DIAMOND BAR

CLIMATE ACTION PLAN 2040

ADOPTED DECEMBER 17, 2019
CITY COUNCIL RESOLUTION NO. 2019-45

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Executive Summary

This Diamond Bar Climate Action Plan (CAP) is designed to reinforce the City's commitment to reducing greenhouse gas (GHG) emissions, and demonstrate how the City will comply with State of California's GHG emission reduction standards. As a Qualified GHG Reduction Strategy, the CAP will also enable streamlined environmental review of future development projects, in accordance with the California Environmental Quality Act (CEQA).

The CAP includes:

- An inventory of the City's GHG emissions;
- Forecasts of future GHG emissions;
- Monitoring and reporting processes to ensure targets are met; and
- Options for reducing GHG emissions beyond State requirements that could be adopted at a future date, if so needed or desired.

The CAP, which has been prepared concurrently with the updated Diamond Bar General Plan, provides an analysis of GHG emissions to the year 2040, which is the horizon year for the General Plan.

State-Mandated Local GHG Emissions Targets and Guidelines

The CAP reflects guidelines established in the 2017 Scoping Plan prepared by the California Air Resources Board (CARB). The Scoping Plan, designed to implement the State's not-to-exceed GHG emission targets set in Executive Order S-3-15 and Senate Bill 32, recommends that local governments target 6 metric tons carbon dioxide equivalent ($MTCO_2e$) per capita per year in 2030 and 2 $MTCO_2e$ per capita per year in 2050 in their CAPs.

Emissions Inventory and Forecast

The 2016 emissions inventory and 2030 and 2040 emissions forecasts cover direct GHG emissions from sources within the boundaries of Diamond Bar. 2016 is the most recent year for which all data is available. Indirect emissions associated with the consumption of energy that is generated outside the borders of the City, such as electricity, are also included. The emissions inventory and forecast tally emissions from nine sectors: residential, commercial, industrial, transportation, solid waste, water, wastewater, off-road equipment, and public lighting.

The City's General Plan includes closely integrated land use and transportation systems and policies designed to foster a more sustainable community. Table ES-1 shows the 2016 emissions inventory, along with 2030 and 2040 emissions forecasts that take into account planned State actions, and incorporating results of the traffic forecasts conducted for the General Plan Update, as well additional reductions from other policies contained in the General Plan.

The analysis presented in Chapter 3 finds that Diamond Bar will meet its targets for 2030 and 2040 without any additional measures beyond those prescribed by the General Plan's Goals and Policies, as summarized in Table ES-1 below.

TABLE ES-1: EMISSIONS INVENTORY, FORECASTS, AND TARGETS

Year	Inventory/Forecast ($MTCO_2e$ per year)	Inventory/Forecast ($MTCO_2e$ per capita per year)	GHG Emissions Targets (not-to-exceed $MTCO_2e$ per capita per year)
2016	348,790	6.0	N/A
2030	254,209	4.2	6.0
2040	251,074	3.8	4.0

Monitoring and Reporting Progress

The City will periodically monitor and report on progress towards achieving the emissions targets, potentially every five years, unless otherwise required more frequently by State law. The monitoring report will include information on the status of the federal and State level emissions reductions measures identified in Chapter 3 of this CAP, as well as any new efforts that may emerge in the reporting year.

Updating the GHG Inventory and the CAP

The City will update the GHG inventory periodically. If an updated inventory reveals that Diamond Bar is not making adequate progress toward meeting the GHG target, or that new technologies and programs emerge that warrant inclusion in the CAP, the City will adjust the CAP by modifying, adding, and/or replacing policies in the General Plan or elsewhere, or incorporating optional measure(s) to further reduce emissions outlined in Section 4.2 of this CAP. For illustration purposes, the CAP outlines several candidate measures, and quantifies the likely GHG emissions reductions resulting from them. The measures include:

- Photovoltaic systems;
- Energy efficiency retrofits;
- Electrification;
- Increased Zero-Emission Vehicle travel;
- Zero Waste; and
- Clean Power partnerships.

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Introduction

1.1 Scope and Purpose

Background and Purpose

The Diamond Bar Climate Action Plan (CAP) – the City's first CAP – is designed to reinforce the City's commitment to reducing greenhouse gas (GHG) emissions and demonstrate how the City will comply with State of California's GHG emission reduction standards. As a Qualified GHG Reduction Strategy, the CAP will also enable streamlined environmental review of future development projects, in accordance with the California Environmental Quality Act (CEQA).

The CAP has been prepared concurrently with the updated Diamond Bar General Plan, reflecting the City's most current land use and transportation strategy, and GHG implications of various General Plan's goals and policies. The General Plan Environmental Impact Report (EIR) also serves as the EIR on the CAP, and the GHG analysis in the CAP is fully synchronized with the analysis in the EIR.

The General Plan includes strategies such as transit-oriented and mixed-use development, integrated transportation and land use planning, promotion of bicycle and pedestrian movements, and parking and transportation demand management. It also includes goals and policies to promote energy efficiency, waste reduction, and resource conservation and recycling. These strategies, goals, and policies would result in GHG reductions compared to baseline trends.

As a document adopted by the City of Diamond Bar City Council, the CAP applies to the municipal limits of the City of Diamond Bar. All information and data presented in the CAP, unless otherwise noted, is for the area within the City's municipal limits. The General Plan covers a larger Planning Area that includes part of Tonner Canyon, an undeveloped wooded canyon that stretches from SR-57 east to the San Bernardino county line. The General Plan does not propose any development within Tonner Canyon, which is designated as a Significant Ecological Area (SEA) under the Diamond Bar General Plan and Los Angeles County SEA Program.

CAP Contents

The CAP includes:

- An inventory of the City's GHG emissions;
- Forecasts of future GHG emissions;
- Actions that demonstrate the City of Diamond Bar commitment to achieve State GHG reduction targets by monitoring and reporting processes to ensure targets are met; and
- Options for reducing GHG emissions beyond State requirements in effect as of the CAP's adoption date.

While there is no sunset year for the CAP, the CAP provides analysis of GHG emissions to the year 2040, which is the General Plan horizon year.

Community Vision and Environmental Stewardship

As part of the General Plan update visioning process, residents and other stakeholders were asked to describe those qualities that make Diamond Bar a great community, so that the common goal of preserving and enhancing those qualities may serve as a guide for all planning efforts. The resultant General Plan Vision incorporates environmental stewardship as a key tenet:

"Through thoughtful planning, collaboration, and stewardship, the community is able to meet the needs of current and future generations, both growing as a city and preserving the strong connections and environmental resources that define its "country living" identity."

In addition, the General Plan reflects several high-level values that can be applied across several topics in the General Plan, and serve as the document's organizing themes. Chapter 5 of the General Plan, Resource Conservation, highlights the City of Diamond Bar's commitment to preservation and restoration of open spaces and sensitive habitat. Chapter 8 of the General Plan, Community Health and Sustainability, prioritizes actions that support environmental justice and reduction of greenhouse gases.

1.2 Climate Change and Greenhouse Gases Overview

Greenhouse Effect and GHGs

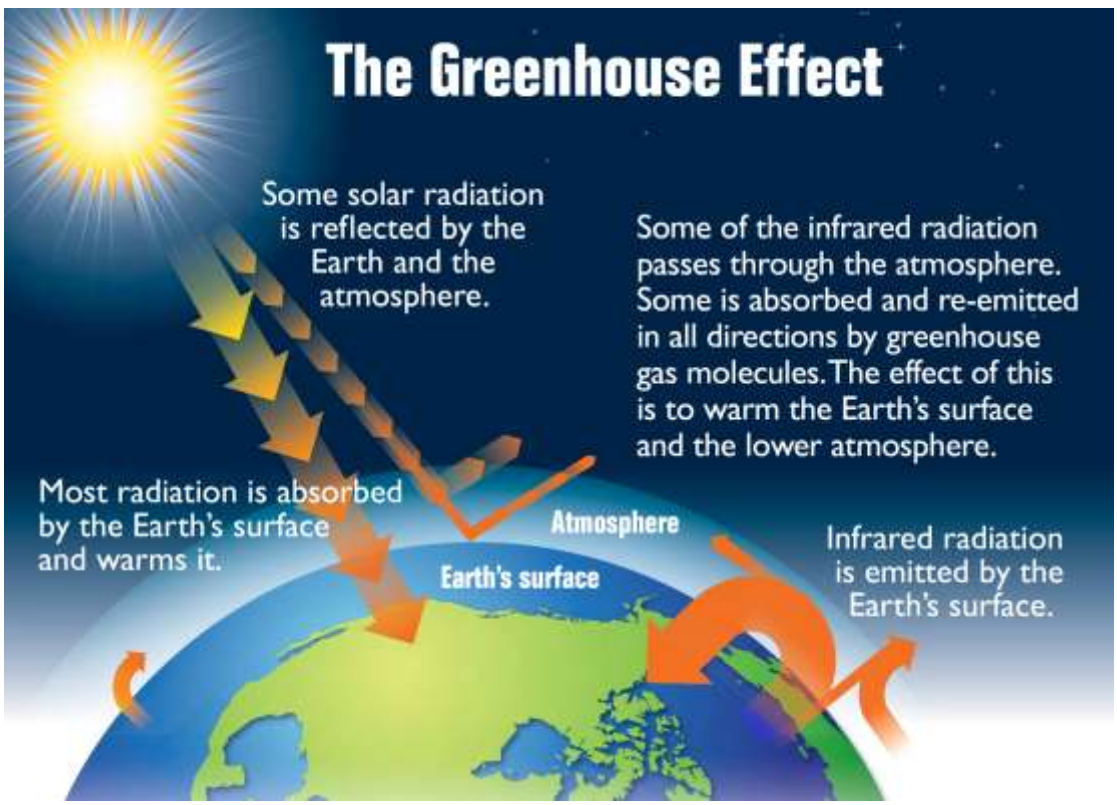
Gases that trap heat in the atmosphere are often called "greenhouse gases" or GHGs. The greenhouse effect traps heat in the troposphere through a threefold process: Short-wave radiation emitted by the sun is absorbed by the earth; the earth emits a portion of this energy in the form of long-wave radiation; and GHGs in the upper atmosphere absorb this long-wave radiation, emitting some of it into space and the rest back toward the earth. This "trapping" of the long-wave

(thermal) radiation emitted back toward the earth is the underlying process of the greenhouse effect (Figure 1-1).

Principal GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone (O_3), and water vapor (H_2O). Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted to the atmosphere through natural processes and human activities. Since different gases contribute to the greenhouse effect in different proportions, the term CO_2e (carbon dioxide equivalent) is used to calibrate each of the different GHGs in terms of the amount of CO_2 that would produce the same thermal effect.

The greenhouse effect is a natural process that contributes to regulating the earth's temperature. Without it, the temperature of the earth would be about 0°F (−18°C) instead of its present 59°F (15°C) and unlikely to support human life in its current form.

Figure 1-1: Greenhouse Gas Effect



Source: United States Environmental Protection Agency, 2016.

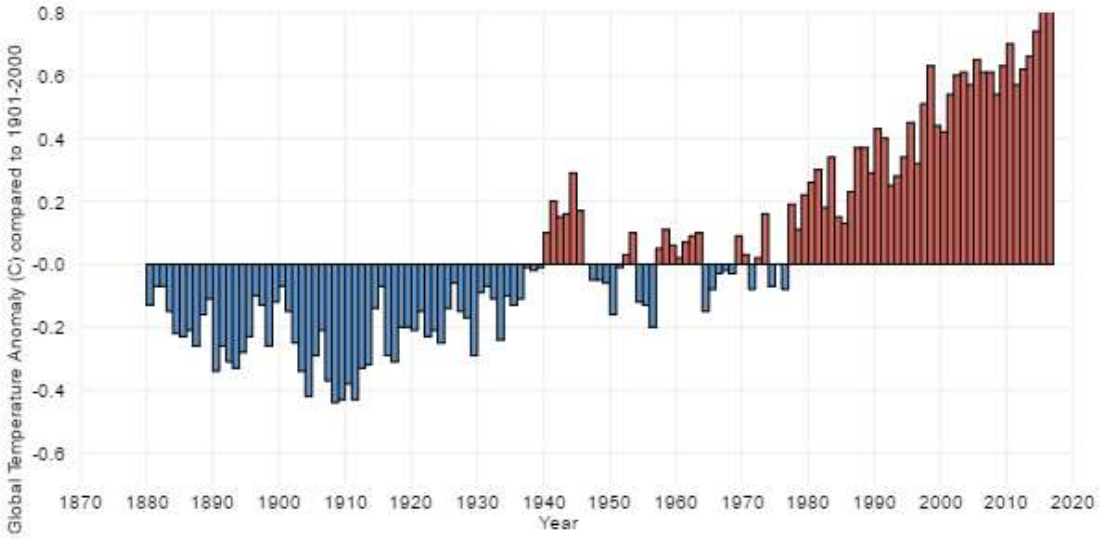
Carbon Cycle and Global Temperatures

The global carbon cycle is complex and incorporates natural sources of atmospheric carbon dioxide, including respiration of aerobic organisms, wildfires, and volcanic outgassing, and sinks such the removal of CO_2 by land plants for photosynthesis, and absorption by the ocean. Data collected on global GHG concentrations over the past 800,000 years demonstrates that the concentration of CO_2, the principal GHG, has increased dramatically since pre-industrial times, from approximately below 300 parts per million (ppm) in 1800, to about 353 ppm in 1990 and 404 ppm in 2016.

Increased atmospheric concentrations of GHGs have led to a rise in average global temperatures. Figure 1-2 shows the increase in global temperatures from 1880 to 2019. While average global temperatures fluctuate on a yearly basis, the general trend shows a long-term temperature increase. Since 1976, every year has been warmer than the long-term average. In 2018, the average temperature across global land and ocean surfaces was 1.42°F (0.79°C) above the twentieth-century average. During 2018, 11 of 12 monthly global land and ocean temperature departures from average ranked among the five warmest for their respective months, giving way to the fourth warmest year in NOAA's 139-year record. The consensus among climate scientists is that earth's climate system is unequivocally warming, and rigorous scientific research demonstrates that anthropogenic[1] greenhouse gases are the primary driver.

[1] Caused by human activities

Figure 1-2: Change in Average Global Temperatures



Source: National Oceanic and Atmospheric Administration, 2018.

Climate Change

Global climate change concerns are focused on the potential effects of climate change resulting from excessive GHGs in the atmosphere and how communities can mitigate effects and adapt to change in the short and long term.

Numerous observations document the impacts of global climate change, including increases in global average air and ocean temperatures, the widespread melting of snow and ice, more intense heat waves, and rising global average sea level. Scientists have high confidence that global temperatures will continue to rise in the foreseeable future, largely due to anthropogenic GHG emissions. In addition to the physical impacts to the environment from increased temperatures, sea level rise, and more frequent extreme weather events, global climate change is predicted to continue to cause ecological and social impacts. Ecological impacts of climate change include greater risk of extinction of species, loss of species diversity, and alteration of global biogeochemical cycles, which play an essential role in nutrient distribution. The social impacts of climate change include impacts on agriculture, fisheries, energy, water resources, forestry, construction, insurance, financial services, tourism, and recreation.

According to the International Panel on Climate Change (IPCC) in North America, the regional impacts of climate change are a forecast of decreased snowpack in the western mountains; a 5 to 20 percent decrease in the yields of rain-fed agriculture in some regions; and increased frequency, intensity and duration of heat waves in cities that currently experience them.

In California, the Climate Action Team (CAT)—a group of state agency secretaries and the heads of agencies, boards, and departments, led by the Secretary of the California Environmental Protection Agency—synthesized current research on the environmental and economic impacts of climate change. The CAT found that climate changes are poised to affect virtually every sector of the state's economy and most ecosystems. Key findings of the CAT include predicted decreases in water supply that could cause revenue losses of up to $3 billion per year in the agricultural sector by 2050, increases in statewide electricity demand of up to 55 percent by the end of the century, increased wildfire risk that may cause monetary impacts of up to $2 billion per year by 2050, and ecosystems impacts affecting California's historic ranching culture and a source of local, grass-fed beef. The 2018 wildfire season alone cost the California fire department $1 billion and resulted in $11.4 billion in insurance claims.

Higher temperatures, changes in precipitation, decreased water supplies accompanied by increased demand, increased risk of wildfire, a greater number of extremely hot days, the decline or loss of plant and animal species, and other impacts of climate change are expected to continue to affect Diamond Bar.

1.3 Effects of Climate Change on Diamond Bar

Open Space and Biological Resources

Although Diamond Bar is primarily developed as a residential community, open spaces and vegetated habitats have a large presence within the City's hilly terrain. A diversity of native plant and animal species inhabit Diamond Bar's open spaces, including coast live oak woodland and California walnut woodland. These species are vulnerable to the effects of climate change, which can reduce available habitat through increased temperature, drier conditions, and increased wildfire frequency and intensity. Climate change can also worsen the endangered status of many native species within Diamond Bar. However, Diamond Bar's open space is considered a valuable resource in the City's fight against climate change. California's oak woodlands act as carbon sinks, storing an estimated 675 million metric tons of carbon dioxide ($MTCO_2e$). Riparian habitats and wetlands also act as climate sinks and are beneficial to ecological adaptation to climate change. Destruction of these habitats, both through land use decisions and the consequences of intensifying climate change, has the potential to release a significant amount of greenhouse gases. The Diamond Bar General Plan update includes multiple policies aimed at preserving open space and riparian habitat to encourage the health of the City's biological resources, particularly oak and walnut woodlands, and applies land use designations that minimize impacts of development on these resources. Additionally, the General Plan includes policies that promote the use of native and drought-tolerant vegetation in landscaping, which can reduce water use.

Access to open space also benefits the human population of Diamond Bar. Increasing the tree canopy and preserving existing open space can reduce the

urban heat island effect and therefore heat-related illnesses. Existing open space resources include multiple parks, the Diamond Bar Golf Course, and Tonner Canyon. The General Plan includes policies and mitigation explicitly aimed at increasing equitable access to open space and preservation of existing resources.

Public Health and Environmental Justice

Climate change threatens human health, including mental health, and access to clean air, safe drinking water, nutritious food, and shelter. Diamond Bar residents who are already more vulnerable to health challenges are likely to be the most affected by climate change. These populations tend to be the young and the old, the poor, and those who are already sick. Increases in extreme heat events can increase the risk of heat-related illness or death, or the worsening of chronic health conditions. Food scarcity and higher food prices from impacts to agriculture can cause increased hunger and reduced availability of nutrition. The increased frequency of natural disasters such as floods, droughts, wildfires, and storm surges can cause injury or death, illness, and increases or shifts in infectious disease.

Environmental justice refers to the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies. Environmental justice is typically examined in the context of disadvantaged communities. The term "disadvantaged community" (DAC) is defined by the California Health and Safety Code, Section 39711, and refers to areas disproportionately affected by environmental pollution and other hazards that can lead to negative public health effects, exposure to hazards, or environmental degradation, and socio-economic vulnerability, determined by concentrations of people that are of low income, high unemployment, low levels of homeownership, high rent burden, sensitive populations, or low levels of educational attainment. Disadvantaged communities can be disproportionately affected by climate change and may be less able than other to adapt to or recover from climate change impacts. While no disadvantaged communities have been identified by CalEPA in Diamond Bar or its Sphere of Influence as of 2019, the General Plan is drafted with an understanding that a community is only as resilient as its most vulnerable populations.

Wildfire

Climate change can exacerbate the frequency and intensity of wildfires. In recent years, the State of California has experienced increasingly severe wildfire seasons. In 2017 and 2018, devastating fires such as the Camp and Tubbs fires in Northern California, and the Woolsey and Thomas Fires in Southern California demonstrated the profound impact wildland fires can have on populated areas. As the wildland-urban interface continues to expand and changes in climate patterns become more apparent, wildfire risk management at the local level will become more and more important.

The California Department of Forestry and Fire Protection (CAL FIRE) has mapped fire threat potential throughout California. CAL FIRE ranks fire threat according to the availability of fuel and the likelihood of an area burning (based on topography, fire history, and climate). Diamond Bar contains regions of very high fire severity, including most of the designated open space areas and much of the Diamond Bar Country Estates neighborhood. Areas with a higher frequency of wildfires have included the SOI and surrounding open spaces outside of the City. Since the 1980s, wildfires have occurred in locations near Peaceful Hills Road, Eldertree Drive, Diamond Knoll Lane, and Wagon Train Lane in the southern portion of the City; in and around the SOI; and near to but outside of the northern City limits. The General Plan includes multiple policies aimed at minimizing wildfire risk in Diamond Bar.

Drought and Flooding

Throughout history, the State of California has experienced many droughts, with the most recent drought period lasted between 2011 and 2017. Effects of drought can include increased susceptibility to wildfires, increased risk of flooding and landslide, habitat degradation, permanent loss of groundwater storage, and impacts to agriculture. California could be affected by significantly more dangerous and more frequent droughts in the near future as changes in weather patterns triggered by climate change block rainfall from reaching the state. Climate change can also increase the volatility of California's climate, resulting in dramatic swings between dry and wet years and widespread flooding. While Diamond Bar is located outside of any flood hazard areas, a portion of its SOI is located within a 100-year flood plain, in which there is a one percent chance of flood event being equaled or exceeded in any given year. General Plan policies emphasize water conservation and drought-tolerant landscaping, which may alleviate future drought conditions in Diamond Bar.

1.4 California GHG Reduction Legal Framework

California has taken an aggressive stance to reduce GHG emissions in order to combat the impacts of climate change; some of the State actions include the following.

