
10. GREENHOUSE GAS EMISSIONS

This EIR chapter describes the impacts of the proposed General Plan with respect to global climate change and greenhouse gas (GHG) emissions. The chapter was prepared using methodologies and assumptions recommended by the Bay Area Air Quality Management District (BAAQMD), the regional air quality regulatory agency.¹ In keeping with these guidelines, the chapter describes existing sources and quantities of GHG emissions, potential short-term construction-related greenhouse gas emissions, potential direct and indirect operational emissions associated with the General Plan.

10.1 ENVIRONMENTAL SETTING

10.1.1 Climate Change

Climate change is the distinct change in measures of climate for a long period of time. Climate change can result from natural processes and from human activities. Natural changes in the climate can be caused by indirect processes such as changes in the Earth's orbit around the Sun or direct changes within the climate system itself (i.e. changes in ocean circulation). Human activities can affect the atmosphere through emissions of gases and changes to the planet's surface. Emissions affect the atmosphere directly by changing its chemical composition, while changes to the land surface indirectly affects the atmosphere by changing the way the Earth absorbs gases from the atmosphere. The term "climate change" is preferred over the term "global warming" because "climate change" conveys the fact that other changes can occur beyond just average increase in temperatures near the Earth's surface. Elements that indicate that climate change is occurring on Earth include:

- Rising of global surface temperatures by 1.3° Fahrenheit (F) over the last 100 years
- Change in precipitation patterns
- Melting ice in the Arctic
- Melting glaciers throughout the world
- Rising ocean temperatures
- Acidification of oceans
- Range shifts in plant and animal species

Climate change is intimately tied to the Earth's greenhouse effect. The greenhouse effect is a natural occurrence that helps regulate the temperature of the planet, and without it, life as we know it on earth would not exist. Human activities since the beginning of the industrial revolution (approximately 150 years) have been adding to the natural greenhouse effect by increasing the gases in the atmosphere that trap energy, thereby contributing to an average increase in the Earth's temperature. Human activities that enhance the greenhouse effect are detailed below.

¹ Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. San Francisco, CA. June 2010, updated May 2017
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10.1.2 Greenhouse Gases

Gases that “trap” heat in the atmosphere and affect regulation of the earth’s temperature are known as “greenhouse gases” (GHG). Many chemical compounds in the earth’s atmosphere exhibit the GHG property. GHG allow sunlight to enter the atmosphere freely. When the sunlight strikes the earth’s surface, it is either absorbed or reflected back toward space. Earth, or materials near the earth’s surface, that have absorbed energy from sunlight warm up during the daytime and emit infrared radiation back toward space during both the daytime and nighttime hours. GHG absorb this long-wave, infrared radiation and “trap” the energy in the earth’s atmosphere. The term “climate change” is preferred over the term “global warming” because “climate change” conveys the fact that other changes can occur beyond just average increase in temperatures near the earth’s surface.

GHG that contribute to climate regulation are a different type of pollutant than criteria or hazardous air pollutants because climate regulation is global in scale, both in terms of causes and effects. Some GHG are emitted to the atmosphere naturally by biological and geological processes such as evaporation (water vapor), aerobic respiration (carbon dioxide, or CO₂), and off-gassing from low oxygen environments such as swamps or exposed permafrost (methane or CH₄); however, GHG emissions from human activities such as fuel combustion (e.g., CO₂) and refrigerants use (e.g., hydrofluorocarbons or HFCs) significantly contribute to overall GHG concentrations in the atmosphere, climate regulation, and global climate change. Human production of GHG has increased steadily since pre-industrial times (approximately pre-1880) and atmospheric CO₂ concentrations have increased from a pre-industrial value of 280 parts per million (ppm) in the early 1800’s to 409 ppm in March 2018.² The effects of increased GHG concentrations in the atmosphere include increasing shifts in temperature and precipitation patterns and amounts, reduced ice and snow cover, sea level rise, and acidification of oceans. These effects in turn will impact food and water supplies, infrastructure, ecosystems, and overall public health and welfare.

The 1997 United Nations’ Kyoto Protocol international treaty set targets for reductions in emissions of four specific greenhouse gases – CO₂, CH₄, nitrous oxide (N₂O), and sulfur hexafluoride (SF₆) – and two groups of gases – HFCs and perfluorocarbons (PFCs). These GHG are the primary GHG emitted into the atmosphere by human activities. Water vapor is also a common GHG that regulates the earth’s temperature; however, the amount of water vapor in the atmosphere can change substantially from day to day, whereas other GHG emissions remain in the atmosphere for longer periods of time. Black carbon consists of particles emitted during combustion; although a particle and not a gas, black carbon also acts to trap heat in the Earth’s atmosphere. Detailed descriptions of the most common GHG are described below.

- **Carbon Dioxide (CO₂)** is emitted and removed from the atmosphere naturally. Animal and plant respiration involves the release of CO₂ from animals and its absorption by plants in a continuous cycle. The ocean-atmosphere exchange results in the absorption and release of CO₂ at the sea surface. CO₂ is also released from plants during wildfires. Volcanic eruptions release a small amount of CO₂ from the Earth’s crust.

Human activities that affect CO₂ in the atmosphere include burning of fossil fuels, industrial processes, and product uses. Combustion of fossil fuels used for electricity generation and transportation are the largest source of CO₂ emissions in the United States. When fossil fuels are burned, the carbon stored in them is released into the

² National Oceanic and Atmospheric Administration (NOAA) 2018. “Mauna Loa CO₂ Monthly Mean Data.” Trends in Atmospheric Carbon Dioxide. NOAA, Earth System Research Laboratory, Global Monitoring Division. April 9, 2018. Web. April 10, 2018. <<http://www.esrl.noaa.gov/gmd/ccgg/trends/>>
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atmosphere entirely as CO₂. Emissions from industrial activities also emit CO₂ such as cement, metal, and chemical production and use of petroleum produced in plastics, solvents, and lubricants.

- **Methane (CH₄)** is emitted from human activities and natural sources. Natural sources of CH₄ include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, soils, and wildfires. Human activities that cause CH₄ releases include fossil fuel production, animal digestive processes from farms, manure management, and waste management. It is estimated that 50 percent of global CH₄ emissions are human generated. Releases from animal digestive processes at agricultural operations are the primary source of human-related CH₄ emissions. CH₄ is produced from landfills as solid waste decomposes. CH₄ is a primary component of natural gas and is emitted during its production, processing, storage, transmission, distribution, and use. Decomposition of organic material in manure stocks or in liquid manure management systems also releases CH₄. Wetlands are the primary natural producers of CH₄ because the habitat is conducive to bacteria that produce CH₄ during decomposition of organic material.
- **Nitrous Oxide (N₂O)** is emitted from human sources such as agricultural soil management, animal manure management, sewage treatment, combustion of fossil fuels, and production of certain acids. N₂O is produced naturally in soil and water, especially in wet, tropical forests. The primary human-related source of N₂O is agricultural soil management due to use of synthetic nitrogen fertilizers and other techniques to boost nitrogen in soils. Combustion of fossil fuels (mobile and stationary) is the second leading source of N₂O, although parts of the world where catalytic converters are used (such as California) have significantly lower levels than those areas that do not.
- **Hydrofluorocarbons (HFCs) and Perfluorocarbons (PFCs)** are entirely human made and are mainly generated through various industrial processes. These types of gases are used in aluminum production, semiconductor manufacturing, and magnesium production and processing. HFCs and PFCs are also used as substitutes for ozone-depleting gases like chlorofluorocarbons (CFCs) and halons.
- **Sulfur Hexafluoride (SF₆)** is commonly used as an electrical insulator in high-voltage electrical transmission and distribution equipment such as circuit breakers, substations, and transmission switchgear. Releases of SF₆ occur during maintenance and servicing as well as from leaks of electrical equipment.

GHG can remain in the atmosphere long after they are emitted. The potential for a particular greenhouse gas to absorb and trap heat in the atmosphere is considered its global warming potential. The reference gas for measuring global warming potential is CO₂, which has a global warming potential of one. By comparison, CH₄ has a global warming potential of 25, which means that one molecule of CH₄ has 25 times the effect on global warming as one molecule of CO₂. Multiplying the estimated emissions for non-CO₂ GHG by their global warming potential determines their CO₂ equivalent (CO₂e), which enables a project's combined global warming potential to be expressed in terms of mass CO₂ emissions. The global warming potentials and estimated atmospheric lifetimes of the common GHG are shown in Table 10-1.

Table 10-1: Global Warming Potential (GWP) of Common GHG (100 Year Horizon)

GHG	GWP ^(A)	GHG	GWP ^(A)
Carbon Dioxide (CO ₂)	1	Perfluorocarbons (PFCs)	
Methane (CH ₄)	25	CF ₄	6,500
Nitrous Oxide (N ₂ O)	298	C ₂ F ₆	9,200
Hydrofluorocarbons (HFCs)		C ₄ F ₁₀	7,000
HFC-23	14,800	C ₆ F ₁₄	7,400
HFC-134a	1,430	Sulfur Hexafluoride (SF ₆)	22,800
HFC-152a	140		
HCFC-22	1,700		

Source: CARB³

(A) GWPs are based on the United Nations Intergovernmental Panel on Climate Change 4th Assessment Report. The 4th Assessment Reports values have been presented to provided consistency with the statewide GHG emissions inventory presented in Section 10.1.3.

10.1.3 Statewide GHG Emissions

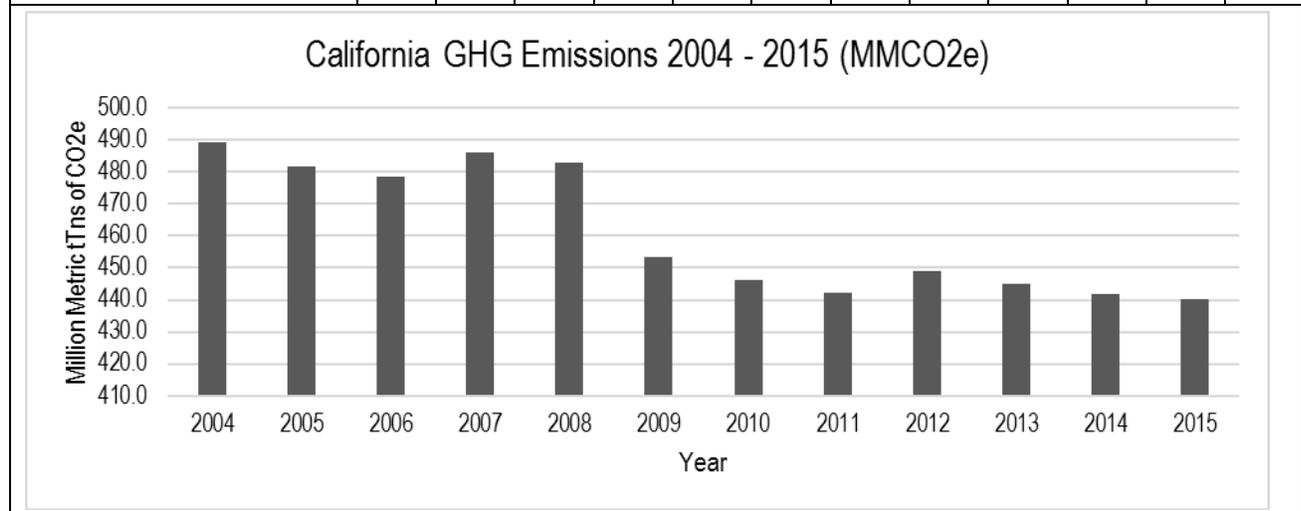
CARB prepares an annual statewide GHG emissions inventory using regional, State, and federal data sources, including facility-specific emissions reports prepared pursuant to the State’s Mandatory GHG Reporting Program. The statewide GHG emissions inventory helps CARB track progress towards meeting California’s AB 32 GHG emissions target of 431 million metric tons of CO₂ equivalents (MMCO₂e), as well as establish and understand trends in GHG emissions.⁴ Statewide GHG emissions for the 2005 to 2015 time period are shown in Table 10-2.

³ California Air Resources Board (CARB). 2014. First Update to the Climate Change Scoping Plan. Sacramento, CA. May 2014.

⁴ CARB approved use of 431 MMCO₂e as the state’s 2020 GHG emission target in May 2014. Previously, the target had been set at 427 MMCO₂e.

Table 10-2: 2004-2015 Statewide GHG Emissions (Million MTCO₂e)

Scoping Plan Sector	Year											
	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15
Agriculture	34	34	36	36	36	34	35	36	37	35	36	35
Commercial/Residential	44	42	43	43	44	44	45	46	43	43	38	38
Electric Power	115	108	105	114	120	101	90	88	95	90	88	84
High GWP	7	8	8	9	10	11	12	14	15	16	17	19
Industrial	98	95	93	90	90	88	91	90	91	93	93	92
Recycling and Waste	8	8	8	8	8	8	9	9	9	9	9	9
Transportation	182	184	184	184	173	166	163	159	159	158	160	165
Total Million MCO₂e^(A)	488	480	476	484	481	452	445	442	448	444	442	440



Source: CARB⁵

(A) Totals may not equal due to rounding. CARB inventory uses GWPs based on the United Nations' ICC's 4th Assessment Report.

As shown in Table 10-2, statewide GHG emissions have generally decreased over the last decade, with 2015 levels (440 million MTCO₂e) approximately 10 percent less than 2004 levels (488 million MTCO₂e). The transportation sector (165 million MTCO₂e) accounted for more than one-third (approximately 37.5%) of the State's total GHG emissions inventory (440 million MTCO₂e) in 2015.

10.1.4 Regional and Local GHG Emissions

10.1.4.1 San Francisco Bay Area

The Bay Area Air Quality Management District (BAAQMD) conducts periodic inventories of GHG emissions within the San Francisco Bay Area Air Basin. Data for the most recent inventory (Year 2011) indicates the Bay Area emitted a total of 86.6 MMTCO₂e, or approximately 20

⁵ California Air Resources Board (CARB). 2017. California Greenhouse Gas Emission by Scoping Plan Category (2017 Edition: 2000 to 2015). Sacramento, CA. June 6, 2017.
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percent of the total statewide GHG emissions in Year 2011.^{6,7} Similar to the state inventory, the combustion of fossil fuels in mobile sources such as cars, trucks, locomotives, ships, and boats contribute the most (34.3 MMTCO₂e) toward regional GHG levels (approximately 40 percent of regional GHG emissions).

A summary of the 2011 regional GHG emissions inventory, by sector and county, is shown in Table 10-3. San Mateo County, in which the City of Burlingame is located, emitted approximately 7.7 MMTCO₂e, or about nine percent of total regional emissions.

Table 10-3: 2011 Bay Area GHG Emissions, by Sector and County (MMTCO₂e)

Sector	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano*	Sonoma*	Total SF Bay Area
Industrial/ Commercial	2.7	17.8	0.4	0.2	1.2	1.4	4.1	2.7	0.5	31.0
Residential Fuel	1.3	1.0	0.3	0.1	0.9	0.8	1.5	0.3	0.4	6.6
Electricity/ Co-Generation	0.9	7.2	0.1	0.1	0.5	0.4	2.2	0.4	0.2	12.0
Off-Road Equipment	0.2	0.2	0.0	0.0	0.2	0.1	0.4	0.0	0.1	1.2
Transportation	7.9	5.0	1.3	0.9	3.0	5.0	7.6	1.6	2.0	34.3
Agriculture/ Farming	0.1	0.2	0.2	0.1	0.0	0.0	0.2	0.1	0.2	1.1
TOTAL (All Sectors)¹	13.2	31.4	2.4	1.5	5.7	7.7	16.0	5.1	3.5	86.5

Source: BAAQMD⁸

* Portions within BAAQMD.

¹ Totals may not equal due to rounding.

The 2011 Regional GHG Emissions Inventory also includes a list of the “Top 200” major GHG emitting point source facilities in the region. None of the facilities listed are located within the City of Burlingame.

⁶ Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. San Francisco, CA. June 2010, updated May 2017.

⁷ The BAAQMD GHG inventory is based on the U.N. IPCC’s 2nd Assessment Report, which uses different GWP values to compute carbon dioxide equivalents. The GWP values in the 2nd Assessment Report are generally lower than the values in the UN IPCC 4th Assessment Report, which the CARB statewide inventory uses. For example, the GWP of methane was reported as 21 in the 2nd Assessment Report and is reported as 25 in the 4th Assessment Report.

