectrum of projects to benefit many types of active transportation users.

MEASURE TR3:

Expand Public Transit Options and "First Mile/Last Mile" Connectivity

GOAL: *Increase transit network coverage; increase "first/last mile" transit connectivity; and increase transit ridership.*

COMMUNITY BENEFITS

- Improve Air Quality
- Improve Public Health
- Promote Sustainable Economics
- Provide Cost Savings
- Improve Social Equity
- Increase Community Resilience

Annual GHG Reduction Potential by 2030

Quantified in R1

DESCRIPTION

Bus or rail transit options often form the core of an individual's trip; however, in order to reach a transit stop, many transit riders must travel by bike or on foot. This "first/last mile" (FLM) connection between transit locations and the active transportation network is critical to making transit accessible and a viable alternative to driving. To increase ridership, first and last mile connections to transit must have proper infrastructure, including sidewalks, crosswalks, bike lanes, and bike parking so that individuals feel comfortable making that first/last mile trip.

Low-income and disadvantaged communities often rely on public transportation for commuting but do not have a viable FLM connection to transit. Improvements to this infrastructure gap would increase transit accessibility to those who need it most, expand transit network coverage and ultimately increase ridership.

WHAT'S ALREADY HAPPENING

Regionally, the Gateway Cities Council of Governments (GCCOG) Strategic Transportation Plan (STP) identifies a series of regional transit improvements, including operational improvements to existing services and new fixed-guideway transit services, such as the Gold Line Eastside Extension and West Santa Ana Branch Transit Corridor (see **Table 4-2**). Together, these projects will add up to 17 new fixed guideway transit stations to the subregion.

TABLE 4-2 Regional Transit Improvements Identified in the Gateway Cities Strategic Transportation Plan (STP)

PROJECT	IMPROVEMENTS
Amtrak Pacific Surfliner	Various operational improvements, service enhancement
Metrolink	Various operational improvements, service enhancement
Metro A (Blue) Line	Increase in service frequency
Metro C (Green) Line	Increase in service frequency
Metro Gold Line	Eastside extension (Washington Blvd alignment)
West Santa Ana Branch Transit	New rail transit service from Los Angeles Union Station to Artesia
Atlantic Blvd Bus Rapid Transit (BRT)	New BRT service along Atlantic Blvd
OCTA Route 722	New express bus service from Santa Ana to California State University Long Beach
Long Beach Transit BRT	Six new BRT lines (Artesia, Del Amo, Willow, Lakewood, Norwalk, and 7th Street)

The STP calls for transit agencies and cities to work together to improve the safety of bicyclists and pedestrians by removing barriers to access, investing in enhanced lighting, closed-circuit cameras, and monitoring by law enforcement to improve safety at transit stations and stops. These improvements will provide a more viable FLM connection that could increase public transit ridership.

The STP Active Transportation Plan (ATP) identifies policies that will connect multiple jurisdictions and maximize the benefit of bicycle and pedestrian investment. Fifty-five regionally significant bicycle projects close the gaps in the existing active transportation network and provide connections to subregional employment and retail destinations, schools, and parks. These projects require coordination between cities, Metro and the GCCOG to determine appropriate and alternative routing and destination opportunities. The STP projects also improve bicycle and pedestrian connections to Metro A (Blue) and C (Green) Line and future services, such as the Metro L (Gold) Line Eastside Extension and West Santa Ana Branch Transit.

Active transportation planning is conducted at the jurisdictional level and reflects each city's individual priorities. In 2019, the City prepared a joint **Bellflower-Paramount ATP** to identify ways to make active transportation safer, more enjoyable, and more prevalent in their cities. Safer modes of active transportation would provide the FLM connection needed to increase accessibility to transit.

In addition to the joint ATP, the City's **General Plan** includes various policies to increase transit connectivity through continued support of the development and expansion of the existing transit system including ongoing efforts to improve connections between other regional transit facilities and services (i.e., MTA bus service, Long Beach Transit, Green Line). Use of the larger regional transit systems is promoted through the availability of Paramount University Pass (PUP) cards, which are free to college students and provide unlimited travel on Long Beach Transit and Metro bus routes to nearby campuses.

The City is also working to expand the FLM connections to transit through construction of the Paramount West Santa Ana Branch Bikeway Trail. This trail connects both the Los Angeles River Bicycle Path and the San Gabriel River Trail and adds transportation options to the community.

STRATEGIES

Effective strategies and implementing actions for expanding public transit options and "last mile" connectivity are outlined in the following table.

STRATEGIES	
Strategy TR3a	Support increased transit options.

- Continue to engage vulnerable populations in a transit needs or accessibility assessment.
- Provide more transit stops throughout the day and on weekends, bus shelters, and frequent transit for low-income communities. Enhance the amenities and information at bus stops where transfers frequently occur and make public transit more reliable and accessible to seniors, youth, and night shift workers.
- Work with appropriate partners to subsidize monthly passes for low-income riders and increase accessibility to bus pass vendors.
- Explore a local shuttle service to complement a robust transit network.
- Engage the community to ensure that transportation improvements are designed to benefit them and meet their needs and are not seen as signs of gentrification.
- Update the City's development impact fee program to provide funding for improvements to public transit facilities and amenities.
- Facilitate dialogue between transit agencies to ensure schedule coordination. Schedule coordination will increase public transit usage by reducing overall travel times and making public transit more competitive with other modes of transportation.
- Encourage transit use by distributing information on the various transit routes and options through the City's newsletters, email blasts, social media outlets, and marketing campaigns.
- Incorporate a "Guaranteed Ride Home Program" as part of agency commuter trip reduction incentive programs.

MEASURE TR4:

Expand Car Sharing, Bike Sharing, and Ride Sharing

GOAL: *Increase percent of residents within half-mile of bike share station; and increase percent of residents within half-mile of care share option/pod.*

COMMUNITY BENEFITS

- Improve Air Quality
- Improve Public Health
- Promote Sustainable Economics
- Provide Cost Savings
- Improve Social Equity
- Increase Community Resilience

Annual GHG Reduction Potential by 2030

Quantified in R1

DESCRIPTION

Ride-hailing, ride-sharing and car sharing can be an efficient way of carrying more people per trip than individuals driving alone, by facilitating the temporary use of a car that one does not own. For example, services like Car2Go, ZipCar, Uber, Lyft, and Waze all provide services that could reduce the need for families to own a second and third vehicle. When sharing the trip or by sharing an electric vehicle (EV), GHG emissions are reduced. Cities have an opportunity to expand car sharing services by working with providers such as **Envoy**, a provider of on-demand shared EVs, or **Zip Car**, to increase their presence within a City.

The City will explore the benefits of promoting ride sharing services such as **Uber** and **Lyft**, as well as "**casual carpools**" for commuting to/from major employment centers. Casual carpools are formed between at least two riders and one driver (carpools of three or more are eligible for reduced tolls and use of highway express lanes) at the pickup locations. Because both riders and drivers can form a carpool almost immediately when they arrive, it can be faster and more efficient than relying on a traditional carpool and is almost always faster than driving individually or taking transit. A casual carpool community emerged in the San Francisco Bay Area in the 1970s and has since grown to be a reliable means of commuting to San Francisco from the East Bay.

The **Metro Bike Share** program allows users to rent bicycles for use on a temporary basis, after which the users return the bicycle to either the same transit station or another designated location. Metro Bike Share offers convenient round-the-clock access to a fleet of bicycles for short trips and to get to transit on your schedule. Bike Share stations are generally located in high density areas and near transit stations to provide the "last mile" between transit stops and riders' final destination. The program offers free bike rentals for rides less than 30 minutes; over 30 minute rentals are based on the hour or day, or a monthly or annual membership. The program currently features approximately 1,400 bikes available 24/7, 365 days a year in Downtown LA, and Port of LA.

WHAT'S ALREADY HAPPENING

Paramount does not currently have a bike share partnership in place within the City; however, various programs are available to help launch bike share services. For example, the CARB implements programs to fund bike share options in low-income areas and to help launch car sharing services that use clean transportation options, including plug-in hybrid electric vehicles (PHEVs) or battery electric vehicles (BEVs) that serve disadvantaged communities. Furthermore, the **Better Bike Share Partnership** awards annual grants to increase access to and use of bike share in low-income communities and communities of color, and to fund research related to bike share and equity.

STRATEGIES

Effective strategies and implementing action for expanding car sharing, bike sharing, and ride sharing are outlined in the following table.

STRATEGIES	
Strategy TR4a	Facilitate private and public mobility services (ride hailing, ride sharing, car sharing, and bike sharing).
• Create an incentive program to encourage developers to incorporate car sharing into new development and redevelopment projects; Offer reduced parking requirements for new development projects that provide dedicated car-share facilities. • Enhance ride-share infrastructure to facilitate community participation by designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading and waiting areas for ride-sharing vehicles, and providing a website or message board for coordinating rides. • Partner with neighborhood groups to identify opportunities and remove barriers to private sector bike sharing and car sharing portals. • Explore feasibility of developing a student bike share program at local schools. • Consider implementing a program that provides rental income in exchange for allowing other residents in the City to borrow unused EVs when they are available (i.e., private car share program). • Collaborate with car sharing companies to support expansion and increase usage by providing trip planning services and additional rental options. • Partner with LA Metro to bring Metro Bike Share program to the City.	
Strategy TR4b	Educate and promote the use of car sharing, ride sharing, and bike sharing.
• Promote the use of car sharing, ride sharing and bike sharing among residents through City's newsletters, email blasts, social media outlets, and a citywide marketing campaign.	

MEASURE TR5:

Infrastructure to Improve Traffic Safety and Flow

GOAL: *Add high-occupancy vehicles (HOV) and express lanes along major freeways.*

COMMUNITY BENEFITS

- Improve Air Quality
- Improve Public Health
- Promote Sustainable Economics
- Provide Cost Savings

Annual GHG Reduction Potential by 2030

Quantified in R1

DESCRIPTION

Ongoing congestion issues—and therefore increased idling time and GHG emissions—have led the Southern California Association of Governments (SCAG) to propose increasing the network of HOV and express lanes that connect cities and counties. As proposed, additional HOV lanes on Interstate 5 (I-5) from the Los Angeles/Orange County Line to I-605 will soon be operational, and the extension of an express lane off-ramp connector on the I-110 from 28th Street to Figueroa Street would be operational in 2023. These improvements would lead to reduced congestion according to regional transportation modeling.

Another way to reduce congestion and associated emissions is through traffic signal coordination, which entails timing groups of traffic signals along an arterial to provide smooth movement of traffic with minimal stops. This lowers the amount of fuel needed to move a certain distance, lessens congestion, and reduces tail pipe emissions, all of which reduce GHG emissions and improve air quality.

WHAT'S ALREADY HAPPENING

LA County has already worked to coordinate traffic signals throughout the County. Los Angeles County Department of Public Works (LACDPW) has developed software to integrate arterial traffic control systems into a regional framework to synchronize traffic signals across jurisdictional boundaries. Los Angeles County operates a transportation management center at LACDPW's Headquarters located in Alhambra. Using roadway sensors and closed-circuit television cameras to monitor traffic conditions, staff is able to better manage congestion caused by incidents and special events. In addition, LADPW is able to synchronize signals across several jurisdictions to reduce congestion and delays. Most traffic signals along arterials in Paramount are synchronized.

As the Metropolitan Planning Organization (MPO), SCAG is charged with developing and maintaining the **Southern California Regional Intelligent Transportation System (ITS) Architecture**. This software integrates information across agencies and helps the region to achieve improved safety and efficiency of transit operations. There are a variety of ITS strategies that are currently being implemented within the region including ramp metering and arterial signal synchronization. In addition,

various efforts have been made to inform traveling public of expected travel times to various destinations. Furthermore, Caltrans is working with Los Angeles Metro and various cities on the Connected Corridors initiative to minimize congestion due to collisions.

In addition to regional efforts to improve traffic flow and efficiency, the City has implemented its own policies to reduce congestion. The City's General Plan includes Policy TR.1 which states that "the City of Paramount will increase the efficiency of the local street system by reducing the conflicts associated with through traffic." In addition, the City's joint Active Transportation Plan (ATP) with the City of Bellflower includes Policy 5.2, which states that the City "shall strive to coordinate with other City departments, local non-profits, schools, and community organizations to maximize signage efficiency at strategic locations." Through the continued implementation of these policies, the City will continue to work with stakeholders to reduce obstacles that impede traffic flow throughout the city.

STRATEGIES

Effective strategies and implementing actions for expanding infrastructure to improve traffic flow and efficiency are outlined in the following table.

STRATEGIES	
Strategy TR5a	Advance traffic signal synchronization.
• Explore developing requirements for traffic signal timing in local traffic engineering design standards. • Develop list of priority arterials to complete any gaps in signal coordination. • Further coordinate signal timing on roads to ensure more efficient traffic flow for motorists and bicyclists.	
Strategy TR5b	Support expansion of HOV and Express Lanes on major freeways in the region.
• Collaborate with SCAG to identify candidate projects for inclusion in the Regional Transportation Plan.	

MEASURE TR6:

Support Transportation Demand Management (TDM)

GOAL: *By 2030, achieve 10 percent increase in local companies participating in TDM programs, from a 2010 baseline.*

COMMUNITY BENEFITS

- Improve Air Quality
- Improve Public Health
- Provide Cost Savings
- Improve Social Equity
- Increase Community Resilience

Annual GHG Reduction Potential by 2030

Quantified in R1

DESCRIPTION

Transportation demand management (TDM) describes strategies to reduce demand for roadway travel, particularly in single-occupancy vehicles. TDM strategies aim to change travel behavior patterns through either voluntary incentives or requirements.

The Southern California Association of Governments (SCAG) region has been home to some of the more innovative and successful TDM efforts over the years. Some examples include rideshare programs, parking cash out, and park-and-ride lots. SCAG's 2020 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) allocates 7.3 billion dollars through 2045 to implement TDM strategies throughout the region. There are three main areas of focus:

- Reducing the number of single occupancy vehicle (SOV) trips and per capita vehicle miles traveled (VMT) through ridesharing, which includes carpooling, vanpooling and supportive policies for shared ride services such as Uber and Lyft;
- Redistributing or eliminating vehicle trips from peak demand periods through incentives for telecommuting and alternative work schedules; and
- Reducing the number of SOV trips through the use of other modes of travel such as transit, rail, bicycling and walking.

In addition, the following strategies expand and encourage the implementation of TDM strategies to their fullest extent:

- Rideshare incentives and rideshare matching;
- Parking management and parking cash-out policies;
- Preferential parking or parking subsidies for carpoolers;
- Intelligent parking programs using sensors and parking management software;
- Promotion and expansion of Guaranteed Ride Home programs;
- Incentives for telecommuting and flexible work schedules;

- Integrated mobility hubs[28] and first/last mile strategies;
- Incentives for employees who bike and walk to work;
- Investments in active transportation infrastructure; and
- Investments in Safe Routes to School programs and infrastructure.

