

## 4.7 GREENHOUSE GAS EMISSIONS

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### INTRODUCTION

This section provides a discussion of existing regulations, plans, and policies pertaining to global climate change and the reduction of greenhouse gas (GHG) emissions, a quantified estimate of GHG emissions that would result from the Project, and an analysis of the significance of the impact of these GHGs. The GHG emissions that would be generated by the Plan are considered within the context of Statewide and local GHG reduction laws, plans, policies, and codes.

### ENVIRONMENTAL SETTING

#### Regulatory Framework

##### *a. Federal*

##### **Federal Clean Air Act**

The US Supreme Court ruled in *Massachusetts v. Environmental Protection Agency*<sup>1</sup> that carbon dioxide (CO<sub>2</sub>) and other GHGs are pollutants under the federal Clean Air Act (CAA), which the US Environmental Protection Agency (USEPA) must regulate if it determines they pose an endangerment to public health or welfare.<sup>2</sup> The Court did not mandate that the USEPA enact regulations to reduce GHG emissions. Instead, the Court found that the USEPA could avoid taking action if it found that GHGs do not contribute to climate change or if it offered a “reasonable explanation” for not determining that GHGs contribute to climate change.

On April 17, 2009, the USEPA issued a proposed finding that GHGs contribute to air pollution that may endanger public health or welfare. On April 24, 2009, the proposed rule was published in the Federal Register under Docket ID No. EPA-HQ-OAR-2009-0171.<sup>3</sup> The USEPA stated that high atmospheric levels of GHGs “are the unambiguous result of human emissions and are very likely the cause of the observed increase in average temperatures and other climatic changes.” The USEPA further found that “atmospheric concentrations of greenhouse gases endanger public health and welfare within the meaning

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1 *Massachusetts v. Environmental Protection Agency*, 127 S.Ct. 1438 (2007).

2 Perry W. Payne and Sara Rosenbaum, “Massachusetts et al. v Environmental Protection Agency: Implications for Public Health Policy and Practice,” *Public Health Reports* 122 No. 6 (2007): 817–819, <https://doi.org/10.1177/003335490712200614>.

3 *Federal Register*, “Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act” (December 15, 2009), accessed November 2017, <https://www.federalregister.gov/documents/2009/12/15/E9-29537/endangerment-and-cause-or-contribute-findings-for-greenhouse-gases-under-section-202a-of-the-clean>.

of Section 202 of the Clean Air Act.” The final rule was effective on January 14, 2010.<sup>4</sup> While these findings alone did not impose any requirements on industry or other entities, this action was a prerequisite to regulatory actions by the EPA, including, but not limited to, GHG emissions standards for light-duty vehicles.

In response, the USEPA promulgated a regulation to require reporting of all GHG emissions from all sectors of the economy. The final rule applies to fossil fuel suppliers and industrial gas suppliers, direct greenhouse gas emitters and manufacturers of heavy-duty and off-road vehicles and engines. The rule does not require control of greenhouse gases; rather, it requires only that sources above certain threshold levels monitor and report emissions.<sup>5</sup>

### Corporate Average Fuel Economy (CAFE) Standards

In response to the *Massachusetts v. Environmental Protection Agency* ruling, the George W. Bush administration issued Executive Order 13432 in 2007, directing the USEPA, the US Department of Transportation (USDOT), and the US Department of Energy (USDOE) to establish regulations that reduce GHG emissions from motor vehicles, nonroad vehicles, and nonroad engines by 2008.<sup>6</sup> In 2009, the National Highway Traffic Safety Administration (NHTSA) issued a final rule regulating fuel efficiency for and GHG emissions from cars and light-duty trucks for model year 2011; in 2010, the USEPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.<sup>7</sup>

In 2010, President Obama issued a memorandum directing the EPA, USDOT, USDOE, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the USEPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles.<sup>8</sup> The proposed standards projected to achieve 163 grams/mile of CO<sub>2</sub> in model year 2025, on an average

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4 United States Environmental Protection Agency (USEPA), “Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Section 202(a) of the Clean Air Act,” accessed November 2017, <https://www.epa.gov/ghgemissions/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a-clean/>.

5 *Federal Register*, “Mandatory Reporting of Greenhouse Gases” (October 30, 2009), <https://www.gpo.gov/fdsys/pkg/FR-2009-10-30/pdf/E9-23315.pdf>.

6 US Government Publishing Office, Administration of George W. Bush, “Executive Order 13432—Cooperation Among Agencies in Protecting the Environment With Respect to Greenhouse Gas Emissions From Motor Vehicles, Nonroad Vehicles, and Nonroad Engines,” 631 (May 14, 2007), <https://www.gpo.gov/fdsys/pkg/WCPD-2007-05-21/pdf/WCPD-2007-05-21-Pg631.pdf>.

7 USEPA, “Regulations for Greenhouse Gas Emissions from Commercial Trucks & Buses” (December 27, 2017), <https://www.epa.gov/regulations-emissions-vehicles-and-engines/regulations-greenhouse-gas-emissions-commercial-trucks>.

8 USEPA, “Presidential Announcements and Letters of Support related to Greenhouse Gas Emissions” (August 28, 2017), <https://www.epa.gov/regulations-emissions-vehicles-and-engines/presidential-announcements-and-letters-support-related>.

industry fleet-wide basis, which is equivalent to 54.5 miles per gallon (mpg) if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022 – 2025 in a future rulemaking. On April 2, 2018 the USEPA signed the Mid-term Evaluation Final Determination, which finds that the model year 2022–2025 greenhouse gas standards are not appropriate and should be revised.<sup>9</sup> The Final Determination serves to initiate a notice to further consider appropriate standards for model year 2022–2025 light duty vehicles. On August 24, 2018, the USEPA and NHTSA published a proposal to freeze the model year 2020 standards through model year 2026 and to revoke California’s waiver under the Clean Air Act to establish more stringent standards.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2016, the USEPA and NHTSA finalized Phase 2 standards for medium and heavy-duty vehicles through model year 2027 that will improve fuel efficiency and cut carbon pollution. If implemented, the Phase 2 standards would be expected to lower CO<sub>2</sub> emissions by approximately 1.1 billion metric tons (MT), save vehicle owners fuels costs of about \$170 billion.<sup>10</sup> But as discussed above, the USEPA and NHTSA have proposed to roll back GHG and fuel economy for cars and light-duty trucks, which suggest a similar rollback of Phase 2 standards for medium and heavy-duty vehicles may be pursued.

### **Energy Independence and Security Act**

The Energy Independence and Security Act of 2007 (EISA) facilitates the reduction of national GHG emissions by requiring the following:<sup>11</sup>

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) that requires fuel producers to use at least 36 billion gallons of renewable fuel in 2022, with at least 16 billion gallons from cellulosic biofuels and a cap of 15 billion gallons for corn-starch ethanol;
- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances;

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9 Federal Register, *Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022 – 2025 Light-Duty Vehicles*, April 13, 2018, accessed March 2019, <https://www.federalregister.gov/documents/2018/04/13/2018-07364/mid-term-evaluation-of-greenhouse-gas-emissions-standards-for-model-year-2022-2025-light-duty>.

10 USEPA, *EPA and NHTSA Adopt Standards to Reduce GHG and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles for Model Year 2018 and Beyond*, August 2016.

11 USEPA, “Summary of the Energy Independence and Security Act,” <https://www.epa.gov/laws-regulations/summary-energy-independence-and-security-act>.

- Requiring approximately 25 percent greater efficiency for light bulbs by phasing out incandescent light bulbs between 2012 and 2014; requiring approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020; and
- While superseded by USEPA and NHTSA actions described above, (i) establishing miles per gallon targets for cars and light trucks; and (ii) directing the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks, and create a separate fuel economy standard for trucks.

Additional provisions of EISA address energy savings in government and public institutions, promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of “green jobs.”<sup>12</sup>

## **b. State**

### **Executive Orders**

#### ***Executive Order S-3-05***

Executive Order S-3-05, signed by Governor Arnold Schwarzenegger and issued in June 2005, proclaimed that California is vulnerable to the impacts of climate change.<sup>13</sup> It declared that increased temperatures could reduce the Sierra snowpack, further exacerbate California’s air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established the following total GHG emission targets:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

However, in adopting the California Global Warming Solutions Act of 2006, also known as Assembly Bill (AB) 32 (Pavley), discussed below, the Legislature did not adopt the 2050 horizon-year goal from Executive Order No. S-3-05 and, in the 2006 legislative session, rejected legislation to enact the Executive Order’s 2050 goal.

#### ***Executive Order S-01-07***

Executive Order S-1-07, the Low Carbon Fuel Standard (issued on January 18, 2007), requires a reduction of at least 10 percent in the carbon intensity of California’s transportation fuels by 2020.<sup>14</sup> Regulatory

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12 A green job, as defined by the United States Department of Labor, is a job in business that produce goods or provide services that benefit the environment or conserve natural resources.

13 National Resources Conservation Service, “Emerging Issues Committee Members,” [https://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs143\\_008701.pdf](https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_008701.pdf).

14 Office of the Governor, Executive Order S-01-07 (January 18, 2007), <https://www.arb.ca.gov/fuels/lcfs/eos0107.pdf>.

proceedings and implementation of the Low Carbon Fuel Standard have been directed to the California Air Resources Board (CARB). The Low Carbon Fuel Standard has been identified by CARB as a discrete early action item in the adopted Climate Change Scoping Plan (discussed below). CARB expects the Low Carbon Fuel Standard to achieve the minimum 10 percent reduction goal; however, many of the early action items outlined in the Climate Change Scoping Plan work in tandem with one another. Other specific emission reduction measures included are the Million Solar Roofs Program<sup>15</sup> and Assembly Bill (AB) 1493 (Pavley I), Vehicle Emissions: Greenhouse Gases, which establishes motor vehicle GHG emissions standards.<sup>16</sup> To avoid the potential for double-counting emission reductions associated with AB 1493, the Climate Change Scoping Plan has modified the aggregate reduction expected from the Low Carbon Fuel Standard to 9.1 percent. In accordance with the Climate Change Scoping Plan, this analysis incorporates the modified reduction potential for the Low Carbon Fuel Standard. CARB released a draft version of the Low Carbon Fuel Standard in October 2008. The final regulation was approved by the Office of Administrative Law and filed with the Secretary of State on January 12, 2010; the Low Carbon Fuel Standard became effective on the same day.

### **Executive Order B-30-15**

Executive Order B-30-15, signed by Governor Edmund Gerald “Jerry” Brown and issued in April 29, 2015, established a new Statewide policy goal to reduce GHG emissions to 40 percent below their 1990 levels by 2030. Reducing GHG emissions by 40 percent below 1990 levels in 2030, and by 80 percent below 1990 levels by 2050 (consistent with Executive Order S-3-05), aligns with scientifically established levels needed to limit global warming to less than 2 degrees Celsius.<sup>17</sup>

### **Assembly Bill 32 and Related Legislation**

AB 32, the Global Warming Solutions Act of 2006, requires a sharp reduction of GHG emissions to 1990 levels by 2020. To achieve these goals, which are consistent with the California Climate Action Team, which works to coordinate statewide efforts to implement global warming emission reduction programs and the state's Climate Adaptation Strategy after the passing of AB 32, AB 32 mandates that CARB establish a quantified emissions cap and institute a schedule to meet the cap; implement regulations to reduce Statewide GHG emissions from stationary sources consistent with the California Climate Action

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15 US Department of Energy, “Laying the Foundation for Solar America: The Million Solar Roofs Initiative” (October 2016), <https://www.nrel.gov/docs/fy07osti/40483.pdf>.

