

# **Appendix 6-1**

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## Air Quality/Greenhouse Gas Report

# Hope Gardens Expansion Project Air Quality and Global Climate Change Analysis

**Prepared for:**

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c o n s u l t i n g

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# I. INTRODUCTION AND SUMMARY

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## 1. PURPOSE OF ANALYSIS AND STUDY OBJECTIVES

The purpose of this air quality, global climate change, and energy impact analysis is to provide an assessment of the impacts resulting from development of the Hope Gardens Expansion Project and to identify measures that may be necessary to reduce potentially significant impacts. This study was performed to address the possibility of regional/local air quality impacts and global climate change impacts, from project-related air emissions. The objectives of the study include:

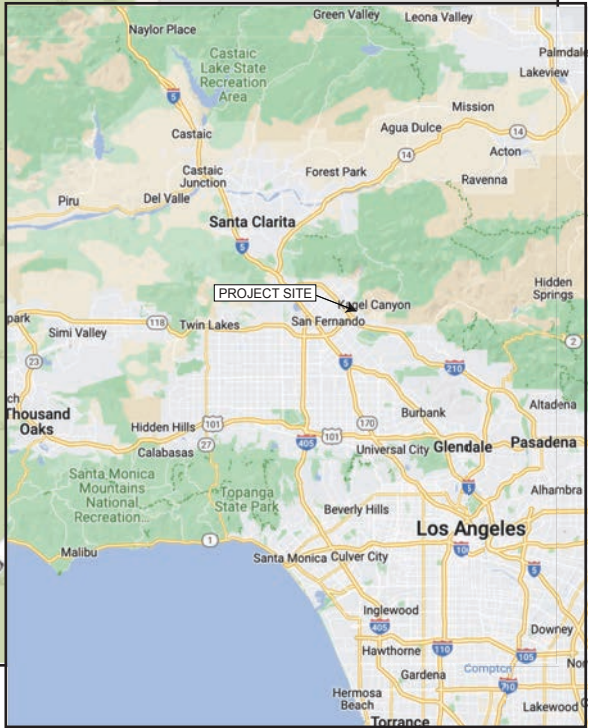
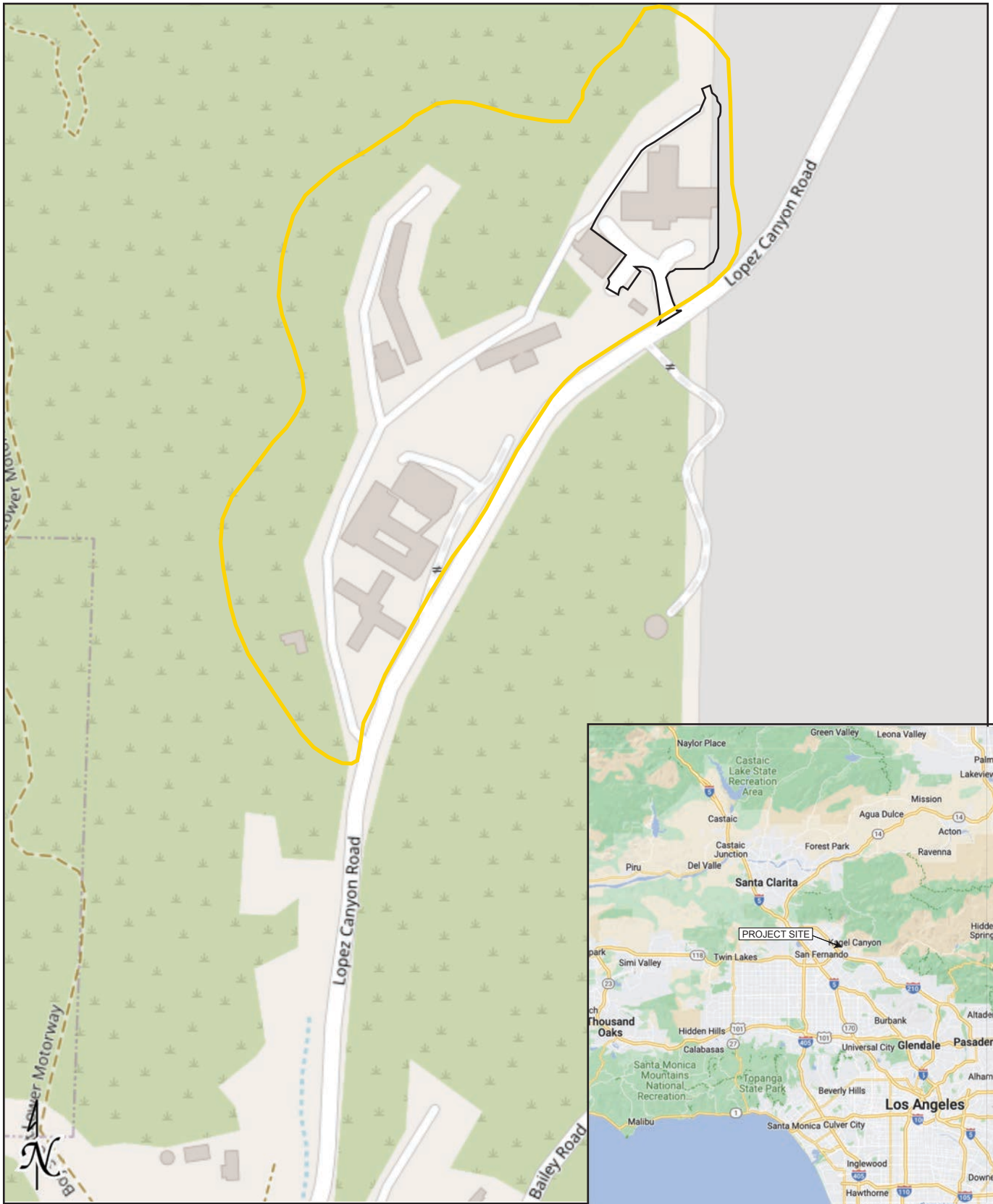
- documentation of the atmospheric setting
- discussion of criteria pollutants and greenhouse gases
- discussion of the air quality and global climate change regulatory framework
- discussion of the air quality and greenhouse gases thresholds of significance
- analysis of the construction related air quality and greenhouse gas emissions
- analysis of the operations related air quality and greenhouse gas emissions
- analysis of the conformity of the proposed project with the SCAQMD AQMP
- analysis of the project's energy use during construction and operation.
- recommendations for mitigation measures