WHAT'S ALREADY HAPPENING

The City of Paramount is working to ensure that TDM strategies are being incorporated in future development. The City's **TDM Ordinance** is incorporated into the Zoning Ordinance/Municipal Code for new development greater than 25,000 square feet. This Code section mandates bicycle racks and other bicycle infrastructure. In addition, the City's General Plan Policy TR.10 states that the "City of Paramount will encourage new and existing businesses to include those improvements that will promote the use of alternative transit." The City's Active Transportation Plan (ATP) Policy 6.1 mandates that City work with SCAG and other regional partners to develop programs that encourage alternative transportation for commuters.

The City worked with the SCAG to develop a joint bicycle master plan with the City of Bellflower. The Bellflower-Paramount Bike & Trail Master Plan (MP) was adopted by the City of Paramount in 2016 and provides guidance that helps the City implement TDM strategies to reduce SOV trips and associated VMT. The Master Plan promotes investments in transportation infrastructure through MP Joint Policy 2.3 and MP Joint Policy 2.4, which require bicycle parking at certain facilities and incentivize inclusion of additional bicycle parking by allowing businesses who elect to provide bicycle parking where none are required to replace one required vehicle parking space with bicycle parking. Furthermore, MP Joint Policy 4 requires consideration of bicycle facilities as part of the design and construction of all new roadways.

STRATEGIES

Effective strategies and implementing actions for supporting TDM are outlined in the following table.

STRATEGIES	
Strategy TR6a	Implement policies, plans, and programs that promote TDM.
• Adopt and implement a Commuter Benefit Ordinance requiring businesses to offer and encourage employees to take alternative modes of transportation. • Explore the potential to support fare-free transit zones in major commercial areas, and free or very low-cost bus passes for target groups. • Develop online tools that provide real time information to transit riders. • Develop a sample TDM program for businesses in the City that encourages use of public transit through transit subsidies and incentive programs. • Implement MP Encouragement Programs – Bicycle System Maps to encourage bicycle use and show residents that bicycling infrastructure is available. • Encourage resident participation in Bike to Work/School Day through incentives such as offering breakfast to bicyclists along well-used bikeways. • Implement Safe Routes to School Pilot Program to encourage safe bicycling and walking to schools. Perform school walk audits, student commute tallies, and a compilation of programs like bike education, children's bike rides, and family events.	
Strategy TR6b	Educate residents and businesses about TDM and encourage partnerships to implement TDM strategies.
• Encourage local businesses and building management companies in the same area to collaborate on joint trip reduction plans. • Collaborate with local transit agencies to explore opportunities to expand subsidized public transit for low-income residents, especially students.	

[28] Mobility hubs are focal points in the transportation network that integrate different modes of transportation, provide multi-modal supportive infrastructure, and maximize first mile/last mile connectivity.

- Increase awareness of TDM through public outreach about the variety of transportation choices through events such as Bike to Work Day, Rideshare Week, direct outreach to employers, community groups, schools, and agencies.
- Create online forum for rideshare customers.
- Facilitate casual carpool for residents commuting to work outside of the City by identifying popular routes and establishing meeting points and drop-off locations.

Safe Routes to School

Safe Routes to School is a comprehensive TDM strategy aimed at encouraging children to walk and bicycle to school. It includes a wide variety of implementation strategies centered on the "6 Es"—Education, Encouragement, Engineering, Enforcement, Evaluation and Equity. When implemented, the 6 Es improve safety, reduce congestion and VMT, improve air quality and increase the physical activity of students and their parents— which improves public health outcomes. SCAG works with each county through SCAG's sustainability joint work programs, which are collaborative planning programs designed to support regional sustainability goals through local projects. Each joint-work program includes a Safe Routes to School program component.

Land Use & Community Design (LU)

Land use patterns and community design contributions to GHG emissions are quantified as part of regional GHG reduction measure R1: *Implement the SCAG Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS)*. Land use patterns and transportation are fundamentally related and together can determine community reliance on automobiles or proclivity to use public transportation. Existing development patterns and the inclusion of transportation infrastructure are critical factors in supporting sustainable transportation options and reducing associated GHG emissions.

The City will use smart growth strategies, which accompany a range of development and conservation strategies that support economic growth, environmental health, and GHG reductions. Smart growth is primarily a land use strategy, which places higher density, mixed-use developments near or within existing development and near transit services. Infill development, or the redevelopment of underutilized sites within existing developed areas, is a key smart growth approach that increases the land use intensity and resulting social and economic activity within the existing urban footprint. Smart growth encourages mixed-use neighborhoods that offer a variety of housing types within close proximity to various commercial and retail services, as well as schools and parks. Smart growth strategies thereby direct new growth towards existing urban areas, and help concentrate City investments to reach more residents and preserve existing open space.

Smart growth strategies include complete streets principles and designs to improve safety, amenities, and access for all types of transportation including walking, bicycling, driving, and transit. Complete streets incorporate amenities and design features for pedestrian, bicycle, and transit users including street trees, landscape strips, trash cans, outdoor furniture, shade structures, bus shelters, and public art installations.

Improving the City's land use systems can reduce GHG emissions as well as improve public health, equity, community resilience, cost savings, the economy, and air quality. The design of neighborhoods, streets, and homes can determine whether children can safely play outside and walk to school and whether families can access basic goods and services. Supporting complete neighborhoods, transit supportive development, and a variety of housing types can increase access to jobs, parks, healthy foods, and health and social services and can encourage healthier active transportation options such as walking, biking, and utilizing public transit.

MEASURE LU1:

Promote Smart Growth, Transit-Oriented Development (TOD), and Complete Neighborhoods

GOAL: *By 2030, increase residential and employment density by 15 percent as compared to business-as-usual.*

COMMUNITY BENEFITS

- Improve Air Quality
- Improve Public Health
- Promote Sustainable Economics
- Provide Cost Savings
- Improve Social Equity
- Increase Community Resilience

Annual GHG Reduction Potential by 2030

Quantified in R1

DESCRIPTION

Smart growth encompasses a range of development and conservation strategies that support economic growth, environmental health, and GHG reductions. Smart growth is primarily a land use strategy, which places higher density, mixed-use developments near or within existing developed areas, and in close proximity to transit services. Infill development, or the redevelopment of underutilized sites within existing developed areas, is a key smart growth approach that increases the land use development intensity and resulting social and economic activity within the existing urban footprint, while typically leveraging existing infrastructure such as roads, sewers, and power lines. Smart growth encourages heterogeneous neighborhoods that offer a variety of housing types within close proximity to various commercial and retail services, as well as schools and parks. As a result of directing new growth towards existing urban areas, smart growth strategies help preserve existing open space, farm land, and critical habitat areas for enjoyment by future residents.

Cities can develop land use and zoning tools such as Specific Plans, Smart Codes and Corridor Plans as a means of guiding the revitalization of developed areas including major commercial corridors, central business districts, and downtowns. These tools can establish development standards for various zones, and can incorporate principles of smart growth into local planning such as high density, mixed-use, transit, bicycle, pedestrian, and open space connectivity networks, reduced parking standards for vehicles, and requirements for bicycle and pedestrian amenities to reduce vehicle trips and encourage active transportation. The City may conduct community and stakeholder outreach to identify other opportunities, as well as areas where smart growth principles may be integrated into the existing urban fabric.

Smart growth development touches on many of the strategies covered in the transportation sector, including complete streets, pedestrian and bicycle connectivity, and enhanced transit services.

WHAT'S ALREADY HAPPENING

The City of Paramount has already begun implementing General Plan measures that are focused on smart growth. General Plan Policy ED.4 states that "the City of Paramount will encourage mixed-use projects in key locations to provide additional market support and patronage of local businesses. This concept will be encouraged in the future infill development of underutilized and blighted commercially zoned parcels. This development concept will also be effective in eliminated strip commercial land use and development patterns."[29] Mixed-use development that continues to be encouraged under this policy would locate residential units near employment centers, reducing VMT generated by residents commuting to and from work.

In addition, the City implements their Housing Element (HE) Infill Sites Redevelopment Program and HE Mixed-Use Development Program. The HE Infill Sites Redevelopment Program helps to facilitate successful infill development projects by providing assistance with site identification and entitlement processing, marketing materials for residential opportunity sites, and technical assistance to interested developers. This includes technical assistance to acquire necessary funding, as well as offering fee waivers and deferrals for affordable housing projects. Similarly, the HE Mixed-Use Development Program promotes infill development within the City by encouraging housing development in districts where mixed-use development is permitted by allowing administrative processing of lot consolidation requests, providing assistance with site identification and entitlement processing, and offering fee waivers and deferrals for affordable housing projects. In addition, the HE Mixed-Use Development Program removes barriers to infill and mixed-use development by modifying development standards such as setbacks and parking, and providing financial support where available for mixed-use affordable projects.

The City is now working on the North Paramount Gateway Specific Plan, which replaces the outdated Clearwater North Specific Plan and Howe-Orizaba Specific Plan into a combined plan. Among a number of goals that include reducing GHG and VMT, the plan will promote mixed-use opportunities along portions of Paramount Boulevard. Later in 2021, Paramount will begin updating the Clearwater East Specific Plan, which will accomplish similar smart growth and TOD goals.

STRATEGIES

Effective strategies and implementing actions for promoting smart growth, transit-oriented development and complete neighborhoods are outlined in the following table.

STRATEGIES	
Strategy LU1a	Encourage compact, efficient, and contiguous development.

- Develop General Plan policies that integrate diverse land uses – including housing, employment and community services – at appropriate densities to help reduce automobile travel and promote walking, bicycling and other opportunities for physical activity.
- As part of the General Plan Housing Element update, inventory potential infill development sites and maintain a community-wide database of vacant and underutilized sites.
- Plan, zone, and provide incentives for new development and renovation of existing uses in identified infill areas, especially those that are well served by transit.
- Streamline the entitlement process for construction of high quality residential development in older and infill areas through updates of the Housing Element and Zoning Code, including taking advantage of opportunities to streamline the California Environmental Quality Act (CEQA) review for infill projects.
- Promote revitalization of transit corridors by supporting the GCCOG's regional efforts to improve light rail, bus rapid transit (BRT), or other high-service transit facilities and services.
- Promote an appropriate mix of housing (for all household income levels), retail, and office space.
- Develop financing mechanisms and outreach tools to further promote Accessory Dwelling Units (ADUs).

[29] City of Paramount, *Paramount General Plan*, August 2007. http://www.paramountcity.com/home/showdocument?id=2538. Accessed November 2020.

- Establish a policy that increases the available open space (such as parks, green belts, hiking trails, etc.) to support different types of uses and the different recreational needs of the community.
- Prepare a Downtown Paramount Specific Plan focused on smart growth.
- Establish and update existing commercial, residential, and mixed-use development guidelines that encourage smart growth.

Strategy LU1b	Support parking, streets, and road opportunities that foster smart growth.

- Reduce parking requirements, to the extent feasible – particularly in areas adjacent to upcoming light rail stations, to facilitate higher density development that fosters access to walking, biking, and public transit.
- Plan and encourage neighborhood development patterns with levels of connectivity.

Strategy LU1c	Foster outreach and understanding of smart growth and transit-oriented development.

- Hold community workshops to identify areas for smart growth prioritization.
- Incorporate smart growth strategies within Paramount Environmental Justice Element.
- Work with Community-based Organizations to increase public awareness of smart growth and enhance public perception of denser development.
- Collaborate with local, regional, and state agencies to share land use and community design information, coordinate planning goals and processes, and take advantage of opportunities to leverage resources.
- Participate in regional planning efforts such as processes to develop and implement the regional Sustainable Communities Strategy (SCS) pursuant to SB 375 and where appropriate align the General Plan and Zoning for consistency with the Regional Transportation Plan.
- Coordinate tours of smart growth and transit-oriented developments for city staff and elected officials to explore potential strategies that can be incorporated/replicated in local projects.

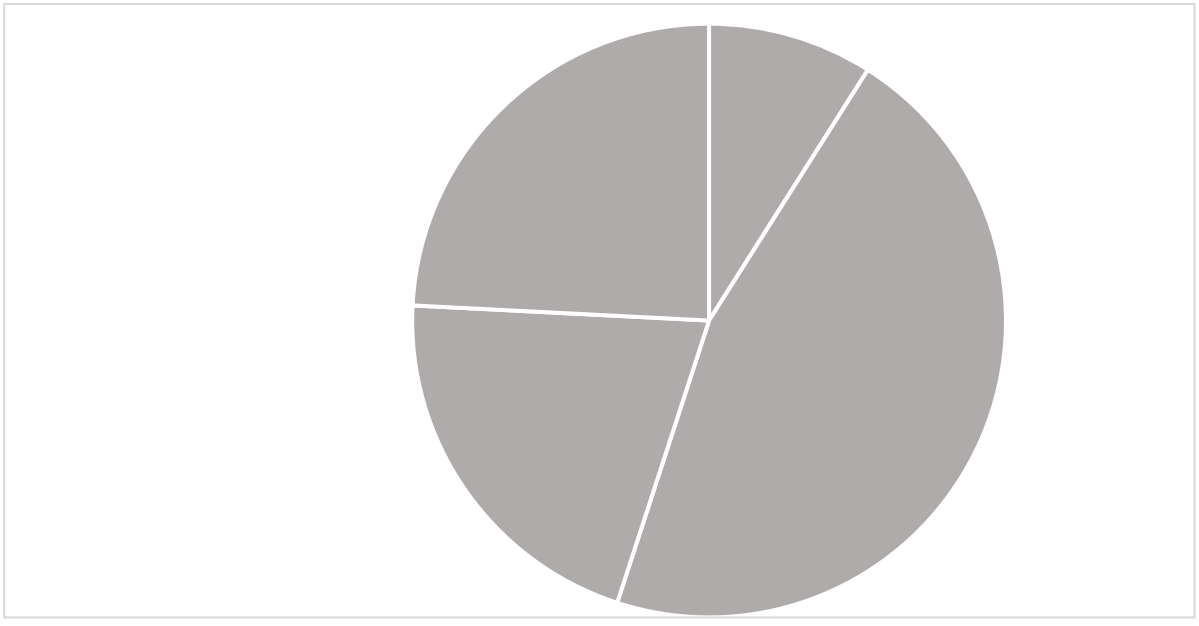
Water and Wastewater Systems (WA)

GHG emissions associated with the energy needed for pumping and conveyance of water represent less than 2 percent of the 2010 Community GHG Inventory; however, strategies to reduce water consumption have important co-benefits to the local water supply. Maintaining a safe and plentiful water supply is a basic necessity for individuals and communities. Promoting conservation programs and supporting water infrastructure improvements helps to maintain the quality and reliability of tap water and prevents consumers from having to purchase bottled water.

Climate variability increases risks to water supplies; therefore, future supplies must be carefully managed and water conservation must continue to be a priority. Water-use efficiency and water conservation efforts over the last 30 years have resulted in total U.S. water consumption remaining relatively constant. The greatest gains in water efficiency can be achieved in urban centers. Water supplies within the City of Paramount can be conserved through implementation of water efficiency measures and through use of recycled water.