Governor's Executive Order S-3-05

Executive Order S-3-05 (EO S-3-05) issued in 2005 recognizes California's vulnerability to increased temperatures causing human health impacts, rising sea levels, and a reduced Sierra snowpack due to a changing climate. The Executive Order established targets to reduce GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

Global Warming Solutions Act of 2006 and 2008 CARB Scoping Plan

The Global Warming Solutions Act of 2006 (Assembly Bill 32, or AB 32) codifies the targets set in EO S-3-05 of statewide reductions to 1990 emissions levels by 2020. AB 32 directs the California Air Resources Board (CARB) to develop and implement a scoping plan and regulations to meet the 2020 target.

CARB approved the Scoping Plan in 2008, which provides guidance for local communities to meet AB 32 and EO S-3-05 targets. The Scoping Plan adopted a quantified cap on GHG emission representing 1990 emission levels, instituted a schedule to meet the emission cap, and developed tracking, reporting, and enforcement tools to assist the State in meeting the required GHG emissions reductions.

Governor's Executive Order S-3-15 and 2017 CARB Scoping Plan

Executive Order S-3-15 (EO S-3-15) issued in 2015 established an interim target to reduce GHG emissions to 40 percent below 1990 levels by 2030. In 2016, the Legislature passed Senate Bill (SB) 32, which codified the 2030 GHG emissions reduction target. To reflect this target, CARB's 2017 Climate Change Scoping Plan Update recommends that local governments target 6 metric tons carbon dioxide equivalent ($MTCO_2e$) per capita per year in 2030 and 2 $MTCO_2e$ per capita per year in 2050.

The CAP's GHG emission targets are based on meeting the goals set in EO S-3-15 and SB 32, following the CAP guidelines established in the 2017 Scoping Plan.

Governor's Executive Order B-55-18

Executive Order B-55-18 (EO B-55-18) issued in 2018 established a statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and to achieve and maintain net negative emissions thereafter. EO B-55-18 is established in addition to the existing statewide targets of reducing GHG emissions. To achieve this target, remaining emissions must be offset by equivalent net removals of CO_2 from the atmosphere, including through sequestration in forests, soils and other natural landscapes.

The CAP's GHG emission targets are not based on the goals set in EO B-55-18 given the General Plan's horizon date of 2040. However, strategies recommended in the CAP would contribute towards carbon sequestration goals established in EO B-55-18.

1.5 Federal and State Emissions Reductions Strategies and Standards

Several federal and state standards have been adopted to reduce GHG emissions, in addition to and in support of the targets set in EO S-3-15 and SB 32. As of August 2019, multiple federal programs have been challenged by the Trump administration and are discussed below.

Federal Standards

Corporate Average Fuel Economy Standards

The United States Environmental Protection Agency (EPA) regulates and tests gas mileage or fuel economy in order to deter air pollution in the United States. Since the transportation sector produces 29 percent[2] of GHG emissions in the U.S. as a whole, fuel economy regulations are an important way to reduce GHG emissions. The EPA's Corporate Average Fuel Economy (CAFE) standards require vehicle manufacturers to comply with the gas mileage or fuel economy standards to reduce energy consumption by increasing the fuel economy of cars and light trucks. The most recent CAFE GHG emissions standards were set in 2012, which will increase the fuel economy to 54.5 miles per gallon average for cars and light trucks by Model Year 2025, and reduce U.S. oil consumption by 12 billion barrels per year.

In August 2018, the EPA and Department of Transportation's National Highway Traffic Safety Administration (NHTSA) released a new plan for fuel efficiency called the Safer Affordable Fuel Efficient Vehicles rule (SAFE), which would freeze federal standards at the 2020 level through model year 2026. The proposed rule also revokes California's ability to set its own, higher fuel efficiency standards. In June 2019, 17 worldwide automakers appealed to the White House and California to work together on a single national standard. In July 2019, California and four major automakers (BMW, VW, Ford, and Honda) signed a voluntary agreement that preempts this rollback and introduces an additional proposed successor to the existing fuel efficiency standards. This proposal would extend the current 2025 model year standard to 2026, and change the original year-over-year 4.7 percent GHG reduction over four years goal to 3.7 percent over five years (2022 through 2026). Additionally, the proposal would provide incentives to companies that sell electric vehicles and install GHG-reducing technologies. As of August 2019, the Trump administration has not finalized the fuel economy rollback and a coalition of 12 states and the District of Columbia has filed a lawsuit challenging the proposed rule. However, the Department of Transportation is still working to finalize its adjustments to this rule, and is proposing a freeze at 37 miles per gallon.

[2] In 2017, GHG emissions from transportation were about 29 percent of the total 6,457 million metric tons CO_2e.

Gas Guzzler Tax

The EPA imposes the Gas Guzzler Tax on manufacturers of new cars that do not meet required fuel economy levels, to discourage the production and purchase of fuel-inefficient vehicles.

Renewable Fuel Standard Program

The EPA established a renewable fuel standard to include a minimum volume of renewable fuel in 2017, which applies to all gasoline and diesel produced or imported. The EPA gradually increases new volume requirements annually for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel.

EO 13783 and Affordable Clean Energy Rule

On August 3, 2015, the EPA finalized the Carbon Pollution Standards, which set national limits on the amount of carbon pollution that new, modified, and reconstructed power plants will be allowed to emit. On the same date, the EPA also finalized the Clean Power Plan, setting national limits on the amount of carbon pollution from existing power plants. The EPA also approved oil and natural gas air pollution standards in 2016 to reduce pollution from the oil and natural gas industry.

On March 28, 2017, President Trump signed the Executive Order on Energy Independence (EO 13783), which calls for review and rewriting of the Clean Power Plan, Carbon Pollution Standards, regulations on methane emissions from oil and gas operations, and the "social cost of carbon" estimate used to justify climate regulations; lifts the moratorium on federal coal leasing; repeals guidance for factoring climate change into NEPA reviews; rescinds multiple Obama-era executive orders and documents related to climate change; and instructs all federal agencies to review all rules inhibiting the development of domestic energy production.

In June 2019, the Trump administration issued the Affordable Clean Energy Rule (ACE), which replaces the Clean Power Plan. The ACE would give individual states more authority to make their own plans for regulating GHG emissions from coal-fired power plants. In August 2019, a coalition of 29 states and cities filed a lawsuit to block the rule.

State Standards

California Senate Bill 375

SB 375 (2008) requires each Metropolitan Planning Organization (MPO) in the state to adopt a Regional Transportation Plan (RTP) aimed at achieving a coordinated and balanced regional transportation system, including mass transit, highways, railroads, bicycles, and pedestrians, among other forms of transit. Each MPO is required to prepare a Sustainable Communities Strategy (SCS) which sets forth

forecast development patterns and describes the transportation system that achieve the regional GHG emission reduction targets set by CARB.

CARB's 2010 targets called for the Southern California Association of Governments (SCAG) region, the MPO in which Diamond Bar is located, to reduce per capita emissions by 8 percent by 2020 and 13 percent by 2035 based on a 2005 baseline. New targets were adopted in 2018, increasing SCAG's 2035 per capita emissions reduction target to 19 percent. SCAG adopted its own RTP/SCS in April 2012. The SCS lays out how the region will meet GHG targets to reduce per capita emissions 9 percent by 2020 and 16 percent by 2035 based on a 2005 baseline. In April 2016, SCAG adopted targets of 8 percent, 18 percent, and 21 percent reduction per capita GHG emissions by 2020, 2035, and 2040, respectively, based on a 2005 baseline. As the SCS is focused on passenger vehicle emissions on a regional scale, it is considered separate from the reductions outlined in this CAP.

Governor's Executive Order S-1-07 (Low Carbon Fuel Standard)

Executive Order S-1-07, the Low Carbon Fuel Standard (LCFS), requires a reduction of at least 10 percent in the carbon intensity of California's transportation fuels by 2020. The LCFS requires oil refineries and distributors to ensure that the mix of fuel sold in California meets this reduction. The reduction comes from production cycle (upstream) emissions from the production and distribution of transport fuels within the state, rather than the combustion cycle (tailpipe) emissions from the use of those transport fuels.[3]

Governor's Executive Order S-1-07 (Low Carbon Fuel Standard)

Executive Order S-1-07, the Low Carbon Fuel Standard (LCFS), requires a reduction of at least 10 percent in the carbon intensity of California's transportation fuels by 2020.

Renewable Portfolio Standards

California's Renewable Portfolio Standard (RPS), established in 2002 by the California State Senate in SB 1078, accelerated in 2006 and expanded in 2011, is one of the most ambitious renewable energy standards in the country. The RPS requires each energy provider to supply 33 percent of their electricity from eligible renewable energy resources by 2020. Signed in October 2015, SB 350 requires providers to supply 50 percent of their electricity from eligible renewable energy resources by 2030.

Pavley Fuel Economy Standards (AB 1493)

In 2009, CARB adopted amendments to the Pavley regulations to reduce GHG emissions in new passenger vehicles from 2009 to 2016. The standards became the model for the updated federal CAFE standards.

[3] EMFAC2014 Volume III - Technical Documentation

Advanced Clean Cars (ACC) Program

In 2012, CARB adopted the ACC program, developed in coordination with the EPA. The components of the ACC program are the Low-Emission Vehicle (LEV) regulations that reduce GHG emissions from light- and medium-duty vehicles, and the Zero-Emission Vehicle regulation, which requires manufacturers to produce an increasing number of battery electric and fuel cell electric vehicles, with provisions to also produce plug-in hybrid electric vehicles in the 2018 through 2025 model years.

Title 24 Building Standards & CALGreen

Title 24 is California's Building Energy Code, which is updated every three years. In 2010, Title 24 was updated to include the "California Green Building Standards Code," referred to as CALGreen. CALGreen requires that new buildings reduce water consumption, increase system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials. CALGreen has mandatory measures that apply to nonresidential and residential construction. The most recent 2019 CALGreen code was adopted in 2018 and will become effective in 2020. A notable change under this update is the requirement for installation of solar photovoltaics on all new residential buildings. CALGreen contains voluntary Tier 1 and Tier 2 levels, which are designed to exceed energy efficiency and other standards by 15 percent or 30 percent.

75 Percent Solid Waste Diversion

In 2011, AB 341 set the goal of 75 percent recycling, composting, or source reduction of solid waste by 2020 calling for the California Department of Resources Recycling and Recovery (CalRecycle) to take a statewide approach to decreasing California's reliance on landfills. This goal was an update to the former goal of 50 percent waste diversion set by AB 939.

United States Climate Alliance

On June 1, 2017, President Trump announced that the United States would cease all participation in the 2015 Paris Agreement on climate change mitigation. In accordance with Article 28 of the Paris Agreement, the earliest possible effective withdrawal date by the United States cannot be before November 4, 2020. The United States Climate Alliance was formed on June 1, 2017 following President Trump's announcement. The Alliance is a bipartisan coalition of states and unincorporated self-governing territories in the United States that are committed to upholding the objectives of the Paris Agreement on climate change within their borders by achieving the United States goal of reducing GHG economy-wide emissions 26 to 28 percent from 2005 levels by 2025 and meeting or exceeding the targets of the federal Clean Power Plan. As of August 2019, the Alliance has 24 members, including the state of California.

100 Percent Clean Energy Act

The 100 Percent Clean Energy Act of 2018 (Senate Bill 100, or SB 100) sets a state policy that eligible renewable energy and zero-carbon resources supply 100 percent of all retail sales of electricity in California by 2045. SB 100 accelerates California's RPS established under SB 350. In recognition that California retail sellers are well on their way to achieving the target in advance of the existing deadlines, SB 100 requires providers to supply 50 percent of their electricity from eligible renewable energy resources by 2026 and 60 percent by 2030.

1.6 Planning Process

How This Plan Was Prepared

The CAP reflects the City's commitment to the core values presented in the General Plan, and links elements of the plan—including Land Use, Circulation, Resource Conservation, and Community Health and Sustainability—with the goal of GHG reduction. The CAP was prepared in 2019 in conjunction with the General Plan 2040 update.

Relationship to the California Environmental Quality Act

The California Environmental Quality Act (CEQA) is a statute that requires local agencies to identify significant environmental impacts of their actions and avoid or mitigate those impacts, if feasible. In 2007, California's lawmakers enacted SB 97, which expressly recognizes the need to analyze GHG emissions as part of the CEQA process. SB 97 required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to address GHG emissions as an environmental effect.

In 2010, OPR's amendments to the CEQA guidelines addressing GHG emissions became effective. Lead agencies are now obligated to describe, calculate or estimate the amount of GHG emissions resulting from a project, by using a model or methodology to quantify GHG emissions resulting from a project or relying on a qualitative analysis or performance based standards. The lead agency should determine whether a project's GHG emissions significantly affect the environment by considering whether the project's emissions, as compared to the existing environmental setting, exceeds a threshold of significance that the lead agency determines applies to the project, and the extent to which the project complies with the regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. In addition, the lead agency is required to impose feasible mitigation to eliminate or substantially reduce significant effects.

In December 2018, OPR and the California Natural Resources Agency's amendments to the CEQA guidelines, including changes to CEQA Guidelines section 15064.4, became effective. The revision of CEQA Guidelines section 15064.4 clarified several points on the analysis of greenhouse gas emissions. Lead

agencies must analyze the greenhouse gas emissions of proposed projects and its effect on climate change, rather than simply quantifying emissions. The lead agency should consider the global and cumulative nature of greenhouse gas emissions and may consider a projects consistency with the State's long-term climate goals or strategies. In addition, the lead agency has discretion to select the model or methodology it considers most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change. The 2019 CEQA Guidelines also implement Senate Bill (SB) 743 traffic impact analysis, including guidance on Vehicle Miles Traveled (VMT) screening thresholds, mitigation, and reduction. Using VMT to measure transportation impacts promotes the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses in accordance with SB 743.

The CAP will help the City comply with CEQA Guidelines Section 15183.5(b): Tiering and Streamlining the Analysis of Greenhouse Gas Emissions[4], which became effective in 2010. The required elements of a CAP, as cited in the guidelines, state that a plan for the reduction of GHG emissions should:

- Quantify greenhouse gas emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;
- Establish a level, based on substantial evidence, below which the contribution to greenhouse gas emissions from activities covered by the plan would not be cumulatively considerable;
- Identify and analyze the greenhouse gas emissions resulting from specific actions or categories of actions anticipated within the geographic area;
- Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;
- Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels; and
- Be adopted in a public process following environmental review.

[4] 15183.5(b) of CEQA Guidelines states, "Plans for the Reduction of Greenhouse Gas Emissions. Public agencies may choose to analyze and mitigate significant greenhouse gas emissions in a plan for the reduction of greenhouse gas emissions or similar document. A plan to reduce greenhouse gas emissions may be used in a cumulative impacts analysis as set forth below. Pursuant to sections 15064(h)(3) and 15130(d), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously adopted plan or mitigation program under specified circumstances."

The CAP is intended to fulfill these requirements. The CAP also contains a Project Review Checklist, which allows for streamlined review of GHG emissions for projects that demonstrate consistency with the CAP, as described in CEQA Guidelines Section 15183.5(b).

Relationship to General Plan and Future Projects

The City's approach to addressing GHG emissions within the General Plan is parallel to the climate change planning process followed by numerous California jurisdictions. A General Plan is a project under CEQA, and projects under CEQA are required to estimate CO_2 and other GHG emissions, as described above. The CAP is designed to provide discrete actions to operationalize the General Plan policies that help with GHG reduction. The preparation of a CAP is also consistent with CEQA Guidelines Section 15183.5 that allows jurisdictions to analyze and mitigate the significant effects of GHG at a programmatic level, by adopting a plan to reduce GHG emissions.

Project-specific environmental documents prepared for projects consistent with the General Plan may rely on the programmatic analysis contained in the CAP and the EIR certified for the Diamond Bar General Plan.

1.7 How to Use This Plan

The CAP is intended to be a tool for policy makers, community members and others to guide the implementation of actions that limit Diamond Bar's GHG emissions. Ensuring that the CAP translates from policy language to on-the-ground results is critical to its success. Chapter 4 describes how the City can monitor progress in reducing emissions, and periodically revisit assumptions and key provisions of the plan. This chapter also outlines GHG emission reduction policies the City can implement if it wishes to reduce its emissions beyond the State-mandated targets.

2

Emissions Inventory

This chapter identifies the major sources and the overall magnitude of greenhouse gas (GHG) emissions in Diamond Bar, pursuant to Sections 15183.5(b)(1)(A) and 15183.5(b)(1)(C) of the state CEQA Guidelines. As part of the Climate Action Plan (CAP) preparation effort, this GHG inventory was prepared to provide a recent measure of emissions and is summarized in this chapter. This GHG inventory is prepared for the year 2016, which is the most recent year for which all data was available.

The inventory follows the standards developed by the International Council for Local Environmental Initiatives (ICLEI) for community GHG inventories.[5] The inventory methodology is described first, followed by the inputs, and results.

2.1 Methodology

The emissions inventory covers direct GHG emissions[6] from sources within the boundaries of Diamond Bar, including fuel combusted and solid waste generated within the City. Indirect emissions associated with the consumption of energy (such as electricity, with no end point emissions) that is generated outside the borders of the City are also included. The emissions inventory is calculated for the year 2016, which is the most recent year for which all data was available. The emissions inventory tallies emissions from nine sectors:

- Residential;
- Commercial;
- Industrial;
- Transportation;

[5] According to the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions, Version 1.1.

[6] GHGs considered in the report are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). The emissions have been converted to carbon dioxide equivalent (CO_2e), which converts the two other GHGs into the equivalent mass of carbon dioxide.

- Solid Waste;
- Water;
- Wastewater;
- Off-Road Equipment; and
- Public Lighting.

ICLEI US Community Protocol assumptions were used to estimate emissions from solid waste disposal, process and fugitive emissions from wastewater treatment, and residential, commercial, industrial, and wastewater treatment natural gas use. The California Air Resources Board's (CARB's) EMFAC2014[7] model was used to calculate transportation emissions, and CARB's OFFROAD[8] model was used for the off-road equipment sector.

The majority of emissions were calculated using activity data and emissions factors. Activity data refers to a measurement of energy use or another GHG-generation process, such as residential electricity use, or vehicle miles traveled. Emissions factors are used to convert activity data to emissions, and are usually expressed as emissions per unit of activity data (e.g. metric tons carbon dioxide [CO_2] per kilowatt hour of electricity). To estimate emissions, the following basic equation is used:

[*Activity Data*] x [*Emissions Factor*] = Emissions

As an example, multiplying the total amount of residential electricity use (activity data, expressed in kilowatt-hours) by the emissions factor (expressed as CO_2e emissions per kilowatt-hour) produces the emissions in CO_2e from residential energy use. The following section describes the inputs for the emissions inventory based on activity data (or usage). The baseline year for the CAP is 2016, which is the earliest year for which all activity data was available.

For transportation trips that originate or end in Diamond Bar, emissions for half of the entire trip, not just for the miles traveled within Diamond Bar, are included; however, trips that just pass through the Diamond Bar are excluded, as their emissions would be reflected at their trip ends.[9] Furthermore, although pass-through trips contribute a substantial amount to VMT totals, the City and the Diamond Bar community have limited ability to influence them.

[7] The EMFAC2014 model was developed by CARB to measure various emissions from on-road vehicles.

[8] The OFFROAD model was developed by CARB to measure various emissions from off-road vehicles.

[9] For example, for a trip that begins in downtown Pomona and ends in Diamond Bar, the entire trip length is calculated for that trip. Half of the entire trip length is assigned to Diamond Bar, and the other half is assigned to the City of Pomona. Using half the trip length is standard ICLEI methodology for assigning regional VMT to a particular jurisdiction.

2.2 Emissions Inventory

Residential, Commercial, and Industrial (RCI) Electricity and Natural Gas Usage

Emissions from electricity consumption were calculated using electricity usage for the residential, commercial, and industrial (RCI) sectors, along with Southern California Edison's (SCE's) 2016 GHG per unit of electricity provided in Edison International's 2016 Corporate Responsibility Report: 0.24 metric tons CO_2e per megawatt-hour ($MTCO_2e/MWh$).[10] Emissions from natural gas consumption were calculated using natural gas usage for the RCI sectors, along with emissions factors provided in Appendix C of the ICLEI Protocol for the RCI sectors: 0.0053 metric tons CO_2e per therm ($MTCO_2e/therm$).

Table 2-1 shows RCI electricity and natural gas consumption, and the total citywide consumption of electricity and natural gas, for 2016. The residential sector has the largest electricity and natural gas consumption (primarily used for heating homes and water), followed by commercial and industrial.

TABLE 2-1: RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL (RCI) INPUTS; 2016

		Inputs
Residential	Electric (kWh per year)	131,937,635
	Natural Gas (therms per year)	6,115,192
Commercial	Electric (kWh per year)	89,460,434
	Natural Gas (therms per year)	1,939,083
Industrial	Electric (kWh per year)	972,126
	Natural Gas (therms per year)	2,192
Total by Source		
Electricity (kWh per year)		222,370,195
Natural Gas (therms per year)		8,056,467

Source: Southern California Edison, 2017; Southern California Gas Company, 2017.

Transportation

Transportation emissions are based on vehicle miles traveled (VMT) for on-road vehicles. The SCAG model consistent with the 2016 SCAG RTP/SCS growth projections was used to estimate the VMT generated by land uses in the Planning

[10] Industrial electricity consumption did not meet the 15/20 Aggregation Rule for data requests (the data set must contain at least 15 customers, and no single customer can make up more than 20 percent of the total energy consumption). This is due to the extremely limited number of industrial facilities in Diamond Bar, as industrial uses account for less than one percent of all land uses in Diamond Bar. To estimate industrial electricity consumption for the purposes of the CAP emissions inventory, 2016 non-residential electricity consumption for Los Angeles County was multiplied by the ratio of existing industrial acreage in Diamond Bar to Los Angeles County non-residential acreage. Estimated industrial electricity consumption may be lower than actual. Industrial natural gas consumption was provided.