16 The standards enacted in Pavley I are the first GHG standards in the nation for passenger vehicles and took effect for model years starting in 2009 and going through 2016. Pavley I could potentially result in 27.7 million metric tons CO<sub>2</sub>e reduction in 2020. Pavley II will cover model years 2017 to 2025 and potentially result in an additional reduction of 4.1 million metric tons CO<sub>2</sub>e.

17 Office of the Governor, “Governor Brown Established Most Ambitious Greenhouse Gas Reduction Target in North America” (April 29, 2015), <https://www.gov.ca.gov/2015/04/29/news18938/>.

Team strategies; and develop tracking, reporting, and enforcement mechanisms to ensure that reductions are achieved. To reach the reduction targets, AB 32 requires CARB to adopt—in an open, public process—rules and regulations that achieve the maximum technologically feasible and cost-effective GHG reductions.

The California Climate Action Team stated that “smart land use” is an umbrella term for strategies that integrate transportation and land-use decisions.<sup>18</sup> Such strategies generally encourage jobs/housing proximity, promote transit-oriented development (TOD), and encourage high-density residential/commercial development along transit corridors. These strategies develop more efficient land-use patterns within each jurisdiction or region to match population increases, workforce, and socioeconomic needs for the full spectrum of the population. “Intelligent transportation systems” is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and the movement of people, goods, and service.<sup>19</sup>

### ***Climate Change Scoping Plan***

CARB approved a Climate Change Scoping Plan (Scoping Plan) on December 11, 2008, as required by AB 32. The Scoping Plan proposed a “comprehensive set of actions designed to reduce overall carbon GHG emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health.”<sup>20</sup> The Scoping Plan had a range of GHG reduction actions, including direct regulations; alternative compliance mechanisms; monetary and nonmonetary incentives; voluntary actions; market-based mechanisms, such as a cap-and-trade system; and an AB 32 implementation regulation to fund the program.

The Scoping Plan called for a “coordinated set of strategies” to address all major categories of GHG emissions.<sup>21</sup> Transportation emissions were to be addressed through a combination of higher standards for vehicle fuel economy, implementation of the Low Carbon Fuel Standard, and greater consideration to reducing trip length and generation through land use planning and transit-oriented development. Buildings, land use, and industrial operations were encouraged and, sometimes, required to implement energy efficiency practices. Utility energy supplies will change to include more renewable energy sources through implementation of the Renewables Portfolio Standard. Established in 2002 under Senate Bill (SB)

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18 California Energy Commission, “The Role of Land Use in Meeting California’s Energy and Climate Change Goals” (June 2007), <http://www.energy.ca.gov/2007publications/CEC-600-2007-008/CEC-600-2007-008-SD.PDF>.

19 California Environmental Protection Agency, *Climate Action Team Report to Governor Schwarzenegger and the Legislature* (March 2006), 58.

20 CARB, *Climate Change Scoping Plan: A Framework for Change* (December 2008), [https://www.arb.ca.gov/cc/scopingplan/document/adopted\\_scoping\\_plan.pdf](https://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf).

21 CARB, *Climate Change Scoping Plan*, p. ES-7.

1078, the California Renewables Portfolio Standards (RPS) were accelerated in 2006 under SB 107, which required that, by 2010, at least 20 percent of electricity retail sales come from renewable sources. In April 2016, the California Energy Commission (CEC) updated the RPS pursuant to SB 350, intended to set the new target 50 percent renewables by 2030.<sup>22</sup> This will be complemented with emphasis on local generation, including rooftop photovoltaics and solar hot water installations. Additionally, the Scoping Plan emphasized opportunities for households and businesses to save energy and money through increasing energy efficiency. It indicated that substantial savings of electricity and natural gas would be accomplished through improving energy efficiency.

Subsequent to the adoption of the Scoping Plan, a lawsuit was filed challenging CARB's approval of the Scoping Plan Functional Equivalent Document (Supplemental FED). On May 20, 2011 (Case No. CPF-09-509562), the court found that the environmental analysis of the alternatives in the Supplemental FED to the Scoping Plan was not sufficient under CEQA. CARB staff prepared a revised and expanded environmental analysis of the alternatives, and the Supplemental FED to the Scoping Plan was approved on August 24, 2011. The Supplemental FED to the Scoping Plan indicated that the potential exists for adverse environmental impacts associated with implementation of the various GHG emission reduction measures recommended in the Scoping Plan.

CARB updated the Scoping Plan in May 2014 (2014 Scoping Plan). The 2014 Scoping Plan<sup>23</sup> adjusted the 1990 GHG emissions levels to 431 million metric tons of carbon dioxide equivalents (MMTCO<sub>2e</sub>); the updated 2020 GHG emissions forecast is 509 MMTCO<sub>2e</sub>, which credited for certain GHG emission reduction measures already in place (e.g., the RPS). The 2014 Scoping Plan also recommended a 40 percent reduction in GH emissions from 1990 levels by 2030, and a 60 percent reduction in GHG emissions from 1990 levels by 2040.

The 2017 Scoping Plan,<sup>24</sup> approved on December 14, 2017, builds on previous programs and takes aim at the 2030 target established by the 2016 SB 32 (Pavley), which is further discussed below. The 2017 Scoping Plan outlines options to meet California's aggressive goals to reduce GHGs by 40 percent below 1990 levels by 2030. In addition, the plan incorporates the State's updated RPS requiring utilities to procure 50 percent of their electricity from renewable energy sources by 2030. It also raises the State's Low Carbon

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22 California Energy Commission, *Enforcement Procedures for the Renewables Portfolio Standards for Local Publicly Owned Electric Utilities: Amended Regulations* (April 12, 2016), <http://www.energy.ca.gov/2016publications/CEC-300-2016-002/CEC-300-2016-002-CMF.pdf>.

23 CARB, *First Update to the Climate Change Scoping Plan: Building on the Framework* (May 2014).

24 CARB, *California's 2017 Climate Change Scoping Plan* (November 2017), [https://www.arb.ca.gov/cc/scopingplan/scoping\\_plan\\_2017.pdf](https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf).

Fuel Standard and aims to reduce emissions of methane and hydrofluorocarbons by 40 percent from 2013 levels by 2030 and emissions of black carbon by 50 percent from 2013 levels.

### ***Advanced Clean Cars Regulations***

In 2012, CARB approved the Advanced Clean Cars (ACC) program, a new emissions-control program for vehicle model years 2017–2025. The program combines the control of smog, soot, and GHGs with requirements for greater number of zero-emission vehicles. By 2025, when the rules will be fully implemented, automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.<sup>25</sup>

### ***AB 197: Statewide GHG Emissions Limit***

On September 8, 2016, Governor Brown signed AB 197, which requires CARB to approve a Statewide GHG emissions limit equivalent to the Statewide GHG emission level in 1990 to be achieved by 2020.<sup>26</sup> AB 197 requires the CARB to prepare and approve a scoping plan for achieving the maximum technologically feasible and cost-effective reductions in GHG emissions. The bill became effective on January 1, 2017.

## **Senate Bills**

### ***Senate Bill 375***

SB 375, signed into law in September 2008, aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocations.<sup>27</sup> The act requires metropolitan planning organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS) that prescribes land use allocation in that MPO's regional transportation plan (RTP). CARB, in consultation with MPOs, provided regional reduction targets for GHGs for the years 2020 and 2035.

### ***Senate Bill X1-2: 2020 Renewable Portfolio Standard***

On April 12, 2011, California governor Jerry Brown signed SB X1-2.<sup>28</sup> This bill supersedes the 33 percent by RPS created by Executive Order S-14-08, previously signed by Governor Schwarzenegger. The RPS required that all retail suppliers of electricity in California serve 33 percent of their load with renewable energy by 2020. A number of significant changes are made in SB X1-2. It extends application of the RPS to

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25 CARB, The Advanced Clean Cars Program (January 18, 2018), <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program>.

26 California Legislative Information, Assembly Bill No. 197 (September 8, 2016), [https://leginfo.ca.gov/faces/billNavClient.xhtml?bill\\_id=201520160AB197](https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB197).

27 California Legislative Information, Senate Bill No. 375 (September 30, 2008), [https://leginfo.ca.gov/faces/billNavClient.xhtml?bill\\_id=200720080SB375](https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=200720080SB375).

28 California Energy Commission, Renewable Portfolio, <http://www.energy.ca.gov/portfolio>.

all electric retailers in the State, including municipal and public utilities, and community choice aggregators.

SB X1-2 creates a three-stage compliance period for electricity providers to meet renewable energy goals: 20 percent of retail sales must be renewable energy products by 2013, 25 percent of retail sales must be renewable energy products by 2016, and 33 percent of retail sales must be renewable energy products by 2020. The 33 percent level must be maintained in the years that follow. This three-stage compliance period requires the RPS to be met increasingly with renewable energy that is supplied to the California grid and is located within or directly proximate to California. SB X1-2 mandates that renewables from this category make up:

- At least 50 percent for the 2011–2013 compliance period;
- At least 65 percent for the 2014–2016 compliance period; and
- At least 75 percent for 2016 and beyond.

SB X1-2 sets rules for the use of Renewable Energy Credits (RECs) as follows:

- Establishes a cap of no more than 25 percent unbundled RECs going toward the RPS between 2011 and 2013, 15 percent from 2014 to 2016, and 10 percent thereafter;
- Does not allow for the grandfathering of tradable REC contracts executed before 2010, unless the contract was (or is) approved by the California Public Utilities Commission (CPUC);
- Allows banking of RECs for 3 years only; and
- Allows energy service providers, community choice aggregators, and investor-owned utilities with 60,000 or fewer customers to use 100 percent RECs to meet the RPS.

SB X1-2 also eliminates the Market Price Referent, which was a benchmark to assess the above-market costs of RPS contracts based on the long-term ownership, operating, and fixed-price fuel costs for a new 500-megawatt (mW) natural-gas-fired, combined-cycle gas turbine.

### ***Senate Bill 350: Clean Energy and Pollution Reduction Act***

SB 350, the Clean Energy and Pollution Reduction Act of 2015, was signed on October 7 of that year.<sup>29</sup> SB 350 implements some of the goals of Executive Order B-30-15 described above. The objectives of SB 350 are: (1) to increase the procurement of our electricity from renewable sources from 33 percent to 50

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29 California Legislative Information, Senate Bill No. 350 (October 7, 2015), [https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=201520160SB350](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350).

percent; and (2) to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.<sup>30</sup>

### **Senate Bill 32: Statewide Reductions in GHG Emissions**

On September 8, 2016, Governor Brown signed SB 32, which extends AB 32 another 10 years to 2030 and updates the State's objectives. SB 32 calls for Statewide reductions in GHG emissions to 40 percent below 1990 levels by 2030. The bill became effective on January 1, 2017.<sup>31</sup>

### **Senate Bill 97**

SB 97, approved on July 10, 2017, requires the Office of Planning and Research (OPR) to prepare and develop guidelines for the mitigation of GHG emissions or the effects thereof, including but not limited to effects associated with transportation and energy consumption.<sup>32</sup> These guidelines were required to be transmitted to the Natural Resources Agency by July 1, 2009, to be certified and adopted by January 1, 2010. OPR submitted the Proposed Draft Guideline Amendments for Greenhouse Gas Emissions to the Secretary for Natural Resources on April 13, 2009. The California Natural Resources Agency conducted formal rulemaking in 2009 on December 30 of that year and adopted the Guideline Amendments, which address the specific obligations of public agencies when analyzing GHG emissions under CEQA to determine a project's effects on the environment.