Water conservation can offer financial savings allowing families to spend more money on healthy food, health care, housing, or other necessities. Identifying and fixing leaking pipes can reduce or prevent the unhealthy growth of indoor molds and mildews which can improve indoor air quality, reduce allergens, and improve respiratory health. Replacing lawns with drought tolerant native plants and trees can expand the City's urban forest and provide a shade and cooling effect for residents, especially for those in homes without air conditioning. Incentive programs can target low-income and communities of color to ensure an equitable distribution of resources.

FIGURE 4-6 GHG Reduction Contribution in 2030 Relative to all Local and Regional Measures



MEASURE WA1:

Promote Water Conservation

GOAL: *By 2030, achieve a 30 percent per capita reduction in water consumption from a 2010 baseline.*

COMMUNITY BENEFITS

- Improve Public Health
- Promote Sustainable Economics
- Provide Cost Savings
- Improve Social Equity
- Increase Community Resilience

Annual GHG Reduction Potential by 2030

10,915 $MTCO_2e$

DESCRIPTION

Central Basin Municipal Water District (CBMWD) is the primary water provider for the City of Paramount, and offers a variety of incentives to encourage customers to reduce indoor and outdoor water consumption during normal and dry years. Increasing the water efficiency of homes and businesses not only helps reduce water consumption and associated GHG emissions, but also reduces water bills and adds market value to the properties.

WHAT'S ALREADY HAPPENING

The City of Paramount implements a variety of programs to promote water conservation including performance of **Water Audits** and distribution of **Water Conservation Kits**. The City conducts an annual water loss audit of water infrastructure and reviews system best practices to minimize water loss. Participation in yearly water audits has led to an increase in internal departmental record-keeping related to the number of meters changed yearly, the switch out of valves, and approximations of water loss when hydrants are damaged by accidents or flushed by City staff. The City also gives out approximately 300 water conservation kits annually at the City's Eco-Friendly Fair. These kits include aerators, water efficient shower heads, and water hose nozzles.

The City has implemented various policies that mandate water conservation and efficiency within the General Plan Public Facilities Element (PF) and Housing Element (HE). General Plan Policy PF.4 states that "the City of Paramount will protect, conserve, and enhance water resources through implementation of the Water Master Plan", while the HE Energy Conservation Program requires the City to consider water conservation in the review of new development as well as continue to educate the public about water conservation strategies in landscaping and domestic water use.

Furthermore, to encourage water efficiency in the region, including within the City of Paramount, the Los Angeles County Public Works Department (LAPW)) offers water conservation activities to school age children residential and commercial **Water Efficiency Rebates** to subsidize the costs of water-efficient appliances and reduce regional water consumption. CBMWD participates in Metropolitan Water District's SoCal Water$mart program, which offers rebates for high efficiency toilets

and clothes washers, rain barrels, and irrigation controls. Resources and incentives are offered for business customers, including Water Surveys and Water Budgets, and a variety of rebates for indoor and outdoor efficiency upgrades.

STRATEGIES

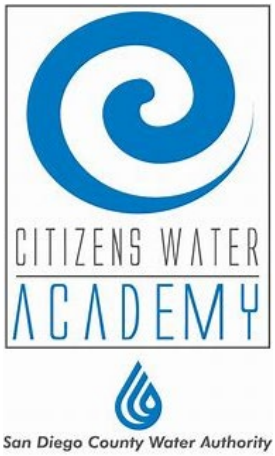
Effective strategies and implementing actions for promoting water conservation are outlined in the following table.

STRATEGIES	
Strategy WA1a	Lead by example through reduced water consumption in municipal buildings, parks, and landscaping.
• Install water-smart features within City owned and/or operated facilities to include landscaping, irrigation, and the use of native drought-tolerant vegetation in all City facilities. • Adopt a water recycling master plan that connects parks into the recycled water system. • Adopt water conservation ordinances for non-drought scenarios encouraging residents and businesses to avoid water waste year round. • Convert all water distributing vehicles such as street sweepers and tree watering tankers to use reclaimed water where feasible.	
Strategy WA1b	Ensure water efficiency in existing buildings and new development
• Ensure compliance with water-related CALGreen codes for new construction and major retrofits. • Adopt a retrofit program that includes incentives to encourage or require the installation of water conservation measures in existing businesses and homes that do not meet state efficiency standards. • Encourage residents, property owners and businesses to take a free Water Survey to identify leaks and identify water efficiency improvements.	
Strategy WA1c	Partner with water providers and other stakeholders to educate and incentivize residents and businesses to conserve water.
• Work with water provider to create a water efficient demonstration garden that includes native and drought tolerant plants, requires low volume mulch, irrigation and other water saving features. • Work with water provider to identify the largest business and industrial water consumers and to better direct reduction outreach efforts. • Collaborate with water provider to improve residential reduction outreach efforts, especially to high water consumption residential areas. • Increase multilingual outreach and education efforts on water conservation programs targeting single family residences through the City's newsletters, email blasts, social media outlets, and marketing campaigns.	

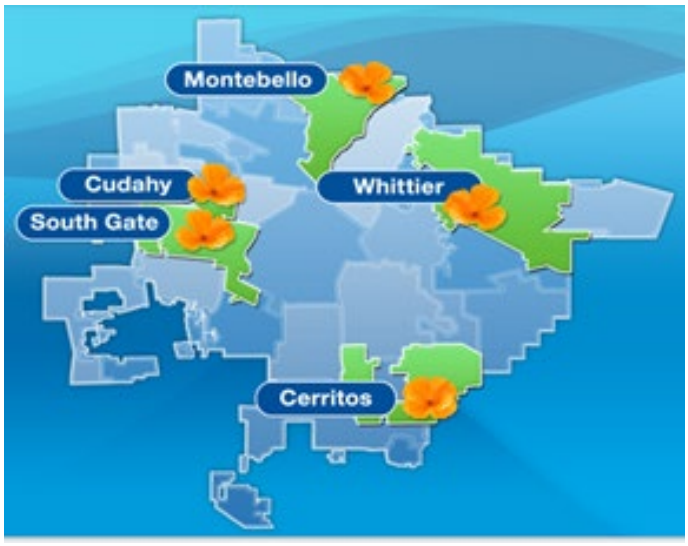
Good Idea: San Diego Water Authority Citizen Water Academy

The Citizen Water Academy is designed to engage and enlist a diverse group of active community members so that they become ambassadors in neighborhoods and organizations throughout the county for the Water Authority's vital water supply planning efforts. During the three-class series, the Water Authority's executives educate up-and-coming community leaders about regional water issues so that they can see how ratepayers' investments have helped make San Diego County resilient to drought. Participants take behind-the-scenes tours of the Water Authority's water supply infrastructure. They also get to ask the Water Authority's senior water supply planners about their decisions and strategies. Through approximately 13 hours of class time, participants gain the kind of insight that allows them not only to understand why plans were made, but how executing them has benefitted the region's economy and quality of life.

https://www.sdcwa.org/sites/default/files/community_engagement_fs_single.pdf



Central Basin Municipal Water District Demonstration Gardens



The Central Basin Municipal Water District received funding from the Department of Water Resources to construct five California native and drought-tolerant landscape demonstration gardens throughout the District's service area. Four of the five gardens were completed in Gateway Cities: Cerritos, Cudahy, Montebello, and Whittier. Between 2,000 and 10,000 sq. feet of turf was removed from each garden and replaced with drought tolerant plants and water permeable decomposed granite. The demonstration gardens were created to motivate community members to use sustainable landscaping. They highlight the state's native plants and serve as a water efficient model for outdoor landscape design.

MEASURE WA2:

Promote Water Recycling and Greywater Use

GOAL: *Increase the number of greywater and rainwater catchment permits issued annually; and increase extent of purple pipe installed and volume of reclaimed water provided to the city.*

COMMUNITY BENEFITS

Provide Cost Savings

Improve Social Equity

Increase Community Resilience

Annual GHG Reduction Potential by 2030

Not quantified

DESCRIPTION

This strategy supports improving and expanding the water supply, water reclamation (recycling), and water reuse infrastructure. The City will support efforts to expand recycled water use to serve its customers, and support the use of greywater and rainwater catchment systems by local residents and businesses. The City will support efforts to maintain and upgrade water infrastructure and conveyance systems to minimize leaks and prevent waste.

Water reclamation is reusing treated wastewater for beneficial purposes such as agricultural and landscape irrigation, industrial processes, toilet flushing, and replenishing a ground water basin (referred to as ground water recharge).

Grey water is reusable wastewater from residential, commercial and industrial bathroom sinks, bathtubs, showers, and clothes washing equipment drains that is treated onsite, and then reused, typically for landscape irrigation.

Rainwater catchment systems collect runoff from roofs or other non-permeable surfaces, which is then redirected to a containment mechanism. Rainwater gardens may also be constructed that direct rainwater into a deep pit or larger reservoir with percolation, or it can be collected from dew or fog with nets or other tools. Rainwater can then be used for gardens, livestock, irrigation, or domestic use with proper treatment, and indoor heating for houses. Central Basin Municipal Water District (CBMWD) offers rebates for rain barrels and a cistern depending on gallon capacity.

The City can support the use of greywater and rainwater catchment systems by reviewing the permitting process to identify opportunities for streamlining, offering rebates and incentives for installation of these systems, and providing information at the permitting counter for developers, business owners, and homeowners.

WHAT'S ALREADY HAPPENING

The City of Paramount is in the process of putting together its 2020 Urban Water Management Plan (UWMP), which was last updated in 2015. The UWMP summarizes the current and proposed water management activities performed by the City with the goal of providing dependable, adequate, and safe water to the community. The UWMP describes a variety of City efforts to promote water recycling and greywater use. The City encourages new industrial developments to connect to a reclaimed water distribution line that runs parallel to the City's "industrial belt" and is exploring opportunities to connect existing industrial customers, such as World Energy, to the reclaimed water line to reduce potable water demand of the industrial sector. Furthermore, the CBMWD has expressed interest to the City in expanding the recycled water system to connect other landscape and industrial customers.

The City, CBMWD and Metropolitan Water District (MWD) encourage recycled water use among its customers, through financial incentives. Recycled water is available at a 30-50% discount to customers who use it over potable water. This allows opportunities for financial savings while encouraging water conservation. CBMWD also provides retrofit funding and will advance funds necessary for retrofitting existing potable connections for use with recycled water.

Finally, the City has identified opportunities in its 2015 Draft Water Master Plan Update for use of recycled water for irrigation or drought tolerant plants in street medians within the City service area.

STRATEGIES

Effective strategies and implementing actions for promoting water conservation are outlined in the following table.

STRATEGIES	
Strategy WA2a	Promote recycled water systems in residential and commercial development.
• Require the installation of recycled water pipes and connections with all new development near reclaimed water lines. • Include greywater regulations in the zoning code. • Support expansion of recycled water infrastructure to serve existing municipal parks and facilities (e.g., golf courses), as well as multi-family, commercial, and industrial development and redevelopment projects. • Work with Central Basin Municipal Water District and Liberty Utilities to identify customers who would benefit from recycled water use, and develop an implementation plan to connect these customers with recycled water, neighboring wastewater agencies, or provide information on local water recycling systems, as applicable. • Partner with an agency/organization or develop a new City program that provides rebates, free rain barrels, or rain barrel conversion kits to residents and businesses and streamlines the permitting process for greywater and rainwater catchment systems.	
Strategy WA2b	Lead by example through the installation and/or expansion of recycled water systems at public facilities.
• Adopt a water recycling master plan that connects parks into a recycled water system. • Use recycled water for agency facilities and operations, including parks and medians, where appropriate. • Adopt a water recycling master plan that connects parks into a recycled water system. • Use recycled water for agency facilities and operations, including parks and medians, where appropriate.	
Strategy WA2c	Partner with Central Basin Municipal Water District (CBMWD), Liberty Utilities (Liberty), and other stakeholders to educate residents and businesses about water recycling and greywater use.
• Establish partnerships with CBMWD, Liberty and local Community-Based Organizations to support education greywater and rainwater catchment systems and benefits. • Provide informational pamphlets at the permitting counter to encourage the use of greywater and rainwater catchment systems in commercial and industrial buildings.	

Community Engagement Key to Orange County's Groundwater Replenishment System

In 2015 Orange County completed a $143 million, 30 million gallons per day (MGD) expansion to their Groundwater Replenishment System. In addition to increasing the local potable water supply, the program has significantly decreased the amount of wastewater discharged into the Pacific Ocean — all while providing enough water for about 850,000 people. Mehul Patel, Orange County Water District's Director of Water Production, credits program success to the community engagement practices, saying, "before we even put pen to paper on a preliminary design, we had already started our community outreach…The message was very honest in terms of telling people, literally, that this is treated wastewater that we are going to turn into beyond drinking water quality and it is going to mix with the other drinking water supplies, but none of it will go directly to your house. It will be part of the water supply indirectly, and it is what we have to do in order to keep up with demand in this area." Patel underscored the importance of not only being up front and honest but also having the staff do all of the outreach and the presentations rather than consultants or PR firms. "We tell everyone that they need to use the staff that actually run the plant, teach them how to speak publicly, be honest and not to use a lot of jargon." https://www.waterworld.com/articles/print/volume-33/issue-11/features/securing-southern-california-s-water-future.html

Waste Reduction & Recycling (WR)

Solid waste that decomposes in landfills generates CH_4, a GHG that is approximately 25 times more potent than CO_2 over a 100-year timeframe, and even more potent over shorter time spans. GHG emissions resulting from the decomposition of solid waste account for approximately 4 percent of the 2010 Community GHG Inventory. In addition, the collection, transportation, and handling of waste cause emissions from trucks and facility operations. Waste reduction and diversion programs prevent materials from ending up in landfills, and recycling reduces GHG emissions associated with the energy embodied in material goods and their packaging.

Recycling and waste reduction results in numerous co-benefits for residents and business owners. Diverting waste from landfills reduces the City's reliance on landfills, which can be costly to permit and locate in or near an urbanized area. Fewer waste collection vehicles results in less traffic, better roads, and improved air quality. Minimizing solid waste in landfills can improve community health by reducing exposures to CH_4 and toxic stormwater runoff that can contaminate groundwater and surface water. Other benefits associated with solid waste diversion include improvements to social equity and promotion of sustainable economics.

Another benefit to minimizing waste includes empowering the community to be more environmentally conscious with every day, tangible decisions. As the community works to reduce waste, residents and businesses may become more conscious consumers. The zero-waste approach to food preparation can result in healthier, less processed, and more affordable food. Additionally, community members may save money by reducing trash bills or repairing existing material possessions instead of purchasing new ones.

MEASURE WR1:
Solid Waste Diversion Programs

GOAL: *By 2030, strive to divert 90 percent of all solid waste from landfills.*

COMMUNITY BENEFITS

- Improve Air Quality
- Improve Public Health
- Promote Sustainable Economics
- Provide Cost Savings
- Improve Social Equity

Annual GHG Reduction Potential by 2030

Not quantified beyond State mandates

DESCRIPTION

This measure focuses on reducing the amount of waste generated by the community and increasing the share of waste that is recycled and composted. The amount of waste we create and the way we dispose of it have a significant impact on GHG emissions.