⁸ Bay Area Air Quality Management District (BAAQMD) 2015. Bay Area Emissions Inventory Summary Report: Greenhouse Gases Base Year 2011. San Francisco, CA. January 2015.

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10.1.4.2 City of Burlingame

The City of Burlingame adopted its initial Climate Action Plan (CAP) in June 2009, which established the 2005 calendar year as the baseline year for GHG emission inventory and emissions reduction planning purposes. The 2009 CAP was developed using tools and methodologies provided by the International Council for Local Environmental Initiatives (ICLEI) – Local Governments for Sustainability, and set forth measures to reduce GHG emissions in the city through the year of 2020, consistent with the state’s goals laid out in AB 32 (see Section 10.2.3.2). Table 10-4, below, summarizes the 2005 baseline municipal operations inventory quantified in the CAP.

Table 10-4: 2005 Burlingame Municipal Operations GHG Emissions

Sector	Metric Tons CO ₂ e
Energy	1,368
Vehicles Fleet	603
Landfill	354
Wastewater Treatment	431
Solid Waste Generation	35
Employee Commute	535
Generators	11
Refrigerants	0
Total	3,338

Notes: MTCO₂e/yr = metric tons carbon dioxide equivalent per year. Totals may not be completely accurate, due to rounding of figures.

On July 11, 2014, the City released its 2010 Community Greenhouse Gas Inventory Report, which provided an update on the City’s community-wide progress toward meeting the 2020 goal. The 2010 Community Greenhouse Gas Inventory Report presented emissions from the residential, commercial, industrial, transportation, solid waste, and municipal sectors, and also incorporated emissions from landfills and wastewater, which were assessed in the 2005 municipal operations inventory. Off-road transportation, another sector that was not assessed in the CAP, was also added to the 2005 baseline in the 2010 Report.

In addition to the CAP and 2010 Community Greenhouse Gas Inventory Report, GHG emissions within the City have been estimated by DNV GL under contract with the County of San Mateo as part of County’s Regionally Integrated Climate Action Planning Suite (RICAPS). RICAPS is a partnership engaging all 20 incorporated cities and the County in climate action planning and implementation. Table 10-5, below, summarizes the community-wide GHG emissions presented in the 2010 Community Greenhouse Gas Inventory Report, as well as annual inventories from 2011 through 2015.

Table 10-5: 2005 to 2015 Burlingame Community-Wide GHG Emissions

Sector	Metric Tons CO ₂ e						
	2005	2010	2011	2012	2013	2014	2015
Residential	47,523	47,232	46,997	46,133	46,299	38,276	38,231
Commercial/ Industrial	74,466	73,759	73,646	75,261	74,260	70,409	67,642
Transportation – Local Roads	60,935	58,151	52,664	60,223	60,227	59,705	60,774
Transportation – State Highways	142,279	122,520	141,143	135,404	135,653	135,331	138,323
Transportation – Off-road Equipment	17,674	18,111	23,597	23,976	24,359	24,750	25,146
Transportation – Caltrain	Not Estimated	2,410	2,426	2,443	2,507	2,433	2,473
Solid Waste – Generated Waste	11,742	5,523	4,402	4,145	4,869	4,284	5,042
Solid Waste – Landfills	265	204	262	176	181	208	204
Wastewater	338	495	845	838	805	854	852
Water	Not Estimated	530	374	427	416	393	316
City-owned Stationary Sources	Not Estimated	3	3	2	2	6	6
Total	355,221	328,937	346,358	349,027	349,578	336,650	339,010

Source: Burlingame, 2014; Butterworth⁹

Notes: MTCO₂e/yr = metric tons carbon dioxide equivalent per year. Totals may not be completely accurate, due to rounding of figures.

As shown in Table 10-5, the 2015 annual community-wide GHG inventory shows emissions have decreased by approximately 4.6 percent, when compared to 2005 levels. To remain consistent with AB 32 goals, the City would need to reduce its emissions to 15 percent below 2005 levels by 2020. Based on the way GHG emissions have trended between 2011 and 2015, this approximately 10.4 percent gap, or 36,942 MTCO₂e, is unlikely to be closed by the 2020 target year.

⁹ Butterworth 2018. Personal communication between Ben Butterworth, DNV GL, and Chris Dugan, MIG. Email RE: Burlingame GHG inventory. September 2017.

10.2 REGULATORY SETTING

Agencies at the international, national, statewide, and local levels are considering or have adopted strategies to control emissions of gases that contribute to global climate change. The agencies described below work jointly, as well as individually, to address climate change through legislation, regulations, planning, policy-making, education, and implementation programs.

10.2.1 International

10.2.1.1 International Regulation and the Kyoto Protocol

In 1988, the United Nations established the Intergovernmental Panel on Climate Change to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change agreement with the goal of controlling greenhouse gas emissions. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The plan currently consists of more than 50 voluntary programs for member nations to adopt.

10.2.1.2 Paris Climate Agreement

On December 12, 2015, representatives from 196 nations entered into a pact to adopt green energy sources, cut down on climate change emissions, and limit the rise of global temperatures while also cooperating to cope with the impact of unavoidable climate change. The agreement focuses on attempting to limit the rise in global temperatures to two degrees Celsius (3.6 degrees Fahrenheit). Voluntary pledges, taken by each country that signed the Paris climate agreement, set 2020 as the year in which reductions would begin. In June 2017, the U.S. announced its intention to withdraw from the Paris Climate Agreement. Per the language in the agreement, the earliest effective date for the United States to withdraw is November 2020.

10.2.2 Federal

10.2.2.1 Federal Regulation and the Clean Air Act

On December 7, 2009, the U.S. EPA announced GHG Emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The U.S. EPA's final findings respond to the 2007 U.S. Supreme Court decision on *Massachusetts v. EPA* that found GHGs fit within the Clean Air Act definition of air pollutants. The findings did not themselves impose any reduction requirements, but rather allowed EPA to finalize the GHG standards proposed for new light-duty vehicles as part of joint rulemaking with the Department of Transportation.¹⁰

In order to enact the 2009 GHG standards for new light-duty vehicles, the U.S. EPA was required to issue an endangerment finding. The finding, which applied to the six Kyoto GHGs (CO₂, CH₄, N₂O, SF₆, HFCs, and PFCs), laid the foundation for future GHG regulation development on a national level.

¹⁰ United States Environmental Protection Agency (U.S. EPA) 2009. EPA's Endangerment Finding. December 7, 2009. Web. Accessed April 10, 2018. <https://www.epa.gov/sites/production/files/2016-08/documents/endangermentfinding_legalbasis.pdf>
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10.2.2.2 GHG Tailoring Rule

The U.S. EPA's GHG Tailoring Rule, issued in May 2010, established an approach to permitting GHG emissions under Prevention of Significant Deterioration (PSD) and Title V.¹¹ The initial Rule applied to any facility having the potential to emit more than 250 tons per year of "any air pollutant," or 100 tons per year for certain types of sources. This was challenged by the Utility Air Regulatory Group in 2012.

In 2014, the U.S. Supreme Court issued its decision in *Utility Air Regulatory Group v. EPA* (No. 12-1146), finding the U.S. EPA may not treat greenhouse gases as an air pollutant for the purposes of determining if a source is a "major source" under PSD or Title V operating permit programs strictly based on the source's potential to emit GHG. The Court did rule, however, that the source may become subject to the U.S. EPA's "Best Available Control Technology" (BACT) requirements under the PSD program, as long as the source is already being regulated for emitting conventional pollutants.

Regardless of whether or not a source is subject to BACT requirements, all facilities emitting 25,000 MTCO₂e or more of GHG in the United States are required to report their emissions to the U.S. EPA through the Greenhouse Gas Reporting Program (codified in 40 CFR Part 98). The Greenhouse Gas Reporting Program provides the U.S. EPA with valuable data to inform future policy decisions.

10.2.3 State and Regional

The following describes the actions taken by California Governors and the California Legislature that have resulted in new policies directed at reducing statewide GHG emissions. These policies, codified in statutes and enacted through regulations, are implemented by state and regional entities through plans and programs.

10.2.3.1 Executive Orders

Executive Order S-01-07

Executive Order S-1-07, the Low Carbon Fuel Standard (LCFS), was issued by Governor Schwarzenegger on January 18, 2007. The LCFS calls for a reduction of at least 10 percent in the carbon intensity of California's transportation fuels by 2020 by promoting the use of GHG reducing transportation fuels (e.g., liquid biofuels, renewable natural gas, electricity, and hydrogen) through a fuel-neutral declining carbon intensity standard.¹² The LCFS regulation was initially approved by CARB in 2009. The LCFS regulation is discussed in greater detail below, under Section 10.2.3.4.

Executive Order S-14-08 and Executive Order S-21-09

On November 17, 2008, Governor Schwarzenegger signed Executive Order S-14-08 requiring all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Executive Order S-21-09, signed September 15, 2009, directed CARB to enact regulations to

¹¹ PSD and Title V are permitting programs required under the Clean Air Act that protect air quality.

¹² California Air Resources Board (CARB). 2016. Low Carbon Fuel Standard Program Background. February 2, 2016. Web. Accessed January 29, 2018. <<https://www.arb.ca.gov/fuels/lcfs/lcfs-background.htm>>

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achieve the goal of 33 percent renewables by 2020 under its AB 32 authority. The Renewable Portfolio Standard (RPS) Program is discussed in greater detail below, under Section 10.2.3.4.

Executive Order S-03-15

On June 1, 2005, Governor Schwarzenegger signed Executive Order S-03-15, which set the following GHG reduction targets for the State:

- 2000 levels by 2010,
- 1990 levels by 2020, and
- 80 percent below 1990 levels by 2050.

These reduction targets were codified in 2008 through the passage of Assembly Bill 32 (AB 32). AB 32 is discussed in greater detail below, under Section 10.2.3.2.

Executive Order B-30-15

Executive Order B-30-15, issued by Governor Jerry Brown on April 29, 2015, set a target of reducing GHG emissions by 40 percent below 1990 levels in 2030. To achieve this ambitious target, Governor Brown identified five key goals for reducing GHG emissions in California through 2030:

1. Increase renewable electricity to 50 percent,
2. Double energy efficiency savings achieved in existing buildings and make heating fuels cleaner,
3. Reduce petroleum use in cars and trucks by up to 50 percent,
4. Reduce emissions of short-lived climate pollutants, and
5. Manage farms, rangelands, forests, and wetlands to increasingly store carbon.

By directing state agencies to take measures consistent with their existing authority to reduce GHG emissions, Executive Order B-30-15 establishes coherence between the 2020 and 2050 GHG reduction goals set by AB 32, and seeks to align California with the scientifically established GHG emissions levels needed to limit global warming below two degrees Celsius. Executive Order B-30-15's reduction goal was codified in 2016 through SB 32. SB 32 is discussed in greater detail below, under Section 10.2.3.2.

10.2.3.2 Senate and Assembly Bills

Assembly Bill 32: California Global Warming Solutions Act

In September 2006, Governor Arnold Schwarzenegger signed AB 32, the California Climate Solutions Act of 2006. AB 32 establishes the caps on statewide greenhouse gas emissions proclaimed in Executive Order S-3-05 and set the following timeline for meeting state GHG reduction targets:

January 1, 2009:	Adopt Scoping Plan
January 1, 2010:	Early action measures take effect
January 1, 2011:	Adopt GHG reduction measures
January 1, 2012:	Reduction measures take effect
December 31, 2020:	Deadline for 2020 reduction target

In order to effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions from large stationary sources (see Mandatory Greenhouse Gas Reporting Regulation, below), prepare a Scoping Plan demonstrating how the 2020 deadline can be met (see CARB Scoping Plan, below), and develop appropriate regulations and programs to implement the plan by 2012.

Senate Bill 32 and Assembly Bill 197

To reinforce the goals established through Executive Order B-30-15, Governor Brown went on to sign SB 32 and AB 197 on September 8, 2016. SB 32 made the GHG reduction target to reduce GHG emissions by 40 percent below 1990 levels by 2030 a requirement, as opposed to a goal. AB 197 gives the Legislature additional authority over CARB to ensure the most successful strategies for lowering emissions are implemented, and requires CARB to, “protect the state’s most impacted and disadvantaged communities ...[and] consider the social costs of the emissions of greenhouse gases.”

Senate Bill 350: Clean Energy and Pollution Reduction Act

SB 350 was signed into law in September 2015 and establishes tiered increases to the RPS by requiring 40 percent of the state’s energy supply come from renewable sources by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal of doubling the energy-efficiency savings in the electricity and natural gas sectors through energy efficiency and conservation measures. The RPS Program is discussed in greater detail below, under Section 10.2.3.4.

Senate Bill 375: Sustainable Communities and Climate Protection Act

SB 375, known as the Sustainable Communities and Climate Protection Act, went into effect in January 2009. The objective of SB 375 is to better integrate regional planning of transportation, land use, and housing to reduce sprawl and ultimately reduce greenhouse gas emissions and other air pollutants. SB 375 tasks CARB to set GHG reduction targets for each of California’s 18 regional Metropolitan Planning Organizations (MPOs). Each MPO is required to prepare a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan (RTP). The SCS is a growth strategy in combination with transportation policies that will show how the MPO will meet its GHG reduction target. If the SCS cannot meet the reduction goal, an Alternative Planning Strategy may be adopted that meets the goal through alternative development, infrastructure, and transportation measures or policies.

Assembly Bill 1493: Pavley I

With the passage of Assembly Bill (AB) 1493 (Pavley I) in 2002, California launched an innovative and pro-active approach for dealing with GHG emissions and climate change at the state level. AB 1493 requires CARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards apply to automobiles and light trucks from 2009 through 2016. Although litigation was filed challenging these regulations and the U.S. EPA initially denied California's related request for a waiver, a waiver has since been granted.¹³ In 2012, the EPA issued a Final Rulemaking that set even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 among light-duty vehicles.

Senate Bill 605 and Senate Bill 1383

SB 605, signed into law on September 24, 2014, directed CARB to develop a comprehensive SLCP strategy, in coordination with other state agencies and local air quality management and air pollution control districts to reduce emissions of SLCPs. SB 1383, signed into law on September 19, 2016, directed the Board to approve and begin implementing the SLCP Strategy by January 1, 2018. SB 1383 set statewide 2030 emission reduction targets of 40 percent below 2013 levels by 2030 for methane and HFCs, and 50 percent below 2013 levels by 2030 for anthropogenic black carbon emissions. SB 1383 also establishes targets for reducing organic waste in landfills. The SLCP Strategy is discussed below, under Section 10.2.3.3.

Assembly Bill 398: Extension of the Cap-and-Trade Program

On July 26, 2017 Governor Brown Signed AB 398 into law, extending the state's cap-and-trade program to 2030. The enacted bill makes design changes to the post-2020 carbon market, such as including a price ceiling, price containment points, additional limits to the number and location of offset credits, limits on who can set greenhouse gas emissions requirements, and specifics on industry assistance factors.¹⁴

10.2.3.3 Plans Resulting from Senate and Assembly Bills

CARB Scoping Plan

The CARB Scoping Plan is the comprehensive plan primarily directed at identifying the measures necessary to reach the GHG reduction targets stipulated in AB 32. The Scoping Plan was initially adopted in 2008, underwent its first update in 2014, and is currently implemented through its second update, which was approved in late 2017. Per AB 32, the Scoping Plan is required to be updated every five years.

¹³ California Air Resources Board (CARB). 2017. Clean Car Standards – Pavley, Assembly Bill 1493. Web. Accessed November 8, 2017 <<https://www.arb.ca.gov/cc/ccms/ccms.htm>>

¹⁴ Center for Climate and Energy Solutions (C2ES) 2017. Ye, Jason. Summary of California's Extension of its Cap-and-Trade Program. Arlington, VA. August 2017. Web. Accessed January 29, 2018.

