

4.7 GREENHOUSE GAS EMISSIONS

4.7.1 Introduction

This section presents the current state of climate change science and greenhouse gas (GHG) emission sources in California; a summary of applicable regulations; quantification of GHG emissions generated and discussion about their contribution to global climate change; and, for new land uses and infrastructure developed under the project, an analysis of their resiliency to climate-change-related risks. In addition, mitigation measures are recommended to reduce potential impacts.

Important terms for specific parts of the project are discussed in detail in Section 4.0, “Approach to the Environmental Analysis.” The following brief discussion is intended to remind the reader how those terms are defined and used in the EIR analysis, including this section. “SAP area” refers to the entire SAP area, which includes the PRSP area. “Net SAP area” refers to the portion of the SAP area outside the PRSP area. The “project” encompasses the entirety of the SAP, including the PRSP and all associated off-site improvements. “Project area” refers to the entire area covered by the project. Because the project area is composed of three pieces (the net SAP area, the PRSP area, and areas where other off-site infrastructure would support the project), the impact analysis typically is divided into three subsections: “Net SAP Area,” “PRSP Area,” and “Other Supporting Infrastructure.” (“Other Supporting Infrastructure” refers to improvements outside the SAP area and is divided into “Pleasant Grove Retention Facility” and “Off-Site Transportation and Utility Improvements.”) Some required infrastructure improvements are planned outside the PRSP area but still in the SAP area; those improvements are addressed in the “PRSP Area” sections.

Regarding GHG emissions, the project is considered to be consistent with the *Placer County General Plan*, which was originally adopted in 1994 and last updated in 2013. The General Plan includes Policy 6.F.6, which relates to addressing GHG emissions and climate change in Placer County (Placer County 2013):

- ▲ **Policy 6. F.5:** The County shall encourage project proponents to consult early in the planning process with the County regarding the applicability of Countywide indirect and areawide source programs and transportation control measures (TCM) programs. Project review shall also address energy-efficient buildings and site designs and proper storage, use, and disposal of hazardous materials.

The proposed SAP includes goals, policies, and implementation programs to reduce air emissions and promote energy efficiency. The PRSP also includes similar standards. The project is consistent with this policy. Impacts regarding the project’s consistency with General Plan policies related to GHG are not discussed further.

Comments received during the NOP public comment period that relate to GHG emission include a comment from Placer County Air Pollution Control District (PCAPCD) regarding the PCAPCD newly adopted CEQA thresholds, a comment raising consistency with other local and state GHG reduction policies, as well as a few comments raising the issue of GHG generally as an issue that should be addressed in the EIR.

As discussed in Chapter 1, “Introduction,” the PRSP land use plan has been slightly revised since circulation of the NOP. Changes primarily relate to increasing the distance between the landfill property and land designated for residential uses, modifying the density of proposed residential areas, reducing the proposed commercial intensity, slightly decreasing the acreage of open space, and increasing the acreage of parks to meet County parkland provision standards. The size of the PRSP area (2,213 acres) has not changed since release of the NOP, and the overall area of development would be nearly identical. The estimate of nonmobile operational emissions of GHGs for the PRSP has been updated to reflect the changes in the land use plan. However, construction emissions associated with development of the updated land use plan were not remodeled, nor were mobile-source GHG emissions associated with operation of the PRSP. The GHG

emissions reported for the PRSP in the following analysis are therefore considered conservative because they do not fully reflect the decreased land use intensities and associated activities (e.g., mobile trips) under the revised land use.

4.7.2 Environmental Setting

PHYSICAL-SCIENCE BASIS

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. 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 toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Human-caused emissions of these GHGs in excess of natural ambient concentrations are found to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic forcing (IPCC 2014).

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas most pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 1 day), GHGs have long atmospheric lifetimes (1,000 to several thousand years). GHGs persist in the atmosphere long enough to be dispersed around the globe. Although the lifetime of any GHG molecule is dependent on multiple variables and cannot be determined with any certainty, it is understood that more CO₂ is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO₂ emissions, approximately 55 percent is estimated to be sequestered through ocean and land uptake every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO₂ emissions remains stored in the atmosphere (IPCC 2013).

The quantity of GHGs in the atmosphere that ultimately result in climate change is not precisely known but is enormous; no single project alone would measurably contribute to an incremental change in the global average temperature or to global or local climates or to microclimates. Thus, from the standpoint of CEQA, GHG impacts relative to global climate change are inherently cumulative.

GREENHOUSE GAS EMISSION SOURCES

GHG emissions are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural emissions sectors (CARB 2014a). In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (CARB 2014a). Emissions of CO₂ are byproducts of fossil fuel combustion. CH₄, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. N₂O is also largely attributable to agricultural practices and soil management. CO₂ sinks, or reservoirs, include vegetation and the ocean, which absorb CO₂ through sequestration and dissolution (CO₂ dissolving into the water), respectively, two of the most common processes for removing CO₂ from the atmosphere.

EFFECTS OF CLIMATE CHANGE ON THE ENVIRONMENT

According to the Intergovernmental Panel on Climate Change, which was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme, global average temperature is expected to increase by 3–7 degrees Fahrenheit (°F) by the end of the century, depending on future GHG emission scenarios (IPCC 2007). According to the California Natural Resources Agency (CNRA), temperatures in California are projected to increase by 2–5°F by 2050 and by 4–9°F by 2100 (CNRA 2009).

Other environmental resources could be indirectly affected by the accumulation of GHG emissions and resulting rise in global average temperature. In the recent years, California has been marked by extreme weather and its effects. According to CNRA's draft report *Safeguarding California Plan: 2017 Update* (CNRA 2017), California experienced the driest 4-year statewide precipitation on record from 2012 through 2015; the warmest years on average in 2014, 2015, and 2016; and the smallest and second smallest Sierra snowpack on record in 2015 and 2014 (CNRA 2017). In contrast, the northern Sierra Nevada experienced its wettest year on record in 2016 (CNRA 2017). The changes in precipitation exacerbate wildfires throughout California with increasing frequency, size, and devastation. As temperatures increase, the increase in precipitation falling as rain rather than snow also could lead to increased potential for floods because water that would normally be held in the snowpack of the Sierra Nevada and Cascade Range until spring would flow into the Central Valley concurrently with winter rainstorm events. This scenario would place more pressure on California's levee/flood control system (CNRA 2017). Furthermore, in the extreme scenario involving the rapid loss of the Antarctic ice sheet, sea level along the California's coastline could rise by 10 feet by 2100, which is approximately 30–40 times faster than sea level rise experienced over the last century (CNRA 2017).

Changes in temperature, precipitation patterns, extreme weather events, and sea-level rise have the potential to affect and decrease the efficiency of thermal power plants and substations, decrease the capacity of transmission lines, disrupt electrical demand, and threaten energy infrastructure with the increased risk of flooding (CNRA 2017).

The California Department of Transportation (Caltrans) owns and operates more than 51,000 miles along 265 highways, as well as three of the busiest passenger rail lines in the nation. Sea level rise, storm surge, and coastal erosion are imminent threats to highways, roads, bridge supports, airports, transit systems and rail lines near sea level and seaports. Shifting precipitation patterns, increased temperatures, wildfires, and increased frequency in extreme weather events also threaten transportation systems across the state. Temperature extremes and increased precipitation can increase the risk of road and railroad track failure, decrease transportation safety, and increase maintenance costs (CNRA 2017).

Water availability and changing temperatures, which affect the prevalence of pests, disease, and species, directly affect crop development and livestock production. Other environmental concerns include decline in water quality, groundwater security, and soil health (CNRA 2017). Vulnerabilities of water resources also include risks of degradation of watersheds, alteration of ecosystems and loss of habitat, impacts on coastal areas, and ocean acidification (CNRA 2017). The ocean absorbs approximately one-third of the CO₂ released into the atmosphere every year from industrial and agricultural activities, changing the chemistry of the ocean by decreasing the pH of seawater. This ocean acidification is harmful to marine organisms, especially calcifying species, such as oysters, clams, sea urchins, and corals (CNRA 2017).

Cal-Adapt is a climate change scenario planning tool developed by the California Energy Commission (CEC) that downscales global climate model data to local and regional resolution under two emissions scenarios. The Representative Concentration Pathway (RCP) 8.5 scenario represents a business-as-usual future emissions scenario, and the RCP 4.5 scenario represents a lower GHG emissions future. According to Cal-Adapt, annual average temperatures in the SAP area are projected to rise by 5 °F to 6.8 °F by 2099, with the range based on low and high emissions scenarios (Cal-Adapt 2017).

Placer County has experienced an annual average high temperature of 75.1 °F between 1950 and 2005. Under a low-emissions scenario, the county's annual average high temperature is projected to increase by

3.3°F to an annual average high of 78.4°F by 2050 and increase a further 1.3°F to an annual average high of 79.7°F by 2099 (Cal-Adapt 2017). Under a high-emissions scenario, the county's annual average high temperature is projected to increase by 3.9°F to an annual average high of 79°F by 2050 and increase a further 4°F to an annual average high of 83°F by 2099 (Cal-Adapt 2017).

Placer County has experienced an annual average precipitation rate of 22.7 inches per year between 1950 and 2005. Under a low-emissions scenario, the county is projected to experience an increase of 2.1 inches to 24.8 inches per year by 2050 and decrease to 24.1 inches per year by 2099 (Cal-Adapt 2017). Under a high-emissions scenarios, the county is projected to experience an increase of 1.3 inches to 24 inches per year by 2050 and increase to 24.7 inches per year by 2099 (Cal-Adapt 2017).