Emissions are released during the waste disposal process in two ways. First, emissions are released from the vehicles and equipment needed to take garbage from homes and businesses to the landfill (waste transport). Second, CH_4 emissions are released as organic waste materials decompose in the landfills (waste disposal). Emissions associated with the landfilling of solid waste can be avoided by waste reduction, sustainable product design, recycling, and composting. Designing and using products sustainably, recycling products at the end of their useful life, and composting organic material are critical waste management strategies that reduce emissions. For example:

- Harvesting virgin materials and manufacturing new products result in significant GHG emissions and other pollutants that can be avoided when products are manufactured using less material, designed to last longer, and are repaired and reused.
- Using recycled materials rather than raw materials to create new products results in substantially fewer emissions during production. Thus, recycling products at the end of their useful life avoids emissions for the next generation of products.
- Composting organic waste keeps it from decomposing anaerobically in landfill to create CH_4, and compost helps build healthy soil and plants, which in turn serve as reservoirs for carbon that would otherwise result in GHG emissions released into the atmosphere.

Waste reduction includes actions that affect the design, manufacture, or use of materials or products (including packaging) to prevent waste. Product stewardship is an approach where those involved in a product's lifecycle—manufacturers, retailers, users, and disposers—share responsibility for reducing environmental impacts. In addition, the City will develop and implement innovative strategies to increase the amount of waste diverted to recycling and composting.

WHAT'S ALREADY HAPPENING

The City of Paramount currently implements Sustainability Best Practices that include **Waste Reduction** and **Recycling** initiatives. To reduce waste, the City promotes ongoing internal reviews of office practices, which have led to the replacement of Styrofoam cups with reusable alternatives, replacement of paper memos with emails, and online availability of capital improvement bid documents and project plans to reduce the printing of hard copies. The City also encourages waste prevention by City staff by asking them to consider the durability of products prior to acquisition, conducting routine maintenance to extend the useful life of products, and use of duplex features on printers and copiers. To promote recycling efforts, the City requires all contractors to recycle concrete and asphalt when doing resurfacing or concrete replacement work within Paramount, and the City uses rubberized asphalt in street resurfacing work which repurposes approximately 4,000 old tires per mile of each lane paved. The City has also partnered with a contract tree trimmer, West Coast Arborists, for the **Urban Wood Pathways Program** to recycle wood chips from City trees and to replant trees that are removed. Furthermore, the City repurposes discontinued City letterheads into notepads for internal use, recycles used ink toner cartridges, collects batteries and fluorescent lights for disposal or recycling, and hosts yearly e-waste and hazardous material collection events for the community, in addition to events sponsored by Los Angeles County through their Household Hazardous Waste Roundup.

The Paramount Municipal Code includes requirements for construction and demolition debris recycling and disposal. Chapter 13.20, Article 8, *Construction and Demolition Debris Recycling and Disposal,* implements a 65% waste diversion standard for construction and demolition projects. Exemptions from this requirement include residential and single-family homes up to two units that are not part of a greater planned development; construction projects of less than $100,000 in value or less than 1,000 square feet; work for which only a plumbing, electrical, or mechanical permit is required; and work for which hazardous or toxic materials are treated or removed.

STRATEGIES

Effective strategies and implementing actions for improving solid waste diversion are outlined in the following table.

STRATEGIES	
Strategy WR1a	Lead by example through waste reduction, reuse, and recycling at municipal facilities and operations.
• Implement a comprehensive waste reduction and recycling program in agency offices and facilities. • Adopt agency or community waste diversion and recycling goals that are higher than existing state law. • Adopt a policy to encourage paper use reduction through various sustainable activities. • Expand source reduction efforts to City construction projects, and incorporate end-of-life management considerations into City procurement guidelines. • Reuse unwanted printed materials for other purposes such as scratch paper or shred for use at the local animal shelter. • Adopt a "buy recycled" policy for agency departments and create or expand budgets to accommodate recycled items. • Provide bins for collection of used batteries, and compact fluorescent lights for proper disposal and recycling. • Require all agency demolition projects to incorporate de-construction/construction and demolition waste and recycling or recovery practices. • Monitor and adapt programs to incorporate new technologies and recycled material markets as they become available.	
Strategy WR1b	Foster waste reduction in business.
• Adopt a program or ordinance to require waste audits and waste reduction plans for existing and/or new developments. • In partnership with the waste hauler serving the commercial sector, institute a comprehensive waste reduction and recycling program with financial and other incentives, such as a tiered rate system that charges less for collecting recyclables. • Adopt an ordinance that restricts the use of expanded-polystyrene containers at restaurants and other establishments. • Implement a green business program that rewards local business for sustainability measures.	

- Require recycling at special events, such as through special event permit conditions.

Strategy WR1c	Promote reuse and recycling community-wide.

- Implement and enforce new recycling and composting programs for residential and business waste, including programs that target waste hauled by residents to transfer stations.
- Work with landlords to include recycling requirement information in lease agreements and/or move-in packets.
- Adopt an ordinance that exceeds state requirements by requiring recycling at multifamily housing with four or fewer units.
- Ban the following materials from residential and business garbage to increase recycling: asphalt paving, concrete, bricks, asphalt shingles, plastic film, clean wood, residential food, and compostable paper.
- Expand investment in existing residential and business programs for reuse and organics management to reach more residents and businesses.
- Continue to support and expand material exchanges and reuse programs, and promote building with salvaged and reclaimed materials.
- Make reuse and recycling drop-off more convenient at transfer facilities.

Strategy WR1d	Support construction and demolition (CD&D) diversion.

- Develop a program or ordinance to reduce, salvage, reuse or recycle community construction and demolition waste.
- Phase-in bans on the following construction and demolition waste from job sites and private transfer stations: recyclable metal, cardboard, plastic film, carpet, clean gypsum, clean wood, and asphalt shingles.
- Develop and promote a certification program for construction and demolition processing facilities in coordination with local industry.
- Adopt a policy to use recycled or rubberized asphalt pavement for streets and roads.
- Adopt a policy to use recycled asphalt pavement for commercial and community parking lots, where feasible.

Strategy WR1e	Encourage diversion of food and food packaging from landfills.

- Support coordination between organics processors, food service product suppliers, and food service retailers to expand the availability of compostable food service products and Implement a food scrap collection program.
- Launch programs to support edible food donation, help commercial kitchens find efficiencies and reduce waste, and help households and businesses reduce food waste through better planning, purchasing, storage, and preparation.
- Offer food waste recycling program to residential customers and encourage onsite composting.
- Encourage local restaurants to use compostable foodware, where appropriate and discourage food waste.

Strategy WR1f	Encourage recycling and safe disposal of electronic waste and hazardous materials.

- Create and distribute information about e-waste and hazardous disposal.
- Increase opportunities for e-waste and hazardous materials collection and recycling.
- Promote proper recycling and disposal of compact fluorescent light bulbs and batteries.

Strategy WR1g	Partner with local waste service providers, schools, and other stakeholders to enhance outreach and education to residents, students, and businesses about reuse, waste reduction, and recycling.

- Establish partnerships with local waste service provider and local Community-Based Organizations to support education about waste reduction recycling.
- Collaborate with schools and nonprofit agencies to help develop and distribute educational materials related to recycling and waste reduction for use in classrooms.
- Coordinate with CalRecycle on the latest information, resources and programs to assist local businesses and encourage product stewardship of electronics and other materials.
- Provide information to residents about how to stop receiving unwanted catalogues, phone books, and weekly circulars.
- Offer composting and sustainable landscaping classes to the community.
- Include information about recycling opportunities and best practices for organics collection and composting on the City's website.

Green Infrastructure, Parks, Urban Forestry & Agriculture (GA)

Green infrastructure uses vegetation, soils, and natural processes to manage water and improve overall health of urban environments. Traditionally, stormwater runoff travels from rooftops, streets, and parking lots into the City's sewer or storm drainage system, which directs discharged water into the Los Angeles River and the Pacific Ocean. As runoff travels across impervious surfaces, it collects garbage, bacteria, heavy metals, oil, and other pollutants from the urban environment that are released along with the runoff, degrading the quality of the receiving waters. In addition, runoff travels more rapidly through urban environments, resulting in erosion and flooding that may damage habitat, property, and infrastructure. By partially retaining runoff onsite, green infrastructure systems reduce the quantity of stormwater sent to the City drainage system, which in turn reduces the amount of pollutants being discharged in nearby water bodies, and physical damage resulting from flooding and erosion. Instead, stormwater runoff permeates the soil, reducing the need for irrigation, and recharges groundwater. Green infrastructure benefits flood control, water supply, pollution reduction, recreational open space, urban agriculture, and urban wildlife habitat.

Green infrastructure, parks, urban forestry, and agriculture all work in concert with Paramount's natural environment to make local landscapes more productive and provide benefits to local residents and ecosystems. The natural environment is important both for sequestering GHG emissions and for mitigating impacts of climate change. By better integrating Paramount's built environment with the natural environment, the city will reduce its contribution to climate change while simultaneously preparing for impacts such as sea-level rise and flooding.

Urban trees provide aesthetic, environmental, health, and economic benefits including cleaner air, arboreal habitats, and increased property values. Forests play a key role in meeting the states GHG emission reduction goals by providing a carbon sink that removes CO_2 from the atmosphere. Urban trees also help lower peak-load energy demands during the hottest months, providing shade for parking lots and other paved areas, and reducing the urban heat island effect. Properly selected and located shade trees can help reduce air conditioner use and associated energy costs. Forested parks and tree-lined streets mitigate the impact of the urban heat island effect by cooling and cleaning the air. Public parks and green spaces allow people to congregate, socialize, and be more physically active. Making parks and green spaces available and accessible to all residents is an important City priority. Parks and green spaces are also associated with better mental health outcomes, improved social integration, and reduced community violence.

In addition, urban agriculture can improve access to healthy foods and better nutrition, which in turn helps prevent obesity and type 2 diabetes. Low-income residents are particularly affected by diet-related diseases and will benefit from improved healthy food access. Local agriculture also benefits GHG emissions reduction by reducing the transportation needed to supply food to local residents.


TREE CITY USA

MEASURE GA1:

Support Urban Tree-Planting, Park Access, and Green Infrastructure

GOAL: *Increase tree canopy city-wide by 10 percent by 2030; and increase permeable pavement Citywide by 2030.*

COMMUNITY BENEFITS

- Improve Air Quality
- Improve Public Health
- Promote Sustainable Economics
- Improve Social Equity
- Increase Community Resilience

Annual GHG Reduction Potential by 2030

Not quantified

DESCRIPTION

The urban forest provides a number of environmental and community benefits, such as increasing comfort for pedestrians, enhancing the overall visual aesthetic, preventing flooding and runoff, filtering pollutants before water enters rivers and oceans, and providing habitat for urban-dwelling animal species. Trees also improve public health by filtering air pollutants which can improve air quality. Trees naturally capture carbon, removing it from the air and storing it within the trunk, branches, and leaves. A healthy urban forest lessens the urban heat island effect by increasing shaded areas along roads and within parking lots. Trees can be strategically planted near buildings to help control the interior temperature of a home or building, and reduce the consumption of energy for heating and cooling, particularly during peak hours.

The City will collaborate with community-based organizations to organize plantings of shade trees along public rights-of-way. The City will work with community-based organizations to continue to promote the Adopt-A-Tree program, and will distribute existing resources providing tree care tips. The City will consider developing a shade tree incentive program that provides a rebate or covers the full cost of the tree.

Green infrastructure and streetscapes include pervious surfaces that allow natural ground absorption of rainfall, replenishing groundwater tables and reducing the amount of stormwater runoff, which in turn reduces contaminant runoff into water bodies and prevents exposure to oils, lead, and other toxins for residents swimming or fishing in the water. There are multiple methods of collecting stormwater onsite, which can be used independently or combined for a multi-faceted approach. Large development projects may incorporate retention or detention basins that direct water to an area onsite for permanent or temporary storage. On a smaller scale, runoff can be directed into bioswales for temporary storage during storms and to capture excess irrigation runoff. Planter strips along roads and parking lots are excellent opportunities for utilizing bioswales to reduce runoff. Rain gardens capture runoff and filter water before excess runoff reaches the stormwater drainage system. Rain water can be directed to catchment barrels or basins onsite and then used for irrigation systems.

To implement this measure, the City will encourage property owners and developers to incorporate green infrastructure into existing and new developments, and continue to utilize the same green infrastructure design principles in City-owned property. The City may develop a program that provides incentives or discounted rainwater collection devices, from the City's stormwater programs that enable property owners to retain rainwater onsite for irrigation. The City will also incorporate green infrastructure into new City developments, and retrofit existing City facilities with green infrastructure as funding becomes available.

WHAT'S ALREADY HAPPENING

The City of Paramount has received the title of Tree City USA by the Arbor Day Foundation in both 2019 and 2020. The City achieved this distinction by meeting the Foundation's four requirements: a tree board or department, a tree care ordinance, an annual community forestry budget of at least two dollars per capita, and an Arbor Day observance and proclamation. The City of Paramount currently has approximately 8,000 City-owned trees in parkways, medians, setbacks, and parks. The City maintains these trees by assigning them into nine grids; the trees are then trimmed by grid once every three years by tree trimming contractors. To preserve the Urban Forest within the City, the City's Zoning Ordinance/Municipal Code addresses tree preservation on private property. For every project on private property, a City planner assesses trees and landscaping and requires additional trees as needed to maximize the urban forest. To promote tree planting, City residents can request that the City plant trees in parkways in front of their residence through a General Service Request to the City.

In 2016, and again in 2018, the City participated in the **California Initiative to Reduce Carbon and Limit Emissions (CIRCLE)**. CIRCLE planted a total of 1,350 trees in various southeast Los Angeles communities, including Paramount, in 2016. In 2018, the City participated in CIRCLE 2.0 which planted a total of 1,650 trees in 11 cities, including Paramount. As part of this effort, the City partnered with West Coast Arborist and hosted the first annual Community Arbor Day Celebration and Tree Planting Event where volunteers from the community gathered to plant 200 trees in parks and along avenues throughout the City. The City plans to participate in CIRCLE 3.0, which aims to plant approximately 4,000 trees along the future High Speed Rail corridor. For CIRCLE 4, the City was one of the 30 cities in the state to be awarded an allotment of the 2000 trees the state will be distributing in the spring of 2022. In addition to the trees, the City and its residents will benefit from an education workshop for the community as well as support and resources to host an Arbor Day tree planting event. Furthermore, several volunteer organizations support the expansion of urban forestry through canvassing, planting, ongoing tree care, organizing community events, education, and sharing best practices within the City.

The City of Paramount, along with four other cities in the **Gateway Cities Council of Governments**, have received a grant through the California Resiliency Challenge to fund an Urban Tree Canopy (UTC) assessment and plan. The UTC assessment will be developed beginning in February 2021 with the help of **CivicSpark** and will use LiDAR and other technologies, along with data science and community input, to determine the number and locations of trees throughout the City. The results of the UTC will be used to develop recommendations for the City to increase its tree canopy.