<<https://www.c2es.org/site/assets/uploads/2017/09/summary-californias-extension-its-cap-trade-program.pdf>>
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2008 Scoping Plan

As part of AB 32, CARB had to determine what 1990 GHG emissions levels were, project a “business-as usual” (BAU)¹⁵ estimate for 2020, and determine the GHG emissions reductions needed to achieve the 2020 target. In 2007, CARB approved a statewide 1990 emissions level and corresponding 2020 GHG reduction limit of 427 million MTCO_{2e}.¹⁶ In 2008, CARB adopted its *Climate Change Scoping Plan (2008 Scoping Plan)*, which projects, absent regulation or under a BAU scenario, 2020 statewide GHG emissions levels of 596 million MTCO_{2e}. The key elements of the *2008 Scoping Plan* focused on:

- Expanding and strengthening existing energy efficiency programs, as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California’s clean car standards, goods movement measures, and the LCFS; and
- Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State’s long-term commitment to AB 32 implementation.¹⁷

First Update to the Scoping Plan

On May 22, 2014, the Board approved the *First Update to the Scoping Plan (First Update)*. The *First Update* highlighted California’s progress toward meeting the 2020 GHG emission reduction goals defined in the *2008 Scoping Plan*, recalculated the 1990 GHG emissions level using the GWPs contained in IPCC’s 4th Assessment Report,¹⁸ and built upon the *2008 Scoping Plan* with new strategies and recommendations. The *First Update*:

- Identified opportunities to leverage new and existing funds to further drive GHG emission reduction through strategic planning and targeted low carbon investments;
- Defined CARB’s climate change priorities over the next five years;
- Laid the groundwork to reach post-2020 goals set forth in Executive Orders S-3-05 and B-16-12; and

¹⁵ BAU is a term used to define emissions levels without considering reductions from future or existing programs or technologies.

¹⁶ California Air Resources Board (CARB). 2007. Staff Report California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit. Sacramento, CA. November 16, 2007.

<http://www.arb.ca.gov/cc/inventory/pubs/reports/staff_report_1990_level.pdf>

¹⁷ California Air Resources Board (CARB). 2009. “Climate Change Scoping Plan – A Framework for Change.” Endorsed by ARB December 2008. Sacramento, CA. Revised May 11, 2009.

<<http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm>>

¹⁸ The 427 MMTCO_{2e} 2020 emissions level, established in the *2008 Scoping Plan*, was recalculated to be slightly higher at 431 MMTCO_{2e}.

- Evaluated how to align the State's long-term GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use.

2017 Scoping Plan Update

On December 14, 2017 CARB adopted the second update to the Scoping Plan, the *2017 Climate Change Scoping Plan Update (2017 Scoping Plan Update)*. The primary objective of the *2017 Scoping Plan Update* is to identify the measures needed to achieve the mid-term GHG reduction target for 2030 (i.e., reduce emissions by 40 percent below 1990 levels by 2030), as established under Executive Order B-30-15 and SB 32. The *2017 Scoping Plan Update* identifies an increasing need for coordination among state, regional, and local governments to achieve the GHG emissions reductions that can be gained from local land use planning and decisions. It notes emission reduction targets set by more than one hundred local jurisdictions in the state could result in emissions reductions of up to 45 MMTCO₂E and 83 MMTCO₂E by 2020 and 2050, respectively. To achieve these goals, the *2017 Scoping Plan Update* includes a recommended plan-level efficiency threshold of six metric tons or less per capita by 2030 and no more than two metric tons by 2050.

The major elements of the *2017 Scoping Plan Update* framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which includes increasing zero emission vehicle (ZEV) buses and trucks;
- LCFS, with an increased stringency (18 percent by 2030);
- Implementation of SB 350, which expands the RPS to 50 percent and doubles energy efficiency savings by 2030;
- California Sustainable Freight Action Plan, which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZEV trucks;
- Implementing the proposed Short-Live Climate Pollutant Strategy, which focuses on reducing CH₄ and hydrocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by the year 2030;
- Continued implementation of SB 375;
- Post-2020 Cap-and-Trade Program that includes declining caps;
- 20 percent reduction in the GHG Emissions from refineries by 2030; and
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Plan Bay Area

Plan Bay Area, initially adopted by the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC) on July 18, 2013, is the integrated long-range transportation, land-use, and housing plan developed for the Bay Area pursuant to SB 375. The success of *Plan Bay Area* implementation is evaluated on thirteen different goals with

corresponding performance targets. One of these goals, reducing per-capita CO₂ emissions from cars and light-duty trucks by 15 percent, is directly related to GHG emissions.¹⁹

One of the most noteworthy aspects of *Plan Bay Area*, is that the forecasted development pattern, also known as the preferred scenario, virtually accommodates all new development within the existing urbanized footprint of the Bay Area. Approximately 80 percent of new development anticipated in *Plan Bay Area* is located throughout nearly 200 different Priority Development Areas (PDAs). PDAs are transit-oriented, infill development opportunity areas within existing communities, meaning that future growth consistent with the regional plan would not increase urban sprawl. It is important to emphasize that although PDAs have been identified in the regional plan, individual jurisdictions throughout the Bay Area are not required to constrain future land use designations and development to the preferred scenario described in *Plan Bay Area* (i.e., lead agencies retain the authority to approve land use designations and projects under CEQA as they see fit).

An update to *Plan Bay Area*, titled *Plan Bay Area 2040*, was jointly approved by the ABAG Executive Board and by MTC on July 26, 2017. Unlike the 2013 version of *Plan Bay Area*, *Plan Bay Area 2040* is a limited and focused update that reevaluates projected household and employment growth in the Bay Area over the next 24 years. The success of *Plan Bay Area 2040* implementation is evaluated on the same 13 goals and performance targets as the 2013 version of *Plan Bay Area*. The 2017 update continues to provide a roadmap for accommodating expected growth in the Bay Area, and connecting it to a transportation investment strategy focused on moving the Bay Area toward key regional goals for the environment (e.g., state GHG reduction goals), economy, and social equity.²⁰

Plan Bay Area 2040 identifies one PDA within the City, which is located along El Camino Real and is appropriately labeled as the Burlingame El Camino Real PDA. The Burlingame El Camino Real PDA encompasses an approximately half mile buffer centered along El Camino Real that runs the length of the city – from Burlingame’s northern border with Millbrae to its southern border with San Mateo. Two specific plans, adopted by the City of Burlingame, exist within the PDA: the Downtown Specific Plan in the southern portion of the City, and the North Burlingame/Rollins Road Specific Plan in the northern portion of the City.

Short-Lived Climate Pollutant Strategy

The *SLCP Strategy*, developed by CARB pursuant to SB 605 and SB 1383 legislation, was adopted by the Board on March 14, 2017. The *SLCP Strategy* identifies the state’s approach to reducing anthropogenic and biogenic sources of SLCPs; specifically, black carbon, methane, and HFCs.

CARB encourages the replacement of old fireplace and woodstoves with EPA-Certified wood-burning devices or appliances that use other sources of fuel, such as electricity, propane, and natural gas. These conversions often come as a result of education and outreach, as well as monetary incentives. For future developments, CARB intends on working with air districts to

¹⁹ Per the efficiency metrics established by CARB, *Plan Bay Area* is required to demonstrate that the regional plan is capable of reducing per capita passenger vehicle and light duty truck CO₂ emissions by seven percent by 2020 and 15 percent by 2035, as compared to the 2005 baseline. Per SB 375, these reductions are required to be demonstrated without taking into account Pavely, LCFS, and any other Scoping Plan provisions adopted since 2007 that are expected to further reduce CO₂ emissions and result in a decrease in total CO₂ emissions over time.

²⁰ Association of Bay Area Governments / Municipal Transit Commission (ABAG/MTC). 2017. *Plan Bay Area 2040*. Approved July 26, 2017.

determine the most effective approach for avoiding new residential wood combustion emissions throughout California.

As noted in the *SLCP Strategy*, “[m]ethane is emitted from a wide range of fugitive sources and biological processes, and is the second largest source of GHG emissions globally.” The two primary sources of methane emissions in California are from landfills and agricultural operations. To address emissions from landfills, CARB is working with the California Department of Resources Recycling and Recovery (CalRecycle) to develop regulations by late 2018 that will reduce the level of the statewide disposal of organic waste by 50 percent of 2014 levels by 2020 and 75 percent of 2014 levels by 2025. Recovering and utilizing edible food that would otherwise be landfilled can help to reduce methane emissions. In addition, technologies such as a landfill gas collection system can be used to extract fugitive sources of methane, which in turn can be either burnt off or turned into fuel.

Manure and enteric fermentation are responsible for approximately 25 and 30 percent of the State’s methane emissions, respectively, and are therefore critical sources to control. Due to the dynamic nature of capturing such emissions, CARB has been, and will continue to be, working alongside other state agencies, industry representatives, and stakeholders to research and develop feasible, cost-effective strategies for addressing agricultural methane emissions. SB 1383 stipulates that manure methane emission control regulations are to be implemented on or after January 1, 2024. However, the statute allows ARB to require monitoring and reporting of emissions from dairy and livestock operations before that date. Consistent with SB 1383, CARB, in consultation with the California Department of Food and Agriculture (CDFA), will analyze the progress dairies are making in achieving the goals in the *SLCP Strategy* by July 1, 2020, and may adjust those goals as necessary.

Controlling emissions of HFCs poses a unique challenge, in the sense that the majority of HFC emissions come from fugitive emissions of refrigerants used in refrigeration and air-conditioning system. Many of these high-HFC refrigerants are already in operation currently, and it will take time to replace the older units with newer, lower-HFC emitting appliances. The *SLCP Strategy* notes California has already begun phase out both the sale and production of high-GWP refrigerants, and identifies a number of additional measures that can be taken. A couple of these measures include financial incentives for low-GWP refrigeration early adoption and prohibition of high-GWP refrigerants in new stationary sources.

Mobile Source Strategy

On May 16, 2016, CARB released the updated *Mobile Source Strategy* that demonstrates how the State can simultaneously meet air quality standards, achieve greenhouse gas emissions reduction targets, decrease health risks from transportation emissions, and reduce petroleum consumption over the next fifteen years. It is anticipated implementation of the *Mobile Source Strategy* will result in a 45 percent reduction in GHG emissions, and a 50 percent reduction in the consumption of petroleum-based fuels.²¹ Actions identified in the strategy include, but are not limited to:

- Deployment of zero-emissions and cleaner combustion technologies, especially around freight hubs such as ports, rail yards, and distribution centers;

²¹ California Air Resources Board (CARB). 2016. 2016 Mobile Source Strategy. Sacramento, CA. May 2016. <<https://www.arb.ca.gov/planning/sip/2016sip/2016mobsr.pdf>>
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- Increasing the number of passenger plug-in hybrid electric vehicles (PHEV) and non-combustion ZEV;
- Requiring heavy-duty vehicles operating in the state to utilize cleaner internal combustion engines, renewable fuels, and/or zero-emission technology; and
- Improving the efficiency of the freight transport system and reducing growth in VMT.

10.2.3.4 Regulations and Programs

Mandatory Greenhouse Gas Reporting Regulation

CARB has adopted the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (Title 17, CCR, Section 95100 – 95133 (17 CCR §95100 – 95133)), which requires electricity generators, industrial facilities, fuel suppliers, and electricity importers that emit greater than or equal to 10,000 MTCO_{2e} from combustion annually to report their GHG emissions to CARB.

Renewables Portfolio Standard (RPS) Program

In 2002, California established its RPS Program, with the goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent of retail sales by 2017. The *2003 Integrated Energy Policy Report* recommended accelerating that goal to 20 percent by 2010, and the *2004 Energy Report Update* further recommended increasing the target to 33 percent by 2020. The state's *Energy Action Plan* also supported this goal. In 2006 under Senate Bill 107, California's 20 percent by 2010 RPS goal was codified. The legislation required retail sellers of electricity to increase renewable energy purchases by at least one percent each year with a target of 20 percent renewables by 2010. Publicly owned utilities set their own RPS goals, recognizing the intent of the legislature to attain the 20 percent by 2010 target.

On November 17, 2008, Governor Schwarzenegger signed Executive Order S-14-08 requiring "[a]ll retail sellers of electricity shall serve 33 percent of their load with renewable energy by 2020." The following year, Executive Order S-21-09 directed the California Air Resources Board, under its AB 32 authority, to enact regulations to achieve the goal of 33 percent renewables by 2020.

In October 2015, Governor Brown signed Senate Bill 350 to codify ambitious climate and clean energy goals. One key provision of SB 350 is for retail sellers and publicly owned utilities to procure "half of the state's electricity from renewable sources by 2030."

Cap-and-Trade Program

The CARB Cap-and-Trade Program was initially identified in the *2008 Scoping Plan* as one of the strategies California will employ to reduce GHG emission that cause climate change. It, the program, stated on January 1, 2012, with an enforceable compliance obligation beginning in 2013. Cap-and-Trade help put California on the path to meeting its goal of reducing GHG emissions to 1990 levels by the year 2020, and ultimately achieving an 80 percent reduction from 1990 levels by 2050.

The Cap-and-Trade Program is a market-based regulation that is designed to reduce GHG emissions from multiple sources. Cap-and-Trade sets a firm limit, or cap, on GHGs and minimizes the compliance costs of achieving AB 32 goals. The cap began declining at a rate of

approximately three percent per year, starting in 2013.²² The Cap-and-Trade Program remains one of the most prominent tools used by CARB in reducing GHG emissions to comply with the reduction goals set forth in Executive Order S-03-15, AB 32, and SB 32. The *2017 Scoping Plan Update* continues to rely on the Cap-and-Trade Program as one of the key elements in reducing GHG emissions. Depending on how successful the other measures identified in the *2017 Scoping Plan Update* are, the cap may be adjusted downward at a faster rate to ensure California remains on track to achieving the reductions necessary to meet the 2030 goal.

Low Carbon Fuel Standard Regulation

CARB initially approved the LCFS regulation in 2009, identifying it as one of the nine discrete early action measures in the *2008 Scoping Plan* to reduce California's GHG emissions. The LCFS regulation defines a Carbon intensity, or "CI," reduction target (or standard) for each year, which the rule refers to as the "compliance schedule." The LCFS regulation requires a reduction of at least 10 percent in the CI of California's transportation fuels by 2020 and maintains that target for all subsequent years.

CARB has begun the rulemaking process for strengthening the compliance target of the LCFS through the year 2030. For a new LCFS target, the preferred scenario in the *2017 Scoping Plan Update* identifies an 18 percent reduction in average transportation fuel carbon intensity, compared to a 2010 baseline, by 2030 as one of the primary measures for achieving the state's GHG 2030 target. Achieving the SB 32 reduction goals will require the use of a low carbon transportation fuels portfolio beyond the amount expended to result from the current compliance schedule.²³

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars (ACC) Program (formerly known as Pavley II) for model years 2017 through 2025. The components of the ACC program are the Low-Emission Vehicle (LEV) regulations and the Zero-Emission Vehicle (ZEV) regulation. The Program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. By 2025, new automobiles under California's Advanced Clean Car program will emit 34 percent less global warming gases and 75 percent less smog-forming emissions.

Title 24 Energy Standards

The CEC first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings in 1978 in response to a legislative mandate to reduce energy consumption in the state. Although not originally intended to reduce GHG emissions, increased energy efficiency, and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically to allow for the consideration and inclusion of new energy efficiency technologies and methods.

²² California Air Resources Board (CARB). 2018. Cap-and-Trade Program. Web. Accessed January 30, 2018. <<https://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>>

²³ California Air Resources Board (CARB). 2017. Low Carbon Fuel Standard 2018 Amendments. "Pre-Rulemaking Concept Paper." July 24, 2017. Web. Accessed January 30, 2018.

<https://www.arb.ca.gov/fuels/lcfs/lcfs_meetings/080717conceptpaper.pdf>

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Part 11 of the Title 24 Building Standards Code is referred to as the California Green Building Standards Code (CALGreen Code). The purpose of the CALGreen Code is to “improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) planning and design; (2) energy efficiency; (3) water efficiency and conservation; (4) material conservation and resource efficiency; and (5) environmental air quality.” The CALGreen Code is not intended to substitute or be identified as meeting the certification requirements of any green building program that is not established and adopted by the California Building Standards Commission (CBSC). The CBSC has released the 2016 California Green Building Standards Code on its website. Unless otherwise noted in the regulation, all newly constructed buildings in California are subject of the requirements of the CALGreen Code.