However, neither a threshold of significance nor any specific mitigation measures is included or provided in these CEQA Guideline Amendments. The Guideline Amendments require a Lead Agency to make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project. The Guideline Amendments give discretion to the Lead Agency whether to (1) use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use; and/or (2) rely on a qualitative analysis or performance-based standards. Further, the Guideline Amendments identify three factors that should be considered in the evaluation of the significance of GHG emissions:

1. The extent to which a project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

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30 Senate Bill 350 (2015–2016 Reg, Session) Stats 2015, ch. 547.

31 California Legislative Information, Senate Bill No. 32 (September 8, 2016), [https://leginfo.ca.gov/faces/billNavClient.xhtml?bill\\_id=201520160SB32](https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32).

32 California Legislative Information, Senate Bill No.97 (August 24, 2007), [https://leginfo.ca.gov/faces/billNavClient.xhtml?bill\\_id=200720080SB97](https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=200720080SB97).

2. Whether the project emissions exceed a threshold of significance that the Lead Agency determines applies to the project; and
3. The extent to which the project complies with regulations or requirements adopted to implement a Statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

The administrative records of the promulgation of the Guidelines Amendments also clarify “that the effects of greenhouse gas emissions are cumulative and should be analyzed in the context of California Environmental Quality Act’s requirements for cumulative impact analysis.”<sup>33</sup>

The Natural Resources Agency is required to periodically update the guidelines to incorporate new information or criteria established by CARB pursuant to AB 32. SB 97 applies retroactively to any environmental impact report, negative declaration, mitigated negative declaration, or other document required by CEQA that has not yet been certified.

### **Center for Biological Diversity v. California Department of Fish and Wildlife**

The California Supreme Court’s decision published on November 30, 2015, in *Center for Biological Diversity v. California Department of Fish and Wildlife* (Case No. 217763; the Newhall Ranch case) reviewed the methodology used to analyze GHG emissions in an EIR prepared for a project that proposed 20,885 dwelling units with 58,000 residents on 12,000 acres of undeveloped land in a rural area of the City of Santa Clara.<sup>34</sup> That EIR used the “business as usual” (BAU) methodology to determine whether the project would impede the State of California’s compliance with statutory emissions reduction mandate established by the AB 32 Scoping Plan. The Court did not invalidate the BAU approach entirely, but did hold that:

*The Scoping Plan nowhere related that statewide level of reduction effort to the percentage of reduction that would or should be required from individual projects and nothing Department of Fish and Wildlife or Newhall have cited in the administrative record indicates the required percentage reduction from business as usual is the same for an individual project as for the entire state population and economy.*<sup>35</sup>

The California Supreme Court suggested regulatory consistency as a pathway to compliance, stating that a Lead Agency might assess consistency with AB 32’s goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities. The Court

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33 Cynthia Bryant, Director of the Office of Planning and Research, letter to Mike Chrisman, Secretary for Natural Resources, April 13, 2009.

34 California Department of Fish and Wildlife, *Newhall Ranch Resource Management and Development Plan and Spineflower Conservation Plan*, <https://www.wildlife.ca.gov/regions/5/newhall>.

35 *Center for Biological Diversity et al. v. California Department of Fish and Wildlife* (2015) (62 Cal.4th 204, 195 Cal.Rptr.3d 247, 361 P.3d 342).

recognized that to the extent a project’s design features comply with or exceed the regulations outlined in the Scoping Plan, and adopted by CARB or other State agencies, a Lead Agency could appropriately rely on their use as showing compliance with performance-based standards adopted to fulfill a Statewide plan for the reduction or mitigation of greenhouse gas emissions. This approach is consistent with CEQA Guidelines Section 15064, which provides that a determination that an impact is not cumulatively considerable may rest on compliance with previously adopted plans or regulations, including plans or regulations for the reduction of greenhouse gas emissions. Importantly, the Supreme Court also suggested “a lead agency may rely on existing numerical thresholds of significance for greenhouse gas emissions (*brightline threshold approach*).”<sup>36</sup>

## California Energy Commission

### ***California Building Energy Efficiency Standards (Title 24, Part 6)***

California’s Energy Efficiency Standards for Residential and Nonresidential Buildings, found in Title 24, Part 6 of the California Code of Regulations (CCR) and commonly referred to as “Title 24,” were established in 1978 in response to a legislative mandate to reduce California’s energy consumption. Title 24 requires the design of building shells and components to conserve energy. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods.<sup>37</sup>

An update to Title 24 was adopted by the CEC on April 23, 2008. The 2008 Title 24 standards applied to building permits for which an application was submitted on or after January 1, 2010. The CEC adopted the changes made in 2008 to the Building Energy Efficiency Standards to respond to the mandates of AB 32 and to pursue California energy policy that energy efficiency is the resource of first choice for meeting California’s energy needs. The CEC adopted the Title 24 standards as well as the 2016 Title 24 standards, which became effective on January 1, 2017, and are applicable to the Project.<sup>38</sup> The 2016 standards will continue to improve upon prior Title 24 standards for new construction of, and additions and alterations to, residential and nonresidential buildings.<sup>39</sup>

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36 The South Coast Air Quality Management District (SCAQMD), *Interim CEQA Greenhouse Gas (GHG) Significance Thresholds*, draft guidance document (October 2008), Attachment E, [http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/ghgattachmente.pdf](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgattachmente.pdf).

37 California Energy Commission, “2016 Building Energy Efficiency Standards,” <http://www.energy.ca.gov/title24/2016standards/>.

38 See California Energy Commission, “2016 Building Energy Efficiency Standards” for additional information.

39 See California Energy Commission, “2016 Building Energy Efficiency Standards.”

### ***California Green Building Standards (Title 24, Part 11)***

The California Green Building Standards Code, which is Part 11 of the CCR, is commonly referred to as the CALGreen Code.<sup>40</sup> The 2008 edition, the first edition of the CALGreen Code, contained only voluntary standards. The 2010 CALGreen Code contains mandatory requirements for State-regulated buildings and structures throughout California beginning on January 1, 2011. The 2010 CALGreen Code contains requirements for construction site selection, stormwater control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. The 2010 CALGreen Code provides for design options, allowing the designer to determine how best to achieve compliance for a given site or building condition. The 2010 CALGreen Code also requires building commissioning, which is a process for verification that all building systems, such as heating and cooling equipment and lighting systems, are functioning at their maximum efficiency.

The 2016 CALGreen Code went into effect on January 1, 2017; it provides a number of important updates in the 2016 CALGreen Code, such as increased requirements for electrical vehicle charging infrastructure and a new universal waste code section.

### ***California Appliance Efficiency Regulations (Title 20, Sections 1601 through 1608)***

The 2016 Appliance Efficiency Regulations, adopted by the CEC, include standards for new appliances, equipment, and lighting if are sold or offered for sale in California. These standards include minimum levels of operating efficiency and other cost-effective measures to promote the use of energy- and water-efficient appliances.<sup>41</sup>

## ***c. Regional***

### **Southern California Association of Governments**

#### ***Sustainable Communities Strategy***

The City is a member agency of the Southern California Association of Governments (SCAG). To fulfill its commitments as an MPO under the Sustainable Communities and Climate Protection Act, SCAG adopted the *2016–2040 Regional Transportation Plan/Sustain Communities Strategy* (2016–2040 RTP/SCS). The 2016–2040 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. It is designed to reduce GHG emissions from passenger vehicles by 8 percent per capita by 2020, 18 percent by 2035, and 21 percent by 2040. The 18 percent

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40 California Buildings Standards Commission, “California Green Building Standards Code (Cal. Code Regs., Title 24, Part 11)” (January 1, 2017), <http://www.bsc.ca.gov/Home/CALGreen.aspx>.

41 California Energy Commission, *2016 Appliance Efficiency Regulations* (January 2017), <http://www.energy.ca.gov/2017publications/CEC-400-2017-002/CEC-400-2017-002.pdf>.

reduction by 2035 over 2005 levels represents a 2 percent greater reduction compared to the projection contained in the 2012–2035 RTP/SCS. The 2016–2040 RTP/SCS reaffirms the land use policies that were incorporated into the 2012–2035 RTP/SCS. The SCS focuses the majority of new regional housing and job growth in high-quality transit areas and other opportunity areas in existing main streets, downtowns, and commercial corridors, resulting in an improved jobs/housing balance and more opportunities for TOD. Many of Los Angeles’s transportation corridors are SCS high-quality transit areas.

The SCS identifies several GHG emission reduction actions and strategies for the State, SCAG, and local jurisdictions. The SCS recommends that local jurisdictions (1) update zoning codes to accelerate adoption of SCS land use strategies; (2) prioritize transportation investments to support compact infill development that includes a mix of land uses and housing options; (3) develop infrastructure plans and educational programs that promote active transportation options; (4) emphasize active transportation projects as part of complying with the Complete Streets Act of 2008 (AB 1358); and (5) increase the efficiency of existing transportation systems.

### **South Coast Air Quality Management District**

The South Coast Air Quality Management District (SCAQMD) adopted a “Policy on Global Warming and Stratospheric Ozone Depletion” on April 6, 1990.<sup>42</sup> The policy commits the SCAQMD to consider global impacts in rulemaking and in drafting revisions to the Air Quality Management Plan (AQMP). In March 1992, the SCAQMD Governing Board reaffirmed this policy and adopted amendments to the policy to include the following directives:

- Phase out the use and corresponding emissions of chlorofluorocarbons, methyl chloroform (1,1,1-trichloroethane or TCA), carbon tetrachloride, and halons by December 1995;
- Phase out the large quantity use and corresponding emissions of hydrochlorofluorocarbons by the year 2000;
- Develop recycling regulations for hydrochlorofluorocarbons (e.g., SCAQMD Rules 1411 and 1415);
- Develop an emissions inventory and control strategy for methyl bromide; and
- Support the adoption of a California GHG emission reduction goal.

SCAQMD released draft guidance regarding interim CEQA GHG significance thresholds. Within its October 2008 document, SCAQMD proposed the use of a percent emission reduction target to determine significance for commercial/residential projects that emit greater than 3,000 MT of GHG per year. On

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42 SCAQMD, “SCAQMD’s Historical Activity on Climate Change,” <http://www.aqmd.gov/nav/about/initiatives/climate-change>.

December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold for stationary source/industrial projects where SCAQMD is the Lead Agency.<sup>43</sup>

SCAQMD has yet to adopt a GHG significance threshold for land use development projects (e.g., residential/commercial projects), but it has formed a GHG Significance Threshold Working Group to further evaluate potential GHG significance thresholds. Members of the working group include government agencies and representatives from various stakeholder agencies that provide input to SCAQMD on developing GHG CEQA significance thresholds.