Area. To assess the VMT generated in Diamond Bar, the production and attraction (PA) method was used which records all home-based production and home-based-work production and attraction vehicular trips generated by land uses in the Planning Area across the entire regional network. The total annual VMT in 2016 was 511,342,670 vehicle miles traveled.

EMFAC2014 was used to find CO_2 emission factors (emissions per VMT) for vehicles in the portion of Los Angeles County within the South Coast Air Basin (SCAB). The emission factors were found for calendar year 2016; annual emissions (no season was chosen); and all model years, speeds, and fuels. The United States Environmental Protection Agency's Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014 was used to find national CH_4 and N_2O emission factors. Emissions were calculated by multiplying emission factors by VMT.

Solid Waste

CalRecycle provided waste characterization data as the percentage of organic residential and commercial waste from nine categories of waste, as shown in Table 2-2.

TABLE 2-2: RESIDENTIAL AND COMMERCIAL WASTE CHARACTERIZATION; 2016

Waste Category	Percentage Residential Waste	Percentage Commercial Waste
Newspaper	1.6	2.0
Office Paper	5.0	7.0
Corrugated Cardboard	1.7	12.1
Magazine/Third Class Mail	9.1	9.7
Food Scraps	18.4	17.3
Grass	3.35	5.4
Leaves	3.35	5.4
Branches	8.6	2.4
Dimensional Lumber	9.0	6.8
Total	**100.00**	**100.00**

Source: CalRecycle, 2019.

Waste Management and Valley Vista Services also provided the amount of organic commercial and residential solid waste disposed of in landfills. 7,700 tons of commercial waste and 14,166 tons of residential waste were generated and disposed of within Diamond Bar. These data were multiplied by the State-mandated solid waste diversion rate and emissions factors used in the EPA's Waste Reduction Model (WARM). Between 2007 and 2017, Diamond Bar consistently met its State-assigned per resident disposal rate (PPD) target of 4.6 and per employee disposal rate target of 17.3 every year for diversion of solid waste; therefore, continued achievement was assumed.

Water

Emissions from supplying water were calculated using the 2016 electricity consumption input provided by Walnut Valley Water District (WVWD) for potable and reclaimed water: 4,048,749 kWh and 186,291 kWh, respectively.

Wastewater Treatment

Emissions from electricity used during wastewater treatment in 2016 were calculated using total influent provided by the San Jose Creek East Water Reclamation Plant. Total wastewater volume was calculated by multiplying total influent by Diamond Bar's existing population and 365 days, then converted to kWh electricity using the default wastewater treatment intensity factor, resulting in a total of 1,740,036 kWh electricity. Emissions from electricity consumption were calculated using SCE's 2016 GHG per unit electricity factor. Nitrous oxide emissions from wastewater effluent and methane emissions from wastewater treatment and septic tank use were calculated using assumptions in the ICLEI Protocol.

Off-Road Equipment

Off-road emissions in Diamond Bar include lawn and garden equipment, construction equipment, and industrial equipment, in addition to other categories for which CARB's OFFROAD2007 model generates emission outputs. The model generates emissions for a total of 16 categories across Los Angeles County. The CO_2, CH_4, and N_2O emissions were calculated in short tons per day for the portion of the county that lies in SCAB. The emissions were found for calendar year 2016; Monday through Sunday; annual emissions (no season was chosen); and all equipment, fuels, and horsepowers. These emissions were then pro-rated by Diamond Bar's share of the county population within SCAB, multiplied by 365 days, and converted to metric tons.

Public Lighting

This sector covers electricity consumed from streetlights in Diamond Bar, making up 3,231,978 kWh of electricity in 2016.

Total Emissions

The total GHG emissions were 348,790 $MTCO_2e$ per year in 2016. Table 2-3 summarizes the sources and quantities of emissions, and Figure 2-1 shows the emissions graphically by sector. The largest sector is transportation, at 70 percent, followed by residential (18 percent) and commercial (nine percent).

Figure 2-1: 2016 GHG Emissions by Sector

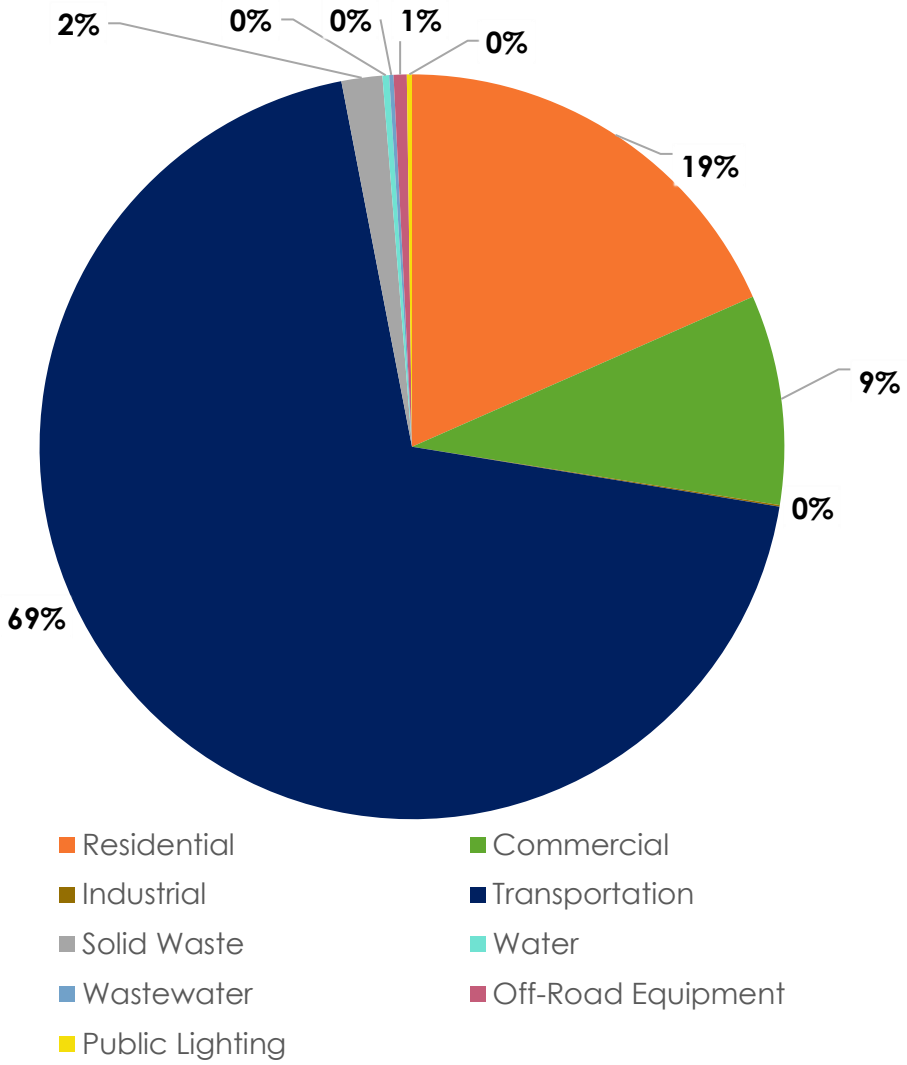


TABLE 2-3: 2016 GHG EMISSIONS ($MTCO_2E$ PER YEAR)		
Sector	**Subsector**	**Emissions**
Residential	Electricity	31,659
	Natural Gas	32,517
	Total Residential	**64,175**
Commercial	Electricity	21,466
	Natural Gas	10,289
	Total Commercial	**31,755**
Industrial	Electricity	233
	Natural Gas	12
	Total Industrial	**245**
Transportation	Gasoline	201,505
	Diesel	40,502
	Total Transportation	**242,007**
Solid Waste	Residential	3,577
	Commercial	2,603
	Total Solid Waste	**6,180**
Water	**Total Water**	**1,016**
Wastewater	**Total Wastewater**	**650**
Off-Road Equipment	**Total Off-Road**	**1,985**
Public Lighting	**Total Public Lighting**	**776**
GRAND TOTAL		**348,790**

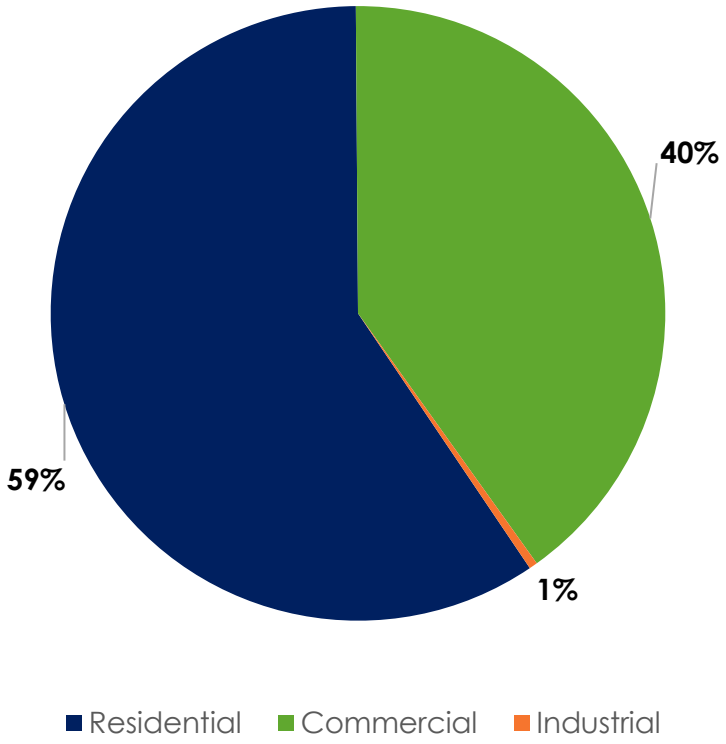
RCI Emissions by Source

Electricity

RCI electricity emissions account for 15 percent of the total emissions. Table 2-4 and Figure 2-2 show electricity use emissions by sector—the residential sector accounts for 57 percent of all electricity emissions in Diamond Bar, followed by the commercial sector, which accounts for 38 percent.

TABLE 2-4: ELECTRICITY EMISSIONS BY SECTOR ($MTCO_2E$ PER YEAR)	
Sector	**2016 Emissions**
Residential	31,659
Commercial	21,466
Industrial	233

Figure 2-2: Electricity Emissions by Sector



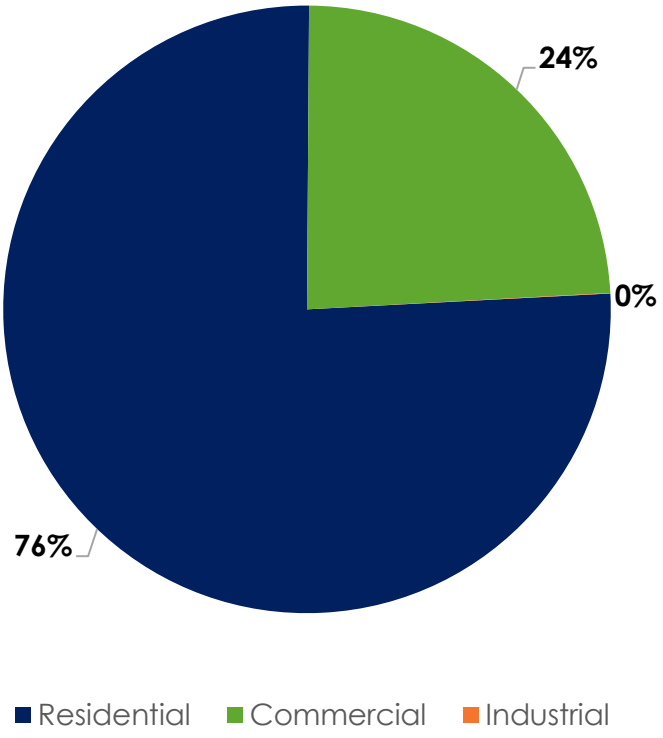
Natural Gas

Natural gas use accounts for nine percent of total emissions in Diamond Bar. The residential sector accounts for 76 percent of natural gas use, while the commercial sector accounts for 24 percent. Table 2-5 and Figure 2-3 show natural gas use emissions by sector.

TABLE 2-5: NATURAL GAS EMISSIONS BY SECTOR ($MTCO_2E$ PER YEAR)

Sector	2016 Emissions
Residential	32,517
Commercial	10,289
Industrial	12

Figure 2-3: Natural Gas Emissions by Sector



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3

Greenhouse Gas Reduction Targets and Forecasts

This chapter describes the greenhouse gas (GHG) reduction targets provided by State law, provides a baseline forecast of GHG emissions, and models forecasts of future GHG emissions through 2040. The chapter also quantifies GHG reductions from (1) State actions and (2) the updated General Plan policies and actions, and applies these reductions to the emissions forecast.

3.1 GHG Reduction Target

Governor's Executive Orders S-3-05 and S-3-15

As discussed in Section 1.4 of the Introduction, in 2015 Executive Order S-3-15 established a target to reduce GHG emissions to 40 percent below 1990 levels by 2030, in addition to the target set by Executive Order S-3-05 of 80 percent below 1990 levels by 2050.

The horizon year for analysis in this CAP is 2040, corresponding with the General Plan horizon. The CAP uses a linear trajectory in emissions reductions between 2030 and 2050 to determine a 2040 target in line with EO S-3-05 and EO S-3-15: reduce GHG emissions to 60 percent below 1990 levels by 2040.

As 1990 emissions are not readily available on a local level, the City completed a "back-cast" to model GHG emissions in Diamond Bar in the year 1990. The 1990 emissions inventory was developed using the same methodology as described in Chapter 2 of the CAP and utilized data collected between 1990 and 1993 found in the 1995 Diamond Bar General Plan Environmental Impact Report. The total GHG emissions are estimated at 1,152,206 $MTCO_2e$ per year in 1990. Table 3-1 summarizes the sources and quantities of emissions. The significant decrease in emissions from 1990 to 2016 can be partially attributed to a reduction in VMT, improvements in fuel economy, and other regulations related to energy efficiency as discussed in Chapter 1.

TABLE 3-1: 1990 GHG EMISSIONS ($MTCO_2E$ PER YEAR)		
Sector	**Subsector**	**Emissions**
Residential	Electricity	54,783
	Natural Gas	66,197
	Total Residential	**120,980**
Non-Residential	Electricity	36,522
	Natural Gas	11,611
	Total Commercial	**48,133**
Transportation	Gasoline	775,149
	Diesel	156,465
	Total Transportation	**931,614**
Solid Waste	Residential	23,335
	Commercial	11,389
	Total Solid Waste	**34,724**
Water	**Total Water**	**2,472**
Wastewater	**Total Wastewater**	**2,632**
Off-Road Equipment	**Total Off-Road**	**10,015**
Public Lighting	**Total Public Lighting**	**1,635**
GRAND TOTAL		**1,152,206**

Compliance with the targets established in EO S-3-05 and EO S-3-15 would limit GHG emissions in the City of Diamond Bar to no more than 691,232 $MTCO_2e$ in 2030, 460,882 $MTCO_2e$ in 2040, and 230,441 $MTCO_2e$ in 2050.

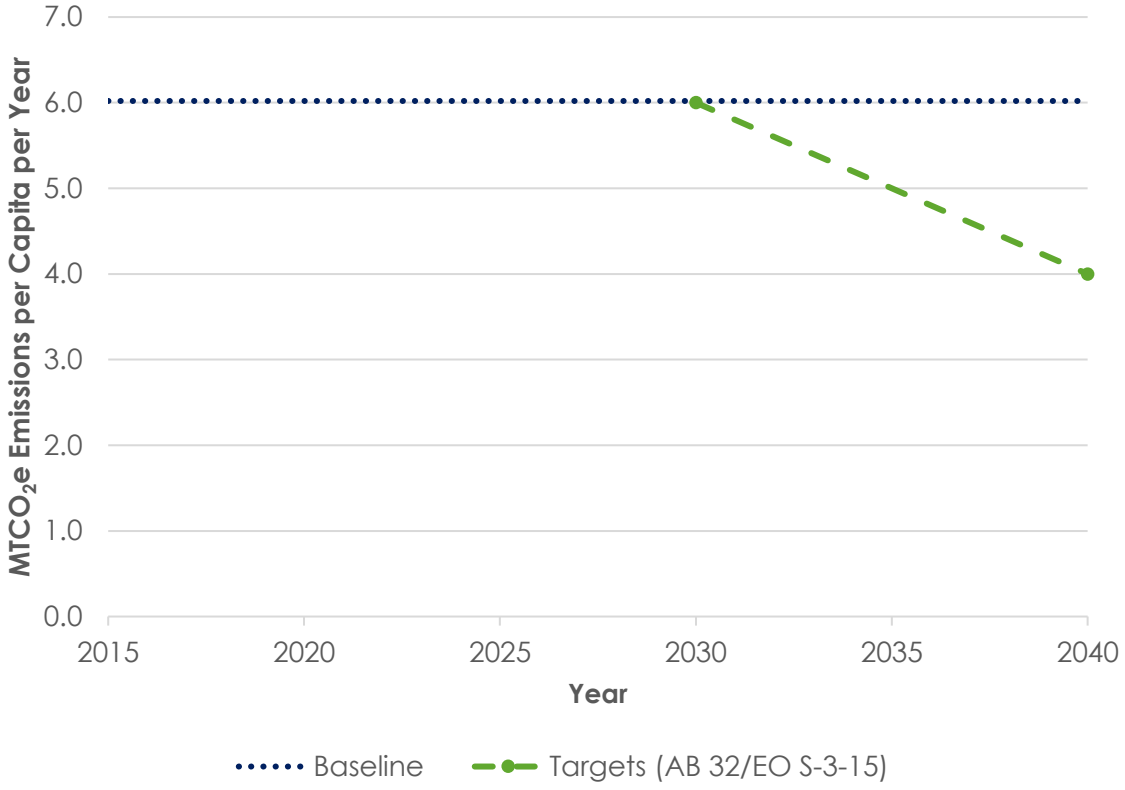
2017 CARB Scoping Plan

As discussed in Section 1.4, to reflect targets established in EO S-3-05 and EO S-3-15, the California Air Resources Board (CARB) recommends that local governments reduce their GHG emissions to 6 metric tons carbon dioxide equivalent ($MTCO_2e$) per capita per year in 2030 and 2 $MTCO_2e$ per capita per year in 2050. The CAP uses a linear trajectory in emissions reductions between 2030 and 2050 to determine the 2040 target: 6 $MTCO_2e$ per capita per year.

Table 3-2 summarizes these emissions targets in per capita and in $MTCO_2e$ (for comparison purposes) and the 2016 emissions. Figure 3-1 graphs the 2016 inventory emissions in MTCO2e per capita along with the emissions targets, following a linear trajectory, from 2030 to 2040. As can be seen, the 2016 emissions exceed the 2040 target but not the 2030 target. Additionally, the CARB emissions targets establish lower thresholds in $MTCO_2e$ than EO S-3-05 and EO S-3-15, and are therefore used in this CAP to provide a conservative analysis of potential impacts on GHG emissions and climate change in 2030 and 2040.

TABLE 3-2: 2016 EMISSIONS AND EMISSIONS TARGETS		
Year	**GHG Emissions and Targets ($MTCO_2e$ per year)**	**GHG Emissions and Targets ($MTCO_2e$ per capita per year)**
2016	348,790	6.0
2030	377,112	6.0
2040	266,740	4.0

Figure 3-1: Comparison of 2016 Emissions to GHG Reduction Targets



3.2 Business as Usual Forecast with General Plan Land Use and Circulation System

Methodology

The business as usual (BAU) forecast estimates emissions through the year 2040. The BAU forecast assumes the General Plan land use and circulation system, but does not include the effects of the following State actions discussed in Section 1.5 of this CAP's Introduction: the Renewable Portfolio Standard (RPS) and the 2019 Title 24 Building Energy Efficiency Standards. As AB 341 was adopted prior to 2016, the forecast accounts for the goal of 75 percent diversion of solid waste by 2020. The Pavley regulations and the Advanced Clean Cars program discussed in Section 1.5 of the Introduction are already accounted for in the transportation emission factors output by the EMFAC2014 model, so these are automatically included in the BAU forecast. Conversely, the Low Carbon Fuel Standard (LCFS) is not included in the EMFAC2014 model because LCFS GHG reductions come from upstream emissions, rather than tailpipe emissions, as discussed in the EMFAC2014 Technical Documentation. Since upstream emissions from transportation fuels are not considered in this CAP, LCFS will not be included in Section 3.3, which quantifies state actions that reduce GHG emissions and incorporates these actions into the forecast.

The forecast predicts all direct GHG emissions[11] from sources within the boundaries of Diamond Bar, including fuel combusted in the City. Indirect emissions associated with the consumption of energy that is generated outside the borders of the City are also included. Other indirect or embodied emissions are not covered in the forecast, in accordance with International Council for Local Environmental Initiatives standards. The forecast tallies emissions from nine sectors:

- Residential;
- Commercial;
- Industrial;
- Transportation;
- Solid Waste;
- Water;
- Wastewater;
- Off-Road Equipment; and

[11] GHGs considered in the report are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). The emissions have been converted to carbon dioxide equivalent (CO_2e), which converts the three other GHGs into the equivalent mass of carbon dioxide.

- Public Lighting.

The emissions projected in the forecast use the activity data (or usage) from the 2016 emissions inventory as an initial value. The predicted growth in each sector is projected to scale with various Diamond Bar characteristics, such as population growth and increase in commercial building square footage. The following section describes how the predicted growth in each section was determined.

Inputs

Residential

Emissions from the residential sector are from electricity and natural gas demand. The growth in residential electricity and natural gas consumption was assumed to scale with housing unit growth, estimated at 0.76 percent per year through 2040, based on General Plan buildout estimates.