CALGreen contains both mandatory and voluntary measures. For non-residential land uses there are 39 mandatory measures including, but not limited to exterior light pollution reduction, wastewater reduction by 20 percent, and commissioning of projects over 10,000 square feet. Two tiers of voluntary measures apply to non-residential land uses, for a total of 36 additional elective measures.

California’s Building Energy Efficiency Standards are updated on an approximately three-year cycle. The 2016 standards, adopted January 1, 2017, improve upon existing standards in the fact that they are 28 percent more efficient for residential construction and five percent more efficient for non-residential construction, when compared to the previous 2013 standards.²⁴ Although the 2016 standards do not achieve zero net energy, they are close to the state’s goal, and mark important steps towards making building practices greener throughout California. It is anticipated the 2019 standards will take the final step in establishing requirements for zero net energy for newly constructed residential buildings throughout California.

California Solar Initiative

The California Solar Initiative (CSI) was authorized in 2006 under SB 1 and allows the California Public Utilities Commission (CPUC) to provide incentives to install solar technology on existing residential, commercial, nonprofit, and governmental buildings if they are customers of the State’s investor-owned utilities (IOUs), including Pacific Gas & Electric (PG&E). The CSI program had a budget of nearly \$2.2 billion to be expended by 2016 with a goal to reach 1,940 megawatts (MW) of installed solar power throughout the state by that time.²⁵ The CSI program has several components, including the Research and Development, Single-Family Affordable Solar Housing (SASH), Multi-Family Affordable Solar Housing (MASH), and Solar Water Heating Pilot Program, each of which provides incentives to further the installation of solar technology on California’s buildings.

²⁴ California Energy Commission (CEC) 2015. “2016 Building Energy Efficiency Standards Adoption Hearing Presentation”. June 10, 2015. Accessed April 17, 2017. Web. <http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2015-06-10_hearing/2015-06-10_Adoption_Hearing_Presentation.pdf>

²⁵ California Public Utilities Commission (CPUC) 2012. California Solar Initiative Annual Program Assessment. June 2012.

10.2.3.5 Bay Area Air Quality Management District

Clean Air Plan

On April 19, 2017, the BAAQMD adopted the *2017 Clean Air Plan: Spare the Air, Cool the Climate (Clean Air Plan)*, which updates the adopted Bay Area *2010 Clean Air Plan*, and continues to provide the framework for assuring that the NAAQS and CAAQS are attained and maintained in the Bay Area. In addition to addressing criteria air pollutant concentrations and public exposure to toxic air contaminants, the *2017 Clean Air Plan* lays the groundwork for a long-term effort to reduce Bay Area GHG emissions 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050, consistent with GHG reduction targets adopted by the State of California.

As opposed to focusing solely on the nearer 2030 GHG reduction target, the *2017 Clean Air Plan* makes a concerted effort to imagine and plan for a successful and sustainable Bay Area in the year 2050. In 2050, the Bay area is envisioned as a region where:

- Energy efficient buildings are heated, cooled, and powered by renewable energy;
- The transportation network has been redeveloped with an emphasis on non-vehicular modes of transportation and mass-transit;
- The electricity grid is powered by 100 percent renewable energy; and
- Bay Area residents have adopted lower-carbon intensive lifestyles (e.g., purchasing low-carbon goods in addition to recycling and putting organic waste to productive use).

The *2017 Clean Air Plan* includes a comprehensive, multipollutant control strategy that is broken up into 85 distinct measures and categorized based on the same economic sector framework used by CARB for the AB 32 Scoping Plan Update.²⁶ The accumulation of all 85 control measures being implemented support the three overarching goals of the plan. These goals are:

- Attain all state and national air quality standards;
- Eliminate disparities among Bay Area communities in cancer health risk from toxic air contaminants; and
- Reduce Bay Area GHG emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050.

Greenhouse Gas Plan Level Guidance

In May 2017, the BAAQMD published a new version of the *CEQA Air Quality Guidelines*, which includes revisions made to address the Supreme Court's decision on the *California Building Industry Association v. BAAQMD*. The Guidelines contain the BAAQMD's recommendations to Lead Agencies for evaluating and assessing the significance of a project's potential greenhouse gas impacts.²⁷

²⁶ The sectors included in the AB 32 Scoping Plan Update are: stationary (industrial) sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-GHG pollutants.

²⁷ Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. San Francisco, CA. June 2010, updated May 2017
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Included in the *CEQA Air Quality Guidelines* are qualitative criteria that the BAAQMD will use to judge whether a CAP or other plan designed to reduce community-wide GHG emissions (e.g., sustainability plan or general plan) will meet the criteria established by the Governor's Office of Planning and Research (OPR) per CEQA Guidelines Section 15183.5. These qualitative criteria are as follows:

- GHG emissions inventory should be complete and comprehensive,
- Calculations and assumptions should be transparent,
- GHG reduction strategies should rely primarily on mandatory measures,
- Build in a margin of safety,
- Measures should address existing as well as new development, and
- Implementation and monitoring should be clearly defined.

The document also provides guidance on developing the quantitative sections of a local CAP, including development of GHG emission inventories, projections, mitigation measures, and implementation and monitoring procedures.

10.3 ENVIRONMENTAL EFFECTS

This section evaluates potential GHG impacts that could occur under implementation of the proposed General Plan Update.

10.3.1 Significance Criteria

Based on Appendix G to the State CEQA Guidelines, a significant impact would occur if a proposed project would:

- (1) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- (2) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Included in the *CEQA Air Quality Guidelines* is a plan-level GHG efficiency threshold of 6.6 MTCO_{2e} per service population (SP),²⁸ per year. The 6.6 MTCO_{2e}/SP/yr threshold does not directly address post-2020 GHG emissions, but is presented in conjunction with the estimated 2020 emissions levels for informational purposes.

To evaluate the significance of proposed project's GHG emissions, this EIR compares estimated emissions against an interpolated efficiency metric of 4.0 MTCO_{2e}/capita/yr for the year 2040, which was derived from the recommended plan-level efficiency thresholds for 2030 and 2050, as presented in the *2017 Scoping Plan Update*.²⁹ The City's estimated GHG

²⁸ Service Population is defined as the number of residents and employees within the planning area.

²⁹ 2040 is the halfway point between 2030 and 2050; thus, half the reductions that need to occur between 2030 and 2050 should be achieved by 2040. Using the efficiency metric for 2030, 6.0 MTCO_{2e}/capita/yr and taking half of the reductions between that and the 2050 efficiency metric of 2.0 MTCO_{2e}/capita/yr, results in a derived efficiency metric of 4.0 MTCO_{2e}/capita/yr for year 2040. The City is not adopting nor proposing to use the 4.0 MTCO_{2e}/capita/yr efficiency threshold for general use; rather, it is only intended for use in this EIR.

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emissions in 2030 is also compared against the *2017 Scoping Plan Update's* 6 MTCO₂e/capita/yr efficiency metric for informational purposes.

10.3.2 GHG Methodology, Inventory, and Forecast Updates

The City of Burlingame is currently in the process of preparing a new CAP that would replace the 2009 CAP that is currently in effect. The CAP update would integrate feasible GHG reduction policies contained in the proposed General Plan Update, and identify additional GHG reduction measures, if necessary. The following analysis highlights updates to previous emissions inventories, presents GHG emission forecasts through 2040, and provides a preliminary assessment of reductions associated with the policies contained in the proposed General Plan Update.

It should be noted the updated inventories and forecasts use different VMT data than the air quality (Chapter 7) and traffic (Chapter 18) sections of this EIR. This is because the VMT data used in the traffic impact analysis and prepared for the General Plan was only modeled for 2015 and 2040. The CAP not only estimates mobile source emissions for 2015 and 2040, but also the 2005, 2020, and 2030 calendar years. The data set used for the CAP was obtained from MTC. It was used in *Plan Bay Area 2040*, and is also located on the BAAQMD's website under the VMT data portal; this VMT data provided by the portal is intended for use by local jurisdictions for climate planning purposes. The VMT data portal, however, does not provide VMT estimates for 2050. Therefore, this EIR does not estimate Year 2050 GHG emissions in the City.

10.3.2.1 Historic Inventory Updates

An international organization known as ICLEI – Local Governments for Sustainability prepares guidance documents to assist local governments in estimating GHG emissions originating in, or related to activities occurring within, their jurisdiction. Both the existing GHG inventories (see Section 10.1.4.2) and the new CAP that is being prepared follow the *U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions (Version 1.1)* and *Local Government Operations Protocol (Version 1.1)* to estimate historic emissions. The GHG emission inventories developed using these protocols are based on activity data for energy use (natural gas and electricity), solid waste, and water use and wastewater generation. Transportation emissions are based on VMT within the City.

Although both the existing inventories and the inventories that are being prepared as part of the CAP update follow the same protocols for estimating emissions, the new inventories follow a slightly different methodology for one of the sectors (transportation), and make use of newer, more up to date, data sources. The updated methodology and data sources are utilized because they provide more accurate representation of emissions during the time frame in question. These altered data sources and methodologies are discussed below in greater detail.

Global Warming Potential (GWP) – Both Inventories

As described in Section 10.1.2, the potential for a particular GHG to absorb and trap heat in the atmosphere is known as its GWP. Whereas the 2009 CAP and subsequent inventories developed for the City utilized the IPCC 2nd Assessment Report's GWPs, the BAAQMD is now recommending the use of the IPCC 5th Assessment Report's GWP values for climate action

planning purposes.³⁰ Table 10-6, below, highlights the three most notable GWPs used to estimate GHG emissions for both the community-wide and local government operations inventories.

Table 10-6: IPCC GWPs (2nd Assessment Report vs. 5th Assessment Report)

GHG	GWP	
	2 nd Assessment Report	5 th Assessment Report
Carbon Dioxide (CO ₂)	1	1
Methane (CH ₄)	21	28
Nitrous Oxide (N ₂ O)	310	265

Source: IPCC³¹

As shown in Table 10-6, the GWP went up between the 2nd Assessment Report for CH₄, while the GWP for N₂O went up. These up and down fluctuations in GWPs between the two assessment reports are fairly common for the rest of the GHGs analyzed in the reports.

VMT Methodology and Data Sources – Community-wide Inventory

The *U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions* contains two methodologies for estimating GHG emissions resulting from the operation of on-road, motor vehicles. The previous inventories followed the in-boundary methodology, which is an alternative method that assesses emissions resulting from all VMT occurring within the jurisdiction’s boundaries, regardless of whether or not the trip started or ended within the City (i.e., all emissions, including those related to vehicles passing through the City were counted).

The revised community-wide inventories that are being developed as part of the new CAP follow the origin-destination methodology, which is the preferred methodology in the *U.S. Community Protocol* and is recommended for use by the BAAQMD (Young, 2018). In addition to the new methodology used to estimate emissions there is also a new source for VMT data that has come about from *Plan Bay Area 2040* (see Section 10.2.3.3). This data is available to the public and is recommended for use by the BAAQMD to retain a consistent VMT data source across all jurisdictions in the Bay; however, this data portal does not include VMT estimates for the Year 2050.

Solid Waste Data Source – Community-wide Inventory

In 2015, the California Department of Resources Recycling and Recovery (CalRecycle) released its *2014 Disposal-Facility-Based Characterization of Solid Waste in California* document. Data contained in this document was used to update the 2015 inventory’s assumptions for the composition of waste generated by the City.

Population Data – Community-wide Inventory

³⁰ Young 2018. Personal communication between Abby Young, BAAQMD, and Phil Gleason, Environmental Analyst III, MIG. Phone call. January 4, 2018.

³¹ Intergovernmental Panel on Climate Change (IPCC) 2013. Greenhouse Gas Protocol. “Global Warming Potential Values.” Web. Accessed April 26, 2018. <http://www.ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf>

The Community Context Element of the proposed General Plan presents the number of housing units, population, and employment in the City during 2016. This data is utilized for 2015 since it is the most accurate data currently available in that time frame.

Revised Community-wide and Local Government Operations Inventories

The revised 2005 and 2015 community-wide and local government operations inventories are presented below in Table 10-7 and Table 10-8, respectively.

Table 10-7: Revised Community-wide GHG Inventory (2005 and 2015)

Sector	Metric Tons CO ₂ e	
	2005	2015
Residential	47,344	38,249
Commercial / Industrial	78,215	67,669
Transportation – On-road Vehicles	108,099	107,781
Transportation – Off-road Equipment	15,788	25,113
Transportation – Caltrain	Not Estimated	2,471
Solid Waste – Generated Waste	8,979	6,043
Solid Waste – Landfills	354	277
Wastewater	343	497
Water	570	307
City-owned Stationary Sources	28	6
Total	260,809	247,591

Notes: MTCO₂e/yr = metric tons carbon dioxide equivalent per year. Totals may not be completely accurate, due to rounding of figures.

Table 10-8: Revised Local Government Operations GHG Inventory (2005 and 2015)

Sector	Metric Tons CO ₂ e	
	2005	2015
Energy	1,563	1,250
Vehicles Fleet	603	702
Landfill	354	277
Wastewater Treatment	431	405
Solid Waste Generation	35	14
Employee Commute	535	474
Generators	11	4
Refrigerants	0	3
Total	3,533	3,128

Notes: MTCO₂e/yr = metric tons carbon dioxide equivalent per year. Totals may not be completely accurate, due to rounding of figures.

As shown in Table 10-7, community-wide GHG emissions in 2015 were approximately 5.1 percent lower than those in 2005. This is approximately the same level of reduction seen in the previous inventories that were developed (i.e., 4.6 percent, as discussed in Section 10.1.4.2). Table 10-8 shows government operations have dramatically improved from 2005 to 2015, as reductions are approximately 11 percent lower than the 2005 baseline.

10.3.2.2 Community-wide and Local Government Operations GHG Targets

During the development of the existing, 2009 CAP, the Green Ribbon Task Force recommended that Burlingame meet the GHG emission reduction target of 15 percent below the base year (2005) by 2020 and 80 percent by the year 2050.³² Accordingly, the 2009 CAP set its 2020 target year reduction to 15 percent below its 2005 emissions.

As detailed in Section 10.3.2.1, the community-wide and local government operations inventories have been updated for 2005 and 2015 in preparation of the new CAP that is being developed. Due to these updates, it is also necessary to reevaluate and re-estimate the emissions levels Burlingame would need to meet to be consistent with statewide GHG reduction goals. As shown in Table 10-7, annual GHG emissions during 2005 are estimated to have been approximately 260,809 MTCO_{2e}, with approximately 3,533 MTCO_{2e} of those emissions stemming from local government operations. Table 10-9 summarizes the reductions that would need to be met to support statewide GHG goals through the year 2040.

Table 10-9: GHG Reduction Targets

Sector	Metric Tons CO _{2e}			
	2005 ^(A)	2020 ^(B)	2030 ^(C)	2040 ^(D)
Target Year Reduction	260,809	221,687	133,012	88,675

Notes:

(A) The value for 2005 was not the target year reduction, rather it is the estimated GHG emissions level for that year, as shown in Table 10-7.

(B) The goal for 2020 is to reduce emissions to 15 percent below 2005 levels. This is also considered to be representative of the emissions levels in 1990.

(C) The statewide GHG goal for 2030 is to reduce emissions levels to 40 percent below 1990 levels. As noted in (A), above, 2020 emissions are considered representative of 1990 levels. Thus, the 2030 target is also 40 percent below the estimated 2020 goal.

(D) The 2040 reduction goal is an interim target between the 2030 and 2050 reduction goals. Whereas the 2030 reduction goal is the reduce emissions by 40 percent below 1990 levels and the 2050 reduction goals is to reduce GHG emissions to 80 percent below 1990 levels, the 2040 interim target represents a goal of reducing emissions of 60 percent below 1990 levels.

10.3.2.3 Business-as-Usual Community-wide GHG Emissions Forecast

Business-as-usual (BAU) emissions forecasts were developed for 2020, 2030, and 2040 using demographic growth projections contained in the Community Context Element of the proposed General Plan Update (Table CX-1). These demographic growth projections and well as the interpolated data used for the estimation of 2020 and 2030 emissions are summarized below in Table 10-10.