4.7.3 Regulatory Setting

FEDERAL

National Program to Cut GHG Emissions and Improve Fuel Economy for Cars and Trucks

On August 28, 2014, U.S. Environmental Protection Agency (EPA) and the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) finalized a new national program that would reduce GHG emissions and improve fuel economy for all new cars and trucks sold in the United States (NHTSA 2012). EPA proposed the first-ever national GHG emissions standards under the federal Clean Air Act, and NHTSA proposed corporate average fuel economy standards under the Energy Policy and Conservation Act. This national program requires automobile manufacturers to build a single light-duty national fleet that meets all requirements under both federal programs and the standards of California and other states. This program will increase fuel economy to the equivalent of 54.5 miles per gallon for the fleet of cars and light-duty trucks by model year 2025, and as of 2016, NHTSA and EPA are developing additional phases to address GHG emission standards for new medium- and heavy-duty trucks (NHTSA 2016). This program is under review by EPA, but at the time of publication of this Draft EIR, had not been changed.

STATE

Executive Order S-3-05

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, to the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

The EO was the subject of a California Appellate Court decision, *Cleveland National Forest Foundation v. San Diego Association of Governments* (SANDAG) (November 24, 2014) 231 Cal.App.4th 1056, which was reviewed by the California Supreme Court in January 2017. The case addressed the adequacy of the GHG analysis in the EIR SANDAG prepared for its 2011 Regional Transportation Plan. The Supreme Court decided a singular question in its decision, which was released on July 13, 2017. The California Supreme Court ruled that SANDAG did not abuse its discretion by declining "to adopt the 2050 goal as a measure of significance in light of the fact that the Executive Order does not specify any plan or implementation measures to achieve its goal."

In addition to concluding that an EIR need not use this EO's goal for determining significance, the court described several principles relevant to CEQA review of GHG impacts, including (1) EIRs should "reasonably evaluate" the "long-range GHG emission impacts for the year 2050"; (2) the 2050 target is "grounded in sound science" in that it is "based on the scientifically supported level of emissions reduction needed to avoid significant disruption of the climate"; (3) in the case of the SANDAG plan, the increase in long-range GHG emissions by 2050, which would be substantially greater than 2010 levels, was appropriately

determined to be significant and unavoidable; (4) the reasoning that a project's role in achieving a long-range emission reduction target is "likely small" is not valid for rejecting a target; and (5) "as more and better data become available," analysis of proposed plan impacts will likely improve, such that "CEQA analysis stays in step with evolving scientific knowledge and state regulatory schemes." The court also ruled that "an EIR's designation of a particular adverse environmental effect as 'significant' does not excuse the EIR's failure to reasonably describe the nature and magnitude of the adverse effect." The court also recognized that the 40-percent reduction in 1990 GHG levels by 2030 is "widely acknowledged" as a "necessary interim target to ensure that California meets its longer-range goal of reducing greenhouse gas emission 80 percent below 1990 levels by the year 2050." Senate Bill (SB) 32 has since defined the 2030 goal in statute (discussed below).

Assembly Bill 32, the California Global Warming Solutions Act of 2006

In September 2006, Governor Schwarzenegger signed the California Global Warming Solutions Act of 2006, Assembly Bill (AB) 32. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also requires that these reductions:

shall remain in effect unless otherwise amended or repealed. (b) It is the intent of the Legislature that the statewide greenhouse gas emissions limit continues in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020. (c) The [California Air Resources Board] shall make recommendations to the Governor and the Legislature on how to continue reductions of greenhouse gas emissions beyond 2020. (California Health and Safety Code, Division 25.5, Part 3, Section 38551)

Assembly Bill 32 Climate Change Scoping Plan and Updates

In December 2008, the California Air Resources Board (CARB) adopted its first version of its *Climate Change Scoping Plan*, which contained the main strategies California will implement to achieve the mandate of AB 32 (2006) to reduce statewide GHG emissions to 1990 levels by 2020. In May 2014, CARB released and subsequently adopted the *First Update to the Climate Change Scoping Plan* to identify the next steps in reaching the goals of AB 32 (2006) and evaluate the progress made between 2000 and 2012 (CARB 2014a). After releasing multiple versions of proposed updates in 2017, CARB adopted the final version titled *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan) in December (CARB 2017). The 2017 Scoping Plan indicates that California is on track to achieve the 2020 statewide GHG target mandated by AB 32 of 2006 (CARB 2017:9). It also lays out the framework for achieving the mandate of SB 32 of 2016 to reduce statewide GHG emissions to at least 40 percent below 1990 levels by the end of 2030 (CARB 2017). The 2017 Scoping Plan identifies the GHG reductions needed by each emissions sector.

The 2017 Scoping Plan also identifies how GHGs associated with proposed projects could be evaluated under CEQA (CARB 2017:101-102). Specifically, it states that achieving "no net increase" in GHG emissions is an appropriate overall objective of projects evaluated under CEQA if conformity with an applicable local GHG reduction plan cannot be demonstrated. CARB recognizes that it may not be appropriate or feasible for every development project to mitigate its GHG emissions to zero and that an increase in GHG emissions because of a project may not necessarily imply a substantial contribution to the cumulatively significant environmental impact of climate change.

Senate Bill 375 of 2008

SB 375, signed by Governor Schwarzenegger in September 2008, aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy, showing prescribed land use allocation in each MPO's Regional Transportation Plan. CARB, in consultation with the MPOs, is to provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in their respective regions for 2020 and 2035. The Sacramento Area Council of Governments (SACOG) serves as the MPO for Sacramento, Placer, El Dorado, Yuba, Sutter, and Yolo Counties, excluding those lands located in the Lake Tahoe Basin. SACOG adopted its Metropolitan

Transportation Plan/Sustainable Communities Strategy (MTP/SCS) 2036 in 2012 and completed an update adopted on February 18, 2016. SACOG was tasked by CARB to achieve a 7-percent per capita reduction compared to 2012 emissions by 2020 and a 16-percent per capita reduction by 2035, which CARB confirmed the region would achieve by implementing its SCS (CARB 2013). In June 2017, CARB released the proposed target update for the SB 375 targets, tasking SACOG to achieve a 7-percent and a 19-percent per capita reduction by 2020 and 2035, respectively (CARB 2017). At the time of writing this Draft EIR, the target update had not been approved by CARB.

Senate Bill 743 of 2013

SB 743 changes the way that public agencies evaluate the transportation impacts of projects under CEQA. The proposed revisions to the State CEQA Guidelines would establish new criteria for determining the significance of a project's transportation impacts that will more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of GHG emissions.

As detailed in SB 743 the Governor's Office of Planning and Research (OPR) was tasked with developing potential metrics to measure transportation impacts and replace the use of delay and level of service (LOS). More detail about SB 743 is provided in the regulatory setting of Section 4.14, "Transportation and Circulation."

In November 2017, OPR released its proposed changes to the State CEQA Guidelines, including the addition of Section 15064.3 that would implement SB 743 (OPR 2017a:77-90). In support of these changes, OPR also published its *Technical Advisory on Evaluating Transportation Impacts in CEQA*, which recommends that the transportation impact of a project be based on whether it would generate a level of vehicle miles traveled (VMT) per capita (or VMT per employee) that is 15 percent lower than the existing development in the region (OPR 2017b:12-13). OPR's technical advisory explains that this criterion is consistent with PRC Section 21099, which states that the criteria for determining significance must "promote the reduction in greenhouse gas emissions" (OPR 2017b:18). It is also consistent with the statewide per capita VMT reduction target developed by Caltrans in its Strategic Management Plan, which calls for a 15-percent reduction in per capita VMT, compared to 2010 levels, by 2020 (Caltrans 2015:11). Additionally, the California Air Pollution Control Officers Association determined that a 15-percent reduction in VMT is typically achievable for projects (CAPCOA 2010:55) and call for local governments to set communitywide GHG reduction targets of 15 percent below then-current levels by 2020 in CARB's First Update to the AB 32 Scoping Plan (CARB 2014b:113).

Executive Order B-30-15

On April 20, 2015, Governor Brown signed EO B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The governor's EO aligns California's GHG reduction targets with those of leading international governments, such as the 28-nation European Union, which adopted the same target in October 2014. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32, discussed above). California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the United States to limit global warming below 2° Celsius, the warming threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the state's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050.

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program, which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of standards for vehicle model years 2017–2025. The new rules strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's zero-emission vehicle regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the state. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 34 percent fewer GHG emissions and 75 percent fewer smog-forming emissions than the statewide fleet in 2016 (CARB 2016).

Senate Bill X1-2, the California Renewable Energy Resources Act of 2011

SB X1-2 of 2011 requires all California utilities to generate 33 percent of their electricity from renewables by 2020. SB X1-2 sets a three-stage compliance period requiring all California utilities, including independently owned utilities, energy service providers, and community choice aggregators, to generate 20 percent of their electricity from renewables by December 31, 2013; 25 percent by December 31, 2016; and 33 percent by December 31, 2020. SB X1-2 also requires the renewable electricity standard to be met increasingly with renewable energy that is supplied to the California grid from sources within, or directly proximate to, California. SB X1-2 mandates that renewables from these sources make up at least 50 percent of the total renewable energy 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. In October 2015, SB 350 was signed by Governor Brown, which requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from renewable resources by 2030.

California Building Efficiency Standards (Title 24, Part 6)

Buildings in California are required to comply with California's Energy Efficiency Standards for Residential and Nonresidential Buildings established by CEC regarding energy conservation standards and found in Title 24, Part 6 of the CCR. These standards were first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption and are updated on an approximately 3-year cycle to allow consideration and possible incorporation of new energy-efficient technologies and methods. All buildings for which an application for a building permit is submitted on or after January 1, 2017, must follow the 2016 standards (CEC 2015). Energy-efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions.