Commercial

The increase in commercial demand for electricity and natural gas was assumed to scale with the commercial building square footage growth, estimated at 1.42 percent per year through 2040.

Industrial

The decrease in industrial demand for electricity and natural gas was assumed to scale with the industrial building square footage reduction, estimated at 0.89 percent per year through 2040.

Transportation—With General Plan Land Use and Circulation System

Transportation emissions are based on the emissions associated with VMT. The SCAG model consistent with the 2016 SCAG RTP/SCS growth projections was used to estimate the VMT generated by land uses in the Planning Area. To assess the VMT generated in Diamond Bar, the production and attraction (PA) method was used which records all home-based production and home-based-work production and attraction vehicular trips generated by land uses in the Planning Area across the entire regional network.

The VMT forecasts incorporate GHG reductions from General Plan land use projections and new roadway construction through 2040. These VMT forecasts reflect the General Plan land use patterns. The land use projections and new roadway construction are described in detail in the General Plan.

Table 3-3 shows the Diamond Bar VMT for 2016 and projected VMT forecast, used to estimate transportation emissions. EMFAC2014 was used to find CO_2 emission factors for calendar years 2030 and 2040. The United States Environmental Protection Agency's Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014 was used to find national CH_4 and N_2O emission factors. Emissions were calculated by multiplying emission factors by VMT.

TABLE 3-3: 2016 VMT AND PROJECTED 2030 AND 2040 VMT	
Year	Vehicle Miles Traveled Per Year
2016	511,342,670
2030	556,317,340
2040	588,441,559

Solid Waste

Waste emissions from solid waste generated in Diamond Bar and disposed of in landfills, was assumed to scale with population growth at 0.59 percent per year through 2040.

Water

The increased demand for electricity usage for supplying reclaimed and potable water was assumed to be proportional to the water demand projections for the City of Diamond Bar according to the 2015 Walnut Valley Water District Urban Water Management Plan (UWMP). The UWMP includes the effect of conservation policies. Table 3-4 shows reclaimed and potable water demand used in the forecast, in addition to the 2016 water demand from the General Plan.

Wastewater

The UWMP was used to determine the growth in emissions from wastewater treatment. The demand for wastewater treatment was assumed to scale with total projected water demand listed in the UWMP. Table 3-4 shows water demand used in the forecast, in addition to the 2016 water demand.

TABLE 3-4: 2016 WATER DEMAND AND UWMP PROJECTED 2030 AND 2040 WATER DEMAND			
Year	Potable Water Delivery (acre-feet per year)	Reclaimed Water Delivery (acre-feet per year)	Total Water Delivery (acre-feet per year)
2016	9,282	516	9,799
2030	11,455	2,131	13,585
2040	12,153	2,937	15,090

Source: Walnut Valley Water District, 2016.

Off-Road Equipment

CARB's OFFROAD2007 model was used to generate emission outputs for calendar years 2030 and 2040.

Public Lighting

Electricity use for public lighting was assumed to scale with population growth at 0.59 percent per year through 2040.

Results

Table 3-5 shows the BAU emissions from the forecast for each sector—residential, commercial, industrial, transportation, solid waste, water, wastewater, off-road equipment, and public lighting—and the total emissions. The forecast includes the effect of the General Plan land use and circulation system on transportation emissions but not the transportation-related policies discussed in Section 3.4 below. Section 3.4 quantifies the emissions reductions due to these policies. The Environmental Impact Report for the General Plan and CAP quantifies the reduction in VMT due to the General Plan in comparison to lower VMT under the 1995 General Plan (the No Project Alternative). The BAU forecast does not include the reduction from RPS, 2016 Title 24, or 75 percent solid waste diversion goals, which are quantified separately in Section 3.3 below.

The greatest projected emissions continue to be from the transportation sector, which accounts for 60 percent of emissions in 2030 and 57 percent of emissions in 2040. Residential emissions are the next largest sector, with 23 percent of emissions in 2030 and 24 percent of the total in 2040.

TABLE 3-5: 2016 EMISSIONS AND BAU FORECAST EMISSIONS BY SECTOR, 2030 AND 2040 ($MTCO_2E$ PER YEAR)

Sector	2016	2030	2040
Residential	64,175	71,324	76,913
Commercial	31,755	38,696	44,564
Industrial	245	216	198
Transportation	242,007	185,253	181,651
Solid Waste	6,180	6,714	7,124
Water	1,016	1,383	1,526
Wastewater	650	885	980
Off-Road Equipment	1,985	2,441	2,811
Public Lighting	776	843	894
TOTAL	348,790	307,756	316,661
PER CAPITA	*6.0*	*4.9*	*4.7*

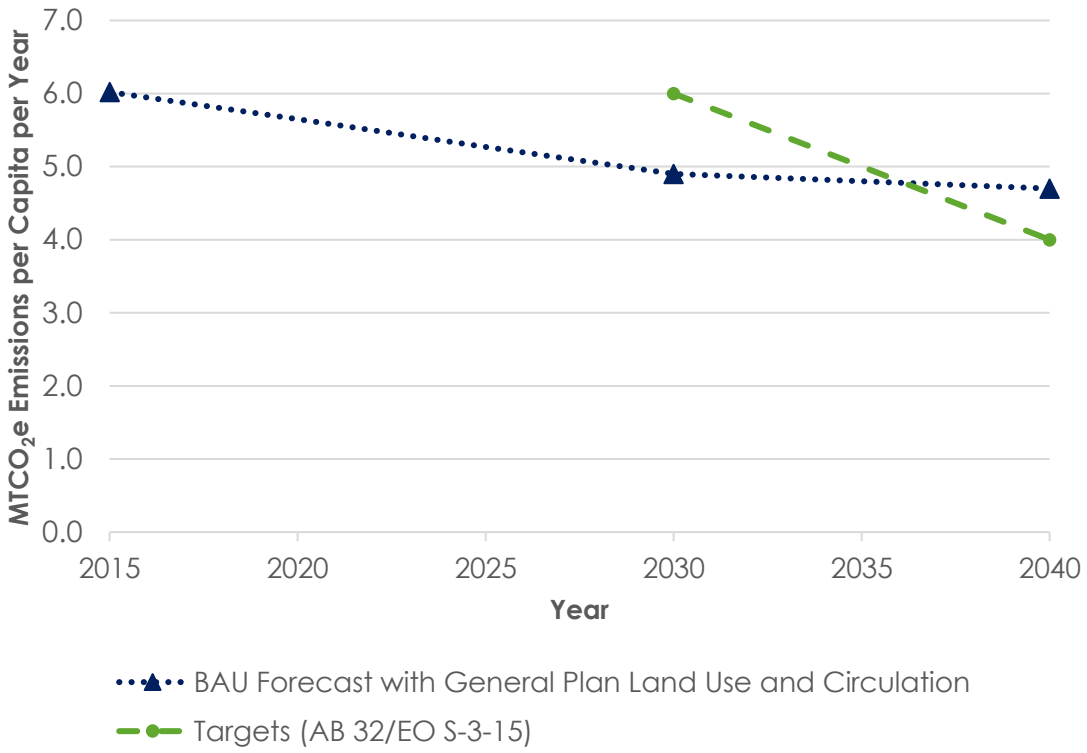
Figure 3-2 shows the change in modeled forecast emissions over time. Total emissions in the BAU scenario are projected to decrease from 348,790 $MTCO_2e$ per year in 2016 to 316,661 $MTCO_2e$ per year in 2040 (a decrease of nine percent).

In 2030, the total emissions would be 307,756 $MTCO_2e$ per year, and using the General Plan-projected population growth rate (which gives a population of 62,852 in 2030), would result in 4.9 $MTCO_2e$ per capita per year. These 2030 BAU emissions are 1.1 $MTCO_2e$ per capita per year below the State target of 6.0 $MTCO_2e$ for that year. In 2040, the total emissions of 316,661 $MTCO_2e$ per year or,

using the General Plan-projected population growth rate (which gives a population of 66,685 in 2040), 4.7 $MTCO_2e$ per capita per year. This would be 0.7 $MTCO_2e$ per capita per year above the State (interpolated) target of 4.0 $MTCO_2e$ for that year.

The following section quantifies GHG reductions from ongoing State actions and applies them to the BAU emissions forecast.

Figure 3-2: Forecast with General Plan Land Use and Circulation System



3.3 GHG Reductions to Forecast from State Actions

Methodology

GHG reductions from state actions and other trends to the forecast are quantified in this section. These reductions include the following:

- Renewable Portfolio Standard;
- Title 24 building efficiency improvements; and

Renewable Portfolio Standard (RPS)

California's RPS, discussed in Section 1.5 of this CAP's Introduction, is one of the most ambitious renewable energy standards in the country. Following the adoption of SB 100, the RPS requires that investor-owned utilities like Southern California Edison (SCE) supply 50 percent of their electricity from renewable resources by 2026 and 60 percent of their electricity from renewable sources by 2030. Table 3-5 lists the reductions from the RPS in 2030 and 2040. These reductions were calculated based on SCE's 2016 energy portfolio from Edison International's 2016 Corporate Responsibility Report: 28.3 percent of the energy delivered to SCE's customers was from renewable sources. To find the GHG emissions from electricity use accounting for RPS, the emission factor for electricity generated by SCE, discussed in Section 2.2 of this CAP, was adjusted for an energy portfolio of 60 percent renewable energy sources in 2030 and 2040: 0.13 $MTCO_2e$ per megawatt-hour.

TABLE 3-5: RPS GHG REDUCTIONS

Year	$MTCO_2e$ Reductions per Year
2030	29,786
2040	33,010

Title 24 Building Efficiency Improvements

Title 24, discussed in Section 1.5 of this CAP's Introduction, is California's Building Energy Code. The most recent Title 24 update ("2019 Update") will become effective on January 1, 2020. The Title 24 building efficiency improvements' effects on emissions through the 2013 update were automatically incorporated into the 2016 inventory since this code update was already in effect by 2016.

To determine the 2019 Update's effect on emissions from new buildings constructed between 2020 and 2040 for the GHG forecast, an impact analysis conducted by the California Energy Commission was used to find the electricity and natural gas usage differences between buildings constructed under the 2013 standards and those constructed according to the 2019 standards. Table 3-6 lists the GHG reductions from building efficiency improvements in new construction in 2030 and 2040.

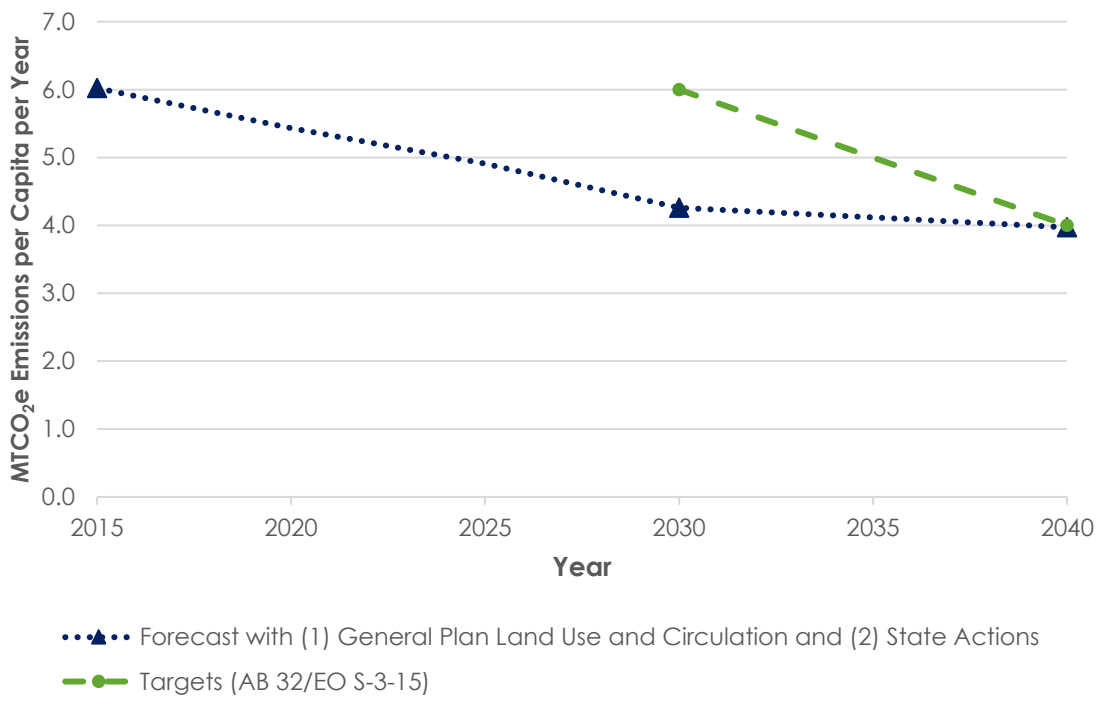
TABLE 3-6: TITLE 24 BUILDING EFFICIENCY IMPROVEMENTS GHG REDUCTIONS	
Year	**$MTCO_2e$ Reductions per Year**
2030	9,997
2040	19,080

RESULTS

The annual reductions from the above State actions—RPS and Title 24 building efficiency improvements—were combined. Table 3-7 lists the total forecast in 2030 and 2040, juxtaposed with reductions from State actions. Figure 3-3 shows the forecast with General Plan land use and circulation system, as well as State actions.

TABLE 3-7: FORECAST WITH STATE ACTIONS					
Year	**BAU Forecast Emissions with General Plan Land Use and Circulation System ($MTCO_2e$ per year)**	**Renewable Portfolio Standard ($MTCO_2e$ per year)**	**Title 24 Building Efficiency Improvements ($MTCO_2e$ per year)**	**Total Forecast Emissions with General Plan Land Use and Circulation System & State Actions ($MTCO_2e$ per year)**	**Total Forecast Emissions with General Plan Land Use and Circulation System & State Actions ($MTCO_2e$ per capita per year)**
2030	307,756	29,786	9,997	267,973	4.26
2040	316,661	33,010	19,080	264,571	3.97

Figure 3-3: Forecast with (1) General Plan Land Use and Circulation System and (2) State Actions



3.4 Modified Forecast: GHG Reductions from Additional General Plan Policies and Actions

Methodology

This section describes General Plan policies and actions that reduce GHG emissions, quantifies emissions reductions, and explains how these policies and actions will be implemented. These reductions are from policies and actions in addition to State regulations and the General Plan land use and circulation system, which incorporate reductions from "No Project" conditions that are already reflected in the modeling discussed previously. The General Plan policies and actions are organized according to the following categories:

- Pedestrian Improvements and Increased Connectivity;
- Bikeway System Improvements;
- Traffic Calming;
- Electric Vehicle Infrastructure;
- Parking Facilities and Policies; and
- Transportation Improvements.

The California Air Pollution Control Officers Association's (CAPCOA's) Quantifying Greenhouse Gas Mitigation Measures report was developed as a resource for local governments to assess emissions reductions from GHG mitigation measures. This section uses the methodology outlined in the CAPCOA report for each category to quantify emissions reductions from the General Plan policies and actions.[12] The reductions are applied to the emissions forecast in the following section to get the "modified forecast."

Pedestrian Improvements and Increased Connectivity

Pedestrian Improvements and Increased Connectivity	***General Plan Goals and Policies:*** *LU-G-2, LU-G-14, LU-G-22, LU-G-23, LU-P-9, LU-P-13, LU-P-14, LU-P-17, LU-P-24, LU-P-26, LU-P-30, LU-P-31, LU-P-36, LU-P-37, LU-P-40, LU-P-41, LU-P-45, LU-P-46, LU-P-47, LU-P-48, LU-P-49, LU-P-50, LU-P-51, ED-P-9, CC-G-1, CC-G-2, CC-G-3, CC-G-4, CC-G-5, CC-G-12, CC-G-13, CC-G-17, CC-P-4, CC-P-7, CC-P-9, CC-P-15, CC-P-18, CC-P-19, CC-P-20, CC-P-21, CC-P-29, C-P-31, CC-P-38, CC-P-39, CC-P-42, CC-P-44, CC-P-45, CC-P-50, CC-P-51, CC-P-54, CC-P-56, CC-P-57, CC-P-58, CC-P-62, CC-P-63, CC-P-64, CR-G-3, CR-G-11, CR-G-12, CR-P-1, CR-P-2, CR-P-3, CR-P-4, CR-P-9, CR-P-14, CR-P-30, CR-P-32, CR-P-33, CR-P-35, CR-P-36, CR-P-39, CR-P-40, CR-P-41, CR-P-44, CR-P-45, CR-P-49, CHS-G-2, CHS-P-2, CHS-P-4, CHS-P-40*	**2030 Reduction:** 1,853 $MTCO_2e$ per Year **2040 Reduction:** 1,817 $MTCO_2e$ per Year

Policy/Action Description

Pedestrian Improvements

Diamond Bar's pedestrian network consists of sidewalks and street crossings as well as off-road paths and trails. While most streets in Diamond Bar have sidewalks, the suburban layout with winding roads and high-speed arterials with narrow sidewalks and spread out crossings can present a difficult pedestrian environment. The General Plan includes policies that create more walkable, livable neighborhoods by expanding the multi-modal transportation system and creating a safe, pedestrian-oriented environment.

[12] While many of the policies and actions quantified in the report are project-level in nature, much of the supporting literature is from studies on a citywide, countywide, or regional context. The methodology in this section is based on these regional studies, which is therefore applicable to the General Plan policies and actions listed in this section.

Increased Connectivity

The General Plan provides strategies for maximizing multi-modal accessibility to and connectivity within mixed use areas, including the Metrolink Station and new Town Center. These are intended as a foundation for realizing the goal of a connected, accessible, and active community by creating pedestrian- and transit-oriented mixed use areas that reflect each area's existing assets and establish unique identities. Components of the strategy serve to improve connectivity between the proposed mixed use areas and the City's existing neighborhoods; provide new jobs, housing, and entertainment opportunities in compact, walkable environments; support multiple modes of transit, car travel, walking and bicycling; and increase accessibility to and from surrounding cities. The General Plan also includes a number of other improvements to enhance connectivity for bicycles, pedestrians, and transit in Diamond Bar.

Quantification

Providing an improved pedestrian network and increasing connectivity encourages people to walk more and results in people driving less, causing a reduction in VMT. An estimate of a 1 percent reduction in VMT from pedestrian improvements and connectivity was assumed[13], which corresponds to a reduction of 1,853 $MTCO_2e$ per year in 2030 and 1,817 $MTCO_2e$ per year in 2040.

Implementation

Pedestrian improvements and increased connectivity will occur through implementation of the General Plan.

Bikeway System Improvements

Bikeway System Improvements	***General Plan Goal and Policies:*** *LU-P-14, LU-P-26, LU-P-31, LU-P-49, ED-P-9, CC-G-5, CC-P-7, CC-P-20, CC-P-56, CR-G-2, CR-G-3, CR-G-11, CR-P-3, CR-P-30, CR-P-31, CR-P-32, CR-P-33, CR-P-34, CR-P-35, CR-P-36, CR-P-39, CR-P-40, CR-P-41, CR-P-43, CR-P-44, CR-P-49, CR-P-67*	**2030 Reduction:** 111 $MTCO_2e$ per year **2040 Reduction:** 109 $MTCO_2e$ per year

Policy/Action Description

The City of Diamond Bar has made an effort to expand the ease of alternative transportation options for residents, recognizing both health and environmental benefits. This includes the introduction of bicycle facilities along roads such as Brea Canyon Road. However, existing bicycle facilities are limited and often disconnected. For example, bicycle lanes on Grand Avenue in neighboring Chino Hills to the east terminate at the City limits despite having sufficient right-of-way to

[13] Center for Clean Air Policy. Transportation Emission Guidebook.

continue. Bicycle lanes on Golden Springs Drive are discontinuous, with gaps on a number of segments through the City. Local neighborhood streets feeding onto roads such as Diamond Bar Boulevard and Grand Avenue could benefit from designated bicycle routes. Finally, the standard of bicycle infrastructure in California has changed, skewing towards the provision of protected infrastructure where cyclists face higher vehicle volumes and speeds.

The General Plan recommends the enhancement of the existing bicycle network with the implementation of 1.76 miles of new Class I and II, 22.95 miles of new Class III bike paths, and 22.95 miles of new Class IV bike paths. In total, the recommended enhancements will create a total of 45.58 miles of new bike paths, to result in a total of 48.3 miles of bike paths.

Quantification

An estimated 0.05 percent reduction in transportation GHG emissions is assumed to occur where there are 2 miles of bike lane per square mile and 0.09 percent reduction where there are 4 miles of bike lanes per square mile. The minimum density threshold given for these assumptions is 2,000 people per square mile.[14] With the total bicycle improvements, there would be approximately 2.4 miles of bike lanes per square mile. Diamond Bar currently has approximately 2,840 people per square mile. This corresponds to a 0.06 percent reduction in VMT emissions, or 111 $MTCO_2e$ per year in 2030 and 109 $MTCO_2e$ per year[15] in 2040.

Implementation

The bikeway system enhancements will occur through the implementation of the Diamond Bar Bicycle Master Plan and the General Plan.

Traffic Calming

Traffic Calming	*General Plan Policies:* *LU-P-26, CR-G-5, CR-P-4, CR-P-21, CR-P-22, CR-P-23, CR-P-39, CR-P-44*	**2030 Reduction: 463 $MTCO_2e$ per year** **2040 Reduction: 454 $MTCO_2e$ per year**

Policy/Action Description

The General Plan includes policies for "calming" traffic to make streets safer and more comfortable for pedestrian travel. Traffic calming devices include roundabouts, corner bulb-outs, speed cushions, surface textures, raised pavement, road narrowing, and other devices that encourage people to drive

[14] Cambridge Systematics. Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.