The County of Los Angeles is the lead agency for this air quality, greenhouse gas, and energy analysis, in accordance with the California Environmental Quality Act authorizing legislation. Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with terms unique to air quality and global climate change, a definition of terms has been provided in Appendix A.

## 2. PROJECT LOCATION

The Project Site encompasses approximately 77.4 gross acres in the foothills of the San Gabriel Mountains, adjacent to the Angeles National Forest, in an area known as Lopez Canyon at 12249 Lopez Canyon Road. The Project Site is located on unincorporated County land and is associated with Los Angeles County Assessor's Identification Numbers (AIN) 2846-001-017, -018, -019, and -020. The Development Site includes the Sequoia Lodge building site and surrounding area, which generally encompasses approximately one acre near the rear northeast corner of the Project Site on AIN 2846-001-017. The Development Site also includes the areas of proposed new paving and internal roadway circulation improvements associated with the proposed building.

Regional access to the Project Site is provided by the Foothill Freeway (Interstate 210 [I-210]) and Ronald Reagan Freeway (State Route 118 [SR-118]), approximately one mile to the southwest. Local access to the Project Site is provided by Lopez Canyon Road, which can be accessed from Paxton Street to the south and Kagel Canyon Road to the north. The Project Site is not served by existing public transit service; however, on-site shuttle services are available for residents travelling to and from the Project Site, including during emergencies. A vicinity map showing the project location is provided in **Figure 1, Project Location Map**.



— Project Site  
— Development Site Area  
 Source: OpenStreetMaps, May 2023.

Figure 1  
Project Location Map

### 3. PROJECT DESCRIPTION

The 77.4-gross-acre Project Site is owned and operated by URM, who purchased the property in 2005 and has been operating the Hope Gardens Family Center there since 2007, which consists of multiple structures in a forest camp retreat-like setting. Up until the fall of 2004 and prior to URM's acquisition of the property, the Project Site was used for senior retirement homes, including a convalescent hospital. For the Hope Gardens Family Center, URM utilized the existing buildings and infrastructure previously constructed at the Project Site.