Low Carbon Fuel Standard

In January 2007, EO S-01-07 established a Low Carbon Fuel Standard (LCFS). The EO calls for a statewide goal to be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 and for an LCFS for transportation fuels to be established for California. Further, it directs CARB to determine whether an LCFS can be adopted as a discrete early action measure under AB 32 and, if so, to consider adoption of an LCFS on the list of early action measures required to be identified by June 30, 2007, under Health and Safety Code Section 38560.5. The LCFS applies to all refiners, blenders, producers, or importers (providers) of transportation fuels in California. The LCFS will be measured on a full fuels-cycle basis and may be met through market-based methods by which providers exceeding the performance required by an LCFS shall receive credits that may be applied to future obligations or traded to providers not meeting the LCFS.

In June 2007, CARB adopted the LCFS as a Discrete Early Action item under AB 32, and in April 2009, CARB approved the new rules and carbon intensity reference values with new regulatory requirements that took effect in January 2011. The standards require providers of transportation fuels to report on the mix of fuels that they provide and demonstrate that they meet the LCFS intensity standards annually. This is

accomplished by ensuring that the number of “credits” earned by providing fuels with a lower carbon intensity than the established baseline (or obtained from another party) is equal to or greater than the “deficits” earned from selling higher intensity fuels.

In December 2011, the U.S. District Court for the Eastern District of California issued three rulings against the LCFS, including a requirement for CARB to abstain from enforcing the LCFS. In April 2012, the Ninth Circuit granted CARB’s motion for a stay of the injunction while it continued to consider CARB’s appeal to the lower court’s decision. Consequently, CARB readopted the LCFS regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low carbon fuel adoption necessary to achieve the governor’s 2030 and 2050 GHG goals.

LOCAL

Placer County Air Pollution Control District

In October 2016, the PCAPCD Board of Directors adopted the *Review of Land Use Projects under CEQA Policy* document, establishing thresholds of significance for GHG emissions and criteria air pollutants for projects under CEQA review in the county. The document serves as guidance for lead agencies when reviewing GHG impacts associated with a project. In the development of these thresholds, the board considered statewide regulations to accomplish statewide emissions reduction targets for GHGs. PCAPCD has prepared a *CEQA Thresholds of Significance Justification Report*, which contains the rationale, modeling analyses, and factual data to justify the thresholds of significance that have been established (PCAPCD 2016a). PCAPCD staff used California Emissions Estimator Model (CalEEMod) software to develop an efficiency matrix for Residential and Non-residential projects in Placer County, using the year 2030 as a midterm target year to achieve California’s long-term climate goal by 2050. The year 2030 was chosen as target year to remain consistent with GHG reduction targets established in state legislation, specifically SB 350 and SB 32.

Placer County General Plan

The *Placer County General Plan*, which was originally adopted in 1994 and last updated in 2013, includes the following policies related to addressing GHG emissions and climate change in Placer County (Placer County 2013):

- ▲ **Policy G-1:** The County shall require that all new dwelling units meet current State requirements for energy efficiency, and encourage developers to exceed Title 24 requirements. Retrofitting of existing units shall be encouraged.
- ▲ **Policy G-2:** The County shall promote land use patterns that encourage energy efficiency, to the extent feasible, and encourage efficient energy use in new development, including but not limited to access to non-auto transit, use of traffic demand management, and water-efficient landscaping.
- ▲ **Policy G-3:** The County shall continue to implement provisions of the Subdivision Map Act that require subdivisions to be oriented for solar access, to the extent practical.
- ▲ **Policy G-4:** The County shall encourage participation in weatherization and energy efficiency programs sponsored by utility companies.
- ▲ **Policy G-5:** The County shall continue to encourage investments in energy efficiency in multifamily properties through the mPower Placer program and seek mechanisms to expand the program to include single-family residences.
- ▲ **Policy 6. F.5:** The County shall encourage project proponents to consult early in the planning process with the County regarding the applicability of Countywide indirect and areawide source programs and transportation control measures (TCM) programs. Project review shall also address energy-efficient buildings and site designs and proper storage, use, and disposal of hazardous materials.

Placer County Code

Section 10.14. Limitation on Engine Idling

The Placer County board of supervisors finds that:

- A. Air pollution is a major public health concern in California. The Sacramento region is currently designated as non-attainment for the one-hour federal ozone standard, as well as the more stringent state ozone standard. Air pollution can cause or aggravate lung illnesses such as acute respiratory infections, asthma, chronic bronchitis, emphysema, and lung cancer. In addition to health impacts, air pollution imposes significant economic costs and negative impacts on our quality of life (nuisance).
- B. Exhaust from vehicles (both on- and off-road) is a substantial source of ozone precursors in the Sacramento region. Vehicle exhaust is also a source of carbon monoxide, particulate matter, toxic air contaminants, and greenhouse gases. Although new engines have become cleaner because of improved emission control technologies; the slow turn over in their inventory and the number miles/hours these vehicles idle year is hindering progress to improving regional air quality.
- C. Public agencies can play an important role in improving air quality by limiting the amount of time engines are allowed to idle within their jurisdiction. Public agencies have the responsibility to lead the effort to improve air quality by adopting ordinances that are cost effective in reducing ozone precursors emissions and toxic air contaminants. This article is based on and derived from the Sacramento Ozone Summit Model Engine Idling Ordinance.
- D. A study of idling exhaust emissions conducted by the U.S. EPA (EPA420-R-02-025, October 2002) indicates that a typical 1980s-2001 model year truck operating on diesel fuel emits 144 grams per hour of nitrogen oxide and 8,224 grams per hour of carbon dioxide emissions and consumes about 0.82 gallons of diesel fuel while idling.
- E. TIAx, a consultant for the Sacramento Air Quality Management District, estimated idling exhaust emissions from heavy duty diesel trucks, medium heavy duty diesel trucks and off road construction equipment to be 2.3 tons per day of nitrogen oxide emissions and 0.23 tons per day of reactive organic gas emissions (Control Measures OFMS 52 and ONMS 45, April 2003). The maximum emissions reductions from full implementation of the Limitation on Engine Idling Ordinance in the Sacramento region was estimated to be 1.725 tons per day of nitrogen oxides emissions and 0.173 tons per day of reactive organic gas emissions (assuming a 75 percent compliance).
- F. Under this article, a limitation on engine idling is established by the board of supervisors to discourage the idling of engines in the unincorporated Placer County (Ord. 5271-B, 2003).

Section 10.20. Trip Reduction Program

The primary purposes of this article include the following:

- A. Reduce total vehicle emissions in Placer County and South Placer region by reducing the number of vehicular trips that might otherwise be generated by home-to-work commuting.
- B. Reduce traffic congestion in Placer County by reducing both the number of vehicular trips and the vehicular miles traveled that might otherwise be generated by home-to-work commuting.
- C. Reduce or delay the need for major transportation facility improvements and reduce congestion by making efficient use of existing facilities.
- D. Reduce present and future motor vehicle emissions as a contribution for complying with federal and state ambient air quality standards.

- E. Implement measures that will work towards attainment of ambient air quality standards and compliance with congestion management program (CMP) requirements.
- F. Increase the average vehicle ridership (AVR) during the weekday commute period (“peak period”) to work towards goals set forth in the California Clean Air Act.

Specifically, Section 10.20.060 includes the detailed provisions for Trip Reduction Programs, including requiring employers to encourage use of alternative commute modes, and for employers of over 100 employees, identification of a transportation coordinator and preparation of a transportation plan designed to reduce vehicle trips. Section 10.20.070 outlines the requirements for transportation control measures (TCMs), such as designation of an employee transportation coordinator, posting ridesharing information and information about alternate transportation modes, bicycle parking facilities, and preferential carpool/vanpool parking. Several optional TCMs are also identified.

Placer County Water Efficient Landscape Ordinance

About half of urban water in California is used for landscape irrigation. To improve water savings in this sector, Governor Brown issued Executive Order B-29-15, which required the Department of Water Resources to update its 2010 Draft Model Water Efficient Landscape Ordinance (WELO) to the California Water Commission. The Model Ordinance promotes efficient landscapes in new developments and retrofitted landscapes. The ordinance’s requirements became effective December 1, 2015.

In response to these changes in State law, the Placer County Planning Division of the Community Development Resource Agency prepared an ordinance to promote water-efficient landscapes in new developments and retrofitted landscapes, prevent water waste and increase efficient irrigation, limit turf, and encourage use of graywater and recycled water. WELO applies to new construction projects proposing a landscape greater than 500 square feet, or rehabilitated landscape projects proposing an aggregated landscape area greater than 2,500 square feet.

The WELO would affect the usage of water for landscaping of the SAP and PRSP.

4.7.4 Analysis, Impacts, and Mitigation

STANDARDS OF SIGNIFICANCE

The issue of global climate change is inherently a cumulative issue, as the GHG emissions of individual projects cannot be shown to have any material effect on global climate change. Thus, the climate change impact resulting from the development of land uses and infrastructure under the project is addressed as a cumulative impact.

State CEQA Guidelines Section 15064 and relevant portions of Appendix G recommend that a lead agency consider a project’s consistency with relevant, adopted plans and discuss any inconsistencies with applicable regional plans, including plans to reduce GHG emissions. Under Appendix G of the State CEQA Guidelines, a project would result in a cumulatively considerable contribution to climate change if it would:

- ▲ generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- ▲ conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

In California, some counties, cities, and air districts have developed guidance and thresholds for determining the significance of GHG emissions that occur within their jurisdiction. Placer County is the CEQA lead agency for the project and is, therefore, responsible for determining whether an impact would be considered

significant. At the time of writing this Draft EIR, Placer County does not have an adopted Climate Action Plan consistent with State CEQA Guidelines Section 15185.5(b).