[15] In this chapter, reductions based on a portion of VMT have lower reductions in 2040 than in 2030 because they are assumed to decrease with greater vehicle efficiency standards over time.

more slowly or to walk or bike instead of using a vehicle, especially for short trips in and around residential neighborhoods.

Quantification

CAPCOA's *Quantifying Greenhouse Mitigation Measures* was used to quantify the effect of traffic calming devices. A 0.25 percent reduction in VMT was assumed to occur from these improvements, which corresponds to a reduction of 463 $MTCO_2e$ per year in 2030 and 454 $MTCO_2e$ per year in 2040.

Implementation

The traffic calming improvements will occur through the implementation of the General Plan.

Electric Vehicle Infrastructure

Electric Vehicle Infrastructure	*General Plan Policies:* *CR-P-56, RC-P-37, CHS-P-41, CHS-P-42*	**2030 Reduction: 926 $MTCO_2e$ per year** **2040 Reduction: 908 $MTCO_2e$ per year**

Policy/Action Description

Installation of electric vehicle infrastructure will encourage Diamond Bar residents, businesses, and the City vehicle fleet to switch to clean fuel and electric vehicles in order to reduce energy use and cost and transportation related GHG emissions. The General Plan recommends that the City of Diamond Bar establish requirements to provide dedicated parking and charging stations for electric vehicles and support the use of clean fuel and "climate friendly" vehicles by residents, businesses, and City government activities. The General Plan recommends Diamond Bar to seek funding opportunities for the installation of electric vehicle charging stations throughout the City and to convert the City fleet to zero emissions vehicles over time.

Quantification

CAPCOA's *Quantifying Greenhouse Mitigation Measures* was used to quantify the effect of electric vehicle infrastructure and converting the City fleet to zero emissions over time. A 0.5 percent reduction in VMT was assumed to occur from these improvements, which corresponds to a reduction of 926 $MTCO_2e$ per year in 2030 and 908 $MTCO_2e$ per year in 2040.

Implementation

The electric vehicle infrastructure improvements will occur through the implementation of the General Plan and may require the City of Diamond Bar to apply for grants and funding opportunities.

Parking Policies

Parking Policies	*General Plan Policies:* *LU-P-15, LU-P-33, LU-P-43, CC-P-26, CC-P-49, CR-G-14, CR-P-24, CR-P-53, CR-P-54, CR-P-56, CR-P-57*	**2030 Reduction: 9,263 $MTCO_2e$ per year** **2045 Reduction: 9,083 $MTCO_2e$ per year**

Policy/Action Description

Parking policies reflect both the necessity of providing for adequate and appropriately located vehicle and bicycle parking in existing and new development, and priorities related to safety, urban design, and transportation demand management. Inadequate parking is inconvenient and frustrating for businesses and residents. Too much parking underutilizes valuable land, results in lower density development, discourages use of other forms of transportation (such as public transit), spreads out land uses, and creates gaps in store fronts; thereby practically requiring the use of the automobile. Overly high parking requirements—particularly in downtown areas or urban cores—can impact the ability to renovate or repurpose older buildings and revitalize activity centers that can be better served and connected by enhancing facilities and amenities for bicyclists and pedestrians. More flexible parking standards for projects that provide VMT reduction and TDM measures such as shared parking lots, subsidized transit passes, or carshare help to reduce, development costs, remove pedestrian barriers, and create a more pedestrian-friendly and attractive built environment. Parking requirements are implemented primarily through Diamond Bar's zoning regulations (Title 22 of the Diamond Bar Municipal Code, or "Development Code").

To promote "right sizing" of parking facilities, the General Plan calls for the amendment of parking regulations in the Municipal Code to require lower parking minimums for developments with a mix of uses with different peak parking needs, as well as developments that implement enforceable residential parking demand reduction measures, such as parking permit and car share programs. The General Plan also recommends updating parking regulations to ensure that they are reflective of the community's needs and incorporating criteria to allow reductions in parking requirements in exchange for VMT reduction measures. The General Plan recommends implementing an overall parking strategy for the Transit-Oriented Mixed Use neighborhood and revised parking ratios for the new Town Center. Additional strategies recommended by the General Plan include consolidation of parking lots, preferential carpool parking, park-n-ride facilities, parking pricing, and bicycle parking. General Plan policies also encourage designing parking facilities to minimize impacts on pedestrian, bicycles, and transit.

Although there are additional parking strategies that are available and may become available in the future, most of the strategies work best in smart

growth/mixed use development areas and will be necessary to accomplish the goals and visions identified in the General Plan.

Quantification

According to CAPCOA's *Quantifying GHG Mitigation Measures*, parking strategies have estimated VMT reductions. Reduced parking standards and other policies reducing parking availability have an estimated 5 to 12.5 percent VMT reduction. Conservatively assuming the effect of General Plan parking reduction strategies would result in the lower end of VMT reduction, the cumulative reduction from implementations would result in a 5 percent VMT reduction to give an estimated 9,263 $MTCO_2e$ per year reduction in 2030, and a 9,083 $MTCO_2e$ per year reduction in 2040.

Implementation

The parking strategies will occur through the implementation of the Development Code and the General Plan.

Transportation Improvements

Transportation Improvements	*General Plan Policies:* *LU-G-4, LU-G-9, LU-G-19, LU-P-26, LU-P-31, LU-P-49, ED-G-5, ED-P-9, CC-P-52, CR-G-13, PR-P-46, CR-P-47, CR-P-48, CR-P-49, CR-P-50, CR-P-51, CR-P-52*	**2030 Reduction: 1,149 $MTCO_2e$ per year** **2040 Reduction: 1,126 $MTCO_2e$ per year**

Policy/Action Description

Transit service can provide an alternative to automobile travel and is a critical mode of transportation for those who cannot drive (such as the elderly, youth, or disabled) or do not have access to a vehicle. Limited fixed-route service is provided within Diamond Bar, primarily along major arterials, operated by Foothill Transit and supported by two Caltrans park-and-ride lots on Diamond Bar Boulevard. Paratransit service is provided to qualifying residents by Access Services, a curb-to-curb paratransit program serving Los Angeles County residents unable to use regular bus service, and by the City's Diamond Ride program, which is a subsidized cab program designed to supplement travel means for persons with disabilities and those age 60 and older residing in Diamond Bar. Diamond Bar residents are also served by the Metrolink Riverside Line along the northwestern boundary of the City. This line runs from Downtown Riverside to Union Station in Downtown Los Angeles and provides service Monday to Friday.

Given that the majority of Diamond Bar is of a suburban, low-density character, the General Plan prioritizes providing high-quality service between employment centers and mixed-use destinations along the spines of the City, supplemented with features such as park-n-rides and pedestrian and bicycle infrastructure to create multi-modal transportation nodes.

This Chapter's policies also support Metrolink ridership by improving bus, bicycle, and pedestrian connections to the station and by introducing Transit-Oriented Mixed Use development around the station. Coordination with Metrolink and Union Pacific Railroad (UPRR) to provide more frequent service to increase Metrolink's convenience and ridership amongst Diamond Bar residents would further increase transit ridership and reduce GHG emissions associated with automobile usage.

Quantification

Transportation system improvements can result in VMT reductions. According to CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures*, transit system improvements can result in the following reductions: 0.1 to 8.2 percent VMT reduction from expanding the transit network, 0.5 to 24.6 percent VMT reduction from increasing transit accessibility, and 0.02 to 2.5 percent VMT reduction from increasing transit service frequency and speed. Conservatively assuming the combined effect of these strategies, summing the low end of the VMT reduction ranges gives a 0.62 percent reduction in VMT emissions, or estimated 1,149 $MTCO_2e$ per year reduction in 2030, and a 1,126 $MTCO_2e$ reduction per year in 2040.

Implementation

Transit improvements will occur through the implementation of the General Plan and by coordination with Foothill Transit, Metrolink, and other transit providers.

Results

Table 3-8 shows the GHG reductions from each of the above General Plan policies. The largest reduction comes from parking policies, followed by pedestrian improvement and increased connectivity, transportation improvements, electric vehicle infrastructure, traffic calming, and bikeway system improvements. VMT emissions are projected to fall in the future due to higher fuel efficiency standards. Therefore, despite VMT projections' continuing to climb in the future, the effect of the VMT reductions are greater in 2030 than in 2040 for all General Plan policies considered in this section. For example, the reductions from pedestrian improvements in 2040 are 1,817 $MTCO_2e$ per year, which is less than the reduction in 2030 of 1,853 $MTCO_2e$ per year. The reductions from these policies are incorporated into the emissions forecast in the following section.

TABLE 3-8: GHG REDUCTIONS FROM ADDITIONAL GENERAL PLAN POLICIES AND ACTIONS ($MTCO_2E$ PER YEAR)

Year	Bikeway System Improvements	Pedestrian Improvements and Increased Connectivity	Traffic Calming	Electric Vehicle Infrastructure	Parking Policies	Transportation Improvements	Total GHG Reductions from Additional General Plan Policies and Actions
2030	111	1,853	463	926	9,263	1,149	**13,764**
2040	109	1,817	454	908	9,083	1,126	**13,497**

3.5 Modified Forecast

Table 3-10 shows the total emissions with the reductions from the following policies and actions:

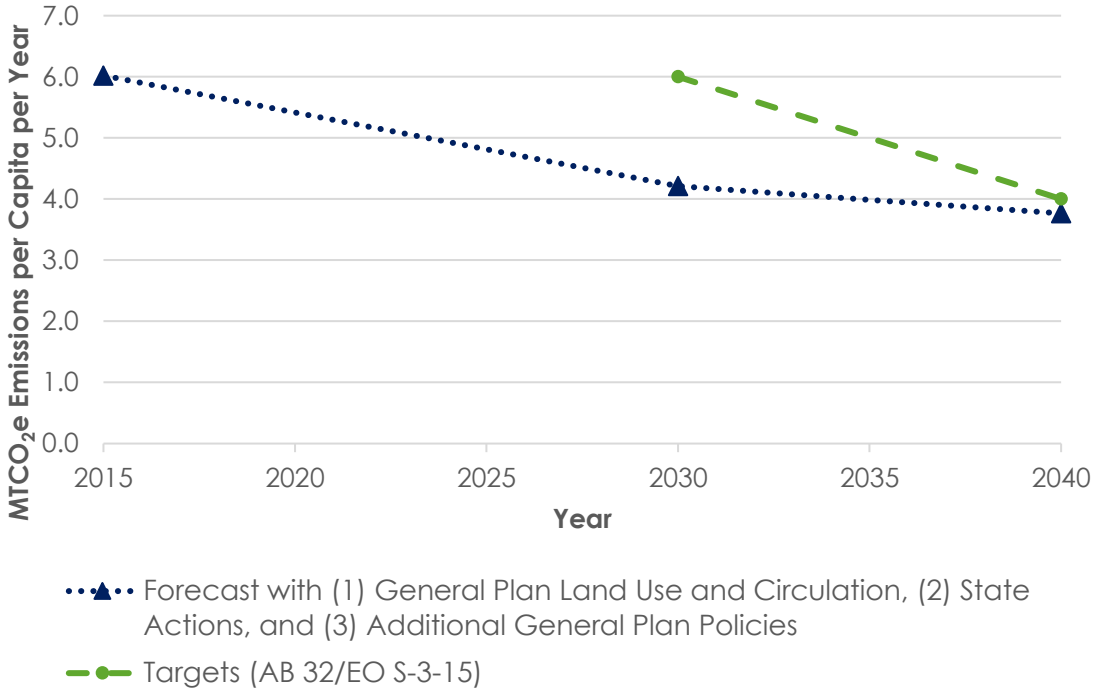
- General Plan land use and circulation system;
- State actions; and
- Additional General Plan policies.

Figure 3-4 shows the "modified forecast," which incorporates the reductions discussed thus far in comparison to the emissions targets. Emissions drop steeply to 2030 from the combined effect of GHG reduction policies and actions and continue a gradual decline to 2040. The decline becomes more gradual because no increases in federal or State standards relating to renewable energy or other GHG reduction methods are assumed, even though these may well occur by that time. With the effect of all the GHG reductions considered in this chapter, the total forecast emissions are 254,209 $MTCO_2e$ in 2030, and 251,074 $MTCO_2e$ in 2040. Table 3-9 shows that Diamond Bar will meet its targets for 2030 and 2040 without any additional measures.

TABLE 3-9: MODIFIED FORECAST (FORECAST EMISSIONS WITH GENERAL PLAN LAND USE AND CIRCULATION SYSTEM, STATE ACTIONS, AND ADDITIONAL GENERAL PLAN POLICIES) AND EMISSIONS TARGETS

Year	Total Modified Forecast ($MTCO_2e$ per year)	Total Modified Forecast ($MTCO_2e$ per capita per year)	GHG Emissions Targets ($MTCO_2e$ per capita per year)
2030	254,209	4.2	6.0
2040	251,074	3.8	4.0

Figure 3-4: Modified Forecast (Forecast Emissions with (1) General Plan Land Use and Circulation System, (2) State Actions, and (3) Additional General Plan Policies)



Conclusion

The emissions target is met in the year 2030, with forecast emissions of 4.0 $MTCO_2e$ per capita per year, well below the target of 6.0 $MTCO_2e$ per capita per year. The emissions target is met in the year 2040 as well, with forecast emissions of 3.8 $MTCO_2e$ per capita per year, which is lower than the target of 4.0 $MTCO_2e$ per capita per year. Thus, Diamond Bar synergistic land use/transportation planning and other actions in the General Plan would enable the City to meet the standards outlined in California's 2017 Scoping Plan, EO S-3-05, and EO S-3-15, and implementation of projects consistent with the General Plan would not require additional GHG analysis in accordance with CEQA.

4

Monitoring Progress and Optional Measures to Further Reduce Emissions

The forecast emissions in Chapter 3 incorporate reductions from (1) State actions, (2) General Plan land use and circulation system, and (3) additional General Plan policies. This analysis shows that projected GHG emissions in 2030 and in 2040 will be well below the standards established in California Air Resources Board's (CARB) 2017 Scoping Plan (adopted on December 14, 2017 by the CARB). Thus, additional GHG reduction actions are not needed for Diamond Bar to have and maintain a Qualified GHG Reduction Strategy.

This chapter describes steps to monitor progress, and potential additional measures that can be taken in the future should the City so desire.

4.1 Monitoring Progress

This CAP provides a framework for the City of Diamond Bar to monitor progress toward GHG emissions and continue to meet emissions targets. Climate action planning, however, is an iterative and adaptive management process: it requires administration, public outreach, monitoring progress and measuring results, periodically revisiting assumptions and adjusting provisions when necessary. Monitoring will enable the City to make timely adjustments to existing policies, replace ineffective actions, and/or add new policies as changes in technology, federal and state programs, or other circumstances warrant. Figure 4-1 shows the steps in the process of climate action planning.

Figure 4-1: Process of Climate Action Planning

(Source: CoolCalifornia, http://www.coolcalifornia.org/local-government/toolkit)

To continue the process of climate action planning, the City of Diamond Bar will follow the steps below.

Monitoring and Reporting

The City will periodically monitor and report on progress towards achieving the emissions targets, potentially every five years, unless otherwise required more frequently by State law. The monitoring report will include information on the status of the federal and State level emissions reductions measures identified in Chapter 3 of this CAP, as well as any new efforts that may emerge in the reporting year. The report will be presented to the City Council at a public meeting during which interested parties may comment on the report.

Updating the GHG Inventory and the CAP

The City will update the GHG inventory periodically. For continuity, the inventory updates will tally emissions from the same sectors analyzed in Chapter 2 of this CAP. If an updated inventory reveals that Diamond Bar is not making adequate progress toward meeting the GHG target, or that new technologies and programs emerge that warrant inclusion in the CAP, the City will adjust the CAP by modifying, adding, and/or replacing policies in the General Plan or elsewhere, or incorporating measure(s) outlined in Section 4.2.

4.2 Optional Measures to Further Reduce Emissions

The optional measures below are offered as a menu of choices should the City decide to more aggressively target GHG emissions at a future date. Measures can be undertaken independently or collectively. Measures and actions, and likely GHG emissions reductions that will result from them, are presented below.

Residential and Commercial Photovoltaic Systems

Option A: Promote Installation of Residential Photovoltaic (PV) Systems	
Goal: Promote installation of residential PV systems to increase solar capacity by 10.5 megawatts (MW) per year, or the equivalent of 15 percent of projected residential electricity supplied by Southern California Edison (SCE), by 2040.	2040 Reduction: 2,271 $MTCO_2e$ per year (approximately 0.9% of total projected GHG emissions in Diamond Bar)
Potential Actions: *A-1: Temporarily—for a period of one year—consider suspending residential and commercial PV system permit fees, together with a publicity campaign to promote PV systems installation.* (Short-term) *A-2: On a continuing basis, ensure that regulatory provisions - such as complying with regulations for zoning, structure height, permit submittal and review, etc. - do not hinder residential and commercial PV system installation.* (Short to Long-term)	

Target: The target increase in solar capacity from residential PV systems would be 10.5 MW[16] per year in 2040, which is the equivalent amount of production to replace 15 percent of projected residential electricity supplied by SCE.

GHG Reduction Option Description: PV systems convert solar energy into electricity. Producing renewable energy locally through residential, commercial, and industrial PV systems reduces the need to construct costly new power plants that produce air pollution, use natural resources, and impact the environment. The 2019 CALGreen Code requires new homes under three stories to install solar panels; Option A would enable existing residential units to install PV systems as well.

Quantification of GHG Emissions Reductions: 15 percent of the 2040 forecast emissions from residential electricity usage, after applying State regulations discussed in Chapter 3.3 of this CAP, was calculated to quantify emissions reductions for Option A.

Responsibility and Implementation: The City of Diamond Bar currently participates in the Los Angeles County Property Assessed Clean Energy (PACE) program and California HERO (Residential and Commercial). PACE programs provide financing

[16] According to the California Air Pollution Control Officers Association's (CAPCOA's) Quantifying Greenhouse Gas Mitigation Measures report, the average generation per kW installed solar capacity in the South Coast Air Quality Management District (SCAQMD), the air district in which Diamond Bar is located, is 1,678 kWh/yr. Therefore, 10.5 MW converts to 17,617,802 kWh per year.

to eligible property owners for sustainable energy projects, thereby offering a source of funding for residential PV systems. Property owners can finance PV system installations and energy efficiency improvements through a voluntary assessment on their property tax bills. Several other financing options are available to residents, including Federal Housing Financing Administration- (FHFA) insured Energy Efficient Mortgages, HUD Title 1 Home Improvements Loans, and FHA PowerSaver Loans.

The City could temporarily suspend residential and commercial solar PV system permit fees to incentivize installation. The City could also ensure on a continuing basis that regulatory provisions—such as complying with regulations for zoning, structure height, permit submittal and review process, etc.—do not hinder PV panel installation.

Costs and Benefits:

Private: Private costs would come from the installation and maintenance of a residential PV system, which can be supported by PACE programs and other incentives. Benefits would accrue from reduced energy bills and increased property values.

City: City costs would occur from the analysis of potential regulatory barriers and the evaluation of the feasibility of incentivizing new homes to install PV systems. Revenue would be lost when permit fees are temporarily suspended.

Option B: Promote Installation of Commercial Photovoltaic Systems	
Goal: Promote installation of commercial and industrial PV systems to produce an additional 11 MW per year, or 15 percent of projected commercial and industrial electricity supplied by SCE, by 2040.	2040 Reduction: 2,380 $MTCO_2e$ per year (approximately 0.9% of total projected GHG emissions in Diamond Bar)
Potential Actions: (*See also actions A1 and A2 above*). *B-1: Consider adopting a commercial energy conservation ordinance requiring all new nonresidential developments with more than 50 cars surface parked or on roofs of parking structures to use PV panels over at least half of the surface/roof-parked cars, or provide equivalent energy conservation/generation by other means (over and above other requirements).* (Short-term) *B-2: Consider adopting an ordinance requiring existing and new nonresidential developments to install PV panels to offset a portion of their energy use.* (Mid-term)	

Target: The target is the PV production of 11 MW per year in 2040, which is the equivalent amount of production to replace 15 percent of projected commercial and industrial electricity supplied by SCE.

GHG Reduction Option Description: PV systems convert solar energy into electricity. Option B promotes the installation of PV systems on commercial buildings to produce an additional 11 MW per year.

Quantification of GHG Emissions Reductions: 15 percent of the 2040 forecast emissions from commercial and industrial electricity usage, after applying State regulations discussed in Chapter 3.3 of this CAP, was calculated to quantify emissions reductions for Option B.

Responsibility and Implementation: See Option A (above) for implementation.

Costs and Benefits:

Private: Private costs would result from the installation and maintenance of commercial and industrial PV systems. Benefits would accrue from reduced energy bills and increased property values.

City: City costs would occur from removing potential regulatory barriers and preparing and enforcing a nonresidential PV systems ordinance. Revenue would be lost when permit fees are temporarily suspended.

Residential and Commercial Efficiency Retrofits

Option C: Encourage Residential Energy Efficiency Retrofits	
Goal: Encourage residential efficiency retrofits with the goal of a 50 percent energy reduction compared to baseline in 30 percent of the total existing homes citywide by 2040 (5,674 homes out of a total of 18,913).	2040 Reduction: 6,098 $MTCO_2e$ per year (approximately 1.7% of total projected GHG emissions in Diamond Bar)
Potential Actions: C-1: *Publicize available incentive and rebate programs, such as SCE's and Southern California Gas Company's (SCG's) Home Energy Efficiency Rebate (HEER) program, on the City's website and by other means.* (Short-term) C-2: *Create a citywide "Energy Challenge," similar to the Department of Energy's Better Buildings Challenge, to promote cost-effective energy improvements, while having residents and building owners commit to reducing energy consumption.* (Short-term)	

Target: The target is a 50 percent energy reduction in 30 percent of homes citywide by the year 2040.