³² As detailed in the 2008 Scoping Plan, 15 percent below 2005 emissions levels are considered to be representative of emissions during 1990. Estimating emissions that were occurring in 1990 is critical since reduction targets set by the state are based on emissions in relation to what they were in 1990. For example, Executive Order S-3-05 established GHG targets for 2020 (being they would be brought down to 1990 levels) and for 2050 (being that emissions would be brought to 80 percent below 1990 levels). Similarly, B-30-15 and SB 32 set a statewide GHG reduction goal of 40 percent below 1990 levels by 2030 as an interim target for 2050.

Table 10-10: Growth Factors Used to Forecast Emissions

Metric	2015 ^(A)	2020	2030	2040
Housing Units	13,144	13,631	14,605	16,065
Population	29,724	30,870	33,162	36,600
Jobs	29,879	31,501	34,745	39,610
Service Population	59,603	62,371	67,907	76,210

Source: Burlingame, 2017.

Notes:

(A) Although Table CX-1 in the Community Context Element of the proposed General Plan provides values for 2016, they are also used here for the 2015 values, since they are the most accurate data sources available. In addition, the use of these values retain consistency with the rest of the chapters herein this EIR.

Emissions forecasts for 2020, 2030, and 2040 were derived by presuming average annual growth from 2015 to the forecast year. The BAU forecasts do not take into account the future regulatory environment, and the reductions that would be achieved through statewide initiatives, such as RPS. See Table 10-11 for a summary of the BAU Community-wide GHG forecasts.

Table 10-11: BAU Community-wide GHG Forecast

Sector	Metric Tons CO ₂ e			
	2015	2020	2030	2040
Residential	38,249	40,118	43,856	47,594
Commercial / Industrial	67,669	70,675	77,132	84,683
Transportation – On-road Vehicles	107,781	111,884	114,844	130,020
Transportation – Off-road Equipment	25,113	26,219	28,459	30,669
Transportation – Caltrain	2,471	2,581	2,880	3,020
Solid Waste – Generated Waste	6,043	6,313	6,854	7,394
Solid Waste – Landfills	277	251	206	168
Wastewater	497	519	564	609
Water	307	320	348	375
City-owned Stationary Sources	6	6	7	7
Total	247,591	258,888	275,070	304,569
Percent Change From 2015	-	+4%	+11%	+23%

Notes: MTCO₂e/yr = metric tons carbon dioxide equivalent per year. Totals may not be completely accurate, due to rounding of figures.

As shown in Table 10-10, GHG emissions would continue to increase through the proposed General Plan’s horizon year of 2040 absent any further regulatory actions or changes in behaviors within the City.

10.3.2.4 Adjusted Business-as-Usual Community-wide GHG Emissions Forecast

The adjusted business-as-usual (Adjusted BAU) forecast takes into account the impact state legislation will have on reducing GHG emissions on the local level. These pieces of legislation include the Pavley II/CAFÉ Vehicle Standards, the Tire Pressure Program, RPS Program, and the current (i.e., 2016) Title 24 Building Standards.³³ The Adjusted BAU forecast is presented below in Table 10-12, and the reductions attributable to the currently regulatory environment are presented in Table 10-13.

³³ The Cap-and-Trade Program is not included in the Adjusted BAU scenario.

Table 10-12: Adjusted BAU Community-wide GHG Forecast

Sector	Metric Tons CO ₂ e			
	2015	2020	2030	2040
Residential	38,249	38,669	37,806	39,890
Commercial / Industrial	67,669	66,825	61,209	65,624
Transportation – On-road Vehicles	107,781	101,626	83,466	86,874
Transportation – Off-road Equipment	25,113	26,219	28,459	30,699
Transportation – Caltrain	2,471	2,581	2,880	3,020
Solid Waste – Generated Waste	6,043	6,313	6,854	7,394
Solid Waste – Landfills	277	251	206	168
Wastewater	497	519	564	609
Water	307	320	348	375
City-owned Stationary Sources	6	6	7	7
Total	247,591	243,331	221,719	234,661
Percent Change From 2015	-	-2%	-11%	-6%

Notes: MTCO₂e/yr = metric tons carbon dioxide equivalent per year. Totals may not be completely accurate, due to rounding of figures.

Table 10-13: Adjusted BAU Regulatory Reduction Breakdown

Scenario / Regulation	Metric Tons CO ₂ e		
	2020	2030	2040
BAU Community-wide GHG Forecast	258,888	275,070	304,569
Title 24 Improvements (2016)	2,281	6,520	10,619
Renewable Portfolio Standard	3,453	17,160	19,312
Transportation (Fuel Efficiency and Fleet Characteristics)	10,258	31,379	43,146
<i>Total ABAU Reductions</i>	<i>15,992</i>	<i>55,059</i>	<i>73,077</i>
Adjusted BAU Community-wide GHG Forecast	243,331	221,719	234,661

Notes: MTCO₂e/yr = metric tons carbon dioxide equivalent per year. Totals may not be completely accurate, due to rounding of figures.

As shown in Table 10-12, GHG emissions under the Adjusted BAU Scenario would decrease through 2030 under current legislation in place. Annual GHG emissions would increase, however, between 2030 and 2040, because there is no legislation in place that would continue to decrease GHG emissions. The current reductions attributable to existing legislation would remain in place, but new growth in the City would cause GHG emissions to rise once again.

10.3.2.5 General Plan Policy Quantification Analysis (Preliminary Gap Analysis)

As shown in Table 10-12, existing legislation enacted at the state level will assist the City in reducing GHG emissions; however, greater reductions are still necessary if the City is to align their emissions with statewide goals. Table 10-14, below, summarizes the reduction targets the City would need to achieve to be consistent with AB 32 and SB 32, and compares those target year reductions against the Adjusted BAU forecasted emissions.

Table 10-14: Future Community-wide GHG Reduction Targets

	Metric Tons CO ₂ e		
	2020	2030	2040
Adjusted BAU Forecast	243,331	221,719	234,661
GHG Reduction Target ^(A)	221,687	133,012	88,674
Emissions Gap	21,644	88,707	145,987

Notes: MTCO₂e/yr = metric tons carbon dioxide equivalent per year. Totals may not be completely accurate, due to rounding of figures.

(A) Emission reduction targets are from Table 10-9.

As shown in Table 10-14, the City has made progress toward meeting the 2020 goal; however, greater reductions still need to be realized if the City is to meet future GHG reduction goals for 2030 and 2040. This EIR presents preliminary GHG reductions associated with some of the policies contained in the proposed General Plan that have been gauged to be readily feasible and implementable. There are additional policies contained within the proposed General Plan Update that are also feasible, but their implementation timing, cost, and other factors require evaluation in greater detail before their reductions have been assessed. Additional, feasible, measures contained within the proposed General Plan Update will be addressed in the CAP that is under development. The estimated GHG reductions associated with policies proposed in the General Plan Update are as follows:

- CC-1.2: Mixed Use, Transit Oriented Infill Development – Promote higher density infill development with a mix of uses on underutilized parcels, particularly near transit stations and stops.
- CC-1.5: Transportation Demand Management – Require all major development projects include a Transportation Demand Management program to reduce single-occupancy car trips.
- CC-1.9: Green Building Practice and Standards – Support the use of sustainable building elements such as green roofs, cisterns, and permeable pavements. Continue to enforce the California Green Building Standards Code (CALGreen). Periodically revisit the minimum standards required for permit approval. Adopt zero-net-energy building goals for municipal buildings.
- HP-2.7: Residential Solar Power – Encourage homeowners to install solar power systems. Provide information to homeowners on the benefits of solar power and funding opportunities. Promote Property Assessed Clean Energy (PACE) programs that finance renewable energy systems. Offer incentives for home solar power systems.
- HP-2.8: Energy Efficiency – Support energy efficiency improvements in the aging building stock citywide. Encourage energy efficiency audits and upgrades at the time of sale for existing homes and buildings. Host energy efficiency workshops, and distribute information to property owners, tenants, and residences. Publicize available programs such as PACE financing and San Mateo Energy Watch programs. Incentivize low-cost retrofits to residents and businesses.
- M-6.1: Transit Supportive Land Use – Plan for an accommodate land uses that facilitate development of compact, mixed use development with the density, diversity of use, and local accessibility supportive of transit use.

Table 10-15 summarizes the estimated reductions that would be achieved by implementing the measures presented above.

Table 10-15: Summary of Quantified Policies and Progress Toward Future GHG Goals

Scenario / Policy	Metric Tons CO ₂ e		
	2020	2030	2040
Adjusted BAU Forecast	243,331	221,719	234,661
General Plan Policy Reductions			
<i>CC-1.2 and M-6.1</i>	164	384	536
<i>CC-1.5</i>	175	389	681
<i>CC-1.9</i>	-	2,225	7,436
<i>HP-2.7</i>	485	862	1,363
<i>HP-2.8</i>	-	279	1,397
<i>IF-6.9^(A)</i>	16,562	31,010	30,078
<i>Total Policy Reductions</i>	17,386	35,149	41,491
General Plan Scenario GHG Emissions	225,945	186,570	193,170
GHG Reduction Target ^(B)	221,687	133,012	88,674
Target Achieved?	No	No	No
Additional Reductions Needed	4,258	53,558	104,496

Notes: MTCO₂e/yr = metric tons carbon dioxide equivalent per year. Totals may not be completely accurate, due to rounding of figures.

(A) Policy IF-6.9 is not identified in the Burlingame General Plan Update 2040, and has been incorporated as part of Mitigation Measure 10-1.

(B) Emission reduction targets are from Table 10-9.

As shown in Table 10-15, the currently quantified policies that are contained in the proposed General Plan Update would continue to reduce GHG emissions toward their targets, but not to the level necessary to conclude they would be consistent with state goals. The significance of these emissions is discussed below under Section 10.3.3.

10.3.3 Environmental Impacts

Impact 10-1: Increases in GHG Emissions.

GHG Emissions

As described in subsections 10.3.2.3 – 10.3.2.5, above, future development supported by the General Plan Update would result in GHG emissions associated with the construction and operation of new and existing development within the City. A summary of short- and long-term emissions and the analysis for each are included below.

Short-Term Emissions

Future development projects would result in short-term greenhouse gas emissions from construction. Greenhouse gas emissions would be released by equipment used for demolition, grading, paving, and building construction activities. GHG emissions would also result from worker and vendor trips to and from project sites and from demolition and soil hauling trips. Construction activities are short-term and cease to emit greenhouse gases upon completion, unlike operational emissions that are continuous year after year until operation of the use ceases.

Typically, construction-related GHG emissions do not substantially contribute (less than one percent) to a project's annual greenhouse gas emissions inventory and mitigation for construction-related emissions is not effective in reducing a project's overall contribution to

climate change, given how small of a piece of the total emissions construction emissions are. Construction emissions associated with anticipated development within the City over the next approximately 20 years has been captured in the “Transportation – Off-road Equipment” category presented in the BAU and Adjusted BAU Forecasts, Table 10-11 and Table 10-12, respectively.

Long-Term Emissions

Existing and future land use projects would result in continuous GHG emissions from energy use (electricity and natural gas), solid waste disposal, and water use and wastewater generation/treatment. Additionally, the operation of motor vehicles from people living in, working in, and/or visiting Burlingame would also contribute to GHG emissions within the City.

Electricity use associated with both the physical usage of the development, as well as the energy needed to transport water/wastewater, result in the production of GHGs if the electricity is generated through non-renewable sources (i.e., combustion of fossil fuels). Natural gas use results in the emission of two GHGs: CH₄ (the major component of natural gas) and CO₂ (from the combustion of natural gas).³⁴ Solid waste generated by land uses within the planning area contribute to GHG emissions in a variety of ways. In addition, landfilling, the most common waste management practice, results in the release of CH₄ from the decomposition of organic materials.³⁵ Mobile sources, including vehicle trips to and from land uses within the City, result primarily in emissions of CO₂, with emissions of CH₄ and NO₂ also occurring in minor amounts.

Table 10-16 compares the project’s preliminary GHG inventory and efficiency metrics against the thresholds established in Section 10.3.1.

³⁴ GHG emissions associated with electricity use and natural gas consumption are both accounted for in the “Residential” and “Commercial” categories in Table 10-11 and Table 10-12. Water and wastewater emissions are accounted for in the “Water” and “Wastewater” categories, respectively.

³⁵ Solid waste emissions are tracked independent of landfill emissions in the BAU and Adjusted BAU Forecasts. The solid waste emissions presented in Tables 10-11 and 10-12 are representative of annual waste that is generated within the City, and landfill emissions are reflective of emissions emanating from the closed Burlingame Landfill. The Burlingame landfill, located at 1001 Airport Boulevard, was in operation from 1957 to 1987. The site accepted only inorganic construction debris, concrete rubble, wood, plastic, garden refuse, metal, and clean soil; no household garbage or hazardous waste was accepted. Although the site is now capped and built upon, methane emissions are still collected via a landfill gas collection system and burnt off to prevent the majority of emissions from escaping into the atmosphere where they would contribute to global climate change.

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Table 10-16: General Plan Build-Out GHG Emissions

	2020	2030	2040
BAAQMD GHG Efficiency Comparison			
Total Annual Emissions (MTCO _{2e}) ^(A)	225,945	186,570	193,170
Service Population ^(B)	62,371	67,907	76,210
GHG Efficiency (SP)	3.6	2.7	2.5
Efficiency Target (SP)	6.6	-	-
Efficiency Achieved?	Yes	N/A	N/A
2017 Scoping Plan Update Comparison			
Total Annual Emissions (MTCO _{2e}) ^(A)	225,945	186,570	193,170
Population ^(B)	30,870	33,162	36,600
GHG Efficiency (Capita)	7.3	5.6	5.3
Efficiency Target (Capita) ^(C)	-	6	4
Efficiency Achieved?	N/A	Yes	No
Significant Impact?	-	-	Yes

Notes: MTCO_{2e}/yr = metric tons carbon dioxide equivalent per year. Totals may not be completely accurate, due to rounding of figures.

(A) See Table 10-14.

(B) See Table 10-10.

(C) Identified under Chapter 5 on page 99 of the *2017 Scoping Plan*.

As shown in Table 10-16, the community-wide emissions are projected to meet the BAAQMD’s efficiency metric for 2020 despite emissions not being brought down to 15 percent below 2005 levels (see Table 10-15). This means that although the City appears to be unable to meet their established goal of reducing community-wide emissions in 2020 to 15 percent below 2005 levels, it is still consistent with overall state reduction goals, as the BAAQMD threshold was designed to achieve.

Additionally, the City’s emissions would be consistent with the *2017 Scoping Plan’s* annual efficiency target for 2030. Annual GHG emissions in 2040 would, however, be inconsistent with the *2017 Scoping Plan’s* by approximately 1.3 MTCO_{2e}/capita (see Table 10-16). Based on the current regulations and policies contained in the proposed General Plan Update, it is unclear whether the City of Burlingame will be able to achieve the State’s long-term goal of reducing GHG emissions to 60 percent below 1990 levels by 2040 and 80 percent below 1990 levels by 2050. The City would continue to prepare the CAP update that is currently in progress. The CAP would quantify additional policies contained in the proposed General Plan, and potentially include additional measures to further reduce GHG emissions. A number of these measures, and a brief description of how they would reduce impacts is presented in Table 10-18 at the end of this chapter.

The proposed General Plan Update contains a goal and policy that require the development and maintenance of a CAP. Goal HP-2 states it is the intention of the City to achieve greenhouse gas emissions reductions consistent with State goals, and Policy CC-1.1 states the City would maintain up-to-date Climate Action Plan policies and continue to provide annual sustainability reports. Under these guiding standards, the City has set a goal to update its existing CAP and identifies measures that can feasibly (in terms of cost and implementation) reduce GHG emissions to levels consistent with state reduction goals. Although the policies contained within the General Plan Update could reduce emissions of GHG, not all may be feasible in terms of their cost and implementation. The City’s updated CAP would evaluate the feasibility and implementation of General Plan policies in greater detail and identify the potential emissions reductions available from these and, if necessary, additional GHG reduction policies. A few of

these policies have already been identified and would be implemented by the City through Mitigation Measure 10-1, as presented below.