Other opportunities are available to improve urban wildlife including funding opportunities through the California Department of Fish and Wildlife (CDFW), The Strategic Growth Council's (SGCs) **Urban Greening Grant Program**, and the **CALFIRE Urban and Community Forestry Program**. Finally, the California Natural Resources Agency offers a variety of grant and loan programs including, but not limited to, the **Environmental Enhancement & Mitigation Program and the Urban Green Infrastructure Program**.

STRATEGIES

Effective strategies and implementing actions for supporting urban tree-planting, park access, and green infrastructure are outlined in the following table.

STRATEGIES	
Strategy GA1a	Increase the number of trees in the City.
• Update the City's tree ordinances and design guidelines to protect and promote native trees, heritage trees, climate-resilient trees, and shade trees where room permits. • Leverage funding to expand the urban forest and fund a maintenance program to ensure tree health. • Minimize pavement along public right-of-ways to facilitate tree plantings. • Promote an Adopt-A-Tree Program to increase the number of trees in the City.	
Strategy GA1b	Encourage green infrastructure in new and existing development including public facilities.
• Review the City's development code to ensure green infrastructure systems can be easily incorporated into new developments and existing properties. • Use form or design-based codes/guidelines to support green infrastructure including planters, landscaping, and tree wells. • Collaborate with community-based organizations to develop an urban agricultural ordinance. • Explore the potential for incorporating green street elements into streetscape design such as bioswales, rain gardens, planter strips, and permeable pavement. Including a "Downspout Disconnection" program to retain rainwater for onsite irrigation. • Incorporate green infrastructure into existing and new City buildings and City parks to more effectively manage stormwater runoff. • Organize an LA River cleanup event with surrounding community-based organizations.	
Strategy GA1c	Conduct an outreach campaign to spread awareness of the benefits associated with planting shade trees, park access, and green infrastructure and connect home and business owners with available resources and rebates.
• Collaborate with local Community-based Organizations on outreach and education efforts to spread awareness of the benefits of green infrastructure, street trees, encourage home and business owners to plant shade trees, and distribute informational resources. • Partner with Community-based Organizations and youth programs to incorporate green infrastructure into neighborhood revitalization projects and plant more shade trees. • Disseminate information on green infrastructure benefits and projects through citywide marketing campaigns using the City's newsletters, email blasts, social media outlets, local newspaper ads, direct mail, and by sending flyers along with property tax and utility bills.	

MEASURE GA2:

Support Sustainable Food and Urban Farming

GOAL: *Increase number of local farmers markets and increase number of urban farms and community gardens.*

COMMUNITY BENEFITS

- Improve Air Quality
- Improve Public Health
- Promote Sustainable Economics
- Provide Cost Savings
- Improve Social Equity
- Increase Community Resilience

Annual GHG Reduction Potential by 2030

Not quantified

DESCRIPTION

Our diets and the decisions we make as individual consumers about the food we purchase have a big impact on our "carbon footprint." Globally, approximately one-third of GHG emissions result from the food system, when accounting for importation, refrigeration, deforestation, and other food system processes.[30] Although the community GHG inventory does not directly account for emissions from agricultural activities occurring outside the City, choosing more sustainably produced food yields benefits for individuals and the community at large. Eating locally-produced, fresh food, and choosing vegetarian options, has the dual benefit of lowering GHG emissions associated with food production while improving community health.

Growing food locally and distributing it through local channels like farmers' markets, rather than importing it from distant lands, can reduce emissions because less fuel is required for transporting food to the consumer. Local food production also has the co-benefits of creating local jobs and enhancing resilience, and can improve health if sustainable organic farming and production methods are used. But more influential to the carbon footprint of food is what we eat and when we eat it—for example, eating seasonal vegetables vs. meat. Certain foods require more energy and fossil fuel inputs than others, making it possible to reduce emissions by choosing foods that have a lower GHG intensity.

Recent studies indicate that transitioning toward more plant-based diets that are in line with standard dietary guidelines could reduce global GHG emissions by up to 70% by 2050.[31] Also important is how food is farmed or and produced. Factors related to meat and dairy production include the energy inputs involved in rearing farm animals and the CH_4 output from those animals. Factors related to fruit, vegetable, and grain farming include the use of nitrogen-based fertilizers, soil tilling techniques, and the energy used for water pumping and irrigation. Organic farming generally produces foods with a lower carbon footprint

[30] Nature.com, One-third of our greenhouse gas emissions come from agriculture, 2012, published October 31, 2013. http://www.nature.com/news/one-third-of-our-greenhouse-gas-emissions-come-from-agriculture-1.11708, accessed November 30, 2015.

[31] Springmann, Marco, H. Charles, J. Godfray, M. Raynera, and P. Scarborough, *Analysis and Valuation of the Health and Climate Change Cobenefits of Dietary Change*, proceeding of the National Academy of Sciences (PNAS), April 12, 2016, 113 (15) 4146–4151.

than conventional farming but also tends to use more land per kilogram of food produced.[32] Due to all of these factors it is a complex endeavor to accurately estimate the GHG emissions associated with the foods we consume.

WHAT'S ALREADY HAPPENING

The City of Paramount has already begun to host events which promote local food production and sustainable agriculture. The daytime Farmers Market is held at Progress Park in Paramount every Friday from 9:00 am to 2:00 pm and features fresh produce, farm-fresh eggs, and a variety of packaged and prepared food. Furthermore, the City has organized a Friday Night Market held the first Friday of each month in Downtown Paramount on Jackson Street, off Paramount Boulevard. This market also features a variety of food items from local vendors and runs from 5:00 pm to 9:00 pm.

There are also a variety of programs and funding opportunities implemented by private organizations to promote local agriculture and healthy eating including **A Well-Fed World**, the **Kaiser Permanente Southern California Region Grants Program**, the **Robert Woods Johnson Foundation**, and the **Clif Bar Family Foundation**. Furthermore, the U.S. Department of Agriculture provides funding for the **Farm to School** program to improve access to local foods in eligible schools.

STRATEGIES

Effective strategies and implanting actions for supporting sustainable food production and consumption are outlined in the following table.

STRATEGIES	
Strategy GA2a	Promote local agriculture and food production
• Promote local farmers' markets to bring local goods to City residents. • Expand upon the existing Home Gardens zoning ordinance to include urban agriculture on rooftops, underutilized parcels, in community open spaces, and on commercial properties. • Create an inventory of the City's potential urban agriculture site and maintain a publicly accessible database; identify rooftops, underutilized parcels, and community open spaces in the City that could support urban agriculture, to prioritize locations to implement urban agriculture projects. • Encourage urban farms and community gardens to host "open hours," where community members can engage with urban gardeners, learn about their practices, and volunteer. Provide tool, soil, and/or seed giveaways at these locations and events. • Work with the local school district and community-based organizations to expand and support educational vegetable gardens at school campuses, small urban farms, and community gardens to provide educational and employment opportunities. • Work with community-based organizations to encourage large institutions and businesses to purchase food from local producers.	
Strategy GA2b	Promote sustainably grown food and low-carbon diets.
• Work with the local school district to consider implementing meatless Mondays in school cafeterias. • Support the inclusion of nutrition, cooking and gardening in primary and secondary school curricula to make connections between the benefits of healthy food choices, locally grown produce, and energy conservation. • Promote local composting and hold giveaways that improve local yields of gardens. • Review and revise municipal procurement policies to encourage the purchase of local foods, and reduce the purchase of meat, when possible. • Highlight local restaurants that serve plant-based food options.	

[32] Tiziano Gomiero, D. Pimentel, and M.G. Paoletti, Environmental Impact of Different Agricultural Management Practices: Conventional vs. Organic Agriculture, *Critical Reviews in Plant Sciences*, 30:1–2, 95–124, DOI: 10.1080/07352689.2011.554355, 2011.


BELLFLOWER
PARAMOUNT

Green Business & Industry (GB)

Commercial businesses and industrial facilities in Paramount use large quantities of natural gas and electricity for lighting, heating, cooling, ventilation, computers, electronics, refrigeration, and other office equipment and processes. Many also emit significant quantities of short-lived climate pollutants (SLCPs) that have an outsized impact on atmospheric warming, including industrial refrigerants like HFCs. The strategies under this objective will help reduce emissions of GHGs, SLCPs, and criteria pollutants, leading to cleaner air and better public health.

Strategies in this section focus on supporting green businesses that help reduce community GHG emissions, and attracting businesses in the "cleantech" industry that are developing the innovative solutions needed to achieve deep GHG reductions across the state (and global) economy. With an abundance of marketable qualities, including robust transportation and transit networks, proximity to world-class universities and urban innovation centers, and relatively affordable real estate, Paramount is well-positioned to attract economic growth in bioscience and green/clean technology sectors, and has set a long-term vision to be nationally recognized for business development in these sectors. There is a tremendous entrepreneurial opportunity in development and marketing new technologies and services that are geared towards reducing the GHG footprint of energy, transportation, agriculture, water, materials, waste management, and land management.

Promoting the growth of green businesses and industry provides many health co-benefits to businesses owners and the community in Paramount. Residential neighborhoods located near industrial zones typically have higher proportions of lower-income residents of color than other neighborhoods. As large industries in Paramount reduce their carbon emissions, these residents benefit from reduced pollution levels. Employees also benefit when businesses commit to sustainability and reducing emissions. Buildings with good environmental quality can enhance worker performance and reduce the rate of respiratory disease, allergy, asthma, and sick building symptoms. By taking steps to ensure compliance with environmental regulation, businesses are protecting the health of their employees.

MEASURE GB1:

Engage and Partner with Local Industries and Businesses to Reduce Emissions

GOAL: *Increase local participation in green business programs; Increase local business participation in utility programs; and raise local awareness of emissions-reduction funding programs.*

COMMUNITY BENEFITS

- Improve Air Quality
- Improve Public Health
- Promote Sustainable Economics
- Provide Cost Savings
- Improve Social Equity

Annual GHG Reduction Potential by 2030

Not quantified

DESCRIPTION

Local green business programs have been successful throughout the state in promoting more climate-friendly business practices for companies of all sizes across many industries. Typically, these programs are a cost-effective way to assist and recognize businesses and public agencies that implement measures to conserve energy and water, minimize waste and prevent pollution.

The energy utilities serving the City offer multiple programs to their commercial customers for improving energy efficiency, purchasing renewable energy, and installing solar PV systems (see EE and RE strategies). To maximize participation in these programs, the City will continue to work with SCE, CPA, and SoCalGas to develop an outreach and education plan that targets businesses and industries with the greatest potential for GHG reduction opportunities.

To maximize promotional efforts, the City may create a comprehensive guide for distribution to local businesses that describes the full range of programs and opportunities available to minimize waste, conserve water and reduce energy and fuel use. This outreach would include information regarding effective transportation demand management (TDM) programs and the use of active transportation, car sharing, bike sharing, and transit use. The City will also educate businesses about the benefits of fuel switching and electrification, and reducing reliance on diesel fuel.

The City will also educate businesses on the benefits of reducing emissions of Short-Lived Climate Pollutants (SLCPs), which include CH_4, fluorinated gases (F-gases), black carbon, and tropospheric ozone, which are harmful to both human health and the global climate. Like CO_2, SLCPs are heat trapping, but they persist in the atmosphere for a shorter period (from a few days to a few years) and have a higher global warming potential (GWP). This higher GWP means that pound for pound they are more powerful than CO_2 in their capacity to heat up the atmosphere. According to the CARB, SLCPs may be responsible for about

40 percent or more of global warming experienced to date.[33] F-gases, which include HFCs, are the fastest growing source of GHG emissions globally. Cutting emissions of SLCPs can immediately slow global warming and reduce the impacts of climate change.

The most prevalent SLCPs associated with industry and business operations include CH_4, anthropogenic black carbon (e.g., particulate matter [PM] from diesel emissions), and HFCs used as refrigerants. Fugitive CH_4 emissions result from the anaerobic decomposition of organic waste in landfills, and from local oil and gas operations. Black carbon results from wood-burning fires and from the combustion of diesel fuel, which emits diesel particulate matter. Black carbon contributes to climate change both directly by absorbing sunlight and indirectly by depositing on snow and by interacting with clouds and affecting cloud formation. HFCs are commonly used refrigerants that have a global warming potential that is thousands of times greater than CO_2, so while they are released in much smaller quantities they are still considered a significant contributor to climate change. Many GHG reduction measures in this CAP directly correlate to actions that businesses can implement to reduce emissions of CH_4 and black carbon, such as improved waste management (increased recycling and composting), use of alternative and renewable fuels, and reducing vehicle miles traveled. Upstream efforts to reduce and divert food waste and other organic materials from the waste stream have the potential to greatly reduce landfill-related CH_4 emissions (see CAP measures focused on waste and recycling), while programs that reduce emissions from goods movement and other uses of on-road diesel engines help reduce black carbon.

CARB, in coordination with other state agencies and local air districts, published a Short-Lived Climate Pollutant Reduction Strategy in 2017, which is incorporated into their 2017 Scoping Plan update. The state's strategy emphasizes the need for integrated planning, coordination and collaboration among agencies at all levels of government in order to achieve significant reductions in SLCPs and accrue the wide array of climate, health, and economic benefits that will result. Significant public and private investments are anticipated to support efforts to reduce SLCPs and support the state's agricultural and waste sectors, build sustainable freight systems, and encourage development of alternatives to HFC-based refrigerants.

Many commercial and industrial operations in the City require the use of refrigerants, or fluids used in the heat pump and refrigeration cycle. There are alternatives to HFC refrigerants that can be used, or are being developed, that have a less substantial impact on the environment and the climate. The City will work with the CARB, SCAQMD, the Department of Toxic Substances Control, and other agencies to assist local business and industry in choosing or shifting to alternative refrigerants that don't use HFCs. Where feasible, the City shall encourage new development to eliminate the use of HFCs in building construction by using alternative methods of heating and refrigeration.

Cutting black carbon emissions from the transportation sector and building a sustainable freight system would have health and economic benefits for the City, especially along freight corridors and near the ports and rail yards where diesel PM concentrations are high.[34]

WHAT'S ALREADY HAPPENING

The energy utilities serving the City offer multiple programs to their residential and commercial customers for improving energy efficiency, purchasing renewable energy, and installing solar photovoltaic (PV) systems (see EE and RE strategies).

Currently, regional agencies and organizations are working to educate business owners and promote green practices. To promote compliance with air quality regulations and reduce emissions, the SCAQMD administers their **Small Business**

[33] CARB, *Short-Lived Climate Pollutant Reduction Strategy*, 2015. https://www.arb.ca.gov/cc/shortlived/concept_paper.pdf.
[34] CARB, *Short-Lived Climate Pollutant Reduction Strategy*, March 2017. https://www.arb.ca.gov/cc/shortlived/shortlived.htm.