Hope Gardens Family Center provides transitional housing and supportive services to women of all ages experiencing homelessness and their children (under the age of 18). The facility provides a total of 128 living units, including 96 family living units and 25 living units for seniors. The facility does not include any adult male residents. The facility includes support services such as individual counseling, various education and training, childcare, healthcare (including dental and general medical examinations), and youth development. The existing facility includes kitchens, classrooms, congregation, recreation, maintenance, and staff housing. Under the current CUP (approved in 2007 and last modified in 2019), the allowed maximum capacity is 300 formerly homeless women and children. There are full-time staff and volunteers working three shifts, including three staff members who reside onsite full-time and one staff member who resides onsite part-time. Currently, 109 of the 128 living units are occupied with a resident population of 248 individuals, including 79 adults, 146 children, and 23 seniors. Additionally, the facility currently employs 32 individuals.

The Project proposes a new CUP to increase the on-site maximum residential capacity from 300 to 525 formerly homeless single women and their children (less than 18 years old) at the Project Site, and the demolition of the existing one-story, approximately 22,470-square-foot Sequoia Lodge at the Project's Development Site and construct a new, larger multi-use building (hereinafter the "New Sequoia Building") to accommodate the residential capacity increase as well as increase the ability of URM to provide support services and life skills training for residents as they transition from homelessness to a position of financial stability to provide for their own housing.

#### **Proposed Development Site**

The proposed New Sequoia Building would include 3 stories plus a main ground floor basement (owing to the topography and slope of the Development Site) encompassing approximately 106,410 square feet of building space and a covered parking structure in the ground floor basement. The proposed building would consist of 117 living units, supportive services, reception area, case manager area, counseling offices, administrative offices, security office, dental/medical examination rooms, daycare center, computer lab, classroom, multipurpose room, kitchen, communal dining, and an open-air courtyard in the center of the building. As the project would demolish the existing 25-living unit Sequoia Lodge, a total of 92 net living units would be added to the project site for a campuswide total of 213 living units. The typical

housing unit would be 371 square feet and can accommodate up to 4 people. Each living unit would include a bathroom, but kitchens are not included in any living units. All food services for residents would be provided in the first-floor dining room. At present, the most staff on site at any one time is 20 employees, and the Project is anticipated to add approximately 30 more employees during the peak for a total of 50 employees during peak daytime shift.

The healthcare clinic and behavioral health offices would be on the main ground floor. Administration offices, guest common areas, outdoor courtyard, daycare, computer classroom and 12 living units would be on the first floor. An outdoor garden terrace and 53 living units would be on the second floor. Guest common areas, outdoor garden terrace, and 52 living units would be on the third floor. The conceptual site plan and respective floor plans for the New Sequoia Building are shown in Figures 3-9 through 3-13 in Section 3.0, Project Description and Environmental Setting, of the Draft EIR.

The proposed average building height would be 39 feet tall as measured from the first floor's finished floor elevation with a maximum height of 44 feet to the top of the stairwells. The height of the New Sequoia Building, particularly in spatial relationship with surrounding hillsides is shown in Figure 3-14, New Sequoia Building Sections Diagram, in Section 3.0, Project Description and Environmental Setting, of the Draft EIR.

The proposed design of the New Sequoia Building is intended to draw inspiration from the color palette of the surrounding oak woodlands and reflect the Project's location in a mountainous canyon. The building would incorporate architectural rainscreen/exterior cladding system with extruded green metal panels, architectural louver system with metal aluminum louvers and slats with wood-like finish, and a river rock wall assembly/retaining wall.

Development Site improvements also include new paving and resurfacing of internal roadways and hardscapes around the proposed building footprint for circulation and building access as well as widen the existing on-site bridge that is accessed from Lopez Canyon Road at Hope Gardens Access Gate 4 adjacent to the New Sequoia Building.

### **Parking**

The proposed partially subterranean parking structure on the main ground floor basement would provide parking for 22 spaces for staff and visitors, which includes 4 ADA spaces. The parking basement would provide enclosed storage for 11 long-term bicycle parking spaces as well as racks for 6 short-term bicycle parking spaces. Ten surface parking spaces would be reconstructed along the western side of the building just before the fire truck turnaround. In total, 32 parking spaces would be provided in or adjacent to the New Sequoia Building. The existing parking spaces located elsewhere within the Project Site would

continue to be used for staff and general parking for a campuswide post-Project total of 96 parking spaces. **Figure 2, Site Plan**, illustrates the proposed site plan.