Mitigation Measure 10-1. To help reduce GHG emissions generated by community-wide activities, the City shall implement the following, additional policies as part of the General Plan Update:

- M-3.10: Bicycle Sharing – Implement a bicycle sharing program in Burlingame to provide an alternative to driving, enhance bicycle accessibility, and offer a last mile option to transit.
- M-4.7: Increase use of available shuttles in Burlingame by improving signage, outreach, and coordination with co-sponsors.
- IF-6.9: ECO100 – Increase ECO100 enrollment by residences and businesses. ECO100 is the 100% renewable and carbon-free electricity rate from Peninsula Clean Energy. Coordinate with community champions and PCE to expand outreach on ECO100.

The reductions associated with implementation of Policy IF-6.9 has been quantified and included in the reductions accounted for in Table 10-15. Both M-3.10 and M-4.7 would be quantified in the CAP update.

As described above, the City cannot at this time conclusively demonstrate that implementation of the Burlingame 2040 General Plan, including Policy CC-1.1, would not generate GHG emissions that exceed the City's existing Year 2020 and future Year 2030 and Year 2040 GHG reduction goals. In addition, although Year 2050 emissions have not been numerically quantified in this EIR, it is likely that the implementation of the General Plan would also contribute to GHG emissions levels that exceed Year 2050 GHG reduction goals. Accordingly, this impact is considered **significant and unavoidable**.

Mitigation. No additional, feasible mitigation has been identified at this time.

Impact 10-2: Plan Consistency. Adoption and implementation of the proposed General Plan Update would conflict with the *2017 Scoping Plan*, *Plan Bay Area 2040*, and the *2017 Clean Air Plan*. This would be a **significant and unavoidable impact** (see criterion [b] under Section 10.3.1, "Significance Criteria," above).

Consistency with 2017 Scoping Plan

As discussed under Section 10.2.3.3, the *2017 Scoping Plan Update* is CARB's second revision, and primary document used to ensure state GHG reduction goals are met. The *2017 Scoping Plan Update*'s primary objective is to identify the measures needed to achieve the 2030 reduction target established under Executive Order B-30-15 and SB 32. The major elements of the Scoping Plan are generally geared toward actions either CARB or other state entities will pursue, such as, but not limited to:

- Implementing the LCFS, with an increased stringency (18 percent by 2030);
- Implementation of SB 350, which expands the RPS to 50 percent and doubles energy efficiency savings; and

- Implementing the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing CH₄ and hydrocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by the year 2030.

Although most of these measures would be implemented at the state level, some of the reductions would be realized at the local level. For example, regardless of actions taken by the City, emissions generated through gasoline combustion in motor vehicles within Burlingame would still produce less GHG in 2030 than they do now. Nonetheless, as shown in Table 10-16, the City would not meet the recommended plan-level efficiency threshold of 4 MTCO_{2e} per capita per year interpolated threshold for 2040, as well as the 2 MTCO_{2e} per capita per year threshold for Year 2050. Since the proposed General Plan Update is inconsistent with state GHG reduction goals, it also does not support the overarching goals of the *2017 Scoping Plan*. As such, the General Plan Update is considered to conflict with or obstruct implementation of the *2017 Scoping Plan*, since it does not achieve the reductions necessary to align community-wide emissions with state GHG reduction goals.

Consistency with Plan Bay Area 2040

As described in Section **Error! Reference source not found.**, *Plan Bay Area 2040* is a long-range planning document developed by ABAG and MTC to reduce GHG emissions from land use and transportation. Plan Bay Area identifies PDAs as transit-oriented, infill development opportunity areas within existing communities. *Plan Bay Area 2040* identifies the Burlingame El Camino Real PDA as one of the nearly 200 PDAs within the Bay Area. The City of Burlingame has adopted two Specific Plans that fall within the PDA – the Downtown Specific Plan in the southern portion of the City, and the North Burlingame/Rollins Road Specific Plan in the northern portion of the City.

The Downtown Specific Plan was adopted in May 2010 and established 12 sub-planning areas within the planning area. Although nine of the 12 areas were considered “base areas” in the fact there weren’t any alterations to design standards, the remaining three – known as “focus areas” – include the Howard Avenue Mixed District, the California Drive District, and the R-4 Incentive District. Overall, adoption of the Specific Plan resulted in a net capacity increase of 183,843 square feet of commercial space, 248,702 square feet of office space, and 875 to 1,232 residential units. The Downtown Specific Plan encourages land use diversity, mixing of uses, and the development of institutions and services to serve Burlingame residents, all in close proximity to Caltrain, SamTrans routes, and the local Burlingame Trolley. In addition, the Downtown Specific Plan included a number of goals to improve the safety and circulation for pedestrians and bicyclists.

The North Burlingame/Rollins Road Specific Plan was adopted in 2004 and was amended in 2007. Unlike the Downtown Specific Plan, the North Burlingame/Rollins Road Specific Plan area is comprised of two primary areas – the Rollins Road Area and El Camino Real North Area – both of which are divided into four pieces for a total of eight subareas. The Rollins Road Area is generally comprised of industrial land uses (with the exception of the Southern Gateway), and provides opportunities for airport-related industries, food preparation, fabrication, automobile sales and services, and other similar light industry uses. The El Camino Real North Area is substantially smaller in size than the Rollins Road Area, but serves as a residential, retail, office, and medical node within the City. Many of the subareas allow for mixed-use development to occur. The Millbrae Intermodal Terminal is located north of the Rollins Road area, and is an at-grade BART and Caltrain station that also features numerous bus lines and access to City-operated shuttles.

Although both of these Specific Plans, in conjunction with the policies contained in the proposed General Plan Update, support the vision of *Plan Bay Area 2040* by locating transit oriented development within close proximity to mass transit nodes, it cannot be assured their implementation would reduce per capita passenger vehicle and light duty truck CO₂ emissions by seven percent by 2020 and 15 percent by 2035, as compared to the 2005 baseline.

³⁶ Per the language in SB 375, these reductions are required to be demonstrated without taking into account Pavely, LCFS, or other Scoping Plan provisions adopted since 2007 that are expected to further reduce CO₂ emissions and result in a decrease in total CO₂ emissions over time. As such, the proposed General Plan Update is found to be inconsistent with the specific goal of *Plan Bay Area 2040* that is to reduce per capita CO₂ emissions from passenger vehicles and light duty trucks by 15 percent by 2035.

Consistency with 2017 Clean Air Plan

As described under Section 10.2.3.5, the *2017 Clean Air Plan* is the BAAQMD document that lays the groundwork for a long-term effort to reduce Bay Area GHG emissions 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050, consistent with GHG reduction targets adopted by the State of California. The *2017 Clean Air Plan* analyzes GHG emissions from construction, mobile, and stationary source activities in its emissions inventories and sets forth 85 control strategies designed to reduce criteria air pollutant and GHG emissions. The 85 controls measures are grouped into nine categories: Stationary Source Measures, Transportation Control Measures, Energy Control Measures, Buildings Control Measures, Agriculture Control Measures, Natural and Working Lands Control Measures, Waste Management Control Measures, Water Control Measures, and Super GHG Control Measures. Table 10-17 presents the potentially applicable GHG control strategies and the proposed General Plan Update’s consistency with those measures.

Table 10-17: General Plan Consistency with BAAQMD 2017 Clean Air Plan

2017 Clean Air Plan Control Measures	Project Consistency
Stationary Source Measures	
SS15 – Natural Gas Processing, Storage, and Distribution	Although Burlingame does not directly own or operate natural gas pipelines, storage or processing operations within the city, the City would support improvements to natural gas infrastructure that may be required by CPUC and implemented by PG&E. These improvements would benefit the City by reducing fugitive natural gas (i.e., methane) leaks that may originate from within the City's jurisdictional boundaries.
SS17 – GHG BACT Threshold	The BAAQMD currently requires "major" facilities that emit 75,000 MTCO ₂ e per year or more to implement the "Best Available Control Technology" to control their greenhouse gas (GHG) emissions. The BAAQMD is currently considering lowering that 75,000 MTCO ₂ e threshold and applying its requirements to all regulated facilities, not just "major" facilities. The City and any stationary sources subject to the new requirements would comply with this measure.

³⁶ For 2035, a 15 percent reduction from 2005 levels is the same as a 8.6 percent reduction from 2020 levels.
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Table 10-17: General Plan Consistency with BAAQMD 2017 Clean Air Plan

2017 Clean Air Plan Control Measures	Project Consistency
SS32 – Emergency Backup Generators	Emergency Backup Generators, or BUGs, are typically powered by diesel fired engines that emit diesel particulate more, which is a black carbon that contributes to climate change. BUGs are typically installed with larger developments or critical infrastructure, tested on a monthly basis to ensure functionality, and become active in the event of a power outage. The BAAQMD acknowledges there are a substantial number of BGs that do not meet current emission standards and yet remain in operation. The BAAQMD is exploring options to address emissions from BUGs. The City and its constituents would comply with any and all applicable measures and/or regulations that may be developed by the BAAQMD.
Transportation Measures	
TR1 – Clean Air Teleworking	The primary objective of this control measure is to increase the number of employees who telework in the Bay Area, especially on Spare the Air days. The proposed General Plan Update includes numerous policies, such as CC-1.5 (Transportation Demand Management), and M-5.1 (TDM Guidelines and Programs) that would support alternative works schedules and commutes, including the potential for employees to telework.
TR2 – Trip Reduction Programs	The trip reduction measure includes a mandatory and voluntary trip reduction program that resulted from SB 1339. In addition to requiring all major development projects include a TDM program (Policy CC-1.5), the City also intends on establishing specific TDM guidelines and requirements within the zoning ordinance that would reduce vehicle trips by promoting alternative modes of transportation (Policy M-5.1). Furthermore, the City supports mixed-use, transit-oriented development near transit stations and stops (Policy CC-1.2).
TR7 – Safe Routes to Schools and Transit	The City of Burlingame has, and will continue to support measures that facilitates safe routes to school and transit. The proposed General Plan Update includes policies such as CC-1.3 (Walkable Streets and Neighborhoods), M-1.1 (Complete Streets), M-1.2 (Connectivity to Destinations), and M-3.2 (Safe and Functional Network) that would support BAAQMD Control Measure TR7.
TR8 – Ridesharing and Last-Mile Connections	The City of Burlingame currently operates two shuttle services in the northern portion of the city that transport residents and employees alike from the Millbrae Intermodal Station to various destinations within the city. Policy M-4.7 (Shuttles) would also increase the number of available shuttles in Burlingame. In addition to these shuttles, the City would also implement the proposed Policies CC-1.5 (Transportation Demand Management), and M-5.1 (TDM Guidelines and Programs) that would include measures such as ridesharing and addressing last-mile connections.

Table 10-17: General Plan Consistency with BAAQMD 2017 Clean Air Plan

2017 Clean Air Plan Control Measures	Project Consistency
TR9 – Bicycle and Pedestrian Access and Facilities	The proposed General Plan Update includes numerous policies that support bicycle and pedestrian access and facilities, including, but not limited to, Policy M-1.1 (Complete Streets), M-1.4 (Focus on Pedestrian and Bicycle Safety), M-3.1 (Uninterrupted Bicycle Network), M-3.2 (Safe and Functional Network), and M-3.7 (Bicycle Facility Maintenance).
TR10 – Land Use Strategies	Control measure TR10 supports land use patterns that reduce vehicle miles traveled, especially within infill locations. The proposed General Plan Update shares this support and would implement these land use pattern through its proposed land use designations, and through Policy CC-1.2 (Mixed Use, Transit Oriented Infill Development), and Policy M-6.1 (Transit Supportive Land Use).
TR13 – Parking Policies	The proposed General Plan Update encourages reducing single-occupancy vehicle trips (and thereby necessitating parking allocations) by promoting transit oriented, infill development in transit oriented areas (Policies CC-1.2 and M-6.1) and by reducing parking through the implementation of Policies M-7.1 (Parking Pricing), M-7.3 (Parking Requirements), M-7.5 (Create Parking Approaches), and M-7.6 (Parking Demand Reductions).
TR14 – Cars & Light Trucks	Control measure TR14 encourages city and county governments expand the use of ZEVs and partial emissions vehicles (PEVs) comprising both batter electric and plug-in hybrid passenger vehicles and light-duty trucks within the Bay Area. The proposed General Plan Update includes Policy M-8.1 (Electric Vehicles Infrastructure) that would seek to integrate emerging electric vehicle changing states into public parking infrastructure to encourage and expand the use of ZEV and PEV plug-in vehicles.
TR15 – Public Outreach	In addition to encouraging transit-oriented development, reducing unnecessary parking supply, and facilitating the expansion of electric vehicle infrastructure, the proposed General Plan Update also includes Policy M-5.2 (Targeted Outreach) that would identify and educate specific neighborhoods within the City that are suitable for increased transit ridership given their proximity to bus stops or train stations.
Energy Measures	
EN1 – Decarbonize Electricity Generation	Starting in October 2016, Peninsula Clean Energy (PCE), San Mateo County’s new electricity provider, was rolled out to all residents and businesses within San Mateo County. PCE was launched collaboratively by the County of San Mateo and all twenty of its cities to meet local climate action goals. PCE offers a choice of two electricity options, each with a different percentage of sustainable energy. ECOplus is the default, with 50% of the electricity provided to its customers being sourced renewably, and ECO100, where 100% of the electricity is sourced from renewable sources. As of mid-2017, the City of Burlingame opted to enroll all its municipal accounts in ECO100. As of November 2017, approximately two percent of all Burlingame residents were enrolled in the ECO100 option as well. Policy IC-6.9 (ECO100) contained in the proposed

Table 10-17: General Plan Consistency with BAAQMD 2017 Clean Air Plan

2017 Clean Air Plan Control Measures	Project Consistency
	General Plan Update directs the City to coordinate with community members and PCE to expand outreach on ECO100, thereby promoting the transition away from non-renewable energy sources. The proposed General Plan Update also includes Policies CC-1.7 (Solar Energy) and HP-2.7 (Residential Solar Power) that would encourage developments within the city to install PV systems.
EN2 – Decrease Energy Use	The proposed General Plan Update would facilitate decreasing energy use through the implementation of Policies CC-1.9 (Green Building Practice and Standards), HP-2.8 (Energy Efficiency), HP-2.9 (Municipal Energy Efficiency) and HP-2.11 (Innovative Technologies).
Building Control Measures	
BL1 – Green Buildings	The proposed General Plan Update supports increasing energy efficiency for all types of development through a number of policies. Some of these policies include: CC-1.7 (Solar energy), CC-1.9 (Green Building Practice and Standards), HP-2.7 (Residential Solar Power), HP-2.8 (Energy Efficiency), and HP-2.9 (Municipal Energy Efficiency).
BL4 – Urban Heat Island Mitigation	The proposed General Plan Update would combat the urban heat island phenomenon by encouraging the installation of cool roofing and cool paving technologies in new buildings and retrofits (Policies CC-1.9 and HP-2.8, respectively). In addition, Policy CC-2.2 (Increase the Public Street Tree Population) promotes the overall population of street trees, which would also help abate urban heat island effects.
Natural and Working Lands Control Measures	
NW2 – Urban Tree Planting	Having a vast network of trees planted throughout the City helps sequester CO ₂ , and also provides valuable shade that helps offset the urban heat island effect. Expanding the urban forest is addressed in the proposed General Plan Update through Policy CC-2.2 (Increase the Public Street Tree Population).
Waste Management Measures	
WA1 – Landfills	Control measure WA1 would reduce emission of methane and non-methane organic compounds from landfills by increasing standards for landfill gas collection control devices and fugitive leaks. There is one, closed landfill within the City of Burlingame that burns off emissions of methane via a landfill gas collection system. Although the emissions are nominal in the scope of all open and closed landfills within the Bay Area, the City would comply with any additional restrictions required of the BAAQMD.
WA4 – Recycling and Waste Reduction	Policies HP-2.13 (Composting) and HP-2.14 (Zero Waste) within the proposed General Plan Update focus on expanding composting and recycling services in residential and commercial developments, and supports goals to implement zero waste strategies for the City and community.