Assistance Program and the **Vehicle and Engine Upgrade** programs. Other programs are currently available to City businesses, through SCE and SoCalGas, that help identify areas for increased energy efficiency. Furthermore, the California Public Utilities Commission (CPUC) manages their **Self-Generation Incentive Program (SGIP)**, which provides incentives to businesses to support existing, new, and emerging distributed energy resources.

Tools and resources are available to assist businesses reduce energy consumption and GHG emissions. The United States Environmental Protection Agency (U.S. EPA) manages their ENERGY STAR Portfolio Manager®, an online tool used to measure and track energy and water consumption, as well as GHG emissions. In addition, EPA's **Sustainable Marketplace: Greener Products and Services** helps public agencies and businesses identify and procure environmentally sustainable products and services.

Local air districts including the SCAQMD have mandatory and voluntary rules that reduce black carbon SCAQMD also provides incentives and funding programs to businesses to replace older heavy-duty diesel engines, to reduce diesel air pollution from goods movement operations, and to purchase low-emission heavy-duty engines for off-road diesel fleet vehicles. The SCAQMD is playing an instrumental role in aiding the reduction of HFC emissions by developing regulations to reduce refrigerant emissions. In addition, some local governments are also tracking emissions of refrigerants, and some have adopted policies to reduce refrigerant emissions from city-owned air conditioning units, vehicles, and refrigerators.

STRATEGIES

The City will pursue the following strategies and implementing actions for engaging and partnering with local industries and businesses.

STRATEGIES	
Strategy GB1a	Promote or establish a local green business program.
• Develop a recognition program for local businesses that supports the goals of the CAP by hiring local workers, employing sustainable operations, undergoing energy and water efficiency upgrades, and implementing a comprehensive transportation demand management program, among other measures. • Consider establishing a city-supported green business network that enables information sharing and cross-communication between business owners and industry leaders.	
Strategy GB1b	Promote available emissions reduction programs and funding sources to local industries and businesses.
• Create an outreach plan that identifies businesses and industries that could benefit from programs and funding sources that reduce GHG emissions, while saving money and improving business operations. • Provide supportive guidance to companies interested in reducing their GHG emissions, and identify ways to promote their accomplishments in the community and throughout the region. Develop a comprehensive guide showcasing programs that promote increasing energy efficiency, fuel switching and electrification, and alternative transportation use, as well as other programs that support local climate action planning goals, for distribution to existing businesses and industries in the community. • Leverage the services of the Gateway City COG's Economic Development Working Group to align and cross-promote training and economic development programs with the goals of the CAP Framework. • Encourage compliance with SCAQMD's requirement to install best-available control technology (BACT) for businesses and industry during the entitlement process. • Promote local business & industry participation in CARB's Goods Movement Emission Reduction Program.	
Strategy GB1c	Promote the reduction of short-lived climate pollutants (SLCPs).
• Encourage local oil and gas operations to monitor and minimize sources of fugitive CH_4 emissions, and support CARB's regulatory processes to monitor and reduce those emissions. • Continue coordination with SCAQMD to assist local business and industry in choosing or shifting to alternative refrigerants that don't use HFCs.	

- Educate local business and industry on the benefits of reducing SLCPs and potential funding sources for reduction programs.

Strategy GB1d	Promote climate-friendly purchasing practices.

- Demonstrate leadership to the business community by adopting a climate-friendly procurement policy for municipal operations.
- Educate the business community about climate-friendly procurement and encourage businesses to adopt and implement a green procurement policy that establishes standards for climate-friendly products and services.
- Raise public awareness about climate-friendly procurement and the use of green products and services, through the City's website, traditional marketing and social media.

MEASURE GB2:

Grow the Local Green Economy

GOAL: *Increase the number of individuals trained for green jobs; and increase the number of cleantech businesses and jobs.*

COMMUNITY BENEFITS

- Improve Air Quality
- Improve Public Health
- Promote Sustainable Economics
- Improve Social Equity
- Increase Community Resilience

Annual GHG Reduction Potential by 2030

Not quantified

DESCRIPTION

The City of Paramount is located within the Gateway Cities region, which has tremendous economic assets including state-of-the-art infrastructure, human capital, and an entrepreneurial base of firms, and it exhibits a competitive advantage in transportation and logistics, manufacturing, and wholesale trade. However, the region is in need of substantial public and private economic development assistance to stabilize, expand, and diversify its local economy. The region meets the economically distressed area criteria, as outlined by the U.S. Department of Commerce, Economic Development Administration (EDA), and is eligible for federal funding. An economic development strategy was recently developed for the region by the University of Southern California (USC), which identified the following principles as key to the region's economic development:[35]

- Seek regional collaboration, pursue innovative public-private partnerships, and leverage public dollars to address chronic and complex problems that transcend municipal boundaries, including low education levels, health risks, the loss of manufacturing businesses, homelessness, and growing inequities in the region;
- Target infrastructure investments to reduce disparities in transportation (highways/public transit), education, health care, etc.;
- Enhance focus on education, technical/soft skills training, career pathways for youth and retrain dislocated adult workers;
- Invest in the information and communication technology across industry sectors;
- Capitalize on industry sectors that exhibit regional specialization such as manufacturing, transportation and logistics, wholesale trade, and emerging sectors such as health care;
- Streamline processes to retain and attract new businesses; and
- Promote entrepreneurship and innovation by facilitating access to capital.

[35] Sol Price School of Public Policy, USC Center for Economic Development, *Gateway Cities Region: Comprehensive Economic Development Strategy*, November 2015.

In addition, the City of Paramount has been designated by the California Environmental Protection Agency (CalEPA) as a Disadvantaged Community under SB 375. Disadvantaged communities are defined as the top 25% scoring communities based on the results of CalEnviroScreen 3.0, which identifies areas that are disproportionately burdened by and vulnerable to multiple sources of pollution. Under SB 535, 25% of the proceeds from the Greenhouse Gas Reduction Fund go to projects that provide a benefit to disadvantaged communities. These funds are aimed at improving public health, quality of life, and economic opportunity in California's most burdened communities at the same time they're reducing pollution that causes climate change.

The "cleantech" business sector is a rapidly growing global sector that advances important innovations in green building, transportation, clean energy, and carbon management that enable economy-wide GHG reductions. The cleantech sector offers opportunities for job creation and business growth, and California and the Los Angeles region in particular are national leaders. Through regional partnerships such as The Green Zones initiative in the City of Commerce and the Innovation Hub in Long Beach, local governments can promote local cleantech businesses that are selling into rapidly growing global markets for low-carbon products, services, and business solutions. Through the right mix of local ordinances, funding sources, and small business incubators, the City can support and incentivize this global transformation while growing local jobs and increasing local economic resilience by transitioning to the jobs and the markets of the future.

Startup incubators are collaborative programs designed to help new startups and early-stage businesses by providing resources like office space, seed money, legal counsel, and network connections. Some business incubator programs in California are demonstrating success focusing on the cleantech sector (see inset on the Los Angeles Cleantech Incubator).

To increase the number of individuals trained for green jobs, the City will promote networking and training organizations, such as the **LA Conservation Corps**, which provides at-risk young adults and school-aged youth with job skills training needed to secure employment in the environmental field; and the Los Angeles Trade Technical College **Green College Initiative**, which integrates a green curriculum with its certificate and degree programs and creates training/education programs for emerging green-related industries and occupations. The City will also support and expand workforce development programs for youth, by working with the local school district (or community college) to incorporate green technology education and job training into their curriculum and course offerings.

WHAT'S ALREADY HAPPENING

California's climate-related policies and regulations are driving public and private investment toward the development and market adoption of new technologies in multiple sectors. New economic opportunities will continue to emerge as state and regional agencies direct investment, policy and planning towards reducing GHG emissions. Electrification of the transportation and building sectors, decarbonization of electricity supply, and designing new buildings to be net energy producers are just three examples of the transformative developments required for the state to meet its long term GHG targets. Many of the technologies needed to accomplish these outcomes are cost-competitive and available today. As businesses develop new technologies and supporting infrastructure becomes available, costs will come down, accelerating market uptake and saving consumers money that will be re-directed elsewhere into the economy.

The Governor's Office of Business and Economic Development (GO-Biz) offers a range of services that have potential value to green business owners including: attraction, retention and expansion services, site selection, permit streamlining, clearing of regulatory hurdles, small business assistance, international trade development, assistance with state government, and more. GO-Biz offers a potential source of green business funding with its California Competes Tax Credit, which has been used by ZEV manufacturers Faraday Future and Tesla Motors to secure millions of dollars in benefits.

In addition to GO-Biz, there are number of organizations within the region that support economic development and provide technical training to individuals. The **Los Angeles County Economic Development Corporation (LAEDC)** works with educational institutions, businesses, and local governments to support industry and align coursework with real skills that businesses need. The **LA Conservation Corps** provides at-risk young adults and school-aged youth with job skills training, education, and work experience with an emphasis on conservation and service projects that benefit the community; while the **Los Angeles Trade and Technical College** offers **Green Workforce Education** in four focused activity areas including green built environment, clean and green campus, public awareness, and green education and training programs. **GRID Alternatives** is also active within the City of Paramount. This organization focuses on providing green energy while also offering a variety of ways for individuals to gain skills in different aspects of the solar industry. See Appendix C for more details regarding available green industry programs and opportunities.

STRATEGIES

Effective strategies and implementing actions for growing the local green economy are outlined in the following table.

STRATEGIES	
Strategy GB2a	Promote expansion and growth of local green businesses and cleantech industries.
• Launch or promote a business incubator program that focuses on the cleantech sector. • Develop a comprehensive guide to business incubator, networking, and financing tools available in the Gateway Cities to distribute to entrepreneurs and new businesses in the city. • Work with local business support agencies and community stakeholders to retain, attract, and support innovative “green” companies.	
Strategy GB2b	Develop a workforce that can support a local green economy.
• Expand jobs-skills training and recruitment programs and services for residents to enter into the green-industry workforce. • Work with the local school district (or community college) to incorporate green technology education and job training into their curriculum and course offerings. • Partner with local school district, local community college, and local industries and businesses to host an annual green tech career fair that introduces students and residents to the range of job opportunities in cleantech and green business.	

Los Angeles Cleantech Incubator (LACI)

The **Los Angeles Cleantech Incubator (LACI)** is a non-profit organization funded by the Community Redevelopment Agency of the City of Los Angeles (CRA/LA) and the Los Angeles Department of Water and Power (LADWP). In partnership with the City of Los Angeles’ exceptional educational and research organizations – UCLA, USC, Caltech and Jet Propulsion Laboratory – LACI helps accelerate the commercialization of their clean technologies in addition to accelerating new products developed by independent entrepreneurs. LACI is a result of the Clean Tech Los Angeles (CTLA) alliance among the Mayor’s office, the universities within the City of Los Angeles, the Los Angeles County Economic Development Corporation, the Los Angeles Business Council, the Los Angeles Area Chamber of Commerce, LADWP and the CRA/LA.

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CHAPTER 5

Community Resilience and Adaptation

Impacts of Climate Change

As explained in Chapter 1, the increase in atmospheric CO_2 and other gases has led to an increase in the global average temperature, a trend that has accelerated in recent years. Research from thousands of studies from around the world indicate that rising temperatures are melting glaciers; diminishing snow cover; shrinking sea ice; increasing sea levels; contributing to ocean acidification; and increasing atmospheric water vapor.[36]

- The global atmospheric CO_2 concentration has now passed 400 parts per million (ppm), a level that last occurred about 3 million years ago, when both global average temperature and sea level were significantly higher than today.
- Extreme temperatures, storms, and extended droughts will affect human safety, infrastructure, agriculture, water quality and quantity, and natural ecosystems.
- Oceans are rising, warming, and becoming more acidic: Global average sea level has risen by about 7 to 8 inches since 1900, with almost half of that rise occurring since 1993. Average sea levels are expected to continue to rise—by at least several inches in the next 15 years and by 1 to 4 feet by 2100. A rise of as much as 8 feet by 2100 is possible.

[36] U.S. Global Change Research Program, *Fourth National Climate Assessment: Global Climate Change Impacts in the United States*, 2018, pp. 25–32. https://nca2018.globalchange.gov/.

- Heatwaves have become more frequent, and annual average temperatures continue to rise.
- Since the early 1980s, large forest fires in the western United States and Alaska have increased in frequency and intensity. The trend is expected to continue in these regions as the climate changes, with profound changes to regional ecosystems.
- Annual trends toward earlier spring melt and reduced snowpack are already affecting water resources in California and the rest of the western United States and these trends are expected to continue. Water resources management will become increasingly challenging as the climate changes and droughts become more extreme.

As explained in Chapter 1, the magnitude of climate change throughout this century will depend primarily on the amount of GHGs the world continues to emit. The effects, however, are already being felt globally and within the City of Paramount. Adapting to a changing climate has now become vital component of community planning.

Exposures and Vulnerabilities in the City of Paramount

Within the City of Paramount, the primary climate change impacts of concern are increasing temperatures and extreme heat events, worsening air quality, longer and more severe droughts, and potential flooding along the Los Angeles River. **Figure 5-1** highlights these impacts and resulting vulnerabilities faced by the community and the City's infrastructure.