### **Project Construction**

The Project would be constructed in one phase over approximately 34 months and is anticipated to commence no sooner than October 2024. The area that would be demolished and disturbed is approximately 80,000 square feet in area (~1.84 acres), which includes the existing 22,470-square-foot Sequoia Lodge and driveways, walkways, parking area, and grading associated with the New Sequoia Building and access. Demolition, grading, bridge widening, and underground utilities are expected to take 10 months to complete. Grading would consist of approximately 3,200 cubic yards of cut and fill that would be balanced on site; no hauling of dirt on or off-site would be required. Building construction from foundations to occupancy is expected to take 24 months to complete. The project is anticipated to be operational in 2027.

### **Temporary Rehousing**

The existing Sequoia Lodge includes 25 living units for senior women. Currently, there are 23 seniors living at the Sequoia Lodge. Senior women living at Sequoia Lodge at the time of construction would be temporarily housed in a vacant living unit on-site, then rehoused in the New Sequoia Building upon completion. If a living unit is not available, other feasible options would be considered as may necessary. No senior woman housed at Sequoia Lodge would be permanently displaced by this Project. URM is committed to continuing to house all affected seniors during Project construction.

## **4. SENSITIVE RECEPTORS IN PROJECT VICINITY**

Those who are sensitive to air pollution include children, the elderly, and people with preexisting respiratory or cardiovascular illness. For purposes of CEQA, the SCAQMD considers a sensitive receptor to be a location where a sensitive individual could remain for 24 hours, such as residences, hospitals, or convalescent facilities (South Coast Air Quality Management District 2008). Commercial and industrial facilities are not included in the definition because employees do not typically remain on-site for 24 hours.

The nearest sensitive receptors to the project site are the single-family residential use located off of Angeles Trail Way and Valley Vista Way, approximately 0.45 miles (725 meters) northwest of the western project boundary and the scattered single-family residential uses located approximately 0.28 miles (443 meters) east of the eastern project boundary. Other air quality sensitive land uses are located further from the project site and would experience lower impacts.

## **5. SUMMARY OF IMPACTS**

### **A. Construction-Source Emissions**

Project construction-source emissions would not exceed applicable regional or local thresholds of significance established by the South Coast Air Quality Management District (SCAQMD).

As discussed herein, the project will comply with all applicable SCAQMD construction-source emission reduction rules and guidelines. Project construction source emissions would not cause or substantively contribute to violation of the California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS) or result in toxic air contaminant (TAC)-related impacts.

Established requirements addressing construction equipment operations, and construction material use, storage, and disposal requirements act to minimize odor impacts that may result from construction activities. Moreover, construction-source odor emissions would be temporary, short-term, and intermittent in nature and would not result in persistent impacts that would affect substantial numbers of people. Potential construction-source odor impacts are therefore considered less than significant.

### **B. Operational-Source Emissions**

The project operational-sourced emissions would not exceed applicable regional or local thresholds of significance established by the SCAQMD. Additionally, project-related trips will not cause or result in CO concentrations exceeding applicable state and/or federal standards (CO “hotspots”). Project operational-source emissions would therefore not adversely affect sensitive receptors within the vicinity of the project.

The project's emissions meet SCAQMD regional thresholds and will not result in a significant cumulative impact. The project does not propose any such uses or activities that would result in potentially significant operational-source toxic air contaminants or odor impacts. Potential operational-source odor impacts are therefore considered less than significant.

### **C. Greenhouse Gases**

The Project's emissions will not exceed the draft SCAQMD GHG emissions threshold of 3,000 MTCO<sub>2</sub>e/year for all land uses. The project will also comply with the goals and strategies of the LA County CCAP; therefore, the project would not conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases and impacts are considered to be less than significant.



Source: Puchlik Design Associates, Inc., January 2020.



Figure 2  
Site Plan

## II. AIR QUALITY ANALYSIS

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### 1. EXISTING AIR QUALITY CONDITIONS

#### A. Local Air Quality

The project site is located in Lopez Canyon in unincorporated Los Angeles County; which is part of the South Coast Air Basin (Basin). The Basin includes all of Orange County and the non-desert portions of Los Angeles, San Bernardino, and Riverside Counties. Bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east, the Basin is an area of high air pollution potential. The regional climate within the Basin is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. Air quality within the Basin is influenced by a wide range of emissions sources—such as dense population centers, heavy vehicular traffic, and industry. Climate change within the Basin is influenced by a wide range of emission sources, such as utility usage, heavy vehicular traffic, industry, and meteorology.