Table 10-17: General Plan Consistency with BAAQMD 2017 Clean Air Plan

2017 Clean Air Plan Control Measures	Project Consistency
Water Resource Measures	
WR2 – Support Water Conservation	The proposed General Plan Update would protect local and regional water resources through conservation, recycling, and sustainable management practices. For example, the proposed update contains Policies CC-1.6 (Water Conservation), HP-6.2 (Water Conservation), HP-6.4 (Water Recycling), and HP-6.8 (Water-Efficient Landscaping).
Short Lived Climate Pollutant Strategies	
SL2: Guidance for Local Planners	The BAAQMD is currently in the process of developing guidance to help local agencies to address SLCP, or super-GHGs, in their climate action plans and programs. Although there are no formal policies listed within the proposed General Plan Update in regard to SLCPs, the City is committed to addressing climate change and would adhere to guidance the BAAQMD releases.

As shown in Table 10-17, the proposed General Plan Update is consistent with the applicable measures identified in the *2017 Clean Air Plan*.

Although the proposed General Plan Update is consistent with all applicable measures contained within the *2017 Clean Air Plan*, it is still inconsistent with one of the ultimate goals of the plan, which is to reduce Bay Area GHG emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. As discussed above under Impact 10-1, the General Plan would exceed the efficiency metrics to align community-wide emissions in Burlingame with state reduction goals.

Plan Consistency Conclusion

As discussed above, the proposed General Plan Update would be inconsistent with the *2017 Scoping Plan Update*, and the *2017 Clean Air Plan*, because community-wide emissions are not in line with state GHG reduction goals. The General Plan Update is also inconsistent with *Plan Bay Area 2040*, because although there are many features that support a sustainable, transit-oriented Burlingame, the City cannot demonstrate the currently adopted Specific Plans within the Burlingame El Camino Real PDA in conjunction with the policies contained in the proposed update would reduce per capita CO₂ emissions from passenger vehicles and light duty trucks by 15 percent, by 2035. Accordingly, the proposed General Plan Update would conflict with or obstruct implementation of a plan, policy, or regulation adopted with the intent GHG emissions. Although implementation of general plan policies would be required by the City, until the additional policies are quantified, it cannot be assured the City would be able to reduce the significance of this impact. Thus, this impact is considered **significant and unavoidable**.

Table 10-18 Description

Column 1 (Objective) lists each General Plan goal, policy, and implementation program (“policy” for short), organized by General Plan element, that addresses the potential impact identified in Table 10-1. Column 2 is a summary of the regulation or text of the policy. Column 3 answers the question, “How does the regulation/policy avoid or reduce the potential impact?” Column 4 identifies the applicable significance criteria that is addressed by the regulation/policy.

The verbs in Column 3 are intended to be applied consistently. The verb “ensures” means that the policy is sufficient to guarantee the result identified in the policy. The verb “helps” means that the policy contributes to avoiding or reducing the identified potential impact; in many cases, “helps” is used for a policy that can be applied to avoid or reduce a wide range of potential impacts. The verb “implements” is used for General Plan implementation programs to indicate that the program provides the details to put the associated policy into action.

Table 10-18: Proposed Burlingame Existing Regulations and General Plan Policies to Avoid or Reduce Impacts on Global Climate Change and Greenhouse Gas Emissions

Regulation/Policy	Description of Regulation/Policy	How Does It Avoid or Reduce Impact?	Applicable Significance Criteria
Existing Regulations			
SB 350: Renewables Portfolio Standard	On November 17, 2008, Governor Schwarzenegger signed Executive Order S-14-08 requiring “[a]ll retail sellers of electricity shall serve 33 percent of their load with renewable energy by 2020.” In October 2015, Governor Brown signed Senate Bill 350 to codify ambitious climate and clean energy goals. One key provision of SB 350 is for retail sellers and publicly owned utilities to procure “half of the state’s electricity from renewable sources by 2030.”	Ensures utility providers will meet minimum requirements for providing clean, renewable sources to electricity consumers by 2020 and 2030. Reducing the amount of electricity generated by non-renewable sources reduces the carbon intensity of the electricity produced and consumed.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Low Carbon Fuel Standard, Advanced Clean Cars Program	CARB initially approved the LCFS regulation in 2009, identifying it as one of the nine discrete early action measures in the <i>2008 Scoping Plan</i> to reduce California’s GHG emissions. For a new LCFS target, the preferred scenario in the <i>2017 Scoping Plan Update</i> identifies an 18 percent reduction in average transportation fuel carbon	Ensures GHG emission reductions are achieved for both the carbon intensity of fuel, as well as mandates for cleaner car production. Reduces emissions of GHG associated with fuel combustion in vehicles.	(a) General GHG emissions (b) Conflict with GHG reduction plans

	<p>intensity, compared to a 2010 baseline, by 2030 as one of the primary measures for achieving the state's GHG 2030 target.</p> <p>In January 2012, CARB approved the Advanced Clean Cars (ACC) Program (formerly known as Pavley II) for model years 2017 through 2025. The components of the ACC program are the Low-Emission Vehicle (LEV) regulations and the Zero-Emission Vehicle (ZEV) regulation.</p>		
California Title 24 Building Standards	<p>California's Building Energy Efficiency Standards are updated on an approximately three-year cycle. The 2016 standards, adopted January 1, 2017, improve upon existing standards in the fact that they are 28 percent more efficient for residential construction and five percent more efficient for non-residential construction, when compared to the previous 2013 standards (CEC, 2015).</p>	<p>Ensures new development becomes more efficient over time, thereby reducing the amount of energy needed to support the structure. Reduced energy costs result in reduced GHG emissions.</p>	<p>(a) General GHG emissions (b) Conflict with GHG reduction plans</p>
Healthy People and Healthy Places Element			
Goal HP-2	<p>Achieve greenhouse gas emissions reductions consistent with State goals.</p>	<p>States the overall goal of the City to improve health and sustainability of the community, including through reduction of GHG emissions and reducing air pollution.</p>	<p>(a) General GHG emissions (b) Conflict with GHG reduction plans</p>
Policy HP-2.1 Municipal Greenhouse Gas Inventory	<p>Continue to partner with San Mateo County's Regionally Integrated Climate Action Planning Suite (RICAPS) to prepare annual Municipal Greenhouse Gas inventories.</p>	<p>Provides the City with annual updates on local government operation GHG emission progress made toward statewide goals.</p>	<p>(a) General GHG emissions (b) Conflict with GHG reduction plans</p>
Policy HP-2.2	<p>Continue the partnership</p>	<p>Provides the City with</p>	<p>(a) General GHG</p>

Community Greenhouse Gas Inventory	with the San Mateo County RICAPS to prepare annual community-wide greenhouse gas inventories.	annual updates on community-wide GHG emission progress made toward statewide goals.	emissions (b) Conflict with GHG reduction plans
Policy HP-2.3 Greenhouse Gas Reduction Targets	Work to achieve greenhouse gas emissions reductions locally that are consistent with the targets established by AB 32 (California Global Warming Solutions Act of 2006) and subsequent supporting legislation.	Establishes the City's goals to achieve GHG emissions in line with statewide reduction targets.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy HP-2.4 Electric Vehicles	Prepare an Electric Vehicle Strategic Plan to support and expand Burlingame's electric vehicle network. Establish parking standards that prioritize electric vehicle spaces. Require new residential developments to install or be pre-wired for electric vehicle charging stations.	Encourages people in the Bay Area to purchase and use electric vehicles by providing them with supporting infrastructure. Helps reduce GHG emission from fuel combustion in vehicles.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy HP-2.5 Municipal Electric Vehicles	Purchase electric vehicles as replacements for gasoline-powered vehicles in the City's fleet. Install electric vehicle charging stations to incentivize City employees to use electric vehicles.	Encourages City employees to purchase and use electric vehicles by providing them with supporting infrastructure. Helps reduce GHG emission from fuel combustion in vehicles.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy HP-2.6 Renewable Energy	Pursue the goal of using 100% renewable energy for the City's municipal accounts. Encourage residents and businesses to opt up to 100% renewable purchase for additional community-wide greenhouse gas reductions. Encourage and support opportunities for developing local solar power projects.	Encourages electricity be sourced from renewable source other than the grid. The grid's electricity may be produced by non-renewable sources. Reduces GHG emissions associated with those non-renewable sources. This measure supports new policy IF-6.9.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy HP-2.7 Residential Solar Power	Encourage homeowners to install solar power systems. Provide information to homeowners on the benefits of solar power and funding opportunities. Promote Property Assessed Clean Energy (PACE) programs that finance	Encourages electricity be sourced from renewable source other than the grid. The grid's electricity may be produced by non-renewable sources. Reduces GHG emissions associated with those non-renewable sources.	(a) General GHG emissions (b) Conflict with GHG reduction plans

	systems. Offer incentives for home solar power systems.		
Policy HP-2.8 Energy Efficiency	Support energy efficiency improvements in the aging building stock citywide. Encourage energy efficiency audits and upgrades at the time of sale for existing homes and buildings. Host energy efficiency workshops, and distribute information to property owners, tenants, and residences.	Establishes the City's intent to promote energy efficiency, which would lead to reduced GHG emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy HP-2.9 Municipal Energy Efficiency	Continue to enhance energy efficiency in City facilities. Conduct periodic energy audits to assess energy efficiency progress and needed improvements.	Establishes the City's commitment to promote the use of specific energy benchmarking programs for nonresidential buildings, which could lead to additional energy efficiency upgrades in existing buildings and result in the reduction of GHG emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy HP-2.10 Municipal Green Building	Aim for new construction and major renovations of City facilities to be zero net energy.	Establishes commitment to reducing energy consumption and GHG emissions that may be generated through energy production/use.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy HP-2.13 Composting	Expand composting services to multi-family residential buildings and commercial buildings.	Establishes goals to reduce the amount of methane generated by organic matter decomposition in landfills. Reduced GHG emitted into atmosphere.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy HP-2.14 Zero Waste	Encourage the South Bayside Waste Management Authority (SBWMA) to explore and consider rate plans that support zero waste goals. Identify opportunities to support and implement zero waste goals and strategies for the City and community.	Establishes goals to reach zero waste. Zero waste would result in less GHG emissions from landfills.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy HP-2.15 Alternative Fuel	Purchase electric or hybrid models of lawn and garden and construction equipment for City maintenance operations, as feasible.	Establishes goal to reduce GHG emissions generated by law, garden, and construction equipment used for City maintenance operations.	(a) General GHG emissions (b) Conflict with GHG reduction plans

Goal HP-3	Minimize exposure of residents and employees of local businesses to harmful air pollutants.	Establishes goals to reduce air pollutant emissions. Reductions in air pollutant emissions generally have a co-benefit of reducing GHG emissions	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy HP-3.4 Air Pollution Reduction	Support regional efforts to improve air quality, reduce auto use, expand infrastructure for alternative transportation, and reduce traffic congestion. Focus efforts to reduce truck idling to two minutes or fewer in industrial and warehouse districts along Rollins Road and the Inner Bayshore.	Establishes goals to support efforts that would reduce GHG emissions from the mobile sector.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy HP-3.5 Woodstove and Fireplace Replacement	Encourage residents to replace wood-burning fireplaces and stoves with cleaner electric heat pumps, natural gas, or propane stoves. Educate the public about financial assistance options through the Bay Area Air Quality Management District's fireplace and wood stove replacement incentive program.	Establishes goals to reduce wood burning. Would reduce emissions of CO ₂ and black carbon.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Goal HP-6	Protect local and regional water resources through conservation, preservation, and sustainable management practices.	Establishes goals to preserve water and use it in sustainable ways. Reduces energy needed to transport and treat water, which in turn reduces GHG emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy HP-6.2 Water Conservation	Promote best practices for water conservation throughout the City, and continue to enforce City ordinances requiring high-efficiency indoor water fixtures in new development. Educate the public about Burlingame's water rebate programs, and continue to establish tiered water rates that promote water conservation. Consider water consumption when evaluating development projects. Encourage drought-tolerant	Establishes goals to preserve water and use it in sustainable ways. Reduces energy needed to transport water, which in turn reduces GHG emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans

	landscaping and efficient irrigation systems.		
Policy HP-6.4 Water Recycling	Promote recycled water use to the extent such resources are available. Work to allow graywater and rainwater catchment systems in residential, commercial, and industrial buildings. Establish a recycled water plan and implement a recycled water program associated with the Wastewater Treatment Facility, when financially feasible.	Establishes goals to preserve water and use it in sustainable ways. Reduces energy needed to transport water, which in turn reduces GHG emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy HP-6.8 Water-Efficient Landscaping	Continue to enforce Burlingame's Water-Efficient Landscaping Ordinance, and promote the use of native, drought-tolerant landscaping. Educate the public about the Bay-Friendly Landscaping Guidelines and other resources for water-efficient landscaping.	Establishes goals to preserve water and use it in sustainable ways. Reduces energy needed to transport water, which in turn reduces GHG emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Community Character Element			
Goal CC-1	Incorporate sustainable practices in all development decisions.	Establishes the City's goal for sustainable growth patterns to address traffic congestion and reduce resource consumption and greenhouse gas emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy CC-1.1 Climate Action Plan	Maintain up-to-date Climate Action Plan policies and continue to provide annual sustainability reports.	Establishes the City's commitment to address global climate change.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy CC-1.2 Transit-Oriented Development	Promote higher-density infill development with a mix of uses on underutilized parcels, particularly near transit stations and stops.	Establishes the City's commitment to high-density, transit-oriented development in specific Priority Development Areas. Improving transit ridership and reducing automobile use would reduce operational mobile source GHG emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy CC-1.3 Walkable Streets and Neighborhoods	Promote walkable neighborhoods and encourage pedestrian activity by designing safe, welcoming streets and sidewalks that incorporate signalized crosswalks,	Encourages modes of transit other than those that produce GHG emissions when used (e.g., gasoline or diesel combustion).	(a) General GHG emissions (b) Conflict with GHG reduction plans

	attractive lighting and landscaping, curb extensions, and traffic-calming measures at appropriate locations.		
Policy CC-1.4 Parking Requirements	Study options for reduced residential parking requirements in areas that are well served by public transportation, such as the North Burlingame and North Rollins Road areas. Implement preferred options.	Encourages modes of transit other than those that produce GHG emissions when used (e.g., gasoline or diesel combustion).	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy CC-1.5 Transportation Demand Management	Require that all major development projects include a Transportation Demand Management program to reduce single-occupancy car trips.	Establishes the City's commitment to reducing VMT, and by association GHG emissions generated by vehicles on the roadway.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy CC-1.6	Promote water conservation by encouraging and incentivizing property owners to incorporate drought-tolerant landscaping, "smart" irrigation systems, water efficient appliances, and recycled water systems. Continue to enforce the water-efficiency landscaping ordinance. Encourage recycling and reuse of graywater in new buildings.	Establishes goals to preserve water and use it in sustainable ways. Reduces energy needed to transport water, which in turn reduces GHG emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy CC-1.7 Solar Energy	Incentivize solar panel installation on existing buildings and new developments.	Encourages electricity be sourced from renewable source other than the grid. The grid's electricity may be produced by non-renewable sources. Reduces GHG emissions associated with those non-renewable sources.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy CC-1.9 Green Building Practice and Standards	Support the use of sustainable building elements such as green roofs, cisterns, and permeable pavement. Continue to enforce the California Green Building Standards Code (CALGreen). Adopt zero-net-energy building goals for municipal buildings.	Establishes goal for new construction and major renovations of City facilities to be zero net energy.	(a) General GHG emissions (b) Conflict with GHG reduction plans