To evaluate the impacts of projects on global climate change, PCAPCD has established thresholds of significance for land use development projects that occur within its jurisdiction (PCAPCD 2017:24). Thresholds used to determine significance are from PCAPCD's policy document "Review of Land Use Projects under CEQA" and are shown below (PCAPCD 2016b).

PCAPCD's policy document, "California Environmental Quality Act Thresholds of Significance – Justification Report" notes the following in describing how each of the thresholds should be applied (PCAPCD 2016a):

- 1) A bright-line threshold of 10,000 metric tons of CO₂ equivalent per year (MTCO_{2e}/year) for the construction and operational phases of land use projects as well as stationary source projects;
- 2) An efficiency matrix for the operational phase of land use development projects when emissions exceed the De Minimis Level; and
- 3) A De Minimis Level for the operational phases of 1,100 MTCO_{2e}/year.

GHG emissions from projects that exceed 10,000 MTCO_{2e}/year would be deemed to have a cumulatively considerable contribution to global climate change. The De Minimis Level for the operational phases of 1,100 MTCO_{2e}/year represents an emissions level which can be considered as less than cumulatively considerable and be excluded from the further GHG impact analysis. To determine the significance of the project's GHG emissions, the PCAPCD's GHG thresholds are compared to the estimate of GHG emissions associated with the proposed project.

METHODS AND APPROACH

GHG emissions are estimated for the construction and operation of land uses developed under the project, as discussed separately below.

Construction

Construction-related emissions of GHGs for the project area, and Pleasant Grove Retention Facility were estimated using the CalEEMod Version 2016.3.1 computer program (CAPCOA 2016), as recommended by PCAPCD. Modeling was based on project-specific information (e.g., size, number of units, energy consumption), where available; reasonable assumptions based on typical construction activities; and default values in CalEEMod based on the land use types and climate conditions of the region.

Construction-related emissions of GHGs for the off-site transportation and utility improvements were calculated using the Sacramento Metropolitan Air Quality Management District's Roadway Construction Model, Version 8.1.0.

Construction of the new land uses under the project, including the Pleasant Grove Retention Facility and the off-site transportation and utility improvements, was assumed to begin in 2021. Although the actual construction schedule is unknown at the time of writing this EIR, the earliest possible construction start dates were used. This assumption would be considered conservative because construction equipment fleet emissions will decrease in the future as older equipment is replaced by newer equipment that complies with recent, more stringent emission standards. Construction of land uses in the net SAP is anticipated to occur over an approximately 80-year period. According to the market study conducted for the PRSP, construction under the PRSP is anticipated to last approximately 20 years. However, for the sake of a conservative and simple emissions modeling, an 18-year buildout period was assumed in this analysis. Construction of the Pleasant Grove Retention Facility was anticipated to take approximately 5 years, with South Basin construction beginning in 2021 and finishing in 2025 and North Basin construction beginning in 2026 and finishing in 2030. Construction of each of the off-site transportation and utility infrastructure improvements

was expected to last between 6 months and 1 year, depending on the type of infrastructure improvement. For a detailed description of model input and output parameters, refer to Appendix K, “Air Quality and Greenhouse Gas Emissions Modeling Results.”

Operations

GHG emissions associated with operation of the land uses that would be developed under the project were also estimated using CalEEMod Version 2016.3.1. Operational emissions of GHGs were estimated for the following sources: area sources (e.g., landscaping-related fuel combustion sources), energy consumption (i.e., electricity and natural gas consumption, and energy use associated with water consumption and the generation of wastewater), solid waste, and vehicle trips (i.e., mobile sources). SAP policies that would reduce emissions such as NR-6.8: Energy Efficient Lighting and Policy PFS-3.2: Efficiency and Demand Reduction were included in the modeling. Operational mobile-source GHG emissions were modeled using the estimated levels of VMT by residents, employees, and students (Fehr & Peers 2018). Project-specific VMT estimates were provided by the traffic impact analysis conducted for this EIR. (See Section 4.14, “Transportation and Circulation.”) Mobile-source emissions associated with operation of land uses developed under the project were estimated using CalEEMod Version 2016.3.1, which uses emission factors from CARB’s Emission Factor model (EMFAC 2014).

Indirect emissions associated with electricity and natural gas consumption were estimated using GHG emission factors for Pacific Gas and Electric Company (PG&E) based on the GHG intensity of power plants generating PG&E’s electricity (PG&E 2015). Levels of electricity and natural gas consumption were based on 2016 Title 24–adjusted consumption rates provided by CalEEMod for each land use type and adjustment factors published by CEC that account for the increased energy efficiency of residential and nonresidential buildings attributable to the 2016 Title 24 building standards not accounted for in the 2016.3.1 version of CalEEMod (CEC 2015). Detailed model assumptions and inputs for these calculations can be found in Appendix K of this Draft EIR.

PROPOSED SUNSET AREA PLAN GOALS, OBJECTIVES, AND POLICIES

The following proposed goals and policies in the SAP address GHGs and climate change:

- ▲ **Policy LU/ED-3.9: Lighting.** The County shall balance the need for lighting in new developments with concern for the environment and existing uses by encouraging the use of efficient, strategic, and aesthetic lighting methods that address public safety and reduce light pollution. Lighting design should adhere to the following principles:

 - a) Lighting on site should be designed to promote pedestrian comfort and safety and to enliven public gathering places.
 - b) Lighting for individual buildings should be integrated into the architecture.
 - c) Lighting shall be designed to minimize projection into adjacent properties and onto adjacent roads and not provide a source of glare.
 - d) The height of light standards in parking areas shall not exceed eighteen (18) feet.
 - e) Energy-efficient technology should be used wherever possible.
- ▲ **Policy TM-1.5: Capital Improvement Funding.** The County shall provide for sufficient capital improvements to meet the target for vehicle miles traveled (VMT) and greenhouse gas reductions.

GOAL TM-2: Active Transportation. To support bicycling and walking in the Sunset Area by providing safe and convenient routes and facilities.

- ▲ **Policy TM-2.1: Transportation Facility Design.** With the exception of limited access expressways (e.g., Placer Parkway), the County shall require the design of all future roads, bridges, and facilities to accommodate bicycle and pedestrian travel, with a preference for shared use paths.
- ▲ **Policy TM-2.2: New Development Connectivity.** The County shall require new development to include a system of sidewalks, trails, and bikeways that link all land uses, provide accessibility to parks and schools, and connect to all existing and planned external street and trail facilities.
- ▲ **Policy TM-2.4: Supportive Land Uses.** The County shall encourage land use types and forms that facilitate the use of alternative modes of transportation, multi-modal facilities, and the development of complete streets.
- ▲ **Policy TM-2.5: Bicycle Parking.** The County shall require safe and convenient bicycle parking for all new or modified public and private developments and businesses. For commercial establishments, bicycle parking shall be located near primary building entrances.
- ▲ **Policy TM-2.6: End-of-Trip Facilities.** The County shall encourage incorporation of cycling-friendly facilities such as showers, secure weather-protected bicycle lockers, storage lockers for other gear, and changing spaces for all new or modified public and private developments and businesses.
- ▲ **Policy TM-2.7: Regional Connectivity.** The County shall work to promote and facilitate bicycle and pedestrian connections between the Sunset Area networks and the active transportation networks of nearby communities. This will include connecting existing facilities in adjacent areas in new facilities in the Sunset Area.
- ▲ **Policy TM-2.8: Grant Funding.** The County shall identify regional, State, and federal funding programs and secure funding for pedestrian and bicycle facilities and programs, if possible.
- ▲ **Policy TM-2.9: Placer Parkway Grade Separations.** With implementation of Placer Parkway, the County shall pursue funding opportunities to ensure provision of grade separations across Placer Parkway to accommodate bicycle and pedestrian facilities.
- ▲ **Policy TM-4.4: Preferred Parking for Alternately-Powered Vehicles.** The County shall require the provision of preferred parking for alternately-powered vehicles, including electric cars, natural gas vehicles, and hydrogen fuel cell vehicles.
- ▲ **Policy PFS-3.2: Efficiency and Demand Reduction.** The County shall promote efficient water use and reduced water demand by:
 - a) Requiring water-conserving design and equipment in new construction;
 - b) Requiring water-conserving landscaping and other conservation measures consistent with the Water Efficient Landscaping Ordinance, as well as the use of recycled water;
 - c) Requiring the retrofitting of existing development with water-conserving devices as a condition of discretionary approval of any change of use or structures;
 - d) Encouraging retrofitting existing development with water-conserving devices; and
 - e) Encouraging water-conserving agricultural irrigation practices.
- ▲ **Policy PFS-3.3: Recycled Water.** The County shall require the use of recycled water and the development of associated infrastructure where feasible to offset the demand for new water supplies.