The annual average temperature varies throughout the Basin, ranging from the low to mid 60s to over 100 degrees during the summer, measured in Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas.

The Basin experiences a persistent temperature inversion, which is characterized by increasing temperature with increasing altitude. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer.

Aside from a persistent temperature inversion, the vertical dispersion of air contaminants in the Basin is also affected by wind conditions. The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. Conversely, on days of no inversion or high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas in the Basin are transported eastward, predominantly into Riverside and San Bernardino Counties. Santa Ana winds, which are strong and dry north or northeasterly winds that occur during the fall and winter months, disperse air contaminants differently through the Basin, generally resulting in worse air conditions in the inner basin areas. Santa Ana conditions tend to last for several days at a time. Wind speeds in San Fernando area average about 5.3 to 7.1 miles per hour (mph)<sup>1</sup>.

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<sup>1</sup> *Weather Spark, Average Weather in San Fernando, website: <https://weatherspark.com/y/1723/Average-Weather-in-San-Fernando-California-United-States-Year-Round>*

The majority of annual rainfall in the Basin occurs between December and March. Summer rainfall is minimal and generally limited to scattered thundershowers in coastal regions. The annual average total of rainfall in the San Fernando area is approximately 17 inches<sup>2</sup>.

In the winter, light nocturnal winds result mainly from the drainage of cool air off of the mountains toward the valley floor while the air aloft over the valley remains warm. This forms a type of inversion known as a radiation inversion. Such winds are characterized by stagnation and poor local mixing and trap pollutants such as automobile exhaust near their source. While these inversions may lead to air pollution “hot spots” in heavily developed coastal areas of the basin, there is not enough traffic in inland valleys to cause any winter air pollution problems. Despite light wind conditions, especially at night and in the early morning, winter is generally a period of good air quality in the project vicinity.

The temperature and precipitation levels for the San Fernando area (San Fernando, CA Station), the closest monitoring station to the project site, are shown below in **Table 1, Local Monthly Climate Data**. Table 1 shows that August is typically the warmest month and December is typically the coolest month. Rainfall in the project area varies considerably in both time and space. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April, with summers being almost completely dry.

**Table 1**  
**Local Monthly Climate Data**

| Descriptor   | Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|--|------|------|------|------|------|------|------|------|------|------|------|------|
| Avg. Max. Temperature  | 65.8 | 70.5 | 73.0 | 74.5 | 78.4 | 85.5 | 91.6 | 91.7 | 86.6 | 80.5 | 68.0 | 65.1 |
| Avg. Min. Temperature  | 43.1 | 44.5 | 44.3 | 45.1 | 49.7 | 54.7 | 59.2 | 60.4 | 55.7 | 49.7 | 42.3 | 42.1 |
| Avg. Total Precipitation (in.)   | 3.41 | 2.00 | 1.33 | 0.31 | 0.15 | 0.02 | 0.00 | 0.03 | 0.01 | 0.40 | 1.57 | 2.90 |
| <i>Source: <a href="https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7759">https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7759</a></i><br><i>Data from the San Fernando, CA station (047759) for period 1971 to 2000</i> |      |      |      |      |      |      |      |      |      |      |      |      |

## B. Pollutants

Pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal ambient air quality standards have been established for criteria pollutants, whereas no ambient standards have been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or

<sup>2</sup> *Best Places, Climate in San Fernando, California, website:*  
[https://www.bestplaces.net/weather/city/california/san\\_fernando](https://www.bestplaces.net/weather/city/california/san_fernando)

avoidance of nuisance conditions). A summary of federal and state ambient air quality standards is provided in the Regulatory Framework section.

***i) Criteria Pollutants***

The criteria pollutants consist of: ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide, lead, and particulate matter. These pollutants can harm your health and the environment, and cause property damage. The Environmental Protection Agency (EPA) calls these pollutants “criteria” air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria for setting permissible levels. The following provides descriptions of each of the criteria pollutants.