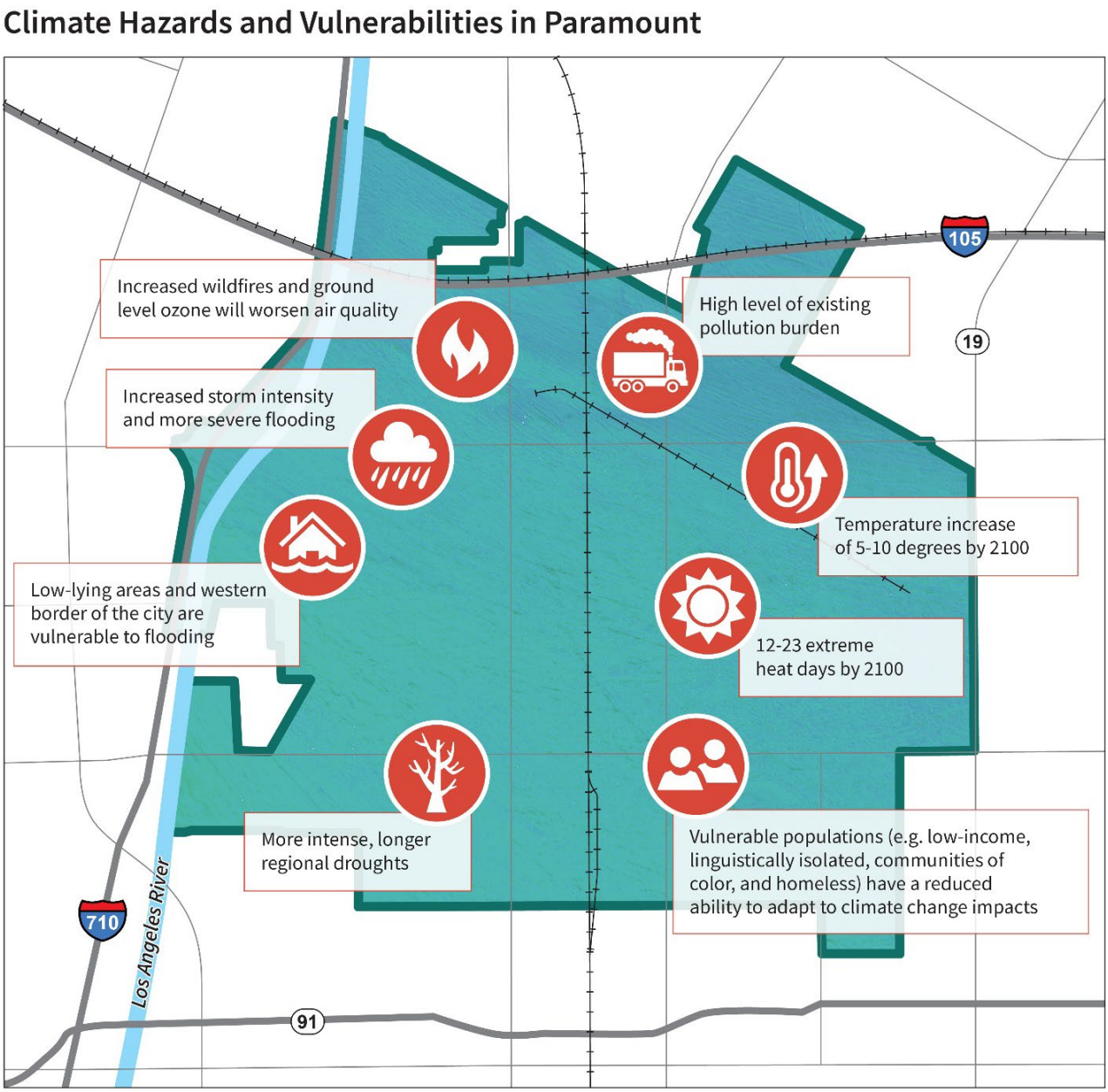
Extreme Heat

By the end of the century, the City of Paramount is expected to experience up to 23 days with extreme heat, defined as days where the temperature rises above 96° F. This represents five times the current frequency of extreme heat days. For the City's most vulnerable populations including the homeless, low-income residents, the chronically ill, and linguistically isolated groups, these conditions can be dangerous and can lead to serious illness or even death. In turn, this places additional stress on emergency services and health care systems. They can also result in higher electricity bills for those who can least afford it. Extreme heat events can also strain the electrical grid and result in power outages, creating particularly dangerous conditions for individuals who rely on electricity for medical devices, air conditioning or fans.

Drought

Southern California has experienced periods of extremely dry conditions in recent years. With climate change, such conditions are expected to become more common and could impact regional water supply. Future water shortages may result in higher water prices that low-income households can't afford. Water scarcity could also raise food prices, disproportionately impacting vulnerable communities including low-income households that are food insecure.

FIGURE 5-1 Climate Impacts Expected in the City of Paramount



Source: CalAdapt, 2020

Extended dry periods increase stress on local flora and fauna and can make trees and other plants more susceptible to pests, diseases, and mortality. For the region's forests, dry conditions and widespread plant mortality create conditions that support the spread of large and destructive wildfires that significantly impair air quality. Large wildfires often require a coordinated regional response to protect property and human health and safety. For the City of Paramount, which relies on the County of Los Angeles for police and fire services, shortages and delays in basic emergency response could result when wildfires are active in the region.

The City is expected to face vulnerabilities from the following climate impacts. For more detail and data regarding these impacts and vulnerabilities, see Tables 1 through 6 of **Appendix B**.

Flooding

In the coming decades, winter storms are expected to become less frequent but more intense when they do arrive. The "atmospheric river" phenomenon, where massive streams of moisture deliver intense precipitation over several days, can result in damaging floods. These events are expected to exacerbate flooding along the western boundary of the City of Paramount and in low-lying areas. An increase in the number of flood events will impact homes and businesses in these areas, resulting in property damage, injuries, and displacement. Vulnerable populations including homeless individuals, low income households, or people living in poor quality housing will face greater impacts of flooding as they have a reduced ability to respond to damage from flood events. Additionally, linguistically isolated households and households without access to transportation will face additional difficulties in the event of evacuations. Flooding may also impact emergency response facilities and other critical infrastructure that is below grade and can temporarily interrupt key access roads for emergency responders or evacuation routes.

Air Pollution and Vector Borne Diseases

The City of Paramount already experiences high levels of air pollution due to its proximity to major freeways and high levels of traffic congestion along transportation corridors. Climate change is expected to worsen the region's air quality due to higher ozone concentrations, more severe wildfires, and more allergens. In 2020, the combination of record breaking heat, stagnant air, and smoke from the region's wildfires led to the worst air quality the Los Angeles area has experienced in decades. The City's most vulnerable populations including homeless, low-income populations, BIPOC communities, outdoor workers, and linguistically isolated, are less able to adapt and face a higher risk of chronic illness, hospitalizations, and mortality, and of missing days of work and school.

Adaptation Actions

To address the exposures and vulnerabilities identified by the Vulnerability Assessment (see Appendix B), potential community adaptation actions were developed for two categories, "Resilient Community" and "Resilient Infrastructure." Resilient Community actions are intended to protect vulnerable populations and further efforts to build resilient, equitable communities within the City of Paramount. Resilient Infrastructure actions are intended to build resilience into the City's infrastructure for stormwater, water supply, and energy, and for the City's parks and open space. Each category includes one or more strategies and a number of potential actions that could be used to implement a given strategy. While Resilient Community actions are likely to be implemented by the Planning Department or an emergency service provider, Resilient Infrastructure actions would most likely be led by the Public Works Department. Ultimately the implementation of adaptation actions will require coordination across City departments which involves assigning staff, identifying partner agencies and stakeholders, identifying sources of funding, and engaging the public. Prioritization of these actions will be determined by available resources and funding. Funding sources could include local general funds, bonds, taxes, assessments, fees, grants, private sector partnerships or investments, non-profit grants and partnerships, among others.

Resilient Community

POTENTIAL STRATEGIES FOR VULNERABLE POPULATIONS	
Strategy CR1	Improve access to air conditioning, air filters, cooling centers, and resilience hubs by vulnerable populations.

- Provide access to air filters, resilience hubs with filtered air, or air masks during wildfire events, or days with high levels of air pollution.
- Pilot a neighborhood resilience hub. A resilience hub is typically housed in a trusted community-managed facility and is designed to engage community members in the adaptation process. A resilience hub may provide shelter during climate events, distribute key necessities such as supplies, multilingual information and translation services, space for community programming, and access to broadband.
- Promote improved access to cooling during heat events, particularly for the most vulnerable populations, ensuring adequate geographic distribution of facilities and accessible hours of operation. Measures can include providing access to on-site cooling such as residential air-conditioners, emergency generators, and cooling centers or resilience hubs.
- Work with local governments and utilities to review the adequacy of programs designed to help vulnerable populations stay cool during heat waves, with attention to ways to offset the economic impacts on seniors and low-income groups.
- Partner with the scientific community and health care providers to identify indoor air temperature guidelines for vulnerable populations (e.g., the elderly) which protect health and may assist with energy efficiency. Partner with utilities providers, community organizations, and others to establish a public education campaign to disseminate such guidelines.
- Install refillable water stations at parks, trailheads, community centers, and sport courts/fields with available water supplies to encourage proper hydration and protection against heat-related illnesses.
- Adjust park hours to discourage use during peak periods and consider extending open hours to early morning or late evening. Adjust construction policies to allow extended work hours (earlier or later than usual) to avoid peak periods.

Strategy CR2	Expand public outreach and education to policymakers, businesses, and the general public.

- Promote greater awareness of the impacts of extreme heat exposure on the most highly impacted populations, such as seniors, people living in poverty, those with chronic conditions, pregnant women, and young children, and those who use active transportation such as bicycles and walking. Create a plan for disseminating public information about cooling centers and other local resources, including development of maps.
- Encourage partnerships between local emergency responders and local health departments to identify and reach vulnerable populations in need of access to cooling centers or personal cooling resources.
- Collaborate with community-based organizations, local emergency responders, and local health departments to develop an inventory of locations with isolated seniors and other vulnerable populations and develop a plan to reach them. This may include the establishment of mutual aid networks in communities to connect neighbors and support households with limited mobility or that are linguistically isolated.

Strategy CR3	Ensure that emergency planning, public health planning, and adaptation efforts prioritize vulnerable populations.

- Ensure early warning systems for hazardous air quality, extreme heat events, and inland flooding are accessible to vulnerable populations such as households without access to internet. Improve outreach to vulnerable populations before and during these events.
- Identify and remedy poor drainage areas to reduce disease risk from stagnant water. Expand outreach programs to educate communities about potential increases in vector-borne diseases from stagnant water.
- Focus planning and intervention programs on neighborhoods and populations that are most at risk from inland flooding, extreme heat, and poor air quality.
- Continue to collaborate with housing service providers to develop transitional housing for the homeless to provide secure housing, services and a pathway to permanent housing to reduce the disproportionate impact of climate change hazards.

Strategy CR4	Reduce the urban heat island effect.

- Examine and expand the use of cool roofs and reflective building materials.
- Expand the use of cool, porous, or sustainable materials in pavements.
- Amend the local development code to require high-reflectivity pavement or increased tree cover for large parking lots.
- Continue to expand and maintain the urban tree canopy where tree maintenance and potential for trapped heat do not outweigh the benefits, and appropriate shade structures, including planting native bushes and trees that provide shade canopy. Use alternative vegetative solutions to alleviate urban heat island: for example, green walls and green roofs where trees are not possible.

- Promote and expand the use of drought-tolerant green infrastructure in public and private spaces to help reduce heat islands and energy demand during extreme heat events.

POTENTIAL STRATEGIES FOR EMERGENCY SERVICES	
Strategy CR5	Improve emergency preparedness and response.

- Continue to coordinate with emergency management services to establish backup power and water resources at emergency shelters, resilience hubs, and cooling centers in case of power outages.
- Conduct an evaluation of the vulnerability of emergency services to climate impacts.
- Encourage advanced coordination between transit operators to facilitate evacuations during inland flooding events.
- Protect critical evacuation routes at risk or ensure redundancy of critical transportation routes to allow for continued access and movement in the event of a flood emergency.
- Coordinate with local governments and regional transit providers to increase shading and heat-mitigating materials on pedestrian walkways and transit stops and identify routes that are less exposed to direct sunlight as part of first/last mile transit planning.

Resilient Infrastructure

POTENTIAL STRATEGIES FOR PARKS AND NATURAL AREAS

Strategy CR6 Account for climate change impacts when designing parks and making land use decisions.

- Protect large, continuous greenspaces wherever possible for greater cooling magnitude and extent. Include a mix of grass and trees for greatest cooling benefits.
- Create new park designs that offer a variety of land cover including dense trees, scattered trees, and lawn to provide recreation opportunities and shading.
- Potential Strategies for Stormwater management

Strategy CR7 Consider inland flooding in land use planning.

- Where possible, use pervious pavement and other green infrastructure to increase water infiltration.
- Elevate or relocate buildings or critical infrastructure that is located below grade or is at risk of increasing flood levels.
- Continue efforts to develop new open space areas and protect existing open space along the Los Angeles River. Protect existing floodplains, open space, and other natural features that provide flood storage by establishing minimum buffers, limiting development in wetlands and buffers and floodplains, requiring no net loss of wetlands, and requiring no net loss of floodplain storage
- Utilize zoning practices to incentivize property owners to make improvements such as flood-proofing and elevating properties, discourage rebuilding after significant flood damage without such improvements, and discourage development in flood prone areas.
- Review and conduct a study of flood and erosion management along the LA River levee system and associated impacts on public transit, railroads, roads and highways. Participate in regional planning regarding flood control management along the LA River and adding greenspace along the River corridor.
- Create a flood impacts monitoring program to monitor physical impacts of flooding over time, the effectiveness of existing adaptation strategies, and the need for new adaptation strategies. Create a citizen monitoring component to engage residents and gather data about existing flooding issues to be used by city staff and managers.

POTENTIAL STRATEGIES FOR WATER SUPPLY

Strategy CR8 Account for climate change impacts when designing parks and making land use decisions.

- Participate in regional water supply planning including planning efforts to upgrade water and wastewater systems to accommodate projected changes in water quality and availability, cross-jurisdictional planning regarding the regional use of recycled water, and efforts to preserve regional groundwater quality and groundwater recharge.
- Develop or expand community-scale water recycling program.
- Continue development and implementation of water use efficiency programs and implement additional water conservation programs.
- Protect existing floodplains, open space, and other natural features that allow stormwater infiltration and groundwater recharge.
- Reduce outdoor water usage by transitioning landscapes to all California native or California-friendly plants and supporting alternative irrigation techniques.
- Adopt stricter requirements for water conservation in new developments.
- Implement tiered pricing along with residential and municipal water metering to reduce water consumption and demand.
- Continue to consider programs to address food insecurity within the community of Paramount.

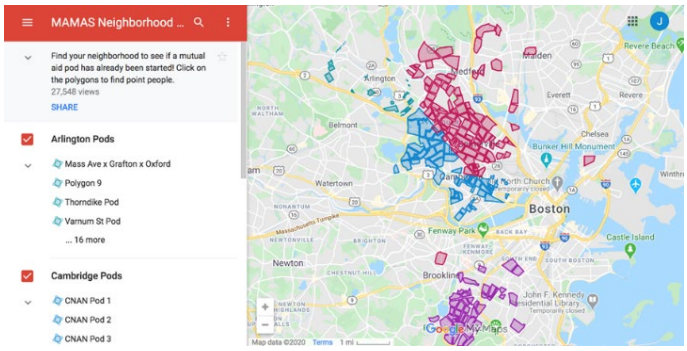
POTENTIAL STRATEGIES FOR ENERGY SYSTEMS

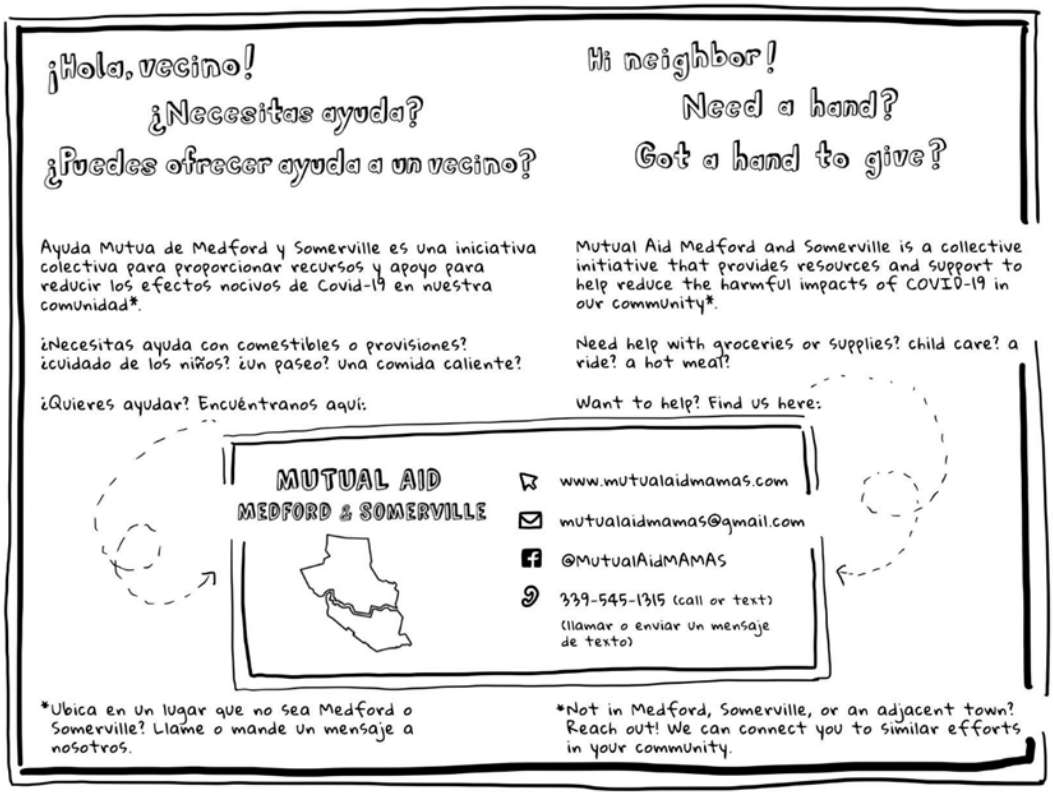
Strategy CR9 Protect and enhance reliability of energy infrastructure.