#### **d. Local**

##### **City of Rancho Cucamonga**

###### ***Rancho Cucamonga General Plan***

The Public Health and Safety Chapter of the General Plan addresses air quality, atmosphere and climate consistent with the information presented in this section of the Draft EIR. Motor vehicles represent the major source of regional emissions throughout the SoCAB and the City. The Public Health and Safety Chapter identifies that sources of non-mobile air pollution include industrial/manufacturing uses, auto repair businesses, dry cleaners, and other businesses that regularly use chemical solvents. Common sources of PM<sub>10</sub> include road dust, construction activity, grading, and fires (including fireplaces). Air pollution is significantly worse where air pollutants are concentrated, including energy-intensive industrial areas, high volume roads, diesel truck routes, rail yards, and sea ports.

###### ***Rancho Cucamonga Development Code***

Section 17.50 of the Development Code requires that new non-residential and residential development or substantial renovations comply with all mandatory provisions of the applicable *City of Rancho Cucamonga, Green Building Compliance Matrix* as required by the California CalGreen Building Code. The purpose is to implement the sustainable planning and design provisions of the Rancho Cucamonga General Plan. Section 17.50 provides incentives for compliance with this code, such as priority processing of the proposed development or reduction in one site development standard or architectural design requirement.

Section 17.82 of the Development Code applies to new construction and rehabilitated landscapes for public agency projects and private development projects (or developer-installed residential projects) with a total landscape area equal to or greater than 2,500 square feet. Applicable projects must develop and

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43 SCAQMD, "Greenhouse Gases: CEQA Significance Thresholds," <http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ghg-significance-thresholds>.

establish a water budget; follow landscape design guidelines; adhere to soil and grading requirements; and submit a complete landscape package to the City of Rancho Cucamonga. Section 17.82 also requires the installation of recycled water irrigation systems to allow for the current and future use of recycled water, and encourages the implementation of stormwater best management practices in the landscape, irrigation, and grading design phase.

### ***Rancho Cucamonga Sustainable Community Action Plan***

On April 2017, the City adopted the Rancho Cucamonga Sustainable Community Action Plan. Legislation like AB 32 in 2006 and SB 32 in 2016 have set statewide greenhouse gas reduction targets to reduce emissions to 1990 levels by 2020 (equivalent to 15 percent reduction from 2005 levels) and 40 percent below 1990 levels by 2030 (equivalent to a 49 percent reduction from 2005 levels). Rancho Cucamonga participated in the San Bernardino Council of Governments' (SBCOG, formerly SANBAG) regional efforts to inventory greenhouse gas emissions and identify strategies to reduce emissions. Through this effort, Rancho Cucamonga set a goal to reduce greenhouse gas emissions 15 percent below 2008 levels by 2020. In total, existing actions, state programs, and the goals and policies would reduce GHG emissions in the City by an estimated 16.9 percent by 2020.

The Sustainable Community Action Plan targets key areas for advancing sustainability. These areas include:

- **Transportation + Mobility (TM)**: Examines mobility options within the community, including, walking, bicycling, driving, and taking public transit.
- **Land Use + Open Space (LU)**: Discusses land use directions and how it affects the overall health and sustainability of Rancho Cucamonga.
- **Energy Efficiency + Renewables (EE)**: Covers opportunities to improve efficiency and increase the use of renewable energy in and around the City.
- **Green Building Performance (GB)**: Looks at opportunities to develop, maintain, and operate buildings in a manner that utilizes resources efficiently and improves the health of building occupants.
- **Water + Wastewater (WW)**: Discusses the use and conservation of water resources as well as reuse of treated wastewater in Rancho Cucamonga.
- **Waste + Recycling (WR)**: Discusses opportunities for minimizing waste and organics by reducing non-recyclable materials and increasing diversion rates.

## Existing Conditions

### *Greenhouse Gases and Climate Change*

#### Global Context

GHGs are global pollutants that have long atmospheric lifetimes (1 year to several thousand years). GHGs persist in the atmosphere for a long enough time to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule depends on multiple variables and cannot be pinpointed, more CO<sub>2</sub> is currently emitted into the atmosphere than is avoided or sequestered. CO<sub>2</sub> sinks, or reservoirs, include vegetation and the ocean, which absorb CO<sub>2</sub> through photosynthesis and dissolution, respectively. These are two of the most common processes of CO<sub>2</sub> sequestration. Of the total annual human-caused CO<sub>2</sub> emissions, approximately 54 percent is sequestered within a year through ocean uptake, northern hemisphere forest regrowth, and other terrestrial sinks; the remaining 46 percent of human-caused CO<sub>2</sub> emissions are stored in the atmosphere.

Similarly, the effects of GHGs are borne globally (sea-level rise, hurricanes, droughts, etc.), as opposed to the localized air quality effects of criteria air pollutants and toxic air contaminants (TACs). The quantity of GHGs that it takes to ultimately result in climate change is not precisely known, but that quantity is enormous. No single project would be expected to measurably contribute to a noticeable incremental change in the global average temperature, or to global, local, or microclimates. However, it is the combined GHG contributions per project that create an impact.

GHGs with lower emissions rates than CO<sub>2</sub> may still contribute to climate change because they are more effective at absorbing outgoing infrared radiation than CO<sub>2</sub>. The measure of CO<sub>2</sub> equivalent (CO<sub>2</sub>e) is used to account for the different potentials of GHGs to absorb infrared radiation. This potential, known as the global warming potential (GWP) of a GHG, is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

CH<sub>4</sub> and nitrous oxide N<sub>2</sub>O are generally much lower than those of CO<sub>2</sub> and are associated with anaerobic microbial activity resulting from agricultural practices, flooded soils, and landfills. CH<sub>4</sub> and N<sub>2</sub>O have approximately 23 and 296 times the GWP of CO<sub>2</sub>, respectively.

#### Greenhouse Effect

GHGs play a critical role in determining the Earth's surface temperature because these gases absorb solar radiation. Solar radiation enters the Earth's atmosphere from space. A portion of the radiation is absorbed by the Earth's surface, and a smaller portion of this radiation is reflected back into space. The radiation absorbed by the Earth is reradiated as lower-frequency infrared radiation, which is then selectively absorbed by GHGs in the Earth's atmosphere. As a result, the greater the amount of GHGs in the

atmosphere, the greater the amount of infrared radiation trapped, resulting in a warming of the atmosphere. This phenomenon is commonly referred to as the “greenhouse effect.” Scientists have speculated that increased GHG emissions from human activity (anthropogenic) could lead to a less habitable climate. Anthropogenic GHG emissions leading to atmospheric levels in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and have led to a trend of unnatural warming of the Earth’s atmosphere and oceans, with corresponding effects on global air and water circulation patterns and climate. CO<sub>2</sub> emissions associated with fossil fuel combustion are the primary contributors to human-induced emissions.

### **Climate Change Effects for California**

Climate change could affect environmental conditions in California in a variety of ways. One effect of climate change is rising sea levels. Sea levels along the California coast rose approximately 7 inches during the last century, and they are predicted to rise an additional 7 to 22 inches by 2100, depending on the future levels of GHG emissions. The effects of a rise in sea level could include increased coastal flooding, saltwater intrusion (especially a concern in the low-lying Sacramento–San Joaquin Delta, where pumps delivering potable water to Southern California could be threatened), and disruption of wetlands.

As the State’s climate changes over time, the range of various plant and wildlife species could shift or be reduced, depending on the favored temperature and moisture regimes of each species. In the worst cases, some species would become extinct or be extirpated from the State if suitable conditions are no longer available. Additional concerns associated with climate change include a reduction in the snowpack, leading to less overall water storage in the mountains (the largest “reservoir” in the State), and increased risk of wildfires caused by changes in rainfall patterns and plant communities. Changes in the climate can also impact California’s weather patterns and rainfall, causing droughts in certain areas and flooding in others.

### **Sources of Greenhouse Gas Emissions**

GHGs are the result of both natural and anthropogenic activities. With respect to anthropogenic activities, motor vehicle travel, air travel, consumption of fossil fuels for power generation, industrial processes, heating and cooling, landfills, agriculture, and wildfire are the primary sources of GHG emissions. Additionally, land use decisions and future development projects pursuant to implementation of a general plan can affect the generation of GHG emissions from multiple sectors, resulting in direct or indirect GHG emissions. For example, electricity consumed in the lighting and heating of buildings is an indirect source of GHG emissions because it requires electricity from power plants, which emits GHG directly into the atmosphere. Conversely, tailpipe emissions from the use of vehicles generates direct GHG emissions.

GHGs are a group of emissions that include CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, SF<sub>6</sub>, and nitrogen trifluoride (NF<sub>3</sub>). Carbon dioxide is the most abundant GHG. As stated above, other GHGs are less abundant, but have higher global warming potential than CO<sub>2</sub>. Thus, emissions of other GHGs are frequently expressed in the equivalent mass of CO<sub>2</sub>; denoted as CO<sub>2</sub>e. A general description of GHGs discussed is provided in **Table 4.7-1: Description of Identified Greenhouse Gases.**

**Table 4.7-1  
Description of Identified Greenhouse Gases**

| <b>GHG</b>                                   | <b>General Description</b>  |
|--|---|
| <b>Carbon Dioxide (CO<sub>2</sub>)</b>       | An odorless, colorless GHG that has both natural and anthropogenic sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic (human caused) sources of CO <sub>2</sub> are burning coal, oil, natural gas, and wood.   |
| <b>Methane (CH<sub>4</sub>)</b>              | A flammable gas and is the main component of natural gas. When one molecule of CH <sub>4</sub> is burned in the presence of oxygen, one molecule of CO <sub>2</sub> and two molecules of water are released. A natural source of CH <sub>4</sub> is the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain CH <sub>4</sub> , which is extracted for fuel. Other sources are from landfills, fermentation of manure, and cattle.  |
| <b>Nitrous Oxide (N<sub>2</sub>O)</b>        | A colorless GHG. High concentrations can cause dizziness, euphoria, and sometimes slight hallucinations. N <sub>2</sub> O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used in rocket engines, race cars, and as an aerosol spray propellant.   |
| <b>Hydrofluorocarbons (HFCs)</b>             | Chlorofluorocarbons (CFCs) are gases formed synthetically by replacing all hydrogen atoms in CH <sub>4</sub> or ethane (C <sub>2</sub> H <sub>6</sub> ) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at Earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. Because they destroy stratospheric ozone, the production of CFCs was stopped as required by the Montreal Protocol in 1987. HFCs are synthetic man-made chemicals that are used as substitute for CFCs as refrigerants. HFCs deplete stratospheric ozone, but to a much lesser extent than CFCs. |
| <b>Perfluorinated Chemicals (PFCs)</b>       | PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane and hexafluoroethane. The two main sources of PFCs are primary aluminum production and semi-conduction manufacturing.  |
| <b>Sulfur Hexafluoride (SF<sub>6</sub>)</b>  | An inorganic, odorless, colorless, nontoxic, and nonflammable gas. SF <sub>6</sub> is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semi-conductor manufacturing, and as a tracer gas for leak detection.  |
| <b>Nitrogen Trifluoride (NF<sub>3</sub>)</b> | An inorganic, nontoxic, odorless, nonflammable gas. NF <sub>3</sub> is used in the manufacture of semiconductors, as an oxidizer of high energy fuels, for the preparation of tetrafluoro   |

| GHG | General Description  |
|-----|--|
|     | hydrazine, as an etchant gas in the electronic industry, and as a fluorine source in high power chemical lasers. |

<sup>a</sup> GHGs identified in this table are ones identified in the Kyoto protocol and other synthetic gases recently added to the IPCC's Fifth Assessment Report.