***ii) Nitrogen Dioxides***

Nitrogen Oxides (NO<sub>x</sub>) is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NO<sub>x</sub> are colorless and odorless, concentrations of nitrogen dioxide (NO<sub>2</sub>) can often be seen as a reddish-brown layer over many urban areas. NO<sub>x</sub> form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NO<sub>x</sub> are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NO<sub>x</sub> reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO<sub>2</sub>, which cause respiratory problems. NO<sub>x</sub> and the pollutants formed from NO<sub>x</sub> can be transported over long distances, following the patterns of prevailing winds. Therefore, controlling NO<sub>x</sub> is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

***iii) Ozone***

Ozone (O<sub>3</sub>) is not usually emitted directly into the air but at ground-level is created by a chemical reaction between NO<sub>x</sub> and volatile organic compounds (VOC) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents as well as natural sources emit NO<sub>x</sub> and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form with the greatest concentrations usually occurring downwind from urban areas. Ozone is subsequently considered a regional pollutant. Ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Because NO<sub>x</sub> and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NO<sub>x</sub> and VOC emissions.

***iv) Carbon Monoxide***

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes about 56 percent of all CO

emissions nationwide. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust.

Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are indoor sources of CO. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air. CO is described as having only a local influence because it dissipates quickly. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease such as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

**v) Sulfur Dioxide**

Sulfur Oxide (SOx) gases (including sulfur dioxide [SO<sub>2</sub>]) are formed when fuel containing sulfur, such as coal and oil is burned, and from the refining of gasoline. SOx dissolve easily in water vapor to form acid and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and the environment.

**vi) Lead**

Lead (Pb) is a metal found naturally in the environment as well as manufactured products. The major sources of lead emissions have historically been motor vehicles and industrial sources. Due to the phase out of leaded gasoline, metal processing is now the primary source of lead emissions to the air. High levels of lead in the air are typically only found near lead smelters, waste incinerators, utilities, and lead-acid battery manufacturers. Exposure of fetuses, infants, and children to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

**vii) Particulate Matter**

Particulate matter (PM) is the term for a mixture of solid particles and liquid droplets found in the air. Particulate matter is made up of a number of components including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. Particles that are less than 10 micrometers in diameter (PM10) are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Particles that are less than 2.5 micrometers in diameter (PM2.5) have been designated as a subset of PM10 due to their increased negative health impacts and its ability to remain suspended in the air longer and travel further.

**viii) Reactive Organic Gases (ROG)**

Although not a criteria pollutant, reactive organic gases (ROGs), or volatile organic compounds (VOCs), are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROGs and VOCs, the two terms are often used interchangeably. Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM10 and lower visibility.

**C. Other Pollutants of Concern****i) Toxic Air Contaminants**

In addition to the above-listed criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. Sources of toxic air contaminants include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least forty different toxic air contaminants. The most important of these toxic air contaminants, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to toxic air contaminants can result from emissions from normal operations as well as from accidental releases. Health effects of toxic air contaminants include cancer, birth defects, neurological damage, and death.

Toxic air contaminants are less pervasive in the urban atmosphere than criteria air pollutants, however they are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of toxic air contaminants with varying degrees of toxicity. Sources

of toxic air contaminants include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to the 2013 California Almanac of Emissions and Air Quality (CARB 2013), the majority of the estimated health risk from toxic air contaminants can be attributed to relatively few compounds, the most important of which is diesel particulate matter (DPM). Diesel particulate matter is a subset of PM<sub>2.5</sub> because the size of diesel particles are typically 2.5 microns and smaller. The identification of diesel particulate matter as a toxic air contaminant in 1998 led the California Air Resources Board (CARB) to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles in September 2000. The plan's goals are a 75-percent reduction in diesel particulate matter by 2010 and an 85-percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or "soot". Diesel exhaust also contains a variety of harmful gases and over 40 other cancer-causing substances. California's identification of diesel particulate matter as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to diesel particulate matter is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's potential airborne cancer risk from combustion sources.

## ***ii) Asbestos***

Asbestos is listed as a TAC by the ARB and as a Hazardous Air Pollutant by the EPA. Asbestos occurs naturally in mineral formations and crushing or breaking these rocks, through construction or other means, can release asbestiform fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma. Naturally occurring asbestos is not present in Los Angeles County. The nearest likely locations of naturally occurring asbestos, as identified in the General Location Guide for Ultramafic Rocks in California prepared by the California Division of Mines and Geology, is located at Asbestos Mountain in the San Jacinto Valley, over 120 miles southeast of the site. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

## **2. REGULATORY SETTING**

The proposed project is addressed through the efforts of various international, federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality

through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality are discussed below.