- ▲ **Policy PFS-4.2: Efficient Water Use and Wastewater Reduction.** The County shall promote efficient water use and reduced wastewater system demand by:
 - a) Requiring water-conserving design and equipment in new construction;
 - b) Encouraging retrofitting with water-conserving devices; and
 - c) Designing wastewater systems to minimize inflow and infiltration to the extent economically feasible.
- ▲ **Policy PFS-4.4: Recycled Water Irrigation Uses.** The County shall require the use of recycled water, wherever feasible, for irrigation, including commercial, industrial, and private landscaping, landscaping within public rights-of-way (e.g., medians), and agricultural lands.
- ▲ **Policy PFS-6.1: Maximize Waste Reduction.** The County shall promote maximum use of solid waste source reduction, recycling, composting, and environmentally-safe transformation of wastes.
- ▲ **Policy NR-5.2: Air Quality Analysis and Mitigation Plan.** Developments that meet or exceed thresholds of significance for ozone precursor pollutants and greenhouse gas emissions, as adopted by the Placer County Air Pollution Control District (PCAPCD), shall be deemed to have a significant environmental impact. The County shall require submittal of an Air Quality Analysis and Mitigation Plan prior to project approval, subject to review and recommendation as to technical adequacy by the PCAPCD.
- ▲ **Policy NR-5.5: Construction Exhaust Emissions.** The County shall require new development to incorporate the use of Best Available Control Technologies (BACT) for the control of construction exhaust emissions. The PCAPCD shall be consulted to determine the appropriate BACT measures available (e.g., regular tune-ups, cleaner burning conventional fuels, alternative fueled vehicles and equipment).
- ▲ **Policy NR-5.6: Emission Reduction Compliance.** The County shall require new development to demonstrate to the County and the PCAPCD compliance with California Air Resources Board (CARB) and PCAPCD Rules and Regulations to reduce emissions from fuel consumption, energy consumption, surface coating operations, and solvent usage.
- ▲ **Policy NR-5.8: Chlorofluorocarbon Recovery.** The County shall require the recovery of chlorofluorocarbons (CFC's) when older air conditioning and refrigeration units are serviced or disposed.
- ▲ **Policy NR-5.9: Cool Community Strategies.** The County shall promote Cool Community strategies to cool the urban heat island, reduce energy use and ozone formation, and maximize air quality benefits by requiring new development to implement four key strategies: plant trees, selective use of vegetation for landscaping, install cool roofing, and install cool pavements. This may include the following:
 - a) Use of roofing materials with a high solar reflectance index (SRI), to reduce heat island effect and manage stormwater.
 - b) Incorporation of high-albedo materials such as concrete for pathways and parking areas, or use coatings and integral colorants for asphalt to achieve light colored surfaces instead of blacktop, where feasible.
 - c) Shading of hardscapes (such as sidewalks, roadways, and parking lots) with trees, vegetated trellises, or structures covered with solar panels or materials with high solar reflectance.
 - d) Preservation of existing trees, wherever feasible, and addition of trees in the public right-of-way, where appropriate.
 - e) Construction of hard surfaces such as roads and sidewalks with partially vegetated systems such as open grid vegetated paving.

- ▲ **Policy NR-6.1: mPOWER Incentive Program.** The County shall continue to implement the mPOWER incentive program to reduce greenhouse gas emissions from buildings and other site improvements.
- ▲ **Policy NR-6.2: Energy Efficient Construction.** The County shall encourage new construction to achieve third-party green building certification, such as the GreenPoint Rated program and the LEED rating system. This will include building and capital improvement design practices that reduce energy consumption, maximize energy conservation, promote passive solar energy generation or other on-site electricity generation, and incorporate natural ventilation.
- ▲ **Policy NR-6.3: CALGreen.** The County shall require that all new buildings shall comply with CALGreen building codes, including diversion and recycling construction and demolition waste; use of locally-sourced building materials and recycled content building materials, including mulch/compost; heating and air conditioning standards, volatile organic compound limits, and recycled content value.
- ▲ **Policy NR-6.4: Energy-Efficient Retrofits.** The County shall encourage energy conservation retrofits for existing buildings in the Sunset Area.
- ▲ **Policy NR-6.5 Water Efficient Landscape Design.** The County shall require all new development to comply with the County's Water Efficient Landscape Ordinance (WELO) to reduce water used for landscaping irrigation and to encourage the use of recycled water and greywater for landscaping purposes.
- ▲ **Policy NR-6.6: Efficient Landscape Maintenance Equipment.** The County shall encourage installation of electric outlets in parks and public/quasi-public lands to promote the use of electric landscape maintenance equipment.
- ▲ **Policy NR-6.7: Residential Energy Efficiency.** The County shall encourage residential units to be designed to maximize energy efficiency. This should include consideration of the following design features:
 - a) Pre-plumbing and structural design to accommodate solar energy systems.
 - b) Installation of energy conservation appliances such as tankless water heaters and whole house fans in all residential units.
 - c) Installation of energy efficient AC units and heating system with programmable thermostat timers, to the extent feasible.
 - d) Use of low flow water fixtures such as low flow toilets and faucets, to the extent feasible.
- ▲ **Policy NR-6.8: Energy Efficient Lighting.** Require the use of energy efficient lighting for all street, parking, and area lighting, to the extent feasible.
- ▲ **Policy NR-7.2: Alternative Transportation.** The County shall require that new development projects be designed to promote pedestrian/bicycle access and circulation to encourage residents and employees to use alternative transportation modes to reduce air contaminant emissions. This includes providing secure bicycle parking and storage.
- ▲ **Policy NR-7.3: Regional Connectivity.** The County shall connect bike lanes in the Sunset Area to existing and future bike lanes within the unincorporated county and neighboring cities to create a regional bicycle network, wherever feasible.
- ▲ **Policy NR-7.5: Transportation Control Measures.** The County shall require project proponents to consult with the County early in the planning process regarding the applicability of countywide indirect and area wide source-reduction programs and transportation control measure programs. County review of new development projects shall also address energy-efficient building and site designs and proper storage, use, and disposal of hazardous material.

- ▲ **Policy NR-7.6: Mixed-Use, Increased Intensity Development.** The County shall promote mixed-use development and increased development intensity along existing and proposed transit corridors to reduce the length and frequency of vehicle trips.
- ▲ **Policy NR-7.7: Efficient Traffic Control.** The County shall implement high-efficiency traffic control strategies such as synchronized signals and roundabouts to reduce vehicle emissions.
- ▲ **Policy NR-7.9: Dedicated Land for Park-and-Ride Lots.** The County shall require large new developments to dedicate land for and construct appropriate improvements for park-and-ride lots.
- ▲ **Policy NR-7.10: Construction Worker Vehicle Trip Reduction.** The County shall require project proponents to consult the County and the PCAPCD concerning feasible transportation alternatives to reduce construction worker vehicle trips and associated vehicle exhaust emissions.
- ▲ **Policy NR-7.11: County Facilities and Operations.** The County shall comply with CARB and PCAPCD Rules and Regulations for Placer County facilities and operations to reduce emissions from fuel consumption, energy consumption, surface coating operations, and solvent usage.
- ▲ **Policy NR-7.13: Tailpipe Emissions Standards.** The County shall support intergovernmental efforts directed at stricter tailpipe emissions standards.
- ▲ **Policy NR-7.14: Vehicle Idling Restriction.** The County shall prohibit the idling of on- and off-road engines when the vehicle is not moving or when the off-road equipment is not performing work for a period greater than five minutes in any one-hour period.
- ▲ **Policy NR-7.15: Alternative Fuel Vehicle Infrastructure.** To the extent feasible, the County shall require the incorporation of alternative vehicle charging and fuel stations, such as electric vehicle charging stations, bio-diesel fueling stations, and hydrogen fueling stations, that are accessible to the public to reduce use of fossil fuel and other nonrenewable resources. This includes the design of an electric box in all residential unit garages to promote electric vehicle usage and the provision of charging stations for electric vehicles at multi-family residences and retail, light industrial, office, hotel, entertainment, and mixed-use buildings.
- ▲ **Policy NR-7.16: Low-Emission Fleet Vehicles.** The County shall encourage businesses to purchase low-emission, fuel-efficient vehicles and phase out use of diesel-fuel vehicles wherever feasible.

IMPACTS AND MITIGATION MEASURES

Impact 4.7-1: Construction-generated greenhouse gas emissions

Construction activity associated with development under the project, including building Pleasant Grove Retention Facility and the off-site transportation and utility improvements, is estimated to generate a maximum of 9,691 MTCO_{2e} per year. These levels of GHG emissions would not result in a considerable contribution to cumulative emissions related to global climate change and would not conflict with state GHG reduction targets. The contribution of the project to this cumulative impact would not be considerable. This impact would be **less than significant**.

GHG emissions would be generated by construction of the land uses developed under the project. Construction activities would result in the generation of GHG emissions from the use of heavy-duty off-road construction equipment, delivery trucks associated with material transport, and vehicle use during worker commute. Table 4.7-1 summarizes construction-related emissions associated with the construction of new land uses under the project, including the North and South Basins of the Pleasant Grove Retention Facility and off-site transportation and utility improvements.

Table 4.7-1 Unmitigated Construction-Generated Greenhouse Gas Emissions

Year	GHG Emissions (MTCO _{2e})				
	Net SAP Area	PRSP Area	Pleasant Grove	Off-Site Improvements	Total
2021	595	3,055	4,050	1,992	9,691
2022	595	2,550	4,373	705	8,223
2023	595	1,298	4,311	705	6,909
2024	595	1,102	4,325	705	6,727
2025	595	3,789	4,292	705	9,380
2026	595	3,183	1,023	705	5,505
2027	595	2,551	1,043	705	4,894
2028	595	1,926	1,038	0	3,559
2029	595	2,733	1,040	0	4,368
2030	602	2,361	1,177	0	4,132
2031 ¹	602	6,512	0	0	7,114
2032	602	5,497	0	0	6,100
2033	602	5,064	0	0	5,667
2034	602	4,173	0	0	4,776
2035	602	4,999	0	0	5,601
2036	602	4,055	0	0	4,657
2037	602	1,859	0	0	2,461
2038	602	1,496	0	0	2,099
2039	602	0	0	0	602
2040–2048	5,334	0	0	0	5,334
2049–buildout	36,706	0	0	0	36,706 ²
PCAPCD Threshold of Significance	10,000 MTCO_{2e}/year				

Notes: Totals may not add because of rounding; GHG = greenhouse gas; MTCO_{2e} = metric tons of carbon dioxide equivalent; SAP = net Sunset Area Plan; PRSP = Placer Ranch Specific Plan.