## Greenhouse Gas Emissions Inventory and Trends

### Existing Statewide GHG Emissions

California is the second largest contributor of GHGs in the United States and the 16th largest in the world.<sup>44</sup> In 2016, California produced 429.4 million metric tons of carbon dioxide equivalents (MMTCO<sub>2e</sub>), including imported electricity and excluding combustion of international fuels and carbon sinks or storage. The major source of GHGs in California is transportation, contributing to 37 percent of the State's total GHG emissions. Industrial generation is the second largest source, contributing to 21 percent of the State's GHG emissions. The Statewide inventory of GHGs by sector is shown in **Table 4.7-2: California GHG Inventory 2008–2016**.

**Table 4.7-2  
California GHG Inventory 2008–2016**

| Main Sector                 | Emissions (MMTCO <sub>2e</sub> ) |              |              |              |              |              |              |              |              |
|-----------------------------|----------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                             | 2008                             | 2009         | 2010         | 2011         | 2012         | 2013         | 2014         | 2015         | 2016         |
| Transportation <sup>a</sup> | 188.59                           | 188.53       | 177.58       | 170.40       | 165.07       | 161.51       | 161.22       | 157.99       | 159.53       |
| Industrial <sup>b</sup>     | 90.54                            | 87.90        | 91.50        | 90.94        | 91.07        | 93.73        | 93.96        | 91.58        | 89.61        |
| Electric power              | 120.14                           | 101.37       | 90.34        | 88.06        | 95.09        | 89.65        | 88.24        | 83.67        | 68.58        |
| Commercial and residential  | 43.52                            | 43.63        | 45.05        | 45.50        | 42.89        | 43.54        | 37.37        | 37.94        | 39.36        |
| Agriculture                 | 35.79                            | 33.50        | 34.27        | 34.89        | 36.08        | 34.61        | 35.95        | 34.41        | 33.84        |
| High GWP <sup>c,d</sup>     | 11.65                            | 12.29        | 13.52        | 14.54        | 15.54        | 16.65        | 17.70        | 18.93        | 19.78        |
| Recycled and waste          | 8.11                             | 8.27         | 8.37         | 8.47         | 8.49         | 8.52         | 8.59         | 8.73         | 8.81         |
| <b>Total Emissions</b>      | <b>487.3</b>                     | <b>457.3</b> | <b>448.1</b> | <b>443.9</b> | <b>450.4</b> | <b>447.6</b> | <b>444.1</b> | <b>441.4</b> | <b>429.4</b> |

Source: CARB (2016), [https://www.arb.ca.gov/cc/inventory/data/tables/ghg\\_inventory\\_scopingplan\\_sum\\_2000-16.pdf](https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_sum_2000-16.pdf)

<sup>a</sup> Includes equipment used in construction, mining, oil drilling, industrial and airport ground operations.

<sup>b</sup> Reflects emissions from combustion of natural gas, diesel, and lease fuel plus fugitive emissions.

<sup>c</sup> These categories are listed in the Industrial sector of CARB's GHG Emission Inventory sectors.

<sup>d</sup> This category is listed in the Electric Power sector of CARB's GHG Emission Inventory sectors.

44 California Energy Commission, *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004, Staff Final Report, CEC-600-2006-013-SF* (December 2006).

## ENVIRONMENTAL IMPACTS

### Methodology

#### *Methodologies for Evaluating Significance*

The analysis of the Plan's GHG emissions consists of a quantitative analysis of the GHG emissions generated by the Plan and a qualitative analysis of the Plan's consistency with adopted GHG-related legislation, plans, and policies. This approach is in accordance with CEQA Guidelines Section 15064.4(a), which affirms the discretion of a lead agency to determine, in the context of a particular project, whether to use quantitative and/or qualitative methodologies to determine the significance of a project's impacts.

#### *Emissions Inventory Modeling*

The California Emissions Estimator Model, known as CalEEMod, is the California Air Resources Board (CARB)–approved computer program model recommended by SCAQMD for use in the quantification of air quality emissions, including GHG emissions. CalEEMod was developed under the auspices of SCAQMD, with input from other California air districts. CalEEMod utilizes widely accepted models for emissions estimates combined with appropriate data that can be used if site-specific information is not available. For example, CalEEMod incorporates USEPA-developed emission factors; CARB's on-road and off-road equipment emission models, such as EMFAC and OFFROAD;<sup>45</sup> and studies commissioned by other California agencies, such as the CEC and CalRecycle. Proposed Plan development would generate GHG emissions from a number of individual sources during both construction and postconstruction (operational) use of the buildings and related activities (e.g., landscape maintenance). These individual sources collectively are hereafter referred to as the Proposed Plan's GHG emissions inventory.

CalEEMod version 2016.3.2 was used to quantify the Plan's GHG emissions. CalEEMod provides a platform to calculate both construction emissions and operational emissions from a land use development project. The following GHG emission sources covered by CalEEMod model include:

- One-time construction emissions associated with site preparation, demolition, grading, utility installation, building, application of architectural coatings (e.g., paint), and paving from emission sources that include both off-road construction equipment and on-road mobile equipment associated with workers, hauling, and the delivery of construction materials to the Plan area. Construction emissions associated with dust control and disposal of waste at landfills were also included.

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<sup>45</sup> EMFAC is an emissions factor model used to calculate emissions rates from on-road vehicles (e.g., passenger vehicles; haul trucks). OFFROAD is an emissions factor model used to calculate emission rates from off-road mobile sources (e.g., construction equipment). CalEEMod version 2016.3.2 utilizes CARB's 2014 version of EMFAC.

- Operational emissions associated with the occupancy of development, such as on-road mobile vehicle traffic generated by the land uses;<sup>46</sup> off-road emissions from landscaping equipment; energy (i.e., electricity and natural gas) and water usage in the buildings; vegetation removal; and emissions from emergency generators.

## Thresholds of Significance

To assist in determining whether the proposed Plan would have a significant effect on the environment, the City finds the proposed Plan may be deemed to have a significant impact related to greenhouse gas emissions if it would:

**Threshold GHG-1:       Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.**

**Threshold GHG-2:       Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.**

Amendment to CEQA Guidelines Section 15064.4 was adopted to assist lead agencies in determining the significance of the impacts of GHG emissions. Consistent with existing CEQA practice, Section 15064.4 gives lead agencies the discretion to determine whether to assess those emissions quantitatively or qualitatively. This section recommends certain factors to be considered that may be used in the determination of significance (i.e., extent to which the project may increase or reduce GHG emissions compared to the existing environment; whether the project exceeds an applicable significance threshold; and extent to which the project complies with regulations or requirements adopted to implement a plan for the reduction or mitigation of GHGs). The California Natural Resources Agency has also clarified that the CEQA Guidelines amendments focus on the effects of GHG emissions as cumulative impacts, and that they should be analyzed in the context of CEQA's requirements for cumulative impact analysis.<sup>47</sup>

The City has not adopted a numerical significance threshold for assessing impacts related to GHG emissions and has not formally adopted a local plan for reducing GHG emissions. Nor have SCAQMD, OPR, CARB, CAPCOA, or any other state or regional agency adopted a numerical significance threshold for assessing GHG emissions that is applicable to the Plan. Since there is no applicable adopted or accepted numerical threshold of significance for GHG emissions, the methodology for evaluating the Plan's impacts

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46 As previously discussed, in APR-2025, SJVAPCD concluded that "all GHG emission increases resulting from the combustion of any fuel produced, imported and/or delivered in California are mitigated under Cap-and-Trade ... Therefore, GHG emission increases caused by fuel use (other than jet fuels) are determined to have a less than significant impact on global climate change under CEQA." Nonetheless, this analysis quantifies all proposed Plan-related emissions and conservatively assumes that they are not otherwise reduced to levels of insignificance via CARB's Cap-and-Trade program.

47 California Natural Resources Agency, *Final Statement of Reasons for Regulatory Actions* (December 2009), pp. 11-13, 14, 16, accessed April 2019, [http://resources.ca.gov/ceqa/docs/Final\\_Statement\\_of\\_Reasons.pdf](http://resources.ca.gov/ceqa/docs/Final_Statement_of_Reasons.pdf).

related to GHG emissions focuses on its consistency with statewide, regional, and local plans adopted for the purpose of reducing and/or mitigation GHG emissions. This evaluation of consistency with such plans is the sole basis for determining the significance of the Plan's GHG-related impacts on the environment. The City has considered many existing regulatory standards as potential quantitative significance criteria that could be used to determine whether the proposed Plan would generate a significant amount of greenhouse gas. The City concluded that consistency with AB 32 is the applicable standard to use in evaluating whether the project would emit significant amount of GHG. The City also considered and rejected six other quantitative significance criteria from the following sources: (1) California Air Pollution Control Offices Association; (2) San Joaquin Valley Air Pollution Control District; (3) Bay Area Air Quality Management District; (4) Executive Orders S-3-05 and B-30-15; (5) SANBAG Reduction Plan; and (6) Zero Emission Threshold.

Notwithstanding, for informational purposes, the analysis calculates the amount of the GHG emissions that would be attributable to the Plan using recommended air quality models, such as CalEEMod. The primary purpose of quantifying the Plan's GHG emissions is to satisfy State CEQA Guidelines Section 15064.4(a), which calls for a good-faith effort to describe and calculate emissions. The SCAQMD efficiency target is used to compare the Plans estimate emissions inventory. However, the significance of the Plan's GHG emissions impacts is not based on the amount of GHG emissions resulting from the Plan.

### ***South Coast Air Quality Management District Efficiency Measures***

In April 2008, SCAMQD convened a Working Group to develop GHG significance threshold. On December 5, 2008, the SCAQMD Governing Board adopted its staff proposal for an interim CEQA GHG significance criteria for industrial stationary source projects where the SCAQMD is the lead agency. As to all other projects, where the SCAQMD is not the lead agency, the Board has, to date, not adopted any thresholds. The Working Group has not convened since the fall of 2010 and there is no plan to recommence the process.

Relevant to the Plan, the SCAQMD Tier 4 option is to utilize an efficiency target. Option 3 has been modified to incorporate the Bay Area AQMD's concept of efficiency-based threshold for two target dates: 2020 and 2035. Relative to the 2020 target date, SCAQMD staff agrees with the methodology for establishing the efficiency threshold value of 6.6 and 4.1 MTCO<sub>2</sub> per year for plans because this number is based on statewide service population (SP) in 2020 and 2035, respectively. Relative to the 2035 target date, this target date was selected to be consistent with the GHG reduction target date of SB 375. Overall, GHG reductions by the SB 375 target date of 2035 would be approximately 40 percent, resulting in an efficiency threshold for plan of 4.1 MTCO<sub>2</sub>e per year.