Policy CC-1.12	Continue to educate Burlingame community members about sustainable development strategies, programs, and opportunities	Encourages community members to reduce energy, or activities that would consume energy that would result in GHG emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy CC-1.13 Electric Vehicle Network	Support the electric vehicle network by incentivizing use of electric vehicles and installations of charging stations.	Encourages people in the Bay Area to purchase and use electric vehicles by providing them with supporting infrastructure. Helps reduce GHG emission from fuel combustion in vehicles.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Goal CC-2	Ensure that public and private trees are beautiful, healthy, and safe, and that they remain an integral feature of the community.	Establishes goals to increase the urban forest in Burlingame. Trees provide shade that reduce the heat island effect. Additionally, trees also sequester CO ₂ .	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy CC-2.2 Increase the Public Street Tree Population	Identify ways to increase the overall population of street trees in Burlingame to stem the natural decline of the urban forest and create a more equitable distribution of tree canopy.	Establishes goals to increase the urban forest in Burlingame. Trees provide shade that reduce the heat island effect. Additionally, trees also sequester CO ₂ .	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy CC-2.3 Street Tree Maintenance Program	Maintain a citywide street tree maintenance program tied to a long-term funding mechanism to ensure adequate maintenance of all public street trees.	Establishes goals to increase the urban forest in Burlingame. Trees provide shade that reduce the heat island effect. Additionally, trees also sequester CO ₂ .	(a) General GHG emissions (b) Conflict with GHG reduction plans
Mobility Element			
Goal M-1	Achieve and maintain a citywide circulation network that provides safe, efficient, and convenient mobility for all users and modes of transportation.	Establishes the City's commitment to making a city-wide circulation network for modes of transportation other than those that generate GHG (e.g., pedestrian and bicycle).	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy M-1.1 Complete Streets	Define and develop a well-connected network of Complete Streets that can move all modes safely, efficiently, and comfortably to promote efficient circulation while also improving public health and safety.	Establishes the City's commitment to encourage mixed-use development, which would contribute to reduction of automobile usage and vehicle miles traveled and lead to reduced operational emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans

<p>Policy M-1.2 Connectivity to Destinations</p>	<p>Connect commercial districts, centers of employment, civic uses, parks, schools, and other destinations with high-quality options for all travel modes. Ensure the system accommodates the needs of all users, including youth, the elderly, and people with disabilities.</p>	<p>Establishes the City's goals to maintain a well-connected, safe, non-vehicular infrastructure throughout Burlingame. Well-connected and safe routes promote travel for modes other than vehicles. Reduces GHG emissions from the mobile sector.</p>	<p>(a) General GHG emissions (b) Conflict with GHG reduction plans</p>
<p>Policy M-1.4 Focus on Pedestrian and Bicycle Safety</p>	<p>Ensure that pedestrian and bicyclist safety at intersections and on roadways is given priority over motor vehicles.</p>	<p>Establishes the City's goals to maintain a well-connected, safe, non-vehicular infrastructure throughout Burlingame. Well-connected and safe routes promote travel for modes other than vehicles. Reduces GHG emissions from the mobile sector.</p>	<p>(a) General GHG emissions (b) Conflict with GHG reduction plans</p>
<p>Goal M-2</p>	<p>Ensure Burlingame's streets are comfortable, safe, and attractive for people of all ages and abilities to walk.</p>	<p>Establishes the City's goals to maintain a well-connected, safe, non-vehicular infrastructure throughout Burlingame. Well-connected and safe routes promote travel for modes other than vehicles. Reduces GHG emissions from the mobile sector.</p>	<p>(a) General GHG emissions (b) Conflict with GHG reduction plans</p>
<p>Policy M-2.1 Pedestrian Amenities and Access</p>	<p>Expand pedestrian access by eliminating gaps in sidewalk and path networks, improving safety, and requiring safe and comfortable pedestrian facilities.</p>	<p>Establishes the City's goals to maintain a well-connected, safe, non-vehicular infrastructure throughout Burlingame. Well-connected and safe routes promote travel for modes other than vehicles. Reduces GHG emissions from the mobile sector.</p>	<p>(a) General GHG emissions (b) Conflict with GHG reduction plans</p>
<p>Policy M-2.2 Walkable Infrastructure and Access to Destinations</p>	<p>Ensure that schools, commercial districts, employment destinations, parks, civic facilities, and transit stops have safe and convenient pedestrian access, including connections across Highway 101 and trails through parks and regional networks. Explore improving access across Highway 101</p>	<p>Establishes the City's goals to maintain a well-connected, safe, non-vehicular infrastructure throughout Burlingame. Well-connected and safe routes promote travel for modes other than vehicles. Reduces GHG emissions from the mobile sector.</p>	<p>(a) General GHG emissions (b) Conflict with GHG reduction plans</p>

	exclusively for pedestrians and cyclists.		
Policy M-2.3 Pedestrian Priority	Promote and prioritize pedestrian improvements and safety where conflicts or problems exist between pedestrians and other travel modes.	Establishes the City's goals to maintain a well-connected, safe, non-vehicular infrastructure throughout Burlingame. Well-connected and safe routes promote travel for modes other than vehicles. Reduces GHG emissions from the mobile sector.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy M-2.4 Circulation around Downtown Library	Improve pedestrian circulation around the Downtown library to minimize potential automobile/pedestrian conflicts.	Establishes the City's goals to maintain a well-connected, safe, non-vehicular infrastructure throughout Burlingame. Well-connected and safe routes promote travel for modes other than vehicles. Reduces GHG emissions from the mobile sector.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy M-2.5 Assessment and Maintenance	Ensure the ongoing assessment and maintenance of sidewalks, pavement markings, pedestrian crossing signals, and lighting.	Establishes the City's goals to maintain a well-connected, safe, non-vehicular infrastructure throughout Burlingame. Well-connected and safe routes promote travel for modes other than vehicles. Reduces GHG emissions from the mobile sector.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Goal M-3	Develop a network of high-quality, convenient, safe, and easy-to-use bicycle facilities to increase the number of people who use bicycles for everyday transportation.	Establishes the City's goals to maintain a well-connected, safe, non-vehicular infrastructure throughout Burlingame. Well-connected and safe routes promote travel for modes other than vehicles. Reduces GHG emissions from the mobile sector.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy M-3.1 Uninterrupted Bicycle Network	Develop a safe, convenient, and integrated bicycle network that connects residential neighborhoods to employment, education, recreation, and commercial destinations throughout	Establishes the City's goals to maintain a well-connected, safe, non-vehicular infrastructure throughout Burlingame. Well-connected and safe routes promote travel for	(a) General GHG emissions (b) Conflict with GHG reduction plans

	Burlingame.	modes other than vehicles. Reduces GHG emissions from the mobile sector.	
Policy M-3.2 Safe and Functional Network	Ensure that roadway intersections, crossings, on-street bicycle lanes (Class II), separated bicycle paths (Class I), and other bicycle network facilities provide safe and comfortable connections to support continuous bicycle routes.	Establishes the City's goals to maintain a well-connected, safe, non-vehicular infrastructure throughout Burlingame. Well-connected and safe routes promote travel for modes other than vehicles. Reduces GHG emissions from the mobile sector.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy M-3.4 Bicycle-Transit integration	Design and construct bicycle and transit facilities so they reduce conflicts between cyclists and buses along transit corridors, while also ensuring these new facilities improve access to transit and support intermodal trips (e.g., bicycle to bus connections).	Establishes the City's goals to maintain a well-connected, safe, non-vehicular infrastructure throughout Burlingame. Well-connected and safe routes promote travel for modes other than vehicles. Reduces GHG emissions from the mobile sector.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy M-3.5 Bicycle Wayfinding Signage and Marked Routes	Encourage bicycling by providing wayfinding signage that directs bicyclists to designated bike routes and to civic places, cultural amenities, and visitor and recreational destinations. Along bike routes, provide clear and unambiguous signage that alerts drivers to the presence of cyclists.	Establishes the City's goals to maintain a well-connected, safe, non-vehicular infrastructure throughout Burlingame. Well-connected and safe routes promote travel for modes other than vehicles. Reduces GHG emissions from the mobile sector.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy M-3.6 Support Facilities for Cyclists	Provide standards in the Zoning Code that address required bicycle parking, including provisions for secured facilities, as well as other development features and incentives that encourage bicycle use (e.g., changing rooms at places of business).	Establishes the City's goals to maintain a well-connected, safe, non-vehicular infrastructure throughout Burlingame. Well-connected and safe routes promote travel for modes other than vehicles. Reduces GHG emissions from the mobile sector.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy M-3.7 Bicycle Facility Maintenance	Ensure that the City maintains an adequate capital improvement budget for ongoing assessment and maintenance of bicycle facilities, including	Establishes the City's goals to maintain a well-connected, safe, non-vehicular infrastructure throughout Burlingame. Well-connected and safe	(a) General GHG emissions (b) Conflict with GHG reduction plans

	pavement markings, wayfinding signage, and bicycle parking/storage.	routes promote travel for modes other than vehicles. Reduces GHG emissions from the mobile sector.	
Goal M-4	Improve transit access, frequency, connectivity, and amenities to increase transit ridership and convenience.	Establishes the City's goals to connect residents and employees to alternative modes of transportation (i.e., not taking single-occupancy trips). Reduces GHG emissions from the mobile sector.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy M-4.2 Caltrain Electrification	Support efforts to electrify Caltrain to improve regional transit services to Burlingame, if these improvements do not result in unacceptable safety or noise impacts on the community.	Establishes goals to reduce GHG emissions from the mobile sector related to single-occupancy vehicles. As the electricity grid becomes supplied with more electricity from renewable sources, the GHG intensity of its operation decreases.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy M-4.4 Access to Transit	Ensure roadways and sidewalks near transit stops are designed to protect pedestrians and bicyclists and are well connected to provide seamless access to/from transit.	Establishes the City's goals to maintain a well-connected, safe, non-vehicular infrastructure throughout Burlingame. Well-connected and safe routes promote travel for modes other than vehicles. Reduces GHG emissions from the mobile sector.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy M-4.5 Transit Priority	Establish a network of transit-serving corridors to accommodate local and regional transit routes, supporting high-frequency service on regional transit streets to make transit service more time competitive with personal vehicle trips.	Establishes the City's goals to connect residents and employees to alternative modes of transportation (i.e., not taking single-occupancy trips). Reduces GHG emissions from the mobile sector.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy M-4.6 Broadway Station	Work with Caltrans to identify opportunities to expand train transit services at the Broadway Station, including adding more frequent community and weekend stops at this station.	Establishes the City's goals to connect residents and employees to alternative modes of transportation (i.e., not taking single-occupancy trips). Reduces GHG emissions from the mobile	(a) General GHG emissions (b) Conflict with GHG reduction plans

		sector.	
Goal M-5	Implement TDM strategies that reduce overall vehicle trips and encourage the use of transportation modes that reduce VMT and greenhouse gas emissions.	Establishes the City's commitment to reducing VMT, and by association GHG emissions generated by vehicles on the roadway.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy M-5.1 TDM Guidelines and Programs	Establish specific TDM guidelines and requirements within the Zoning Ordinance that encourage travel by a variety of modes for both individuals and employees, focusing different strategies in different parts of the community as appropriate to promote sustainability and economic development.	Establishes the City's commitment to reducing VMT, and by association GHG emissions generated by vehicles on the roadway.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy M-5.2 Targeted Outreach	Develop outreach materials for specific neighborhoods in the city that are suitable for increased transit ridership given their proximity to bus stops or train stations as a way to reduce drive-alone automobile trips	Establishes the City's commitment to reducing VMT, and by association GHG emissions generated by vehicles on the roadway.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Goal M-6	Create an integrated transportation program that reduces peak-period vehicle trips and vehicle miles traveled.	Establishes the City's commitment to reducing VMT, and by association GHG emissions generated by vehicles on the roadway.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy M-6.1 Transit Supportive Land Use	Plan for and accommodate land uses that facilitate development of compact, mixed use development with the density, diversity of use, and local accessibility supportive of transit use.	Establishes the City's commitment to high-density, transit-oriented development. Improving transit ridership and reducing automobile use would reduce operational mobile source GHG emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy M-6.2 Mixed Use Areas	Promote residential, employment, recreation, and commercial uses within designated mixed-use areas to reduce walking distances between destinations and to create an active street environment throughout the day.	Establishes the City's commitment to high-density, transit-oriented development. Improving transit ridership and reducing automobile use would reduce operational mobile source GHG emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Goal M-8	Achieve air quality, sustainability, and greenhouse gas emission reduction objectives through technology upgrades and	Establishes the City's commitment to investing in newer, more efficient technologies that are more sustainable and	(a) General GHG emissions (b) Conflict with GHG reduction plans

	improved management of Burlingame's streets.	ultimately reduce GHG emissions.	
Policy M-8.1 Electric Vehicle Infrastructure	Identify electric vehicle charging priority locations and opportunities to integrate emerging technology into public parking infrastructure to encourage and expand the use of zero-emissions vehicles.	Encourages people in the Bay Area to purchase and use electric vehicles by providing them with supporting infrastructure. Helps reduce GHG emission from fuel combustion in vehicles.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy M-8.2 Vehicle Trip Reduction	Support vehicle trip reduction strategies, including building safer and more inviting active transportation networks, supporting connections to high frequency and regional transit, implementing TDM programs, and integrating land use and transportation decisions.	Establishes City's commitment to collaborate with appropriate agencies on promotion of alternative fuel usage and standards.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Infrastructure Element			
Goal IF-2	Ensure the long-term availability of water through conservation methods and regular maintenance and improvements to the overall water supply delivery system.	Establishes goals to preserve water and use it in sustainable ways. Reduces energy needed to transport water, which in turn reduces GHG emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy IF-2.11 Retrofits	Implement programs that incentivize businesses and private institutions to replace existing plumbing fixtures with water-efficient plumbing.	Demonstrates the City's commitment to working with employers in the City to reduce inefficient water usage. Reduces GHG emission associated with transporting the water and treating the wastewater.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy IF-2.12 Recycled Water	Increase the use of recycled water as available, cost effective, and safe. This may include allowed use of graywater systems consistent with health and building codes.	Establishes goals to preserve water and use it in sustainable ways. Reduces energy needed to transport and treat water, which in turn reduces GHG emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Goal IF-5	Achieve waste reduction goals in excess of State mandates.	Establishes the City's goal of being a sustainable community. Reduced waste would reduce GHG emissions associated with landfilled emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy IF-5.3 Municipal Waste Reduction	Reduce municipal waste generation by continuing to employ a wide range of simple and innovative techniques, such as	Establishes the City's goal of being a sustainable community. Reduced waste would reduce GHG emissions associated with	(a) General GHG emissions (b) Conflict with GHG reduction plans

	electronic communications to reduce paper usage and buying products with less packaging and in bulk.	landfilled emissions.	
Policy IF-5.4 Disposable, Toxic, and Non-Renewable Products	Identify uses of disposable, toxic, and nonrenewable products in City operations and seek ways to reduce, avoid, or substitute such uses with less toxic options.	Establishes the City's goal of being a sustainable community. Reduced waste would reduce GHG emissions associated with landfilled emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy IF-5.5 Construction Waste Recycling	Require demolition, remodeling, and major new development projects include salvaging or recycling asphalt and concrete and all other nonhazardous construction and demolition materials to the maximum extent practicable.	Establishes the City's goal of being a sustainable community. Reduced waste would reduce GHG emissions associated with landfilled emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy IF-5.7 Composting	Facilitate the ability of all residents to compost both for their own use and for collection by contract waste haulers.	Establishes the City's goal of being a sustainable community. Reduced waste would reduce GHG emissions associated with landfilled emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy IF-5.12 Reuse	Encourage reuse of materials and reusable products. Develop a program for reuse of materials and reusable products in City facilities and outreach programs for community-wide participation by promoting communitywide garage sales and online venues.	Establishes the City's goal of being a sustainable community. Reduced waste would reduce GHG emissions associated with landfilled emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy IF-5.15 Composting	Expand composting programs in coordination with waste vendor to all residential type and businesses.	Establishes the City's goal of being a sustainable community. Reduced waste would reduce GHG emissions associated with landfilled emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Policy IF-5.16 Zero Waste	Participate in negotiations with waste vendor to implement zero waste supportive contracts and services.	Establishes goals to reach zero waste. Zero waste would result in less GHG emissions from landfills.	(a) General GHG emissions (b) Conflict with GHG reduction plans
Goal IF-6	Ensure the provision of adequate and safe gas and electric services to Burlingame residents and businesses, and that energy facilities are constructed in a fashion that minimizes their impacts on surrounding	Establishes the City's goal to provide energy infrastructure that is efficient and reliable. An efficient energy infrastructure would lead to reduced GHG emissions.	(a) General GHG emissions (b) Conflict with GHG reduction plans

	development and maximizes efficiency.		
Policy IF-6.7 Electric Vehicles	Work with energy providers to plan for and provide for the electricity needs of a growing EV network in Burlingame.	Establishes City's commitment to collaborate with appropriate agencies on promotion of alternative fuel usage and standards.	(a) General GHG emissions (b) Conflict with GHG reduction plans