GHG Reduction Option Description: Diamond Bar is a residential city in nature. As homes use a large portion of the City's total energy and older homes are substantially less efficient than newly constructed homes, there is a large opportunity to reduce GHG emissions through the retrofitting of existing homes. When a single-family homeowner seeks to make major improvements, the owner would be required to conduct an energy audit, and meet low-cost energy efficiency measures—such as improving insulation, providing weather stripping, promoting natural lighting and ventilation, and using "smart" thermostats to regulate energy use for heating and cooling. Multi-family residential retrofits are similar to single-family retrofits but can provide increased energy savings. For

example, increasing insulation between residential units benefits both units. Other examples of multi-family residential retrofits include replacing incandescent and halogen lamps with LED or CFL lamps and installing energy-efficient windows and efficient appliances.

Quantification of GHG Emissions Reductions: 50 percent of the 2040 forecast emissions from 30 percent of residential energy usage, after applying State regulations discussed in Chapter 3.3 of this CAP, was calculated to quantify emissions reductions for Option C.

Responsibility and Implementation: Homeowners and multi-family unit owners would implement this measure. The California Public Utilities Commission administers the Energy Upgrade California Program, which connects homeowners to multiple financing options for energy-saving upgrades. SCE and SCG offer the HEER program, which offers residential customers rebates to improve the efficiency of appliances, such as water heaters, air conditioners, and pool pumps. HEER also offers residential customers rebates for smart thermostats, attic and wall insulation, and efficient furnaces. The City will publicize this and related programs on its website and by other means.

Costs and Benefits:

Private: Private costs would come from residential unit owners conducting energy audits and implementing efficiency retrofits. The cost of these retrofits is frequently 1 percent or less of the total renovation cost. Benefits would occur through reduced energy costs. Rebates are available as described above.

City: City costs would come from promoting incentive programs and creating an "Energy Challenge" program.

Option D: Encourage Commercial Efficiency Retrofits	
Goal: Encourage commercial and industrial efficiency retrofits with the goal equivalent to a 25 percent energy reduction in 30 percent of commercial square footage citywide by 2040.	2040 Reduction: 2,268 $MTCO_2e$ per year (approximately 0.6% of total GHG emissions in Diamond Bar)
Potential Actions: *D-1: Promote available incentive and rebate programs, such as SCE's and SCG's On-Bill Financing (OBF) programs, on the City's website and by other means.* (Short-term) *D-2: Consider adopting a commercial and industrial energy conservation ordinance, which requires property owners to ensure that commercial and industrial buildings meet specified energy efficiency measures—such as requisite heating, ventilation, and air conditioning improvements, service water system requirements, and improved refrigeration equipment, at the time of conducting major renovations (as defined by the ordinance).* (Short-term)	

Target: The target is equivalent to a 25 percent energy reduction in 30 percent of the projected amount of commercial and industrial square footage.

GHG Reduction Option Description: Relatively straightforward fixes to commercial buildings can significantly reduce spending on fuel and electricity. Examples of retrofits include installing efficient boilers and equipment, high-quality windows, pipe insulation, and other building energy improvements.

Quantification of GHG Emissions Reductions: 25 percent of the 2040 forecast emissions from 30 percent of commercial and industrial energy usage, after applying State regulations discussed in Chapter 3.3 of this CAP, was calculated to quantify emissions reductions for Option D.

Responsibility and Implementation: Building owners would implement this measure for commercial buildings.[17] Funding is available through incentive and rebate programs, such as SCE's and SCG's OBF program.

Costs and Benefits:

Private: Private costs would come from building owners and business owners implementing efficiency retrofits. Benefits would occur through reduced energy costs. Costs could be offset through incentive and rebate programs.

City: City costs would come from providing resources to help guide building owners to implement this measure, promoting available incentive and rebate programs, and adopting and enforcing a commercial energy conservation ordinance.

[17] AB 1103, the California Nonresidential Building Energy Use Disclosure Program, requires an owner of a nonresidential building to benchmark the building's energy use data and disclose the energy use prior to the sale of the building, or the lease and financing of the entire building. This benchmark data can be used to guide implementation of efficiency measures for buildings renovated after a recent sale.

Residential Electrification

Option E: Promote Switching from Natural Gas to Clean Electricity	
Goal: Promote conversion of residential natural gas water heaters to electric systems powered by solar energy with the goal of 50 percent replacement by 2040.	2040 Reduction: 13,669 $MTCO_2e$ per year (approximately 5% of total GHG emissions in Diamond Bar)
Actions: *E-1: Publicize available incentive and rebate programs, such as Southern California Gas Company's (SCG's) California Solar Initiative (CSI-Thermal) Program, on the City's website and by other means.* (Short-term) *E-2: Create a citywide "Energy Challenge," similar to the Department of Energy's Better Buildings Challenge, to promote cost-effective energy improvements, while having residents and building owners commit to reducing energy consumption.* (Short-term)	

Target: The target is to replace 50 percent of residential natural gas water heaters to electric models powered by solar thermal systems by 2040.

GHG Reduction Option Description: Replace inefficient and expensive natural gas water heaters with more efficient solar water heating systems to reduce the amount of energy needed to heat homes, which will reduce the demand for natural gas and thus the amount of GHG emissions created by the natural gas power generation.

Quantification of GHG Emissions Reductions: An estimated 49 percent of residential natural gas in California is used for heating water.[18] Applied to citywide natural gas use, this percentage corresponds to about 12,470 $MTCO_2e$ of forecast emissions in 2040 (after applying State regulations discussed in Chapter 3.3 of this CAP). In a typical year, an estimated 6.3 percent of existing homes replace natural gas water heaters, and 57 percent of replacements are electric models.[19] This measure sets the target of replacing natural gas water heaters with electric models powered by solar thermal systems in 50 percent of existing homes by 2040. This would lead to an emissions reduction of 7,945 $MTCO_2e$ per year in 2040.

Responsibility and Implementation: Homeowners and multi-family units would implement this measure. The California Public Utilities Commission administers the California Solar Initiative CSI-Thermal Program, which provides rebates on solar water heating systems for single-family residential customers and multi-family properties. The City will publicize this and related programs on its website and by other means.

[18] CEC, Statewide Appliance Saturation Survey, 2009.

[19] Northwest Energy Efficiency Alliance (NEEA), 2011. Water Heater Market Update.

Costs and Benefits:

Private: Private costs would be from purchasing and maintaining electric water heaters. Regular maintenance can be as infrequent as every three to five years, and systems with electrical components usually require replacement parts after 10 years. Benefits would be from reduced energy costs.

City: City costs would come from providing resources to help guide building owners to implement this measure and promoting available incentive and rebate programs.

Increased Zero-Emissions Vehicle (ZEV) Travel

Option F: Promote an Increase in the Amount of Zero-Emissions Vehicle Travel	
Goal: Promote an increase in the amount of ZEV[20] vehicle miles traveled to 15 percent of total vehicle miles traveled by 2040.	2040 Reduction: 26,837 $MTCO_2e$ per year (approximately 10.7% of total GHG emissions in Diamond Bar)
Actions: *F-1:* *Working with industry partners, construct a "PV to EV" pilot project to install a PV charging station at a City facility (such as City Hall), to charge ZEVs. The purpose of the pilot project would be to evaluate the feasibility of incorporating more ZEVs into the City's fleet.* (Short-term) *F-2:* *Prepare a community-wide charging station siting plan, which evaluates site visibility and exposure, EV driving ranges, high volume destinations, locations with high ownership or interest in EVs, and cost of construction.* (Short-term) *F-3:* *Construct ZEV charging stations based on the community-wide charging station siting plan described in G-2 above. The ZEV charging stations will be funded by grant funds when available, and the City will post signage directing ZEVs to charging stations described in G-2 above.* (Mid-term) *F-4:* *Offer dedicated ZEV parking and provide charging stations adjacent to ZEV parking as identified in the community-wide charging station siting plan.* (Mid-term) *F-5:* *Adopt requirements for ZEV parking for new developments.* (Short-term) *F-6:* *Consider adopting a residential energy conservation ordinance requiring the installation of EV chargers or pre-wiring in new residential construction and major renovations.* (Short-term)	

Target: The target is to increase the proportion of vehicle miles traveled to 15 percent by the year 2040.

GHG Reduction Option Description: Driving ZEVs reduces carbon emissions by eliminating direct tailpipe emissions of carbon dioxide and other GHGs. The production of electricity used to power electric vehicles generates GHGs; however, SCE electricity generates much less GHGs than the direct combustion of fossil fuels. Furthermore, electric vehicles can be charged at home or the

[20] Zero-Emissions Vehicle (ZEV) is a vehicle that emits no tailpipe pollutants from the onboard source of power. ZEVs include electric vehicles, fuel cell vehicles, and plug-in hybrids, when in electric mode.

workplace using energy produced by PV panels, eliminating GHG emissions completely, at least for the months when PV panels produce the full amount of electricity needed for operations. The ability to provide entirely emissions-free transportation through the use of PV panels to charge ZEVs should be capitalized on whenever possible.

Quantification of GHG Emissions Reductions: The City of Diamond Bar and SCAQMD jointly host an annual National Drive Electric Week event. In 2018, 199 registered attendees reported 1,355,875 electric miles driven, which translates to approximately 0.3% of existing VMT assuming similar VMT in 2016 and 2018.[21] Establishing a goal of increasing the proportion of ZEV vehicle miles traveled from 0.3% to 15 percent was calculated to quantify emissions reductions for Option F.

Responsibility and Implementation: Option F would support policies in the General Plan aimed at increasing electric vehicle infrastructure. The City would promote an increase in the amount of electric vehicle travel by constructing ZEV charging stations using the community-wide station siting plan described in Action F-2 above. Grant funding for the construction of the ZEV charging stations can come from the California Energy Commission's Electric Vehicle Charging Infrastructure grant, or other similar grant programs. The City would be responsible for operating (including electricity provision, for stations not using PV panels) and maintaining charging stations.

The City would also promote the use of ZEVs by offering dedicated ZEV parking and adopting requirements for ZEV parking for new development. The City would create an ordinance requiring the installation of ZEV chargers or pre-wiring in new residential construction and major renovations.[22]

Costs and Benefits:

Private: The private cost would be the purchase of an electric vehicle and the cost of electricity to power the electric vehicle, for community members who elect to purchase an electric vehicle. Costs may also occur from installing EV chargers or pre-wiring into new residential construction or major renovations. Available rebates for the purchase or lease of an electric vehicle include the California Vehicle Rebate Program administered by CARB and the Clean Fuel Reward Program administered by SCE. Benefits would accrue from reduced spending on gasoline.

[21] Drive Electric, 2018. National Drive Electric Week – Diamond Bar.

[22] Assembly Bill 1092 (2013) requires the Department of Housing and Community Development to propose minimum building standards for the installation of future electric vehicle charging infrastructure for parking spaces in multi-family dwellings and nonresidential development.

City: City costs would be from planning for, constructing, operating (including providing electricity, for stations not using PV panels) and maintaining ZEV charging stations, which may be offset by potential user fees or grants from the California Energy Commission, or other similar agencies. City costs may occur from developing ordinances to require the installation of ZEV chargers in new residential construction and major renovations. City costs may also occur from fleet purchases of ZEV vehicles. Benefits would accrue from reduced spending on gasoline.

Establish a Zero-Waste Framework

Option G: Establish a Zero-Waste Framework	
Goal: Consider a Zero Waste Ordinance with the goal of 90% diversion by 2040.	2040 Reduction: 26,837 $MTCO_2e$ per year (approximately 10.7% of total GHG emissions in Diamond Bar)
Actions: *G-1: Adopt a Citywide zero waste ordinance to reduce waste sent to landfill.* (Short-term) *G-2: Adopt requirements for recycling and composting facilities in new developments.* (Short-term) *G-3: Continue and expand specialized recycling programs.* (Mid-term) *G-4: Expand network of recycling and composting bins in public spaces, including implementation of smart bins such as BigBelly.* (Mid-term)	

Target: The target is to increase waste diversion by 90 percent by 2040.

GHG Reduction Option Description: Reducing waste sent to landfills reduces GHG emissions from landfill methane and decreases Diamond Bar's reliance on landfills. AB 341 has set a goal of 75 percent recycling, composting, or source reduction of solid waste by 2040. Exceeding this goal by establishing a Zero Waste Ordinance has the potential to reduce consumption of raw materials, reuse materials, reduce GHG emissions, minimize production of toxic materials, and support a culture of low waste and sustainability in Diamond Bar.

Quantification of GHG Emissions Reductions: In 2016, 47 percent of Diamond Bar's waste was diverted from the landfill. Emissions totals assume achievement of the AB 341 goal of 75 percent diversion by 2040. Establishment of a Zero Waste Ordinance, assuming 90 percent recycling, composting, or source reduction of solid waste by 2040, would result in a reduction of 1,069 $MTCO_2e$ per year by 2040.

Responsibility and Implementation: The City would be responsible for adopting and promoting a Zero Waste Ordinance to increase diversion of solid waste and reduce associated emissions. The City currently offers a number of specialized recycling programs in addition to its residential trash/recycling program, including a free recycling bins for businesses programs. The City also offers residential waste hauler rate discounts. Success of the Zero Waste Ordinance would require

continued implementation and expansion of these programs to promote residential and commercial recycling and composting. New developers would be responsible for providing recycling and composting options to reduce overall waste as described in Action G-2 above. Should the City take Action G-4, the City would be responsible for expanding recycling and composting alternatives throughout the City through the placement of easily accessible bins or smart bins such as BigBelly bins, which are solar powered.

Costs and Benefits:

Private: The private cost to new developers would be the provision of recycling and composting facilities, should they not qualify for the free recycling container application. Businesses would be required to establish and oversee a recycling program to qualify for free bins. Qualified residents may apply for residential waste hauler rate discounts to reduce costs associated with recycling and composting. Costs may also occur from switching to increased refuse and recycling service should rates stay stable. For businesses, reducing the disposal of solid waste would reduce trash container fees. Benefits may accrue from a reduction in overall waste and the cost of regular garbage pickup and disposal.

City: City costs may occur from developing ordinances to require achievement of Zero Waste Goals. City costs would also occur from continuing recycling programs, including the continued cost of providing free recycling bins to businesses. City costs would also occur from adding recycling and composting containers in public spaces. Benefits may accrue from a reduction in overall waste and the cost of regular garbage pickup and disposal.

Clean Energy

Option H: Promote and Maximize Utility Clean Energy Offerings	
Goal: Join the Clean Power Alliance to offer 100% renewable energy to Diamond Bar residents and businesses.	2040 Reduction: 15,503 $MTCO_2e$ per year (approximately 6% of total GHG emissions in Diamond Bar)
Actions: *H-1: Join the Clean Power Alliance, choosing the default rate of 100% Green Power.* (Short to mid-term) *H-2: Publicize available rate options and information about renewable energy on the City's website or by other means.* (Short-term)	

Target: The target is to join the Clean Power Alliance at the default rate of 100% Green Power to offer renewable energy to Diamond Bar residents and businesses.

GHG Reduction Option Description: The Clean Power Alliance serves approximately three million customers and one million customer accounts across 31 communities throughout southern California including unincorporated Los Angeles County and nearby cities such as Claremont, South Pasadena, and

Whittier. Utilizing renewable energy reduces electric sector GHG emissions, promotes energy efficiency and demand reduction programs, and is cost competitive with existing services. The Clean Power Alliance offers three default options of electric power generation mix. The 100% Green Power option provides 100% renewable energy content, derived from solar power, and the Clean Power (50%) and Lean Power (36%) provide a mix of renewable, including solar and wind energy, and non-renewable energy content. 100% Green Power is offered at a 7 to 9 percent overall bill premium to SCE's standard rates and 5 percent less than SCE's 100 percent renewables rate. Clean Power and Lean Power options are cost-comparable or more affordable than SCE's standard rates. Providing the option for renewable energy will allow Diamond Bar to significantly reduce emissions of greenhouse gases associated with electricity generation in 2040.

Quantification of GHG Emissions Reductions: The Clean Power Alliance is committed to providing zero-carbon electricity through the 100% Green Power option. Typical opt-out rates for enrolled communities are as low as 1.5 percent. For a conservative analysis, quantification of GHG emissions reductions assumes that 50 percent of Diamond Bar residents and businesses opt out of the 100% Green Power Option entirely or downgrade to the Clean Power or Lean Power options (comparable to emissions from electricity supplied by SCE, which is required to supply 60 percent of electricity from renewable resources by 2030 under SB 100). 50 percent enrollment in the 100% Green Power option provided by the Clean Power Alliance would result in an emissions reduction of 6 percent, or 15,503 $MTCO_2e$ in 2040.

Assuming the typical opt-out rate of 1.5 percent, Diamond Bar could reduce GHG emissions associated with electricity consumption by as much as 12 percent, or 30,540 $MTCO_2e$ in 2040.

Responsibility and Implementation: City Council would be responsible for approving Diamond Bar's entry into the Clean Power Alliance. The City would also be responsible for promoting the Clean Power Alliance, providing information on renewable energy, and providing sufficient notice and information regarding alternative options on its website and by other means. SCE would continue to deliver power, and the Clean Power Alliance would provide enrollment notices and provide electric generation.

Residents and businesses would be responsible for choosing to participate in or opt out of the Clean Power Alliance service once they receive an enrollment notice.

Costs and Benefits:

Private: The private cost of the 100% Green Power option would be 7 to 9 percent higher than SCE's standard rates for electricity service, but 5 percent or more lower than SCE's 100 percent renewable rates. The private cost for the Clean Power option would be similar to SCE's standard rates, and one to two percent lower

than standard rates for the Lean Power option. Benefits would accrue from reduced energy costs for the lower-tier options, and Clean Power Alliance customers would still be eligible to obtain rebates from SCE for energy efficiency and solar electric systems.

City: City costs would be from coordinating approval of and enrollment in the Clean Power Alliance. City costs would occur from providing resources to help residents and businesses to navigate this new system and promoting enrollment in the 100% Green Power default. Benefits would accrue from reduced electricity emissions and promotion of Diamond Bar's sustainable choices.

Other Measures

Other measures that may be implemented on a project-level basis or are difficult to quantify are listed in Appendix D.

Appendix A

Climate Change Informational Resources

Combating climate change requires education and personal action. This section contains resources on climate change and its impacts, calculating individual carbon footprints, and ways to reduce individual carbon footprints.

Education

The evidence is clear that climate change is happening. Humans are largely responsible for recent climate change. International scientific bodies, federal agencies, and state agencies have numerous resources that summarize the current scientific understanding of climate change and the latest projections of climate change impacts.

The Intergovernmental Panel on Climate Change is the leading international body for the assessment of climate change:

- http://www.ipcc.ch/

The National Aeronautics and Space Administration (NASA) has documented recent impacts and future trends of climate change:

- http://climate.nasa.gov/effects

The U.S. Environmental Protection Agency (U.S. EPA) has information of climate change, and its effects:

- https://www.climate.gov/teaching/resources/climate-change-basics

Cal-Adapt, a product of the Public Interest Energy Research (PIER) program, funded by the California Energy Commission, provides California-specific climate change research, including interactive climate tools:

- http://cal-adapt.org/

Carbon Footprint

A carbon footprint is a measure of the total amount of GHG emissions produced by an individual. It can be thought of as a personal inventory of one's impacts on climate change. There are a number of online calculators that estimate personal carbon footprints. Individuals can use the following carbon footprint calculators as a guide to help reduce personal carbon emissions.

U.S. Environmental Protection Agency (EPA)

- https://www3.epa.gov/carbon-footprint-calculator/

Cool California

- https://coolcalifornia.arb.ca.gov/calculator-households-individuals

Cool Climate Network

- https://coolclimate.org/calculator

Nature Conservancy

- https://www.nature.org/en-us/get-involved/how-to-help/consider-your-impact/carbon-calculator/

Carbon Footprint

- http://www.carbonfootprint.com/calculator1.html

Global Footprint Network

- https://www.footprintnetwork.org/resources/footprint-calculator/

Reducing your Carbon Footprint

Reducing one's personal carbon footprint saves money, decreases impact on the environment, and helps fight climate change. The following links provide resources on changes one can make in his or her day-to-day life to diminish GHG emissions.

U.S Department of Energy: Save energy, save money

- http://energy.gov/energysaver/energy-saver

California Air Resources Board: Low emissions vehicles

- https://ww2.arb.ca.gov/our-work/topics/clean-cars

Carbon Fund: Reduce what you can, offset what you can't

- https://carbonfund.org/reduce/

New York Times: How to Reduce Your Carbon Footprint

- https://www.nytimes.com/guides/year-of-living-better/how-to-reduce-your-carbon-footprint

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Appendix B

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Appendix C

Applicable General Plan Policies

Pedestrian Improvements and Increased Connectivity

LU-G-2. Encourage compact growth and prioritize infill development to preserve existing large blocks of natural open space within the City and Sphere of Influence including Tonner Canyon and Tres Hermanos Ranch; and enhance community character, optimize city infrastructure investments, provide pedestrian- and bicycle-friendly neighborhoods, and enhance economic vitality.

LU-G-14. Foster development of nodes or clusters of mixed-use centers to promote city and neighborhood identity, improve accessibility to stores, parks, natural open spaces, and services, and promote walkable, pedestrian-scaled retail and dining destinations.

LU-G-22. Promote and support the commercial area on both sides of Diamond Bar Boulevard from Golden Springs Drive to SR-60 as a vibrant, pedestrian-oriented Town Center that serves as Diamond Bar's primary specialty retail and dining destination and is accessible to all Diamond Bar residents.'