- Collaborate with utility providers to evaluate utility capacity during surge periods and identify actions to minimize outages and establish back-up power supplies that protect the most vulnerable populations. Continue to establish backup power and water resources at emergency centers, resilience hubs, and cooling centers.
- Invest in sustainable backup power sources to provide redundancy and continued services for critical facilities during periods of high demand during extreme heat events.

Lessons Learned: Engagement Approaches Utilized during COVID-19 Pandemic

The Mutual Aid Medford and Somerville (MAMAS) network in Massachusetts was created during the coronavirus pandemic to build hyperlocal, virtual resilience hubs. The network mapped neighborhoods into "pods" or block areas with the goal of reaching neighbors that may not have access to the internet. Each pod has a leader with the responsibility of reaching neighbors and creating phone trees and group chats. The MAMAS network created a virtual needs-matching platform where neighbors may post either resources they can provide or needs that they have, allowing neighbors to connect resources virtually. Some of the resources that have been shared through the MAMAS network include childcare, car rides, cooking, translation, and financial resources. Outreach materials are provided in both English and Spanish and translation services are available for translation to Spanish, Portuguese, Haitian, and Creole. The MAMAS network has a how-to guide for establishing neighborhood pods and a mutual aid network in other areas and regions. These resources include outreach materials designed to reach residents that may not have internet access. The City could consider partnering with community organizations or providing technical resources to support creation of such resilience hubs to build a network of communication at the neighborhood level for support before, during, and after emergency events. If well-established and maintained overtime, it could also serve as a network to conduct outreach.





CHAPTER 6

Implementation and Monitoring

This chapter focuses how the City intends to implement the GHG reduction strategies and actions laid out in Chapter 4 and track progress towards its 2030 GHG reduction target. Translating strategies and actions into actual emission reductions will require development of programs, City staff time to promote and track the various measures, and effective systems for tracking and monitoring their implementation. Coordination between City departments and collaboration with residents, businesses, regional organizations, and other government agencies will be needed to ensure that programs are well-managed and cost-effective.

It is important to acknowledge the important role that behavior change has in reducing community GHG reductions. Community involvement is an essential component of the CAP implementation process, as many strategies depend on active participation by residents and businesses. The City will be making a concerted effort to develop and strengthen community education and awareness through various promotional efforts. The City's web site will also be updated to communicate program development and gauge the success of CAP implementation.

Implementation Plan

For the most part, the City will be responsible for initiating the local measures to reduce emissions. However, success for many measures will ultimately depend on public participation. Actions that require active City promotion may require updates to the City website, distribution of promotional materials, and other active City outreach activities. The City will develop programs to reach the public, including public forums, workshops, and meetings; these programs will be administered with the intent to foster an open public input and commenting process. Collaboration and coordination with regional agencies and institutions such as the Gateway Cities Regional Council of Governments (COG), Long Beach Transit (LBT), and Community Power Alliance (CPA) will also be essential to successful CAP implementation.

Dependence on outside agency participation and regional partnerships is mentioned explicitly in the strategy descriptions included in Chapter 4, and the City will continue to explore opportunities for collaboration.

Table 6-1 provides a summary of the key implementation components for each local measure described in Chapter 4, including implementation timeframe, the City department tasked with overseeing implementation, and objectives (i.e., the monitoring criteria). The implementation timeline is organized as follows: Ongoing (current); Near-term (2021–2024), Medium-term (2025–2028), and Long-term (beyond 2028) actions. The schedule also highlights the City department responsible for spearheading implementation efforts, and the quantifiable objectives for each strategy against which successful implementation will be gauged. Actual implementation will depend on a variety of factors, including availability of funding and City staff time, shifting community priorities, and changing environmental demands.

TABLE 6-1 Implementation Summary

MEASURE	2030 ANNUAL GHG REDUCTIONS ($MTCO_2e$)[a]	IMPLEMENTATION TIMEFRAME	RESPONSIBLE DEPARTMENT	2030 OBJECTIVES
Regional Measures				
R1: RTP/SCS	4,116	Ongoing	Planning Department	Reduce emissions associated with transportation and land use through coordinated local and regional strategies
R2: Cap and Trade	Not quantified	Ongoing	Planning Department	Reduce GHG emissions from large industrial facilities, including those regulated by Cap and Trade
Energy Efficiency & Conservation				
E1: Improve Energy Efficiency of Existing Buildings	4,029	Ongoing	Planning Department Public Works Department	Reduce energy use by existing buildings 15% from 2010 baseline
E2: Promote Green Building	Not quantified	Near-term	Planning Department	Increase the number of new buildings in the City that exceed minimum Title 24 standards, and/or achieve LEED or EnergyStar® certification
E3: Improve Efficiency of Municipal Operations and Public Infrastructure	27	Ongoing	Public Works	Decrease energy use by existing municipal buildings by 15 percent from a 2010 baseline

MEASURE	2030 ANNUAL GHG REDUCTIONS ($MTCO_2e$)[a]	IMPLEMENTATION TIMEFRAME	RESPONSIBLE DEPARTMENT	2030 OBJECTIVES
Renewable Energy				
RE1: Increase Local Renewable Energy Generation	2,912	Near-term	Public Works	Increase local rooftop solar PV installations on residential and commercial buildings
RE2: Promote and Maximize Community Choice Energy (CCE) and Utility Renewable Energy Offerings	17,857	Near-term	Public Works	Maintain community enrollment in Clean Power Alliance (CPA); and enroll 20% of the community in "Clean" or "100% Green" CPA Options
RE3: Promote Conversion from Natural Gas to Clean Energy	Not quantified	Medium-term	Public Works	Increase the number of natural gas appliances replaced with electric or solar alternatives; and decrease number of new buildings and major renovations connecting to natural gas infrastructure
Sustainable Transportation				
TR1: Support the Transition to Electric and Zero-Emissions Vehicles	9,388	Long-term	Both	Increase the number zero-emissions vehicles (ZEVs) in the community to a level in line with state goals; increase the number of electric vehicle charging stations within the City
TR2: Improve Pedestrian and Bicycle Infrastructure	Not quantified	Ongoing	Public Works	Increase miles dedicated to pedestrian and bicycle paths; and increase number of trips taken by bicycle
TR3: Expand Public Transit Options and "Last-Mile" Connectivity	Not quantified	Medium-term	Public Works Community Services and Recreation	Increase transit network coverage; increase "first/last mile" transit connectivity; and increase transit ridership
TR4: Expand Car Sharing, Bike Sharing, and Ride Sharing	Not quantified	Medium-term	Both	Increase percent of residents within half-mile of bike share station; and increase percent of residents within half-mile of care share option/pod
TR5: Improve Traffic Safety and Flow	Not quantified	Ongoing	Gateway Cities COG	Add high-occupancy vehicles (HOV) and express lanes along major freeways
TR6: Support Transportation Demand Management	Not quantified	Medium-term	Planning	Achieve 10 percent increase in local companies participating in TDM programs, from a 2010 baseline
Land Use and Community Design				
LU1: Promote Smart Growth, TOD, and Complete Neighborhoods	Not quantified	Ongoing	Planning	Increase residential and employment density by 15 percent as compared to business as usual
Water and Wastewater Systems				
WA1: Promote Water Conservation	10,915	Near-term	Public Works	Achieve a 30% per capita reduction in water consumption from a 2010 baseline
WA2: Promote Water Recycling and Greywater Use	Not quantified	Near-term	Public Works	Increase the number of greywater and rainwater catchment installations; and increase purple pipe installations and volume of reclaimed water provided to the City

MEASURE	2030 ANNUAL GHG REDUCTIONS ($MTCO_2e$)[a]	IMPLEMENTATION TIMEFRAME	RESPONSIBLE DEPARTMENT	2030 OBJECTIVES
Waste Reduction and Recycling				
WR1: Promote Solid Waste Diversion	Not quantified	Near-term	Public Works	Strive to divert 90% of all solid waste from landfills
Green Infrastructure, Parks, Urban Forestry, and Agriculture				
GA1: Support Urban Tree-Planting, Park Access, and Green Infrastructure	Not quantified	Ongoing	Both	Increase tree canopy city-wide by 10 percent by 2030; and increase permeable pavement Citywide
GA2: Support Local Agriculture and Food Production	Not quantified	Near-term	Community Services and Recreation	Increase number of local farmers markets, urban farms and community gardens
Green Business and Industry				
GB1: Engage and Partner with Local Industries and Businesses to Reduce Emissions	Not quantified	Ongoing	Planning City Manager's Office	Increase local participation in green business programs and utility programs; and raise local awareness of emissions-reduction funding programs
GB2: Grow the Local Green Economy	Not quantified	Long-term	City Manager's Office	Increase the number of individuals trained for green jobs; and increase the number of cleantech businesses and jobs

NOTE:
a – $MTCO_2e$ represents metric tons of carbon dioxide equivalent.

More detail underlying the local measures this table can be found in **Appendix C**, which in addition to listing the goals and performance criteria for each measure, provides information on cost-effectiveness and a listing of potential implementation partners, programs and funding sources.

Tracking Progress

City staff will annually present updates to the City Manager and the Sustainability Board that summarize CAP implementation progress. The report will evaluate the successes and challenges in meeting the goals established in Chapter 4, and summarize progress toward the City's 2030 GHG reduction target. City staff will provide the status of implementation (e.g., initiated, ongoing, completed), assess the effectiveness of the strategies and programs included in the Plan against the established performance objectives, and recommend adjustments to programs or tactics as needed. The annual report will also assess whether the City's actual growth and development is consistent with the forecasts made in this CAP.

An update of the City's GHG inventory and comprehensive revision of the CAP should occur at least every five years to monitor progress of GHG reductions against the 2030 target.

Transportation and Land Use: Longer Term Considerations

As introduced in Chapter 1, California's EO S-3-05 established aggressive goals to reduce state-wide GHG emissions to 80 percent below 1990 levels by 2050. SB 32 represents an interim target to reduce emissions 40 percent below 1990 levels by 2030, and defines state GHG policy and regulations through the year 2030. This CAP provides a roadmap for the City to achieve GHG reductions consistent with the statewide SB 32 target. Achieving this target will be challenging, but accomplishing the deep reductions needed to help meet the state's 2050 goal will be even more difficult. Such reductions are highly dependent on technological development and strong leadership at the federal and state levels, but they will also require extensive changes to local development patterns and transportation systems. It is appropriate for the City to begin thinking and planning for this challenge now, as profound changes to local land use patterns, transportation modes, and community behavior could require decades of planning, public engagement, and policy development.

As a sector, Transportation and Land Use represents perhaps the biggest challenge to meeting the state's 2050 GHG emission target, and to local efforts to reduce emissions. SB 375 (Sustainable Communities and Climate Protection Act of 2008) mandates GHG reductions from transportation, assigning reduction targets to SCAG and the rest of the state's 18 Metropolitan Planning Organizations (MPOs) for emissions from on-road transportation vehicles, but the City of Paramount has authority over local land use authority. Transforming of disparate neighborhoods and commercial zones into integrated, automobile-independent, "new urbanist" type communities is a viable way to reduce emissions, but such transitions are difficult under the best of circumstances, even when there is community consensus to move in that direction. As the state continues to develop its longer term policies and strategies for reducing emissions, the City of Paramount will begin its longer-term visioning on how future growth can be accommodated while still reducing GHG emissions. The City's next General Plan Update, tentatively scheduled to begin in 2022, provides an excellent opportunity to develop this vision.

This CAP provides a framework for a more in-depth discussion on ways to accommodate future growth sustainably and reduce local dependence on single-occupancy vehicle (SOV) travel. As described in Chapter 4, Strategy LU-1 (Promote Smart Growth, TOD, and Complete Neighborhoods), in combination with the Sustainable Transportation (TR) measures, is intended to decrease the need for motor vehicle travel through infilling, mixed-use developments, and pedestrian- and bicycle-friendly design. Whereas many of these measures currently rely on voluntary actions and behavior change, GHG reductions over the long term can be greatly enhanced through municipal codes, ordinances, and other regulatory means.

Funding Sources and Partnerships

The City will use a combination of City staff time, grant funding, direct spending, and collaboration with other agencies and organizations to achieve CAP goals. In addition to the program implementation costs to the City, there will be costs borne by residents and businesses to comply with its requirements. The City's costs for implementation may include the creation or promotion of voluntary programs, continuing administration of those programs, coordination and outreach with other government agencies and businesses, and—in some cases—exploration or study of potential regulatory mechanisms not yet codified. Only a few strategies require up-front capital expenditures by the City.

The GHG reduction measures in this document were formulated with an understanding that the City has limited staff time and financial resources to implement them. Cost-effectiveness estimates are based on the anticipated impact to the City budget,

including any upfront capital investment needed to implement a strategy, ongoing annual costs, and City staff time required. As shown in Table 6-1, Planning Department staff will implement the majority of the CAP measures. The Public Works Department, the Community Services and Recreation Development, and the City Manager's Office will also contribute. Promotional activities are likely to require significant City staff time, and will require updating the City website, public outreach campaigns (e.g., workshops), dissemination of promotional materials (e.g., flyers), and other forms of public awareness, outreach, and education.

Potential Funding and Partnerships

A list of available partners, programs, and funding sources is listed for each measure in **Appendix C**. Federal, state, and regional agencies and organizations provide grants and loans, as well as planning assistance, for investments in a variety of climate-related projects. Grants and loans can provide short-term funding for program development and program testing, and could help pay for the staff time required to develop programs, and then establish an alternative financial framework for the program's continued operation after the grant expires.