¹ GHG emissions from off-road equipment increase because of changes in emission standards.

² Indicates total GHG emissions that would occur from 2049 until buildout. This does not indicate that an individual year would exceed the annual 10,000 MTCO_{2e} threshold.

SAP construction assumed to take place at a constant pace over an 80-year buildout period. PRSP construction assumed to last 18 years, following order of infrastructure phasing plan. Pleasant Grove Retention Facility assumed to last 5 years for each basin (10 years total). Off-site transportation and utility improvements assumed to be constructed simultaneously over 7-year period.

Source: Modeling conducted by Ascent Environmental in 2018.

Net SAP Area

The GHG emissions associated with construction of new land uses under the net SAP area are estimated to be 602 MTCO_{2e} per year as shown in Table 4.7-1. This would not exceed the PCAPCD-recommended threshold of 10,000 MTCO_{2e} per year. Further, implementation of Mitigation Measures 4.3-2a and 4.3-2b of Section 4.3, “Air Quality,” would reduce construction-generated GHG emissions. This level of GHG emissions would not be considered substantial and would not conflict with the state’s ability to meet its statewide GHG targets. Thus, this impact would be less than significant.

PRSP Area

The GHG emissions associated with construction of new land uses under the PRSP area are estimated to be 6,512 MTCO₂e per year as shown in Table 4.7-1. This would not exceed the PCAPCD-recommended threshold of 10,000 MTCO₂e per year. Further, implementation of Mitigation Measures 4.3-2a and 4.3-2b of Section 4.3, "Air Quality," would reduce construction-generated GHG emissions. This level of GHG emissions would not be considered substantial and would not conflict with the state's ability to meet its statewide GHG targets. Thus, this impact would be less than significant.

Other Supporting Infrastructure

Pleasant Grove Retention Facility

The GHG emissions associated with construction of the Pleasant Grove Retention Facility are estimated to be 4,373 MTCO₂e per year as shown in Table 4.7-1. This would not exceed the PCAPCD-recommended threshold of 10,000 MTCO₂e per year. This level of GHG emissions would not be considered substantial and would not conflict with the state's ability to meet its statewide GHG targets. Thus, this impact would be less than significant.

Off-Site Transportation and Utility Improvements

The GHG emissions associated with construction of the off-site transportation and utility improvements are estimated to be 1,992 MTCO₂e per year, as shown in Table 4.7-1. This would not exceed the PCAPCD-recommended threshold of 10,000 MTCO₂e per year. This level of GHG emissions would not be considered substantial and would not conflict with the state's ability to meet its statewide GHG targets. Thus, this impact would be less than significant.

Conclusion

The combined level of GHG emissions associated with construction of land uses under the project and construction of the other supporting infrastructure are estimated to be 9,691 MTCO₂e per year as shown in Table 4.7-1. These GHG emission levels would not be considered substantial and would not conflict with the state's ability to meet its statewide GHG targets. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 4.7-2: Operational greenhouse gas emissions

Operation of the land uses developed under the net SAP area is estimated to generate 378,518 MTCO₂e/year at full buildout, and operation of the land uses developed under the PRSP area is estimated to generate 201,004 MTCO₂e/year at full buildout. These levels of GHG emissions have the potential to result in a considerable contribution to cumulative emissions related to global climate change and conflict with state GHG reduction targets. This impact would be **significant**.

GHG emissions would be generated by operation of the land uses developed under the project. Table 4.7-2 summarizes the annual operational GHG emissions associated with buildout of the project area. Operation of the land uses developed under the project would result in mobile-source GHG emissions associated with vehicle trips to and from these land uses, and within the project area (i.e., project-generated VMT); area-source emissions from the operation of landscape maintenance equipment; energy-source emissions from the consumption of electricity and natural gas; water-related energy consumption associated with water use and the conveyance and treatment of wastewater; and waste-generated emissions from the transport and disposal of solid waste. After their construction, the Pleasant Grove Retention Facility and the off-site transportation and utility improvements would not involve the direct operation of stationary or area sources of GHG emissions or the generation of new GHG-emitting vehicle trips.

Table 4.7-2 Unmitigated Operational Greenhouse Gas Emissions for Net SAP Area and PRSP Area at Full Buildout

Emissions Activity	GHG Emissions (MTCO _{2e} /year)	
	Net SAP Area at Buildout	PRSP Area at Buildout
Hearths and landscape equipment	1,512	7,797
Electricity consumption	35,107	17,700
Natural gas combustion	46,112	18,233
Vehicle trips	282,392	147,988
Solid waste generation	10,469	7,109
Water consumption and wastewater generation	2,926	2,177
Total operational annual GHG emissions	378,518	201,004
PCAPCD De Minimis Level	1,100	1,100
PCAPCD Bright-Line Threshold	10,000	10,000

Notes: Totals may not add because of rounding.; GHG = greenhouse gas; MTCO_{2e} = metric tons of carbon dioxide equivalent; SAP = Sunset Area Plan; PRSP = Placer Ranch Specific Plan.

Full buildout of the SAP area is expected to occur past 2050, the latest year for which mobile-source emission factors are provided by the EMFAC2014 model.

Source: Modeling conducted by Ascent Environmental in 2018.

Net SAP Area

The GHG emissions associated with operation of the land uses under the net SAP area at full buildout would be 378,518 MTCO_{2e}/year (Table 4.7-2). These GHG emission levels would be substantial and could conflict with the state's ability to meet its statewide GHG targets. The net SAP is consistent with the MTP/SCS 2036 because it was identified in the document as a "developing community" in the region. A developing community is defined by SACOG as one of "the next increment[s] of urban expansion" as identified in local plans, such as master plans (SACOG 2016:3-27). However, because GHG emission levels anticipated from development under the net SAP exceed the PCAPCD thresholds, this impact would be significant.

PRSP Area

The total GHG emissions associated with operation of the land uses proposed in the PRSP land use plan would be 201,004 MTCO_{2e}/year (Table 4.7-2). GHG emissions associated with the previous PRSP land use plan circulated with the NOP would be 211,227 MTCO_{2e}. Although the current PRSP land use plan would result in lower levels of GHG emissions than the previous version, these GHG emission levels would be substantial and could conflict with the state's ability to meet its statewide GHG targets. Development of the PRSP area was considered in the MTP/SCS 2036 at an intensity greater than what is analyzed in this EIR. The MTP/SCS 2036 assumed that the land use development under the PRSP would support 6,740 housing units and 20,155 jobs (SACOG 2016:25 in Appendix E-3) whereas the PRSP area is planned to support 5,636 housing units and 14,956 jobs. Because the level of development assumed was more intensive in the MTP/SCS 2036, development under the PRSP would be consistent with the MTP/SCS 2036. However, because GHG emission levels anticipated from development of the PRSP area exceed the PCAPCD thresholds, this impact would be significant.

Other Supporting Infrastructure

Pleasant Grove Retention Facility

Operation of the Pleasant Grove Retention Facility would not involve the direct operation of stationary or area sources of GHG emissions or the generation of new GHG-emitting vehicle trips. This impact would be less than significant.

Off-Site Transportation and Utility Improvements

Operation of off-site transportation and utility improvements would not involve the direct operation of stationary or area sources of GHG emissions or the generation of new GHG-emitting vehicle trips. This impact would be less than significant.

Conclusion

Annual emissions associated with the operation of land uses would be 378,518 MTCO_{2e}/year at buildout of the net SAP area and 201,004 MTCO_{2e}/year at buildout of the PRSP area (Table 4.7-2). The total project annual emission would be 589,745 MTCO_{2e}/year at buildout. These GHG emission levels exceed PCAPCD thresholds, therefore, the project's contribution of GHG emissions would be cumulatively **significant**.

Mitigation Measures

Mitigation Measure 4.7-2a: Implement all feasible on-site features to reduce operational GHG emissions (Net SAP Area and PRSP Area)

The County will require project proponents of development proposed under the project to incorporate the following measures to reduce operational emissions of GHGs to the extent feasible.

Transportation

- ▲ For each single-family residential unit, install a listed raceway, associated overcurrent protective device and the balance of a dedicated 208/240-volt branch circuit at 40 amperes (amp) minimum. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or unit subpanel and shall terminate into a listed cabinet, box, or other enclosure near the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity for a 40-ampere minimum dedicated branch circuit. All electrical circuit components and Electric Vehicle Service Equipment (EVSE), including a receptacle or box with a blank cover, related to this section shall be installed in accordance with the California Electrical Code.
- ▲ Multi-family residential buildings shall design at least 10 percent of parking spaces to include EVSE, or a minimum of two spaces to be installed with EVSE for buildings with 2-10 parking spaces. EVSE includes EV charging equipment for each required space connected to a 208/240-volt, 40-amp panel with conduit, wiring, receptacle, and overprotection devices.
- ▲ Non-residential buildings shall design at least 10 percent of parking spaces to include EVSE, or a minimum of two spaces to be installed with EVSE for buildings with 2-10 parking spaces. EVSE includes EV charging equipment for each required space connected to a 208/240-volt, 40-amp panel with conduit, wiring, receptacle, and overprotection devices.
- ▲ Non-residential land uses with 20 or more on-site parking spaces shall dedicate preferential parking spaces to vehicles with more than one occupant and ZEVs (including battery electric vehicles and hydrogen fuel cell vehicles). The number of dedicated spaces should be no less than two spaces or 5 percent of the total parking spaces on the individual project site, whichever is greater. These dedicated spaces shall be in preferential locations such as near the main entrances to the buildings served by the parking lot and/or under the shade of structure or trees. These spaces shall be clearly marked with signs and pavement markings. This measure shall not be implemented in a way that prevents compliance with requirements in the California Vehicle Code regarding parking spaces for disabled persons or disabled veterans.