LU-G-23. Ensure an inviting and comfortable public realm to encourage pedestrian activity in the Town Center area.

LU-P-9. Incorporate architectural and landscape design features in new development that create more pedestrian-friendly neighborhoods, such as orientation to the street; set-back, or detached garages; tree-lined streets; and landscaped parkways between streets and sidewalks.

LU-P-14. Improve vehicular accessibility, traffic flow, and parking availability as well as pedestrian and bicycle access and amenities within office, commercial, and industrial areas.

LU-P-17. Promote site designs that create active street frontages and introduce pedestrian-scaled street networks and street designs.

LU-P-24. Buildings located along corridors should be designed to face the street and define the public realm with a mix of building patterns, ground floor transparency for commercial uses, and pedestrian-oriented elements such as building entrances and public outdoor spaces.

LU-P-26. Maximize multi-modal (transit, automobile, cycling, and pedestrian) connections to other destinations in Diamond Bar, such as schools, parks, job centers, and community gathering spaces like the Town Center by:

a. Filling gaps in and expanding and/or upgrading the bikeway network to ensure safe and efficient bicycle mobility. Gaps that could be addressed in this area include the northern ends of Diamond Bar Boulevard and Golden Springs Drive.
b. Improving pedestrian comfort and safety by implementing traffic calming measures on Diamond Bar Boulevard between Temple Avenue and Sunset Crossing Road, providing shading through the addition of street trees along Diamond Bar Boulevard and Sunset Crossing Road, and encouraging pedestrian-oriented elements on buildings and street furniture on Diamond Bar Boulevard.

LU-P-30. Ensure that building frontages and streetscaping define the public realm and encourage pedestrian activity and comfort with a mix of building patterns, ground floor transparency for commercial uses, and pedestrian-oriented elements such as building entrances and public outdoor spaces.

LU-P-31. Promote convenient, attractive, and safe pedestrian, bicycle, and transit connections between the Transit-Oriented Mixed Use neighborhood and surrounding neighborhoods and other destinations within Diamond Bar such as schools, the Town Center, and parks.

LU-P-36. Prioritize and support renovation, infill, and reuse of the existing commercial center. Require, where appropriate, redesign and modernization of architectural treatment and the introduction of finer-grained pedestrian network, as well as utilization of parking lots to create central gathering spaces and make the Town Center more pedestrian-friendly.

LU-P-37. Utilize buildings and streetscapes to define the public realm and encourage pedestrian activity and comfort.

To further promote these objectives, incorporate attractive landscaping elements and usable outdoor green paces, and discourage new drive through uses.

LU-P-40. Study, as necessary, the implementation of safe pedestrian connectivity between the north and south sections of the Town Center Mixed-Use project site and at Lorbeer Middle School.

Potential strategies for achieving safe pedestrian connectivity may include traffic calming measures along the roadways, crosswalk visibility improvements, ensuring adequate time for walk signals, refuge islands, bulb-outs, bridges, and others.

LU-P-41. Maximize accessibility for transit, automobiles, cyclists, and pedestrians to the Town Center from surrounding neighborhoods, the Metrolink station, and other Diamond Bar destinations.

LU-P-45. Prepare a master plan or specific plan for any future development within the Community Core Overlay area that creates mixed-use, pedestrian-oriented community and regional destination. Approximately 100 acres north of Grand Avenue is to support a park or consolidated golf course along with additional community or civic uses. The southern portion is to accommodate a mix of uses emphasizing destination and specialty retail, dining, and entertainment, including opportunities for residential, hospitality, and community and civic uses.

LU-P-46. Where appropriate, require development to provide courtyards and plazas, public art, and landscaped open spaces and pathways between buildings that promote safe and convenient pedestrian movement.

LU-P-47. Buildings should be designed to define the public realm and promote sidewalk activity and neighborhood interaction in public spaces.

LU-P-48. Create a fine-grained (shorter blocks), pedestrian-scaled street network, and require buildings and streetscapes to encourage pedestrian activity and comfort.

LU-P-49. Promote convenient, attractive, and safe pedestrian, bicycle, and transit connections both within the Community Core area and between the Community Core and surrounding neighborhoods and other destinations within Diamond Bar.

LU-P-50. Where practicable, consolidate and locate parking in a manner that encourages pedestrian activity. Avoid expanses of surface parking (see Chapter 3, *Community Character and Placemaking*).

LU-P-51. Provide streetscape and intersection improvements along Golden Springs Drive to enhance comfort and safety for all modes of travel and increase accessibility to and from surrounding areas.

ED-P-9. Promote the use of multi-modal connections to serve commercial and office uses within Diamond Bar, thereby enhancing transit, ride-sharing, pedestrian, and bicycle infrastructure opportunities, and reducing automobile congestion within the City.

CC-G-1. Foster and maintain a distinctive city identity that values the community's "country living" character by preserving the city's open spaces, physical features, and environmental resources, and focusing new development into accessible, pedestrian-oriented areas integrated with existing neighborhoods, augmented with parks, and connected by an attractive and safe street network.

CC-G-2. Encourage development within mixed-use areas that is inviting to pedestrians, promotes community interaction and activity, and contributes to an engaging street environment.

CC-G-3. Encourage rehabilitation and façade improvements of existing commercial centers to ensure commercial vitality and pedestrian-oriented design.

CC-G-4. Preserve the scale and character of existing residential neighborhoods and ensure sensitive transitions between densities and uses.

CC-G-5. Provide an expanded pedestrian and bicycle infrastructure network to improve connectivity throughout the city where topography and technology permit.

CC-G-12. Establish an inviting and comfortable public realm that encourages pedestrian activity in the Town Center focus area.

CC-G-13. Establish a new pedestrian-oriented "Main Street" within the Town Center focus area lined with retail uses.

CC-G-17. Create a new master-planned destination with vibrant, mixed-use, pedestrian oriented uses for the community and region.

CC-P-4. Continue to support community identity with streetscape improvement and beautification projects in both existing residential

areas and commercial centers, as well as new mixed-use areas that incorporate unified landscaping and pedestrian amenities. Amenities should include seating, bus shelters, pedestrian safety treatments such as sidewalk bulb-outs and widening and improved crosswalks, and city-branded decorative elements such as street lighting, concrete pavers, tree grates, and theme rails.

CC-P-7. Ensure that new development provides an integrated pattern of roadways, bicycle routes and paths, and pedestrian connections within and between neighborhoods that are safe, comfortable, and accessible sidewalks for people of all ages and abilities.

CC-P-9. Encourage pedestrian orientation in mixed-use development using a variety of site planning and architectural strategies, such as locating and orienting buildings to street frontages, plazas, or pedestrian paseos; providing visual transparency through fenestration; entries and arcades close to the street edge and sidewalk; and/or incorporating porches, patios, or outdoor spaces that overlook or interact with front yards or sidewalks.

CC-P-15. Where public space fronts the sidewalk, ensure that it is primarily open and free of walls or other obstructions (not including trees, lights, and steps). Use landscaping strategically to identify pedestrian entrances and articulate edges for plazas and courtyards.

CC-P-18. As large vacant or underutilized sites are developed or redeveloped, maximize multi-modal accessibility with fine-grained street networks and walkable block sizes. Generally limit new block sizes to a maximum of about 400 feet in length. Mid-block plazas or alleys may be considered if the intent is to ensure fine-grained patterns where pedestrian access can be accommodated in intervals no more than 400 feet apart.

CC-P-19. Through development review, ensure that new development provides an integrated pattern of streets and pedestrian paths with connections within and between neighborhoods.

CC-P-20. Create pedestrian-and bicycle-only pathways to enhance neighborhood interconnectivity where street connections are limited due to existing cul-de-sac or dead-end conditions, grade separation, property ownership, or topographical challenges.

CC-P-21. Site plans should be designed to create pedestrian-oriented neighborhoods that follow these guidelines:

a. Buildings should be oriented to the street;

b. Garages and parking areas should be screened and/or located at the side or rear of properties wherever possible; and
c. Landscaping, sidewalk conditions, and other streetscape elements should be improved during rehabilitation and new construction.

CC-P-29. Promote the revitalization of existing commercial centers by encouraging property owners to maintain and improve the appearance of individual buildings and commercial centers through building façade improvements, landscaping, and pedestrian improvements.

CC-P-31. Ensure that commercial uses are designed to incorporate ground floor transparency and pedestrian activity.

CC-P-38. Enhance the pedestrian experience along the east side of Diamond Bar Boulevard within the Neighborhood Mixed Use area with widened sidewalks, shade trees, and pedestrian amenities such as street furniture, attractive paving, pedestrian-scaled lighting, and landscape buffers. Front setbacks should function as an extension of the sidewalk, with publicly-accessible and usable open space.

CC-P-39. Enhance pedestrian comfort on the west side of North Diamond Bar Boulevard through enhanced landscaping and improved fencing.

CC-P-42. Prioritize retail and other uses that promote pedestrian activity on the ground floor of buildings.

CC-P-44. As the Town Center redevelops, enhance pedestrian connectivity throughout the district through the incorporation of a new "Main Street" within the western portion of the focus area that is off of or set back from Diamond Bar Boulevard.

CC-P-45. The design of new development should be pedestrian-oriented, with the majority of building frontages located at the new street edge and with entrances located along the roadway or along pedestrian pathways or public spaces.

CC-P-50. Where possible, above-grade parking structures should be wrapped with pedestrian uses where they front onto active streets. If active uses are not feasible, frontages should be architecturally attractive. This may include unique designs and materials such as glass, articulated masonry, murals, or landscaping setbacks.

CC-P-51. Enhance the pedestrian experience along Diamond Bar Boulevard within the Town Center area with widened sidewalks, shade trees,

and pedestrian amenities such as street furniture, attractive paving, pedestrian-scaled lighting, and landscape buffers.

CC-P-54. Encourage all new development within a quarter-mile radius of the transit facilities to focus building design, massing, and landscaping toward the pedestrian experience through:

a. Limiting block lengths between streets generally to a maximum of 400 feet, and encouraging four-way intersections;
b. Providing space for enhanced pedestrian connections such as internal semi-public pathways;
c. Building design that focuses on street-orientation;
d. Extensive landscaping and street trees;
e. Pedestrian furniture and site elements (for example, benches and trash receptacles);
f. Street lighting; and
g. Wayfinding signage.

CC-P-56. Provide high-visibility pedestrian and bicycle connections to the Metrolink station, making use of existing infrastructure that connects South Brea Canyon Road to the station.

CC-P-57. Promote the pedestrian comfort and safety of crosswalks along South Brea Canyon Road and South Lemon Avenue.

CC-P-58. Enhance the pedestrian experience along South Brea Canyon Road within the Transit-Oriented Mixed Use area with widened sidewalks, shade trees, and pedestrian amenities such as street furniture, attractive paving, and pedestrian scaled lighting, where feasible.

CC-P-62. Create a fine-grained pedestrian-scaled street network and ensure that buildings and streetscapes to encourage pedestrian activity and comfort.

CC-P-63. Parking should be consolidated and located in a manner that encourages pedestrian activity. Avoid expanses of surface parking.

CC-P-64. Provide streetscape and intersection improvements along Golden Springs Drive to enhance comfort and safety for all modes of travel and increase accessibility to and from surrounding areas.

CR-G-3. Strive to achieve a finer grained network of streets and pedestrian/bicycle connections as development occurs, especially in focus areas such as the Transit-Oriented, Neighborhood, Town Center, and Community Core mixed-use areas.

CR-G-11. Expand and strengthen existing pedestrian and cyclist network and facilities.

CR-G-12. Improve safety and accessibility for pedestrians and cyclists.

CR-P-1. When redesigning streets, plan for the needs of different modes by incorporating elements such as shade for pedestrians, safe pedestrian-friendly crossings/intersections, lighting at the pedestrian scale, bike lanes, signage visible to relevant modes, transit amenities, etc.

CR-P-2. Promote new street designs and efforts to retrofit existing streets in residential neighborhoods minimize traffic volumes and/or speed as appropriate without compromising connectivity for emergency vehicles, bicycles, pedestrians, and users of mobility devices.

CR-P-3. Plan for and provide new connections within the Transit-Oriented, Neighborhood, Town Center, and Community Core mixed-use areas to create finer grained, pedestrian-scaled circulation networks that support the development of connected and accessible neighborhoods. Connections should facilitate the use of alternatives to single-occupancy vehicles, such as walking, bicycling, and transit by improving the safety and accessibility of those modes.

CR-P-4. Develop traffic calming strategies for Diamond Bar Boulevard between Temple Avenue and Golden Springs Drive in order to provide a safe and comfortable pedestrian-friendly environment along and through the Neighborhood Mixed Use and Town Center Mixed Use areas.

CR-P-9. Develop a plan for managing limited curb space throughout the City's commercial, mixed-use, and higher density areas to accommodate efficient package and food deliveries; delivery of goods to restaurants/retail; pick-up/drop-off of passengers by transit, taxis, and on-demand shared ride services; and the safe movement of pedestrians and bicyclists.

CR-P-14. Prioritize pedestrian movement and safety—through wider sidewalks, more frequent pedestrian crossings, sidewalk bulbouts, median pedestrian refuges etc.—rather than LOS in Community Character Priority Areas, which are areas designated for higher density mixed-use development in the General Plan.

CR-P-30. Use Figure 4-2: Proposed Bicycle Network as the overall guide for undertaking bikeway and pedestrian improvements in the community, with the Parks and Recreation Master Plan providing a more detailed implementation strategy.

CR-P-32. Promote pedestrian and bicycle connectivity in existing residential neighborhoods, utility easements, and/or flood control channels, including connections through cul-de-sacs to other streets or community facilities where feasible.

CR-P-33. Ensure that new development integrates with Diamond Bar's bicycle and pedestrian networks by requiring developers to provide sidewalks and bicycle infrastructure on local streets.

CR-P-35. Develop bicycle and pedestrian facility standards for pavement design, signage, and roadway and intersection striping for each functional roadway classification, so streets are accessible by all users and modes.

CR-P-36. Where appropriate, plant street trees and provide landscaping along major pedestrian and bicycle routes to provide shade and barriers between cyclists and motorists, as well as enhance aesthetics.

CR-P-39. Ensure a safe environment for pedestrians and cyclists while allowing for local traffic to access freeways in the Neighborhood Mixed Use area through the following strategies:

a. Widening sidewalks, providing planting strips between sidewalks and streets and providing pedestrian amenities such as shade trees and street furniture along Diamond Bar Boulevard;
b. Implementing traffic calming measures such as reduced vehicle speeds, striping and signage along Diamond Bar Boulevard;
c. Buffering bike lanes along Diamond Bar Boulevard;
d. Enhancing pedestrian crossings at the intersection of Diamond Bar Boulevard and Sunset Crossing Road, at Diamond Bar Boulevard and Highland Valley Road, and at Diamond Bar Boulevard and the SR-60 on/off ramps; and
e. Incorporating multi-use pathways internal to new development and connecting to existing development.

CR-P-40. Provide for a vibrant Town Center that encourages pedestrian activity and comfort within the Town Center Mixed Use area while accommodating through traffic along Diamond Bar Boulevard through the following strategies:

a. Establishing a new pedestrian-oriented main street or pedestrian pathway in the Town Center;

b. Enhancing the pedestrian experience along Diamond Bar Boulevard within the Town Center area with widened sidewalks, shade trees, and pedestrian amenities such as street furniture,

attractive paving, pedestrian-scaled lighting, and landscape buffers;

c. Buffering bike lanes along Diamond Bar Boulevard;

d. Improving crosswalks at the intersection of Diamond Bar Boulevard and Palomino Drive, at Diamond Bar Boulevard and Golden Springs Drive, and where Diamond Bar Boulevard intersects with the driveway to the Town Center; and

e. Strengthening cyclist and pedestrian connections between the Town Center area and nearby schools to provide safe and convenient routes to the Town Center for students by identifying barriers such as safety hazards and gaps in the bicycle and pedestrian networks and implementing improvements to address those barriers.

f. address those barriers.

CR-P-41. Promote a fine-grained network of safe pedestrian, bicycle, and vehicle connections in the Transit Oriented Mixed-Use area, emphasizing connectivity to the Metrolink station through the following strategies:

a. Improving crosswalks along Brea Canyon Road and Lemon Avenue;
b. Enhancing the pedestrian experience along South Brea Canyon Road within the Transit Oriented Mixed Use area with widened sidewalks, shade trees, and pedestrian amenities such as street furniture, attractive paving, and pedestrian-scaled lighting, where feasible;
c. Providing high-visibility pedestrian and bicycle connections to the Metrolink station;
d. Incorporating multi-use pathways internal to new development and connecting to existing development; and
e. Studying the potential for shuttle, bikeshare, and/or other linkages to improve the convenience of travel within the mixed-use area.

CR-P-44. Enhance bicycle and pedestrian safety and comfort where feasible through means such as:

a. Introducing bicycle- and pedestrian-level street lighting to improve safety at night;
b. Furnishing intersections with crosswalks on all legs of the intersection;
c. Improving pedestrian safety with intersection design features such as improved signal timing, sidewalk bulb-outs, pedestrian refuge islands with “noses” that extend past the crosswalks,

advance vehicle stop bars, high visibility crosswalk striping or decorative paving;

d. Improving bicycle safety with intersection design features such as bicycle detection and signalization, painted bike boxes, and intersection crossing markings;
e. Widening sidewalks, providing planting strips between sidewalks and streets and providing pedestrian amenities such as shade trees and street furniture; and
f. Implementing traffic calming measures to reduce vehicle speeds and congestion.

CR-P-45. Routinely review pedestrian and cyclist collision data for type, location, severity, and cause, and develop strategies to prevent these collisions.

CR-P-49. Create additional pedestrian, bus, and bikeway connections to the Metrolink station to address first- and last-mile (FMLM) connectivity and make it easier to travel to between the station and surrounding neighborhoods.

CHS-G-2. Achieve more walkable, livable neighborhoods by expanding the multi-modal transportation system and creating a safe, pedestrian-oriented environment.

CHS-P-2. As resources become available and appropriated through the municipal budget process, improve signs directing residents and visitors to public parks and recreational facilities from all parts of the community. Integrate parks and recreation signage with bikeway and pedestrian-oriented signage systems throughout Diamond Bar.

CHS-P-4. Remove barriers and improve multi-modal mobility throughout the City for all community members by supporting transit, pedestrian, and bicycle connections between residential neighborhoods and major destinations, including parks, civic facilities, school campuses, other educational institutions, employment centers, shopping destinations, parks, and recreation areas, where appropriate.

CHS-P-40. Require the inclusion, where feasible, of provisions for energy-efficient modes of transportation and fixed facilities that establish public transit, bicycle, and pedestrian modes as safe, efficient, and desirable alternatives.

Bikeway System Improvements

LU-P-14. Improve vehicular accessibility, traffic flow, and parking availability as well as pedestrian and bicycle access and amenities within office, commercial, and industrial areas.

LU-P-26. Maximize multi-modal (transit, automobile, cycling, and pedestrian) connections to other destinations in Diamond Bar, such as schools, parks, job centers, and community gathering spaces like the Town Center by:

c. Filling gaps in and expanding and/or upgrading the bikeway network to ensure safe and efficient bicycle mobility. Gaps that could be addressed in this area include the northern ends of Diamond Bar Boulevard and Golden Springs Drive.
d. Improving pedestrian comfort and safety by implementing traffic calming measures on Diamond Bar Boulevard between Temple Avenue and Sunset Crossing Road, providing shading through the addition of street trees along Diamond Bar Boulevard and Sunset Crossing Road, and encouraging pedestrian-oriented elements on buildings and street furniture on Diamond Bar Boulevard.

LU-P-31. Promote convenient, attractive, and safe pedestrian, bicycle, and transit connections between the Transit-Oriented Mixed Use neighborhood and surrounding neighborhoods and other destinations within Diamond Bar such as schools, the Town Center, and parks.

LU-P-49. Promote convenient, attractive, and safe pedestrian, bicycle, and transit connections both within the Community Core area and between the Community Core and surrounding neighborhoods and other destinations within Diamond Bar.

ED-P-9. Promote the use of multi-modal connections to serve commercial and office uses within Diamond Bar, thereby enhancing transit, ride-sharing, pedestrian, and bicycle infrastructure opportunities, and reducing automobile congestion within the City.

CC-G-5. Provide an expanded pedestrian and bicycle infrastructure network to improve connectivity throughout the city where topography and technology permit.

CC-P-7. Ensure that new development provides an integrated pattern of roadways, bicycle routes and paths, and pedestrian connections within and between neighborhoods that are safe, comfortable, and accessible sidewalks for people of all ages and abilities.

CC-P-20. Create pedestrian-and bicycle-only pathways to enhance neighborhood interconnectivity where street connections are limited due to existing cul-de-sac or dead-end conditions, grade separation, property ownership, or topographical challenges.

CC-P-56. Promote pedestrian and bicycle connections to the Metrolink station, making use of existing infrastructure that connects South Brea Canyon Road to the station.

CR-G-2. Maintain a street classification system that considers the broad role of streets as corridors for movement but also reflects a Complete Streets concept that enables safe, comfortable, and attractive access for pedestrians, bicyclists, motorists, and transit users of all ages and abilities, in a form that is compatible with and complementary to adjacent land uses, including neighborhood schools.

CR-G-3. Strive to achieve a finer grained network of streets and pedestrian/bicycle connections as development occurs, especially in focus areas such as the Transit-Oriented, Neighborhood, Town Center, and Community Core mixed-use areas.

CR-G-11. Expand and strengthen existing pedestrian and cyclist network and facilities.