## **Consistency Analysis**

For purposes of assessing consistency with, applicable plans, policy, or regulations, the SCAG RTP/SCS GHG emission reduction plan for land use and transportation emissions is the applicable plan in assessing whether the project conflicts with an applicable plan adopted for the purpose of reducing GHG emissions. In addition, the City's Sustainable Community Action Plan summarizes policies that support the City's GHG reduction measures and won't contribute to GHG reductions and sustainable practices. The OPR encourages lead agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses.

The Plans' GHG impacts are evaluated by assessing the Plan's consistency with applicable statewide, regional, and local GHG reduction plans and strategies. The SCAG RTP/SCS GHG emission reduction plan for land use and transportation emissions is the applicable plan in assessing whether the project conflicts with an applicable plan adopted for the purpose of reducing GHG emissions. In addition, the City's Sustainable Community Action Plan summarizes policies that support the City's GHG reduction measures and won't contribute to GHG reductions and sustainable practices.

On a regional level, the SCAG 2016 RTP/SCS contains measures to achieve VMT reductions required under SB 375. Thus, if the Plan complies with these plans, policies, regulations, and requirements, the Plan would result in a less than significant impact because it would be consistent with the overarching state, regional, and local plans for GHG reduction.

## **Project Impact Analysis**

**Threshold GHG-1:       Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.**

### **Construction**

Construction activity impacts are relatively short in duration, they contribute a relatively small portion of the total lifetime GHG emissions of a project. In addition, GHG emissions-reduction measures for construction equipment are relatively limited. Therefore, in its *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Thresholds*, the SCAQMD recommends that construction emissions be amortized over a 30-year project lifetime so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies. That method is used in this analysis.

The Plan is anticipated to be constructed occurring in nine (9) phases. Construction assumptions used in the analysis of GHG emissions conservatively assume that the Plan would be constructed with the most intensive activities occurring on a daily basis. The total emissions from construction of the Plan are shown

in **Table 4.7-3: Construction Annual Greenhouse Gas Emissions**. As recommended by SCAQMD, the total GHG construction emissions were amortized over the 30-year lifetime of the Plan (i.e., total construction GHG emissions were divided by 30 to determine an annual construction emissions estimate that can be added to the Plan's operational emissions) in order to determine the Plan's annual GHG emissions inventory.<sup>48</sup> Total GHG emissions from the construction activities are 19,982 MTCO<sub>2</sub>e. The total GHG emissions were amortized over 30-year project lifetime at 666 MTCO<sub>2</sub>e per year.

**Table 4.7-3  
Construction Annual Greenhouse Gas Emissions**

| Year                                 | MTCO <sub>2</sub> e |
|--------------------------------------|---------------------|
| Phase I                              | 961                 |
| Phase II                             | 1,222               |
| Phase III                            | 2,905               |
| Phase IV                             | 2,815               |
| Phase V                              | 2,191               |
| Phase VI                             | 1,198               |
| Phase VII                            | 1,024               |
| Phase VIII                           | 2,681               |
| Phase IX                             | 4,985               |
| <b>Overall Total</b>                 | <b>19,982</b>       |
| <b>30-Year Annual Amortized Rate</b> | <b>666</b>          |

Source: Refer to **Appendix C: CalEEMod Output Data**, Section 2.1 Overall Construction  
Note: GHG = greenhouse gas; MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalent

## Operation

Emissions from mobile and area sources and indirect emissions from energy and water use, wastewater, as well as waste management would occur every year after full development of the uses allowed by the EHNCP. This section addresses operational GHG emissions.

## Area Sources

The area source GHG emissions included in this analysis result primarily from natural gas fireplaces with additional emissions from landscaping-related fuel combustion sources, such as lawn mowers. GHG emission due to natural gas combustion in buildings other than from fireplaces are excluded from area sources since they are included in the emissions associated with building energy use.

48 SCAQMD Governing Board Agenda Item 31, December 8, 2008.

Consumer products are various solvents used in non-industrial applications which emit Reactive Organic Gases (ROGs) during their product use. Consumer products include cleaning supplies, kitchen aerosols, cosmetics, and toiletries. All land use buildings are assumed to be repainted at a rate of 10 percent of area per year. This is based on the assumptions used by SCAQMD. However, CalEEMod does not consider architectural coatings and consumer products to be sources of GHG.

The GHG emissions for the Plan were calculated using CalEEMod. All fireplaces were assumed to be natural gas burning, based on SCAQMD Rule 445. CalEEMod defaults were used for landscape maintenance emissions. Area source emissions are shown in **Table 4.7-4: Area Source Greenhouse Gas Emissions**. As shown in **Table 4.7-4**, implementation of Mitigation Measure **MM GHG-1** would require the use of electric landscaping equipment resulting in a reduction of 15 MTCO<sub>2</sub> per year (2 percent) when compared to the unmitigated scenario.

**Table 4.7-4  
Area Source Greenhouse Gas Emissions**

| Source                | Unmitigated<br>MTCO <sub>2</sub> e per year | Mitigated<br>MTCO <sub>2</sub> e per<br>year |
|-----------------------|---|--|
| Architectural Coating | 0   | 0  |
| Consumer Products     | 0   | 0  |
| Hearth                | 616   | 616  |
| Landscaping           | 52  | 37   |
| <b>TOTAL</b>          | <b>668</b>                                  | <b>653</b>                                   |

Source: Refer to **Appendix C: CalEEMod Output Data**.

### Energy Sources

GHGs are emitted as a result of activities in buildings when electricity and natural gas are used as energy sources. Combustion of any type of fuel emits CO<sub>2</sub> and other GHGs directly into the atmosphere; when this occurs in a building, it is a direct emission source associated with that building. GHGs are also emitted during the generation of electricity from fossil fuels. When electricity is used in a building, the electricity generation typically takes place off-site at the power plant; electricity use in a building generally causes emission in an indirect manner.

Estimated emissions from the combustion of natural gas and other fuels from the implementation of the Project are calculated using the CalEEMod emissions inventory model, which multiplies an estimate of the energy usage by applicable emissions factors chosen by the utility company. GHG emissions from

electricity use are directly dependent on the electricity utility provider. In this case, GHG intensity factors for Southern California Edison were selected in CalEEMod. Energy use in buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building, such as plug-in appliances. CalEEMod calculates energy use from systems covered by Title 24 (e.g., heating, ventilation, and air conditioning [HVAC] system, water heating system, and lighting system); energy use from lighting; and energy use from office equipment, appliances, plug-ins, and other sources not covered by Title 24 or lighting.

Energy source emissions are shown in **Table 4.7-5: Energy Source Greenhouse Gas Emissions**. As shown in **Table 4.7-5**, implementation of Mitigation Measure **MM GHG-2** would require the Plan to comply with the CALGreen Voluntary measures for energy efficiency that exceed Title 24 requirements by 15 to 30 percent, and would result in a reduction of 7,851 MTCO<sub>2</sub>e per year (63 percent) for electricity and a reduction of 646 MTCO<sub>2</sub>e per year (12 percent) for natural gas. Overall, energy source would result in a reduction of approximately 7,979 MTCO<sub>2</sub>e per year (23 percent).

**Table 4.7-5  
Energy Source Greenhouse Gas Emissions**

| Land Use                 | Electricity                                 |   | Natural Gas                                 |   |
|--------------------------|---|---|---|---|
|                          | Unmitigated<br>MTCO <sub>2</sub> e per year | Mitigated<br>MTCO <sub>2</sub> e per year | Unmitigated<br>MTCO <sub>2</sub> e per year | Mitigated<br>MTCO <sub>2</sub> e per year |
| School Site/Fire station | 1,830                                       | 673                                       | 368   | 325                                       |
| Shops/Restaurant         | 2,287                                       | 827                                       | 67  | 58  |
| Residential              | 8,361                                       | 3,646                                     | 4,927                                       | 4,334                                     |
| <b>TOTAL</b>             | <b>12,479</b>                               | <b>4,628</b>                              | <b>5,363</b>                                | <b>4,717</b>                              |

Source: Refer to **Appendix C: CalEEMod Output Data**.

### Mobile Sources Emissions

Vehicle trips generated by growth within the Plan area would result in operational emissions through the combustion of fossil fuels. CO<sub>2</sub> emissions were determined based on the daily VMT of 373,060 (refer to **Section 4.15: Traffic and Transportation**). The VMT takes into account internal and external trips. The City is served by multiple transit operators, specifically within the vicinity of the Plan area, with networks connecting different communities within and outside of City boundaries. The primary transit operator is Metrolink, which operates six commuter rail lines throughout Southern California. The Omnitrans Transit Agency provides local transit service throughout San Bernardino County, including within the City boundaries. Mobile source emissions would result in 30,770 MTCO<sub>2</sub>e per year (refer to **Appendix 4.7**). As discussed in **Section 4.15: Traffic and Transportation**, the Plan's configuration of the new neighborhoods

would reduce VMT in comparison to the average for the City and surrounding area. These results are considered reasonable given the Plan’s mix of land uses and increased accessibility provided with the extension of Wilson Avenue through the Plan Area.

### Solid Waste Emissions

Solid waste generation and associated emissions are calculated based on the square footage of the Plan Area, using default data found in CalEEMod for the proposed land uses. Disposal of organic waste in landfills can lead to the generation of CH<sub>4</sub>, a potent GHG. By generating solid waste, the Plan would contribute to the emission of fugitive CH<sub>4</sub> from landfills, as well as CO<sub>2</sub> and N<sub>2</sub>O from the operation of trash collection vehicles. As shown in **Table 4.7-6: Solid Waste Source Greenhouse Gas Emissions**, implementation of Mitigation Measure **MM GHG-3** would exceed the waste goals of at least 75 percent of waste diversion, resulting in a reduction of 1,559 MTCO<sub>2</sub> per year (70 percent).

**Table 4.7-6**  
**Solid Waste Source Greenhouse Gas Emissions**

| Land Use                 | Unmitigated<br>MTCO <sub>2</sub> e per year | Mitigated<br>MTCO <sub>2</sub> e per year |
|--------------------------|---|---|
| School Site/Fire station | 55  | 17  |
| Shops/Restaurant         | 299   | 90  |
| Residential              | 1,874                                       | 562                                       |
| <b>TOTAL</b>             | <b>2,228</b>                                | <b>669</b>                                |

Source: Refer to **Appendix C: CalEEMod Output Data**.

### Water Consumption and Wastewater Emissions

California’s water conveyance system is energy intensive, with electricity used to pump and treat water. The Project will result in indirect GHG emissions due to water consumption and wastewater generation. Water consumption and wastewater generation, and their associated emissions, are calculated based on the square footage of the Plan Area, using CalEEMod data. As shown in **Table 4.7-7: Water Source Greenhouse Gas Emissions**, implementation of Mitigation Measure **MM GHG-3** would require the Plan to comply with the CALGreen Voluntary measures for water conservation measures to reduce indoor potable water use by 20 percent by applying water saving fixtures and or flow restrictors, resulting in a reduction for water and waste water sources of 377 MTCO<sub>2</sub> per year (20 percent).