Building Energy

Reduce GHG emissions associated with building energy through the following measures:

- ▲ Single family residential buildings constructed within the net SAP area and the PRSP area shall be designed to achieve a 30 percent reduction in energy use versus a standard 2016 Title 24 code-compliant building. Reductions in energy shall be achieved by following the energy efficiency performance standards set forth in Tier 2 of the 2016 California Green Building Standards Code, Section A4.203.1.2.2. These reductions shall be achieved by employing energy efficient design features and/or solar photovoltaics. Compliance shall be demonstrated using CEC-approved residential energy modeling software.

- ▲ Multi-family residential buildings of three stories or less constructed within the net SAP area and the PRSP area shall be designed to achieve a 15 percent reduction in energy use compared to a standard 2016 Title 24 code-compliant building. Reductions in energy shall be achieved by following the energy efficiency performance standards set forth in Tier 1 of the 2016 California Green Building Standards Code, Action A4.203.1.2.1. These reductions shall be achieved by employing energy efficient design features and/or solar photovoltaics. Compliance shall be demonstrated using CEC-approved residential modeling software.
- ▲ Commercial buildings (including multi-family residential structures four stories or higher) shall be designed to achieve a 10 percent or greater reduction in energy use compared to a standard 2016 Title 24 code-compliant building. Reductions in energy shall be achieved through energy efficiency measures consistent with Tier 1 of the 2016 California Green Building Standards Code, Section A5.203.1.2.1. Alternatively, this could be met by installing on-site renewable energy systems that achieve equivalent reductions in building energy use.
- ▲ All project buildings shall be designed to include Cool Roofs in accordance with the requirements set forth in Tier 2 of the 2016 California Green Building Energy Code, Sections A4.106.5 and A5.106.11.2.
- ▲ All project buildings shall comply with requirements for water efficiency and conservation as described in the 2016 California Green Building Standards Code, Divisions 4.3 and 5.3.
- ▲ Multiple electrical receptacles shall be included on the exterior of all non-residential buildings and accessible for purposes of charging or powering electric landscaping equipment and providing an alternative to using fossil fuel-powered generators. The electrical receptacles shall have an electric potential of 100 volts. There should be a minimum of one electrical receptacle on each side of the building and one receptacle every 100 linear feet around the perimeter of the building. This measure is consistent with SAP Policy NR-6.6, encourages installation of electric outlets to promote the use of electric landscape maintenance equipment.
- ▲ Ensure that all appliances and fixtures installed in buildings developed under the project are Energy Star®-certified if an Energy Star®-certified model of the appliance is available. Types of Energy Star®-certified appliances include boilers, ceiling fans, central and room air conditioners, clothes washers, compact fluorescent light bulbs, computer monitors, copiers, consumer electronics, dehumidifiers, dishwashers, external power adapters, furnaces, geothermal heat pumps, programmable thermostats, refrigerators and freezers, residential light fixtures, room air cleaners, transformers, televisions, vending machines, ventilating fans, and windows (EPA 2018). If EPA's Energy Star® program is discontinued and not replaced with a comparable certification program before appliances and fixtures are selected, then similar measures which exceed the 2016 California Green Building Standards Code may be used.

Mitigation Measure 4.7-2b: Purchase carbon offsets (Net SAP Area and PRSP Area)

The County will require project proponents of individual developments under the project to offset operational GHG emissions remaining after implementation of Mitigation Measure 4.7-2a. This mitigation measure is consistent with guidance recommended by PCAPCD and CARB (PCAPCD 2017:54, CARB 2017:152). This measure is also consistent with the State CEQA Guidelines, which recommend several options for mitigating GHG emissions. State CEQA Guidelines Section 15126.4(C)(3) states that measures to mitigate the significant effects of GHG emissions may include “off-site measures, including offsets that are not otherwise required....”

Project proponents shall implement an off-site GHG emissions reduction program or to pay GHG offset fees to compensate for the project's emissions in excess of 1,100 MTCO_{2e} for a single year, or as determined feasible by the County and project proponent. The off-site program shall comply with approved protocols from California Air Pollution Control Officers Association's (CAPCOA) GHG Rx program or CARB's Cap & Trade Offset protocols. Alternatively, the project proponent can purchase local or California-only GHG mitigation credits through the CAPCOA GHG Rx program or ARB accredited offset project registry. At the time this EIR was written, the average rate ranges from \$8 to \$35 per metric ton of CO_{2e}.

The net SAP area would generate 373,896 MTCO_{2e}/year after implementation of Mitigation Measure 4.7-2a. The total GHG emission offset requirement would be 372,795 MT CO_{2e} for a period of one year. Based on the current average rate of \$12 per metric ton of CO_{2e}, the estimated payment to offset GHG emissions in excess of thresholds, for a period of one year, would equal \$5,120,190 (equivalent to \$0.66 per square foot for nonresidential and \$954 per residential unit).

PRSP would generate 195,014 MTCO_{2e}/year after implementation of Mitigation Measure 4.7-2a. The total GHG emission offset requirement would be 193,914 MTCO_{2e}, or 27.14 MTCO_{2e}/year for each residential unit in the PRSP area. The estimated payment to offset GHG emissions in excess of thresholds, for a period of one year, would equal \$1,706,730 (equivalent to \$955 per residential unit). Detailed calculations for the Off-Site Mitigation Fee Program can be found in Appendix K.

This condition shall be satisfied prior to the recordation of each Final Map.

PCAPCD and CARB also recommend that lead agencies prioritize direct investments in GHG emission reductions near the project site to provide potential local air quality and economic co-benefits. For example, mPOWER is a local program in Placer County that provides financing to property owners for the installation of energy and water efficiency retrofits and renewable energy systems. Investing in mPOWER is consistent with the County's General Plan Policy 2.G.5, as described above in Section 4.7.3, "Regulatory Setting."

Other examples of local direct investments include financing installation of regional electric vehicle-charging stations, paying for electrification of public school buses, and investing in local urban forests. However, it is critical that any such investments in actions to reduce GHG emissions are real and quantifiable, as determined by the County, PCAPCD, or a consultant selected by the County.

Where development of a local offset is not feasible, the County will allow project proponents to mitigate GHG emissions through the purchase of local or California-only carbon credits issued through the CAPCOA GHG Rx program or CARB-accredited offset project registry.

The GHG reductions achieved through an offset or through the purchase of a carbon credit must meet the following criteria:

- ▲ **Real**—They represent reductions actually achieved (not based on maximum permit levels).
- ▲ **Additional/surplus**—They are not already planned or required by regulation or policy (i.e., not double counted).
- ▲ **Quantifiable**—They are readily accounted for through process information and other reliable data.
- ▲ **Enforceable**—They are acquired through legally binding commitments/agreements.
- ▲ **Validated**—They are verified through the accurate means by a reliable third party.
- ▲ **Permanent**—They will remain as GHG reductions in perpetuity.

Establishment of offsets or purchases of carbon credits to offset operational-generated GHG emissions should be made prior to recordation of each small lot final map, or approval of the first building permit when a small lot map is not required.

Significance after Mitigation

Table 4.7-3 summarizes the estimated levels of operational GHG emissions with implementation of Mitigation Measure 4.7-2a. The mitigated levels of GHG emissions were estimated using CalEEMod by replacing all wood-burning fireplaces with natural gas-fueled fireplaces, compliance with CALGreen Tier 2 standards for all single-family residences, and compliance with CALGreen Tier 1 standards for multi-family residences and all non-residential buildings. With implementation of Mitigation Measure 4.7-2a, operational GHG emissions would be reduced to 373,895 MTCO_{2e}/year for the net SAP area (at buildout) and to 195,014 MTCO_{2e}/year for the PRSP area (at buildout) (Table 4.7-3).

Table 4.7-3 Mitigated Operation-Related Greenhouse Gas Emissions

Emissions Activity	GHG Emissions (MTCO ₂ e)	
	Net SAP Area	PRSP Area
Landscape equipment	934	5,185
Electricity Consumption	32,840	15,715
Natural gas combustion	44,914	17,257
Vehicle trips	282,392	147,988
Solid waste generation	10,469	7,109
Water consumption and wastewater generation	2,346	1,760
PCAPCD De Minimis Level	1,100 MTCO ₂ e/year	1,100 MTCO ₂ e/year
PCAPCD Bright-Line Threshold	10,000 MTCO ₂ e/year	10,000 MTCO ₂ e/year
Total operational annual GHG emissions	373,895	195,014

Notes: Totals may not add because of rounding; GHG = greenhouse gas; MTCO₂e = metric tons of carbon dioxide equivalent; SAP = Sunset Area Plan; PRSP = Placer Ranch Specific Plan.

Source: Modeling conducted by Ascent Environmental in 2018

Implementation of Mitigation Measure 4.7-2b could offset a single year of operation-related GHG emissions but would not reduce emissions for the life of the project below thresholds. Additionally, because of the long-term buildout of the project, the availability and affordability of purchasing GHG offset credits in the future is unknown. Thus, the contribution of GHG emissions associated with the project to cumulative GHG emissions would not be reduced to a less-than-significant level and could substantially contribute to a significant cumulative impact. The impact would be **significant and unavoidable**.