CR-P-3. Plan for and provide new connections within the Transit-Oriented, Neighborhood, Town Center, and Community Core mixed-use areas to create finer grained, pedestrian-scaled circulation networks that support the development of connected and accessible neighborhoods. Connections should facilitate the use of alternatives to single-occupancy vehicles, such as walking, bicycling, and transit by improving the safety and accessibility of those modes.

CR-P-30. Use Figure 4-2: Proposed Bicycle Network as the overall guide for undertaking bikeway and pedestrian improvements in the community, with the Parks and Recreation Master Plan providing a more detailed implementation strategy.

CR-P-31. Update the Parks and Recreation Master Plan using community input and best practices to identify bicycle infrastructure needs such as gaps in the network, prioritize facilities and improvements, and identify funding for proposed facilities. Review and update the plan as necessary.

CR-P-32. Promote pedestrian and bicycle connectivity in existing residential neighborhoods, utility easements, and/or flood control channels, including connections through cul-de-sacs to other streets or community facilities where feasible.

CR-P-33. Ensure that new development integrates with Diamond Bar's bicycle and pedestrian networks by requiring developers to provide sidewalks and bicycle infrastructure on local streets.

CR-P-34. As opportunities arise, collaborate with neighboring jurisdictions and colleges such as Cal Poly Pomona and Mt. San Antonio College to establish a safe and efficient bicycle route between Diamond Bar and these institutions.

CR-P-35. Develop bicycle and pedestrian facility standards for pavement design, signage, and roadway and intersection striping for each functional roadway classification, so streets are accessible by all users and modes.

CR-P-36. Where appropriate, plant street trees and provide landscaping along major pedestrian and bicycle routes to provide shade and barriers between cyclists and motorists, as well as enhance aesthetics.

CR-P-39. Ensure a safe environment for pedestrians and cyclists while allowing for local traffic to access freeways in the Neighborhood Mixed Use area through the following strategies:

a. Widening sidewalks, providing planting strips between sidewalks and streets and providing pedestrian amenities such as shade trees and street furniture along Diamond Bar Boulevard;
b. Implementing traffic calming measures such as reduced vehicle speeds, striping and signage along Diamond Bar Boulevard;
c. Buffering bike lanes along Diamond Bar Boulevard;
d. Enhancing pedestrian crossings at the intersection of Diamond Bar Boulevard and Sunset Crossing Road, at Diamond Bar Boulevard and Highland Valley Road, and at Diamond Bar Boulevard and the SR-60 on/off ramps; and
e. Incorporating multi-use pathways internal to new development and connecting to existing development.

CR-P-40. Provide for a vibrant Town Center that encourages pedestrian activity and comfort within the Town Center Mixed Use area while accommodating through traffic along Diamond Bar Boulevard through the following strategies:

a. Establishing a new pedestrian-oriented main street or pedestrian pathway in the Town Center;

b. Enhancing the pedestrian experience along Diamond Bar Boulevard within the Town Center area with widened sidewalks, shade trees, and pedestrian amenities such as street furniture, attractive paving, pedestrian-scaled lighting, and landscape buffers;

c. Buffering bike lanes along Diamond Bar Boulevard;

d. Improving crosswalks at the intersection of Diamond Bar Boulevard and Palomino Drive, at Diamond Bar Boulevard and Golden Springs Drive, and where Diamond Bar Boulevard intersects with the driveway to the Town Center; and

e. Strengthening cyclist and pedestrian connections between the Town Center area and nearby schools to provide safe and convenient routes to the Town Center for students by identifying barriers such as safety hazards and gaps in the bicycle and pedestrian networks and implementing improvements to address those barriers.

f. address those barriers.

CR-P-41. Promote a fine-grained network of safe pedestrian, bicycle, and vehicle connections in the Transit Oriented Mixed-Use area, emphasizing connectivity to the Metrolink station through the following strategies:

f. Improving crosswalks along Brea Canyon Road and Lemon Avenue;
g. Enhancing the pedestrian experience along South Brea Canyon Road within the Transit Oriented Mixed Use area with widened sidewalks, shade trees, and pedestrian amenities such as street furniture, attractive paving, and pedestrian-scaled lighting, where feasible;
h. Providing high-visibility pedestrian and bicycle connections to the Metrolink station;
i. Incorporating multi-use pathways internal to new development and connecting to existing development; and
j. Studying the potential for shuttle, bikeshare, and/or other linkages to improve the convenience of travel within the mixed-use area.

CR-P-43. When planning capital improvement programs, ensure that projects incorporate measures that strengthen the protection of cyclists in bike lanes by implementing improvements such as increasing visibility of lane markings and signage, increasing bike lane widths, raising lanes, designing safer intersection crossings and turns, and buffering lanes from traffic wherever feasible, prioritizing bicycle lanes along arterials.

CR-P-44. Enhance bicycle and pedestrian safety and comfort where feasible through means such as:

g. Introducing bicycle- and pedestrian-level street lighting to improve safety at night;

h. Furnishing intersections with crosswalks on all legs of the intersection;
i. Improving pedestrian safety with intersection design features such as improved signal timing, sidewalk bulb-outs, pedestrian refuge islands with "noses" that extend past the crosswalks, advance vehicle stop bars, high visibility crosswalk striping or decorative paving;
j. Improving bicycle safety with intersection design features such as bicycle detection and signalization, painted bike boxes, and intersection crossing markings;
k. Widening sidewalks, providing planting strips between sidewalks and streets and providing pedestrian amenities such as shade trees and street furniture; and
l. Implementing traffic calming measures to reduce vehicle speeds and congestion.

CR-P-49. Create additional pedestrian, bus, and bikeway connections to the Metrolink station to address first- and last-mile (FMLM) connectivity and make it easier to travel to between the station and surrounding neighborhoods.

CR-P-67. Ensure that trucks do not interfere with cyclist or pedestrian activity by:

a. Incorporating off-street or buffered bike lanes and walking paths where truck routes overlap with bicycle routes or streets with heavy pedestrian traffic; and
b. Designing driveways and curb cuts to avoid maneuvering on sidewalks or in street traffic, while also facilitating the safe and efficient movement of trucks.

Traffic Calming

LU-P-26. Maximize multi-modal (transit, automobile, cycling, and pedestrian) connections to other destinations in Diamond Bar, such as schools, parks, job centers, and community gathering spaces like the Town Center by:

a. Filling gaps in and expanding and/or upgrading the bikeway network to ensure safe and efficient bicycle mobility. Gaps that could be addressed in this area include the northern ends of Diamond Bar Boulevard and Golden Springs Drive.
b. Improving pedestrian comfort and safety by implementing traffic calming measures on Diamond Bar Boulevard between Temple Avenue and Sunset Crossing Road, providing shading through the addition of street trees along Diamond Bar Boulevard and Sunset Crossing Road, and encouraging

pedestrian-oriented elements on buildings and street furniture on Diamond Bar Boulevard.

CR-G-5. Develop neighborhood streets and alleys that encourage walking, biking, and outdoor activity through engineering and urban design principles that reduce the potential for speeding and cut-through traffic, which may include traffic calming measures.

CR-P-4. Develop traffic calming strategies for Diamond Bar Boulevard between Temple Avenue and Golden Springs Drive in order to provide a safe and comfortable pedestrian-friendly environment along and through the Neighborhood Mixed Use and Town Center Mixed Use areas.

CR-P-21. On an ongoing basis, examine opportunities to avoid delay, spillover, or cut-through traffic onto Diamond Bar's roadways through techniques such as adaptive traffic control systems along major corridors and traffic calming measures along cut-through routes that would reduce speeds and discourage drivers from electing to drive on them. Consider financial and technological feasibility and community priorities to determine whether and how strategies should be implemented.

CR-P-22. Implement traffic calming measures to slow traffic on local and collector residential streets and prioritize these measures over congestion management where appropriate and feasible.

CR-P-23. Maintain the integrity of existing residential areas and discourage cut-through traffic by retaining cul-de-sacs and implementing other traffic calming measures that promote safe driving at speeds appropriate to the surrounding neighborhood, particularly at Prospectors Road, Chaparral Drive, Sunset Crossing Road, Lycoming Street, and Washington Street.

CR-P-39. Ensure a safe environment for pedestrians and cyclists while allowing for local traffic to access freeways in the Neighborhood Mixed Use area through the following strategies:

a. Widening sidewalks, providing planting strips between sidewalks and streets and providing pedestrian amenities such as shade trees and street furniture along Diamond Bar Boulevard;
b. Implementing traffic calming measures such as reduced vehicle speeds, striping and signage along Diamond Bar Boulevard;
c. Buffering bike lanes along Diamond Bar Boulevard;
d. Enhancing pedestrian crossings at the intersection of Diamond Bar Boulevard and Sunset Crossing Road, at Diamond Bar

Boulevard and Highland Valley Road, and at Diamond Bar Boulevard and the SR-60 on/off ramps; and

e. Incorporating multi-use pathways internal to new development and connecting to existing development.

CR-P-44. Enhance bicycle and pedestrian safety and comfort where feasible through means such as:

a. Introducing bicycle- and pedestrian-level street lighting to improve safety at night;
b. Furnishing intersections with crosswalks on all legs of the intersection;
c. Improving pedestrian safety with intersection design features such as improved signal timing, sidewalk bulb-outs, pedestrian refuge islands with "noses" that extend past the crosswalks, advance vehicle stop bars, high visibility crosswalk striping or decorative paving;
d. Improving bicycle safety with intersection design features such as bicycle detection and signalization, painted bike boxes, and intersection crossing markings;
e. Widening sidewalks, providing planting strips between sidewalks and streets and providing pedestrian amenities such as shade trees and street furniture; and
f. Implementing traffic calming measures to reduce vehicle speeds and congestion.

Electric Vehicle Infrastructure

CR-P-56. Encourage dedicated parking and charging stations for electric vehicles.

RC-P-37. Seek grants and other external funding opportunities to convert the City fleet to zero emissions vehicles over time and in a manner that is fiscally neutral in comparison to conventional fuel vehicles.

CHS-P-41. Support the use of clean fuel and "climate friendly" vehicles in order to reduce energy use, energy cost, and greenhouse gas emissions by residents, businesses, and City government activities.

CHS-P-42. Seek funding and other assistance from the South Coast Air Quality Management District for installation of electric vehicle charging stations at appropriate locations throughout the City.

Parking Policies

LU-P-15. Encourage mixed-use development in infill areas by providing incentives such as reduced parking requirements and/or opportunities for shared parking.

LU-P-33. Amend the Development Code parking regulations to allow lower parking minimums for developments with a mix of uses with different peak parking needs, as well as developments that implement enforceable residential parking demand reduction measures, such as parking permit and car share programs.

LU-P-43. When updating the Development Code's parking standards or preparing specific plans, evaluate parking ratios for the Town Center to balance the financial feasibility of development projects with the provision of adequate parking for visitors. Coordinate with developers and transit agencies to provide alternative modes of transportation to allow for reduced parking requirements.

CC-P-26. Establish reduced minimum commercial parking requirements for all development within new mixed-use land use designations. Reduced parking requirements should be supported by proximity to transit, shared parking, and technologies that, once mainstreamed, would reduce the need for conventional parking layouts.

CC-P-49. Encourage reductions in surface parking and allow for the development of consolidated parking structures, provided that they are screened from view from Diamond Bar Boulevard and Golden Springs Drive.

CR-G-14. Provide adequate parking for all land use types, while balancing this against the need to promote walkable, mixed-use districts and neighborhoods in targeted areas, and promoting ride-sharing and alternative transportation modes.

CR-P-24. As opportunities arise, coordinate with local, regional, and State agencies to encourage and support programs that reduce vehicle miles traveled, such as preferential carpool and car share parking, parking pricing, on-site childcare, flexible work schedules, subsidized transit passes, and ridesharing.

CR-P-53. Update parking standards in the Development Code to ensure that they are reflective of the community's needs, using current data on parking demand and taking into consideration demographics and access to alternative modes of transportation.

CR-P-54. Incorporate criteria in the Development Code to allow reductions in parking requirements in exchange for VMT reduction measures.

CR-P-56. Encourage dedicated parking and charging stations for electric vehicles.

CR-P-57. Develop incentives to encourage carpooling, such as preferential parking for high-occupancy vehicles.

Transportation Improvements

LU-G-4. Locate new residential growth in or adjacent to mixed-use centers and transit stations to support regional and statewide efforts to encourage sustainable land use planning and smart growth principles.

LU-G-9. Provide for the concentration of office and commercial uses near regional access routes, transit stations, and existing and proposed employment centers.

LU-G-19. Leverage the proximity of the City of Industry Metrolink station and Foothill Transit facility to create an engaging, compact, mixed-use neighborhood that encourages multi-modal transportation and responds to a diversity of housing needs.

LU-P-26. Maximize multi-modal (transit, automobile, cycling, and pedestrian) connections to other destinations in Diamond Bar, such as schools, parks, job centers, and community gathering spaces like the Town Center by:

a. Filling gaps in and expanding and/or upgrading the bikeway network to ensure safe and efficient bicycle mobility. Gaps that could be addressed in this area include the northern ends of Diamond Bar Boulevard and Golden Springs Drive.
b. Improving pedestrian comfort and safety by implementing traffic calming measures on Diamond Bar Boulevard between Temple Avenue and Sunset Crossing Road, providing shading through the addition of street trees along Diamond Bar Boulevard and Sunset Crossing Road, and encouraging pedestrian-oriented elements on buildings and street furniture on Diamond Bar Boulevard.

LU-P-31. Promote convenient, attractive, and safe pedestrian, bicycle, and transit connections between the Transit-Oriented Mixed Use neighborhood and surrounding neighborhoods and other destinations within Diamond Bar such as schools, the Town Center, and parks.

LU-P-49. Promote convenient, attractive, and safe pedestrian, bicycle, and transit connections both within the Community Core area and

between the Community Core and surrounding neighborhoods and other destinations within Diamond Bar.

ED-G-5. Support the use of Metrolink and local transit connections as a means for non-residents to commute to employment opportunities in Diamond Bar.

ED-P-9. Promote the use of multi-modal connections to serve commercial and office uses within Diamond Bar, thereby enhancing transit, ride-sharing, pedestrian, and bicycle infrastructure opportunities, and reducing automobile congestion within the City.

CC-P-52. Highlight gateways and access to the transit facilities through landscape and signage improvements.

CR-G-13. Maximize the availability, efficiency, and effectiveness of public transit service.

CR-P-46. Where feasible, integrate transit nodes and connections with adjacent existing and proposed developments and destinations—such as employment centers, commercial centers, major attractions, and public pedestrian spaces—to make them more accessible to transit users.

CR-P-47. As opportunities arise, coordinate with Foothill Transit, Metrolink, and other transit providers to incorporate real-time information systems at transit stops so that passengers will know when their vehicle is expected to arrive.

CR-P-48. As opportunities arise, work with Foothill Transit to maintain and improve bus stops and shelters, as well as identify areas where service can be improved or expanded to increase system use.

CR-P-49. Create additional pedestrian, bus, and bikeway connections to the Metrolink station to address first- and last-mile (FMLM) connectivity and make it easier to travel to between the station and surrounding neighborhoods.

CR-P-50. As opportunities arise, coordinate with Metrolink and Union Pacific Railroad (UPRR) to provide more frequent service at the City of Industry station, including service for shorter trips, to increase the convenience and use of transit.

CR-P-51. Support, where feasible, privately funded local transit systems that are accessible for seniors, youths, and individuals with disabilities, to ensure that all community members have the ability to travel while decreasing congestion.

CR-P-52. In areas or on routes between destinations that have been determined to be infeasible for public transit providers to serve, explore the use of programs that subsidize the use of TNCs, alternative transit services, or the City's Diamond Ride program, particularly for populations with special needs, such as seniors, youths, or persons with disabilities, until such a time as mass transit becomes feasible.

Appendix D

Potential Project Level GHG Reduction Measures

In addition to the potential programmatic measures contained in this Climate Action Plan, the following is a non-exclusive list of potential additional measures that can be applied at the project level to reduce greenhouse gas emissions. It should be noted that these measures are not essential for the City to meet its GHG reduction targets, but are presented here for information purpose. Sources for additional potential measures include those listed in CAPCOA's "CEQA and Climate Change, Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act (January 2008)" and OPR's "CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA)". Please see Appendix B for complete references.

Renewable Energy

- Provide onsite renewable energy system(s). Nonpolluting and renewable energy potential includes solar, wind, geothermal, low-impact hydro, biomass and bio-gas strategies
- Include in new buildings facilities to support the use of low/zero carbon fueled vehicles, such as the charging of electric vehicles from green electricity sources

Green Building

- Meet recognized green building and energy efficiency benchmarks such as LEED and ENERGY STAR
- Incorporate materials which are resource efficient, recycled, with long life cycles and manufactured in an environmentally friendly way

Energy Efficiency

- Exceed Diamond Bar Green Building Code (Title 24) mandatory efficiency requirements by 15% or more
- Install light colored "cool" roofs (e.g. Energy Star roofing) or other highly reflective, highly emissive roofing materials
- Install a vegetated ("green") roof that covers at least 50% of roof area
- Design project to maximize solar orientation (i.e., 75% or more building face north or south; include roof overhangs that block high summer sun, but not lower winter sun, from penetrating south-facing windows
- Plant trees and vegetation near structures to shade buildings and reduce energy requirements for heating/cooling
- Install energy-reducing ceiling/whole-house fans
- Install energy efficient lighting (e.g., light emitting diodes (LEDs)), heating and cooling systems, appliances, equipment, and control systems. (e.g., Energy Star)
- Install energy-reducing programmable thermostats that automatically adjust temperature settings

Transportation

- Develop commute trip reduction plans that encourage employees who commute alone to consider alternative transportation modes
- Create an online ridesharing program that matches potential carpoolers immediately through email
- Provide fair-share funding of transportation improvements
- Provide shuttle service or public transit incentives such as transit passes to decrease work-related auto trips
- Provide "end-of-trip" facilities including showers, lockers, and changing space (nonresidential projects)
- Incorporate public transit into project design
- Incorporate bicycle lanes, routes and facilities into street systems, new subdivisions, and large developments
- Provide amenities for non-motorized transportation, such as secure and convenient bicycle parking
- Provide plentiful short- and long-term bicycle parking facilities (nonresidential projects)
- Provide long-term bicycle parking is provided at apartment complexes or condominiums without garages

- Create pedestrian (and/or bicycle) access network that internally links all uses and connects to all existing/planned external streets and pedestrian (and/or bicycle) facilities contiguous with the project site
- Provide a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities and building entrances
- Provide parking for EVs/CNG vehicles
- Install EV charging facilities

Water Conservation

- Install water-efficient fixtures and appliances such as low-flow fixtures, dual flush toilets, and other water efficient appliances
- Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls and use water-efficient irrigation methods
- Implement low-impact development practices that maintain the existing hydrology of the site to manage storm water and protect the environment
- Incorporate recycled/reclaimed water for landscape irrigation and other non-potable water use needs
- Incorporate rain barrels and gray water systems for landscape irrigation

Landscaping

- Incorporate into landscapes drought resistant native trees, trees with low emissions and high carbon sequestration potential
- Provide parking lot areas with 50% tree cover within 10 years of construction, in particular low emitting, low maintenance, native drought resistant trees. Reduces urban heat island effect
- Dedicate space for neighborhood gardening
- Establish an urban tree planting program

Solid Waste Measures

- Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard)
- Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas
- Provide education and publicity about reducing waste and available recycling services

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Appendix E

Diamond Bar City Council Resolution No. 2019-10 – Balanced Energy Solutions

RESOLUTION NO. 2019- 10

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF DIAMOND BAR SUPPORTING EFFORTS TO MAINTAIN LOCAL CONTROL OF ENERGY SOLUTIONS

WHEREAS California's energy policies are critical to reducing greenhouse gas emissions and reducing the impact of climate change; and

WHEREAS the state legislature and state agencies are increasingly proposing new legislation and regulations eliminating choice of energy by mandating single source technologies to power buildings and public fleets, including transit, as a strategy to help achieve the state's climate goals; and

WHEREAS the City of Diamond Bar, its residents and businesses, value local control and the right to choose the policies and investments that most affordably and efficiently enable them to comply with state requirements; and

WHEREAS single source building and vehicle technology mandates eliminate local control and customer choice, suppress innovation, reduce reliability and unnecessarily increase costs for Diamond Bar residents and businesses; and

WHEREAS relying on a single energy delivery system unnecessarily increases vulnerabilities to natural and man-made disasters, and that a diversity of energy delivery systems and resources contribute to greater reliability and community resilience; and

WHEREAS the City of Diamond Bar is committed to doing its part to help the state achieve its climate goals, but requires the flexibility to do so in a manner that best serves the needs of its residents and businesses.

NOW, THEREFORE, BE IT RESOLVED, that the City Council of the City of Diamond Bar does hereby support balanced energy solutions that provide local control authority, and opposes proposed state legislation and policy that eliminate such local control or mandates single energy technologies, to achieve the state's climate goals.

PASSED, APPROVED, AND ADOPTED this 16th day of April, 2019.

Carol Herrera

Carol Herrera, Mayor

ATTEST:

I, Tommye A. Cribbins, City Clerk of the City of Diamond Bar, California, do hereby certify that the foregoing Resolution was duly and regularly passed, approved and adopted by the City Council of the City of Diamond Bar, California, at its Regular meeting held on the 16th day of April 2019, by the following Roll Call vote:

AYES:	COUNCILMEMBERS:	Chou, Low, Lyons, MPT/Tye, M/Herrera
NOES:	COUNCILMEMBERS:	None
ABSENT:	COUNCILMEMBERS:	None
ABSTAIN:	COUNCILMEMBERS:	None

Tommye A. Cribbins, City Clerk
City of Diamond Bar

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