**Table 4.7-7  
Water Source Greenhouse Gas Emissions**

| Land Use                 | Unmitigated<br>MTCO <sub>2</sub> e per year | Mitigated<br>MTCO <sub>2</sub> e per year |
|--------------------------|---|---|
| School Site/Fire station | 39  | 31  |
| Shops/Restaurant         | 323   | 258                                       |
| Residential              | 1,518                                       | 1,214                                     |
| <b>TOTAL</b>             | <b>1,880</b>                                | <b>1,503</b>                              |

Source: Refer to **Appendix C: CalEEMod Output Data**.

### Total Emissions

When taking into consideration implementation of the requirements set forth in the City's Development Code and the CalGreen Building requirements and Mitigation Measures **MM GHG-1** through **MM GHG-3**, the GHG emissions for the Plan area would result in a reduction of 9,928 MTCO<sub>2</sub>e per year (18 percent), as shown in **Table 4.7-8: Total Greenhouse Gas Emissions**. It is important to note, reduction from compliance with local and state standards are not reasonably quantifiable in the CalEEMod model and would provide additional emissions reductions that are not accounted for. However, the Plan would exceed the SCAQMD threshold of 4.1 MTCO<sub>2</sub>e per service population during the horizon year.

The SCAQMD recommends that if the Plan would generate emissions in excess of the applicable targets, to assess the Plan utilizing the Tier 5 approach. The Tier 5 approach recommends implementation of offsite mitigation (GHG reduction projects) to reduce GHG emission impacts to less than the proposed screening level. Any offsite mitigation measure that include purchase offsets would require that the project provide offsets for life of the project, which is defined by 30 years. If the project is unable to implement offsite GHG reduction mitigation measures to reduce GHG emission impacts to less than the screening level, then GHG emissions would be considered significant. Since it is currently uncertain how offsite mitigation measures, including purchasing offsets, interact with future AB 32 Scoping Plan measures, the SCAQMD would allow substitution of mitigation measures that include an enforceable commitment to provide mitigation prior to the occurrence of emissions. With implementation and enforcement of Mitigation Measures **MM GHG-1** through **MM GHG-3**, and compliance with local and regional plans to further reduce emissions, impacts would be potentially significant.

**Table 4.7-8  
Total Greenhouse Gas Emissions**

| Source  | Unmitigated<br>MTCO <sub>2</sub> e per year | Mitigated<br>MTCO <sub>2</sub> e per<br>year |
|---|---|--|
| Construction (amortized)                                  | 666   | 666  |
| Area  | 668   | 653  |
| Energy  | 17,842                                      | 9,863  |
| Mobile  | 30,770                                      | 30,770                                       |
| Waste   | 2,228                                       | 669  |
| Water   | 1,879                                       | 1,504  |
| <b>TOTAL</b>  | <b>54,053</b>                               | <b>44,125</b>                                |
| Estimated Service Population<br>(Residents and Employees) | 9,506                                       | 9,506  |
| GHG Efficiency MTCO <sub>2</sub> e/yr/SP                  | 5.69  | 4.64   |

Source: Refer to **Appendix C: CalEEMod Output Data**.

**Threshold GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

### ***Rancho Cucamonga Sustainable Community Action Plan***

The Rancho Cucamonga Sustainable Community Action Plan summarizes key general plan policies that support the City's GHG reduction measures and would contribute to GHG reductions and sustainable practices in the City. **Table 4.7-9: Consistency with Applicable Plans of the Rancho Cucamonga Sustainable Community Action Plan**, lists by topic area, each policy contained in the Sustainable Community Action Plan and related strategy in the GHG Reduction Plan. It is anticipated that key policies in the Sustainable Community Action Plan will be integrated as part of the next General Plan Update in order to advance policy implementation. As shown in **Table 4.7-9**, the Plan would be consistent with the City's Sustainable Community Action through compliance and adherence to local regulations.

**Table 4.7-9  
Consistency with Applicable Plans of the  
Rancho Cucamonga Sustainable Community Action Plan**

| Sustainable Community Action Plan Policy   | SBCOG GHG Reduction Plan Strategy   | Consistency   |
|--|---|---|
| <b>Transportation + Mobility (TM)</b>  |   |   |
| <b>TM Policy 1:</b> Promote active transportation choices  | <b>Transportation (On-Road)-1 SCS:</b> Coordinates land use planning, regional transportation plans, and funding priorities in order to help California meet the GHG reduction goals. | <b>Consistent.</b> As discussed in <b>Section 2.0: Project Description</b> of this Draft EIR, the Plan would provide an internal circulation system that would provide convenient, safe, and efficient access and connections to planned residential and non-residential land uses in the Plan Area and to the existing neighborhoods around the NA. There are four fixed-route bus lines operated by OmniTrans that serve the vicinity of the plan area which include Route 67, 68, 80, and 81. Bus stops includes stops at Chaffey College, stops at Milliken Avenue and Banyan Street, three stops along Banyan Street between Milliken Avenue and Haven Avenue, as well as a stop at Haven Avenue and Banyan Street.              |
| <b>TM Policy 3:</b> Ensure safe and convenient transit options are available to all residents                                | N/A   | <b>Consistent.</b> As discussed in <b>Section 2.0: Project Description</b> of this Draft EIR, the Plan would provide an internal circulation system that would provide convenient, safe, and efficient access and connections to planned residential and non-residential land uses in the Plan Area and to the existing neighborhoods around the NA. In addition, there are four fixed-route bus lines operated by OmniTrans that serve the vicinity of the plan area which include Route 67, 68, 80, and 81. Bus stops includes stops at Chaffey College, stops at Milliken Avenue and Banyan Street, three stops along Banyan Street between Milliken Avenue and Haven Avenue, as well as a stop at Haven Avenue and Banyan Street. |
| <b>Land Use + Open Space (LU)</b>  |   |   |
| <b>LU Policy 1:</b> Support development and redevelopment of land use patterns that promote clean, green, and healthy living | N/A   | <b>Consistent.</b> The Plan would enhance bicycling and walking by providing pedestrian and bicycle connections to the existing surrounding neighborhoods. In addition, the Plan would provide a wide range of park facilities, including a Community Park with sports fields at the intersection of Banyan Street and Rochester Avenue, neighborhood parks and smaller open space areas throughout the new planned neighborhoods in the NA, a network of open space corridors with trails in the NA and trails   |

| Sustainable Community Action Plan Policy   | SBCOG GHG Reduction Plan Strategy   | Consistency   |
|--|---|---|
|  |   | consistent with the General Plan Trail Master Plan in the RCA. In addition, the City is currently proposing to implement a choice of the California Green Builder (CGB) or the Build-It-Green (B(G) program for single family homes or multi-unit homes, and a LEED Certified Equivalent system for all other development, provided the minimum requirements are met.   |
| <b>Energy Efficiency + Renewables (EE)</b>   |   |   |
| <b>EE Policy 2:</b> Increase the amount of renewable energy use in Rancho Cucamonga.                                     | <b>Energy-4 Solar Installation for new housing:</b> Establish a goal for solar installations on new homes to be achieved before 2020.<br><b>Energy-5 Solar installation for new commercial:</b> Establish a goal for solar installations on new commercial and industrial development to be achieved before 2020. | <b>Consistent.</b> This policy is intended to increase solar power throughout California, which is being done by various electricity providers and existing solar programs. The Plan would be required to comply with California Building Code requirements for energy efficiency which would reduce natural gas emissions. The Plan would be designed in accordance with the applicable Title 24 Energy Efficiency Standards for Residential and Nonresidential Buildings. These standards are updated, nominally every three years to incorporate improved energy efficiency technologies and methods. The current 2016 standards were effective January 1, 2017 with the 2019 standards to be effective January 1, 2020. |
| <b>Green Building Performance (GB)</b>   |   |   |
| <b>GB Policy 1:</b> Facilitate the use of green building practices.  | <b>PS-1 GHG Performance Standards for New development.</b> Support implementation of the performance standard to reduce GHG emissions attributable to new discretionary development projects at least 20 percent to 29 percent by 2020.   | <b>Consistent.</b> The Plan would be designed to meet CalGreen building standards. The Plan would be designed in accordance with applicable residential and non-residential sections of the CALGreen Building Code as designed by the City and required by Section 17.50 of the City’s Municipal Code. The Plan would be designed in accordance with the applicable Title 24 Energy Efficiency Standards for Residential and Nonresidential Buildings. These standards are updated, nominally every three years to incorporate improved energy efficiency technologies and methods. The current 2016 standards were effective January 1, 2017 with the 2019 standards to be effective January 1, 2020.                      |
| <b>GB Policy 2:</b> Promote opportunities to improve environmental health, disaster, resiliency, and workplace wellness. | N/A   | <b>Consistent.</b> The Plan would provide a network of open spaces planned to define the character of the proposed neighborhoods which include:   |

| Sustainable Community Action Plan Policy   | SBCOG GHG Reduction Plan Strategy   | Consistency  |
|--|---|--|
|  |   | <ul style="list-style-type: none"> <li>• Etiwanda Heights Preserve</li> <li>• Trailheads</li> <li>• Central Greenway</li> <li>• Milliken Heights Greenway</li> <li>• Milliken Roundabout Park</li> <li>• Neighborhood Park</li> <li>• Neighborhood Greens</li> <li>• Banyan Greenways</li> <li>• Community Playfields</li> <li>• Wilson Square.</li> </ul> <p>The plan would provide walkable, complete streets that provide safe, comfortable pedestrian and bicycle routes low-speed driving environments to promote a healthy environment. In addition, parks would be within a 2 to 3-minute walk of every resident and trails leading to the foothill open spaces within a 5-minute walk of every residence.</p> <p>The City adopted the Multi-Hazard Disaster Plan in 1997, which is incorporated into the General Plan. The Plan would be required to comply with the Multi-Hazard Disaster Plan which identifies the roles and responsibilities for those who respond to natural, man-made, or attack-related emergencies.</p> |
| <b>Water + Wastewater (WW)</b>   |   |  |
| <p><b>WW Policy 1:</b> Support efforts to reduce potable water usage per capita in Rancho Cucamonga.</p> | <p><b>Water-1 Require Adoption of Voluntary CalGreen Water Efficiency Measures for new construction.</b> Require adoption of the voluntary CALGreen water efficiency measures (at least Tier 1 for new construction).</p> | <p><b>Consistent.</b> The Plan would comply with Chapter 17.56 of the Development Code that sets landscaping standards for various purposes, including to conserve water. In addition, Chapter 17.82, Water Efficient Landscaping, provides guidelines to reduce irrigation demands, promote recycled water use, and minimize irrigation runoff.</p>   |
| <p><b>WW Policy 2:</b> Continue to expand water conservation efforts citywide.</p>                       | <p><b>Water-3 Water efficient Landscaping practices:</b> Establish a goal that a certain percentage of all water used for non-potable sources be recycled (and treated) wastewater.</p>                                   | <p><b>Consistent.</b> The Plan would comply with Chapter 17.56 of the Development Code that sets landscaping standards for various purposes, including to conserve water. In addition, Chapter 17.82, Water Efficient Landscaping, provides guidelines to reduce irrigation demands, promote recycled water use, and minimize irrigation runoff.</p>   |

| <b>Waste + Recycling (WR)</b>   |  |   |
|---|--|---|
| <p><b>WR Policy 1:</b> Expand programs to decrease waste sent to landfills.</p> | <p><b>Waste-2 Increased Waste Diversion:</b> Exceed the waste diversion goal (50 percent) by adopting waste goals of at least 75 percent of waste diversion.</p> | <p><b>Consistent.</b> The Plan would comply with Section 8.17 of the City’s Municipal Code for refuse, recyclables, and green waste collection. In addition, during construction, the Plan would comply with Section 8.19.280 Construction and Demolition Waste, which outlines requirements for diverting construction waste from landfills.</p> <p><b>Section 4.16: Utilities and Service Systems</b> discusses solid waste generation, collection and disposal, as well as the availability of landfill capacity to serve the uses that would be developed that would be allowed by the Plan. As identified, there is sufficient capacity to serve the proposed uses. In addition, the City is proposing to implement a choice of the California Green Builder (CGB) or the Build-It-Green (BIG) program for single-family homes or multi-unit homes, and a LEED Certified Equivalent system for all other development. All projects subject to the LEED Certified Equivalent system would need to comply with LEED credits that reflect the City’s values and priorities, including the Healthy RC Initiative; and that encourage alternate forms of transportation, water efficiency, and construction and demolition waste recycling.</p> |