Impact 4.7-3: Impacts of climate change on the project area

The project area is not located in an area projected to experience a substantial increase in wildland fire risk or flooding because of climate changes in the future. Further, water supply to land uses developed under the project would be adequate. Anticipated changes in future climate patterns are not anticipated to have any substantial adverse effects on the project area, and development under the project would neither violate nor conflict with policies and plans that would reduce the extent and severity of potential climate change-related effects. Therefore, the impacts of climate change on the project area would be **less than significant**.

Net SAP Area, PRSP Area, Pleasant Grove, and Off-Site Transportation and Utility Improvements

As discussed previously in this section, there is substantial evidence that human-induced increases in GHG concentrations in the atmosphere have led, through the intensification of the greenhouse effect, to increased global average temperatures (climate change) and associated changes in local, regional, and global average climatic conditions.

Although there is strong scientific consensus that global climate change is occurring, there is less certainty as to the timing, severity, and potential consequences of the climate phenomena, particularly at specific locations. Scientists have identified several ways in which global climate change could alter the physical environment in California (CNRA 2012, DWR 2006, IPCC 2014). These include:

- ▲ increased average temperatures;
- ▲ modifications to the timing, amount, and form (rain vs. snow) of precipitation;
- ▲ changes in timing and amount of runoff;
- ▲ reduced water supply;
- ▲ deterioration of water quality; and
- ▲ elevated sea level.

Several of these changes may translate to a variety of issues and concerns that may affect land uses and infrastructure developed under the project, including:

- ▲ increased average temperatures, and
- ▲ unreliability in water supply associated with changes to precipitation and snowmelt patterns.

Annual average temperatures in Placer County are projected to increase steadily. According to Cal-Adapt, the portion of Placer County in the Sacramento Valley is projected to experience a temperature increase of 3.3°F by 2050 and 4.6°F by 2099 under the low-emissions scenario and an increase of 3.9°F by 2050 and 7.9°F by 2099 under the high-emissions scenario.

Increased temperature is expected to lead to secondary climate change impacts, including increases in the frequency, intensity, and duration of extreme heat days and multiday heat waves/events in California. Cal-Adapt defines an extreme heat day in Placer County as one during which the temperature reaches 105.1°F. The temperature of 105.1°F is the criterion used because it is the 98th historical percentile of maximum temperature based on daily temperature data from April through October from 1961 through 1990. Based on temperature data collected from 1961 through 1990, Placer County has a historical average of 4 extreme heat days a year. Placer County has already experienced an increase in the frequency of extreme heat days per year with an average of 8 extreme heat days per year from 2010 through 2017 and with 9 extreme heat days in 2017 (Cal-Adapt 2017).

Cal-Adapt data project a range of projected increases in the number of extreme heat days per year by 2099, all of which are at least four times the historical (1961–1990) average in both emissions scenarios. The projected annual average number of extreme heat days under the low-emissions scenario is approximately 19 days per year in 2050 and 25–29 days per year at the end of the century. Under the high-emissions scenario, Cal-Adapt predicts that Placer County will experience 21 extreme heat days per year in 2050 and 36–45 extreme heat days per year by 2099 (Cal-Adapt 2017).

Buildings constructed in the project area would meet or exceed the 2016 Title 24 building energy standards, which require well-insulated buildings and high-efficiency heating, ventilation, and air conditioning systems.

The California Department of Forestry and Fire Protection (CAL FIRE) produces county maps indicating very-high-fire-hazard severity zones. According to CAL FIRE's map for Placer County, there are no high-fire-risk areas near the project area (CAL FIRE 2008). Wildland fires produce substantial emissions of matter (smoke, soot) that may cause health effects, including restricted breathing and aggravation of existing respiratory and cardiovascular diseases in the short term and alterations to immune systems and cancer from chronic exposure. Particulate matter from wildfire dissipates throughout the Central Valley, degrading air quality conditions for short or extended periods. The period during which wildfire-generated particulate matter remains airborne is a function of wind patterns originating from the Sacramento–San Joaquin Delta. Colloquially known as the “Delta Breeze,” oceanic winds are channeled through the Delta into the Sacramento Valley, including western Placer County, and help disperse air pollutants to the north; however, during approximately half of the days from July through September, a phenomenon called the “Shultz Eddy” prevents this from occurring (SMAQMD 2016:1-8). These natural phenomena affect the severity of wildfire-related air pollution in the project area. During summers 2013 and 2014, several wildfire incidents in northern California resulted in substantially high concentrations of particulate matter in Placer County (Placer County 2016).

The *Placer County General Plan*, which was first adopted in 1994 and most recently updated in 2016, includes the following policies in the Health and Safety Element related to addressing wildfires and mitigating their risks (Placer County 2016):

- ▲ **Policy 8.C.1:** The County shall ensure that development in high-fire-hazard areas is designed and constructed in a manner that minimizes fire risk from fire hazard and meets all applicable state and County fire standards.

- ▲ **Policy 8.C.2:** The County shall require that discretionary permits for new development in fire hazard areas be conditioned to include requirements for fire-resistant vegetation, cleared fire breaks, or a long-term comprehensive fuel management program. Fire hazard reduction measures shall be incorporated into the design of development projects in fire hazard areas.
- ▲ **Policy 8.C.7:** The County shall work with local fire protection agencies, the California Department of Forestry and Fire Protection, and the U.S. Forest Service to promote the maintenance of existing fuel breaks and emergency access routes for effective fire suppression.
- ▲ **Policy 8.C.11:** The County shall continue to work cooperatively with the California Department of Forestry and Fire Protection and local fire protection agencies in managing wildland fire hazards.

As projected in the fire risk models and through the implementation of the policies listed in the County's General Plan, the project area is not located in an area considered to have substantial risk of wildland fires.

Regarding water supply to land uses developed under the project, Placer County Water Agency would be the responsible water purveyor. The water supply assessment prepared by Placer County Water Agency for the project demonstrates that the planned water supplies, in addition to its existing and other future projected water supply obligations, would be sufficient to meet the demands of land uses developed under the project. Water supply was evaluated for normal, single-dry, and multiple-dry years. Placer County's 2015 Urban Water Management Plan projects and evaluates water demands for the County's sphere of influence, which includes the project area. The estimated project water demand at buildout is 8,324 acre-feet per year (AFY). Given that this estimation is 1,332 AFY less than the value identified in the 2015 Urban Water Management Plan, there would be sufficient water supply to meet the needs of the project area.

Regarding the potential for increased risk of flooding, the project area is not located in a coastal zone where an increased threat of flooding may occur because of sea level rise. However, Placer County is vulnerable to riverine flooding. Riverine flooding generally occurs because of prolonged rainfall or rainfall combined with snowmelt and/or already saturated soils from previous rain events. Riverine flooding can occur anytime from November through April and is largely caused by heavy and continued rains. Intense storms may overwhelm local waterways, as well as threaten the integrity of local structures.

Placer County is considered highly likely to experience catastrophic flooding related to riverine flooding. Because the region is relatively flat, has generally low-lying terrain, and has numerous waterways, flooding has historically constituted the most frequent natural hazard experienced by Placer County. Although it is uncertain precisely how and to what extent climate change will affect the frequency and severity of flood events in Placer County, it is reasonable to expect that an increase in flooding could have serious ramifications because the area is already considered vulnerable. More rapid and earlier snowmelt, or increased potential for high-intensity storm events, relative compared to the historical record, could potentially place additional strain on the components of flood control systems (e.g., levees, dams) and increase the likelihood of flooding in Placer County. The project area is not located in the 100-, 200-, or 500-year floodplain maps designed by the Federal Emergency Management Agency (DWR 2008). Further, *Placer County General Plan* Policy 8.B.6 ensures that floodplains are considered in development plans and that new public facilities will not be constructed in the 100-year floodplain. The construction of the Pleasant Grove Retention Facility would reduce downstream flooding risk caused by increased stormwater runoff associated with implementation of the project. The project area would include municipal stormwater drain systems designed appropriately to handle on-site stormwater flows and would include appropriate setback from streams to minimize flood potential. Thus, development of the project area would be sufficiently protected from flood risk.

Development under the project would include cooling features (e.g., energy-efficient buildings) to help it withstand the projected increase in extreme heat days and heat waves. Based on current available data, the project area is not projected to experience a substantial increase in wildland fire risk or flooding because of climate change. Further, water supply to land uses developed under the project would be adequate. SAP and PRSP objectives and policies would neither violate nor conflict with policies and plans

that would reduce the extent and severity of these potential climate change-related effects. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

CUMULATIVE IMPACTS

The discussion of GHG emissions associated with the project and related infrastructure for Impacts 4.7-1 and 4.7-2 is inherently a cumulative impact analysis. GHG emissions from one project cannot, on their own, result in changes in climatic conditions; therefore, the emissions from one project must be considered in the context of their contribution to cumulative global emissions. The analysis of Impact 4.7-1 concluded that the level of construction-related GHG emissions associated with implementation of the project would not exceed PCAPCD's bright line threshold of 10,000 MTCO_{2e}/year and therefore would not be substantial and therefore would not be cumulatively considerable. The analysis of Impact 4.7-2 concluded that the level of operation-related GHG emissions associated with implementation of the project would be substantial and could conflict with the state's ability to meet its statewide GHG targets and, therefore, would be cumulatively considerable. Implementation of on-site GHG reduction measures required by Mitigation Measure 4.7-2a, along with establishment of offsets or purchase of carbon credits, as required by Mitigation Measure 4.7-2b, would not reduce GHG emissions below thresholds for the life of the project, and because of the uncertainty in the availability and affordability of GHG offset credits in the future, the impact remains significant and unavoidable.