**SCAG RTP/SCS 2016 – 2040**

The 2016 RTP/SCS is expected to help SCAG reach its GHG reduction goals, as identified by CARB, with reductions in per capita passenger vehicle GHG emissions of 9 percent by 2020 and 16 percent by 2035.<sup>49</sup> Furthermore, although there are no per capita GHG emission reduction targets for passenger vehicles set by CARB for 2040, the 2016 RTP/SCS GHG emission reduction trajectory shows that more aggressive GHG emission reductions are projected for 2040.<sup>50</sup>

The 2016 RTP/SCS would result in an estimate 8 percent decrease in per capita passenger vehicle GHG emissions by 2020, 18 percent decrease in per capita passenger vehicle GHG emissions by 2035, and 21 percent decrease in per capita passenger vehicle GHG emissions by 2040. In March 2018, CARB adopted updated targets requiring a 19 percent decrease in VMT for the SCAG region by 2035. As the CARB targets were adopted after the 2016 RTP/SCS, it is expected that the updated targets will be incorporated into the next RTP/SCS. The 2016 RTP/SCS and/or the next RTP/SCS are expected to fulfill and exceed SB 375 compliance with respect to meeting the State’s GHG emission reduction goals.

In addition to demonstrating the region’s ability to attain and exceed the GHG emission-reduction targets set forth by CARB, the 2016 RTP/SCS outlines a series of actions and strategies for integrating the

49 CARB, *Regional Greenhouse Gas Emission Reduction Targets Pursuant to SB 375, Resolution 10-31*.

50 SCAG, *Final 2016–2040 RTP/SCS*, April 2016, p. 153.

transportation network with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands. Thus, successful implementation of the 2016 RTP/SCS would result in more complete communities with a variety of transportation and housing choices, while reducing automobile use. With regard to individual developments, such as the Plan, strategies and policies set forth in the 2016 RTP/SCS can be grouped into the following two categories: (1) integrated growth forecast; and (2) reduction of vehicle trips and VMT.

### **Integrated Growth Forecast**

The 2016 RTP/SCS provides socioeconomic forecast projections of regional population growth. The population, housing, and employment forecasts, which are adopted by SCAG's Regional Council, are based on the local plans and policies applicable to the specific area; these are used by SCAG in all phases of implementation and review. According to the SCAG estimates, the 2012 population within the City was 170,100 residents and 69,300 employment opportunities. Based on the current draft forecasts, the population projection for year 2035 and 2040 is 191,165 and 201,255 residents, respectively.

It is important to note SCAG projections take into account current jurisdictional boundaries. As discussed in **Section 2.0: Project Description**, the EHNCP includes 305 acres in the City and 4,088 acres currently in the County. As such, the current 2016 – 2040 SCAG RTP/SCS Growth Forecasts only reflect growth projected for the EHNCP, a population increase of 2,000. SCAG is currently preparing the 2020–2045 RTP/SCS which will include the projected growth within the annexation area. The draft 2020–2045 SCAG includes approximately 1,600 households with a population of 4,900 and 300 jobs within the Neighborhood Area (NA). This projected growth, when combined with the growth already forecast on the 305 acres in the City, would account for 300 of the 415 jobs projected for the EHNCP and 6,035 persons above the projections in the City's General Plan, compared to the 9,090 for the EHNCP. However, although the population increase is incrementally above the regional growth forecasts, the impact of growth associated with the EHNCP is considered significant because all of the population and employment growth associated with the proposed EHNCP is not accounted for in the current 2016 – 2040 RTP/SCS and draft 2020 – 2045 draft SCAG Regional Growth Forecasts.

### **Consistency with VMT Reduction Strategies and Policies**

The SCS's goals and policies to reduce VMT focus on transportation and land use planning that include building mixed use projects, locating residents closer to where they work and play, and designing communities so there is access to high quality transit service. The SCS identifies transportation network actions and strategies that are outside the City's jurisdiction and control, such as expanding the use of transit modes in sub regions (e.g., bus rapid transit (BRT), rail, limited-stop service, and point-to-point express service utilizing the high-occupancy vehicle (HOV) and high-occupancy toll (HOT) lane networks.

In areas without quality transit, the SCS identifies land use strategies to promote development patterns that result in fewer vehicles miles travelled and thus lower GHG emissions. Such land use strategies including local government adoption of updated zoning codes, General Plans, and other regulatory policies that promote neighborhood-oriented development, suburban villages, and revitalized main streets consistent with the 2016 – 2040 RTP/SCS.

As discussed in **Section 4.15: Transportation and Traffic**, OPR issued proposed changes to the CEQA Guidelines.<sup>51</sup> These changes state that projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor generally may be considered to have a less than significant transportation impact. However, the nearest major transit stop is located approximately 4 miles south of the Plan area. In addition, the proposed guidelines advise that development projects that result in net decreases in Vehicle Miles Traveled (VMT), compared to existing conditions; and land use plans consistent with an SCS or that achieve similar reductions in VMT as projected to result from the SCS generally may be considered to have a less than significant impact.<sup>52</sup> As no methodology has been defined at this time, OPR recommends that a per capita or per employee VMT that is 15 percent below that of existing development may indicate that transportation impacts would be less than significant. The estimated VMT for the Plan is 373,060 VMT per day or 30.40 VMT/service population. The Plan would perform better than 15 percent below either of the comparable regions (City of Rancho Cucamonga and San Bernardino County Valley Region) from a VMT perspective, as compared to VMT estimates from the existing base year model. The Plan would perform 19 percent better than the City of Rancho Cucamonga and 21 percent better than the San Bernardino County Valley Region. These results are considered reasonable given the Plan mix of land uses and increased accessibility provided with the extension of Wilson Avenue through the Plan Area. As the projected per capita VMT is more than 15 percent below that of existing development transportation are considered be less than significant based on analysis of VMT.

In addition, the Plan characteristics listed below are consistent with the CAPCOA guidance document, *Quantifying Greenhouse Gas Mitigation Measures*, which identifies the VMT and vehicle trips reductions for the site. Measures applicable to the Plan include the following; a brief description of the Plan's relevance to the measure is also provided.

- **CAPCOA Measure LUT-1 – Increase Density:** Increased density, measured in terms of persons, jobs, or dwelling units per unit area, reduced emissions associated with transportation as it reduces the

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51 California Office of Planning and Research (OPR), *Revised Proposal on Updates to CEQA Guidelines on Evaluating Transportation Impacts in CEQA* (January 20, 2016), [http://www.opr.ca.gov/docs/Revised\\_VMT\\_CEQA\\_Guidelines\\_Proposal\\_January\\_20\\_2016.pdf](http://www.opr.ca.gov/docs/Revised_VMT_CEQA_Guidelines_Proposal_January_20_2016.pdf).

52 OPR, "Transportation Impacts (SB 743)," <http://www.opr.ca.gov/ceqa/updates/sb-743/>.

distance people travel for work or services and provides a foundation for the implementation of other strategies, such as enhanced transit services.

- **CAPCOA Measure LUT-3 – Increase Diversity of Urban and Suburban Developments:** The Plan would introduce new uses at the site, including high-quality, single-family neighborhoods with a range of housing opportunities- including equestrian-oriented housing – that are compatible in character with the existing surrounding neighborhoods. The Plan would improve access to the existing and new foothill neighborhoods by extending, connecting and improving Wilson Avenue, Rochester Avenue, and Milliken Avenue, and providing a network of walkable and bikeable neighborhood streets.
- **CAPCOA Measure SDT-1 – Provide Pedestrian Network Improvements:** The Plan would improve access to the existing and new foothill neighborhoods by extending, connecting and improving Wilson Avenue, Rochester Avenue, and Milliken Avenue, and providing a network of walkable and bikeable neighborhood streets. In addition, the Plan would include equestrian-oriented housing which would include alternatives to residence instead of driving.

**Section 4.10: Land Use and Planning**, presents the Plans consistency with the RTP/SCS. Guiding policies in the RTP/SCS focus on SCAG’s priorities for investment and strategies to preserve, maintain and optimize the transportation system. Thus, they do not apply to the Plan. However, the analysis of project consistency with the RTP/SCS goals shows that adoption and implementation of the Plan would support the goals of the RTP/SCS.

## CUMULATIVE IMPACTS

To achieve Statewide goals, CARB is in the process of establishing and implementing regulations to reduce Statewide GHG emissions. Currently no generally accepted methodology exists to determine whether GHG emissions associated with a specific project represent new emissions or existing and/or displaced emissions. Therefore, consistent with CEQA Guidelines Section 15064h(3), the City as a lead agency, has determined that the Plan’s contribution to cumulative GHG emission and global climate change would be less than significant if the proposed Plan is consistent with the applicable regulatory plans and polices to reduce GHG emissions. Accordingly, the analysis above took into account the potential for the proposed Plan to contribute to the cumulative impact of global climate change. As stated above, the proposed Plan with mitigation would result in a potentially-significant impact, because it could be inconsistent with the applicable regulations, plans, and policies.

## MITIGATION MEASURES

- MM GHG-1** Require the use of electric lawn mowers and leaf blowers through the Electric Lawn Mower Rebate Program established by the SCAQMD.
- MM GHG-2** Implement the Plan design with CALGreen Voluntary Measure for Energy efficiency that exceed Title 24 requirements by 15 to 30 percent.
- MM GHG-3** Implement the Plan design with CALGreen Voluntary Measure for water conservation to reduce indoor potable water use by 20 percent by applying water saving fixtures and/or flow restrictors

## LEVEL OF SIGNIFICANCE AFTER MITIGATION

- Threshold GHG-1** Reduction from compliance with local and state standards are not readily quantifiable in the CalEEMod model and would provide additional emissions reductions that are not accounted for in the emissions inventory. Implementation of Mitigation Measures **MM GHG-1** through **MM GHG-3** would further reduce GHG emissions; however, the Plan would exceed screening threshold. Impacts would be significant and unavoidable.
- Threshold GHG-2** Implementation of Mitigation Measures **MM GHG-1** through **MM GHG-3** would further reduce GHG emissions; however, the Plan would be inconsistent with the growth forecast of the SCAG RTP/SCS. Impacts would be significant and unavoidable.