#### **A. Federal – United States Environmental Protection Agency**

The EPA is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The NAAQS pollutants were identified using medical evidence and are shown below in **Table 2, State and Federal Criteria Pollutant Standards**.

The EPA and the California Air Resource Board (CARB) designate air basins where ambient air quality standards are exceeded as “nonattainment” areas. If standards are met, the area is designated as an “attainment” area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered “unclassified.” National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or ‘form’ of what constitutes attainment, based on specific air quality statistics. For example, the Federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the Federal annual PM2.5 standard is met if the three-year average of the annual average PM2.5 concentration is less than or equal to the standard. Attainment status is shown in **Table 3, South Coast Air Basin Attainment Status**.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The SIP must integrate federal, state, and local components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the SIP.

As indicated below in Table 3, the South Coast Air Basin has been designated by the EPA as a non-attainment area for ozone (O<sub>3</sub>) and suspended particulates (PM<sub>10</sub>). Currently, the Basin is in attainment with the ambient air quality standards for carbon monoxide (CO), lead, sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>) and particulate matter (PM<sub>2.5</sub>).

**Table 2**  
**State and Federal Criteria Pollutant Standards**

| Air Pollutant                                     | Concentration / Averaging Time  |   | Most Relevant Effects  |
|---|---|---|--|
|   | California Standards  | Federal Primary Standards                                     |  |
| Ozone (O <sub>3</sub> )                           | 0.09 ppm/1-hour<br>0.07 ppm/8-hour  | 0.070 ppm/8-hour  | (a) Decline in pulmonary function and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; and (f) Property damage. |
| Carbon Monoxide (CO)                              | 20.0 ppm/1-hour<br>9.0 ppm/8-hour   | 35.0 ppm/1-hour<br>9.0 ppm/8-hour                             | (a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses.   |
| Nitrogen Dioxide (NO <sub>2</sub> )               | 0.18 ppm/1-hour<br>0.03 ppm/annual  | 100 ppb/1-hour<br>0.053 ppm/annual                            | (a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration.  |
| Sulfur Dioxide (SO <sub>2</sub> )                 | 0.25 ppm/1-hour<br>0.04 ppm/24-hour   | 75 ppb/1-hour<br>0.14 ppm/annual                              | (a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.  |
| Suspended Particulate Matter (PM <sub>10</sub> )  | 50 µg/m <sup>3</sup> /24-hour<br>20 µg/m <sup>3</sup> /annual   | 150 µg/m <sup>3</sup> /24-hour                                | (a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; (c) Increased risk of premature death from heart or lung diseases in elderly.  |
| Suspended Particulate Matter (PM <sub>2.5</sub> ) | 12 µg/m <sup>3</sup> / annual   | 35 µg/m <sup>3</sup> /24-hour<br>12 µg/m <sup>3</sup> /annual |  |
| Sulfates  | 25 µg/m <sup>3</sup> /24-hour   | No Federal Standards  | (a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) property damage.   |
| Lead  | 1.5 µg/m <sup>3</sup> /30-day   | 0.15 µg/m <sup>3</sup> /3-month rolling                       | (a) Learning disabilities; (b) Impairment of blood formation and nerve conduction.   |
| Visibility Reducing Particles                     | Extinction coefficient of 0.23 per kilometer-visibility of 10 miles or more due to particles when humidity is less than 70 percent. | No Federal Standards  | Visibility impairment on days when relative humidity is less than 70 percent.  |

Source: <http://www3.epa.gov/climatechange/ghgemissions/gases.html>.

**Table 3**  
**South Coast Air Basin Attainment Status**

| <b>Pollutant</b>   | <b>State Status</b> | <b>National Status</b>   |
|--|---------------------|--------------------------|
| Ozone  | Nonattainment       | Nonattainment (Extreme)  |
| Carbon monoxide  | Attainment          | Attainment/Unclassified  |
| Nitrogen dioxide   | Attainment          | Attainment/Unclassified  |
| Sulfur dioxide   | Attainment          | Attainment/Unclassified  |
| PM10   | Nonattainment       | Attainment (Maintenance) |
| PM2.5  | Nonattainment       | Nonattainment (Moderate) |
| <i>Source (Federal and State Status): California Air Resources Board, November 2022.</i> |                     |                          |

### **B. State – California Air Resources Board**

The CARB, which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. The CAAQS for criteria pollutants are shown in Table 2. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

The SCAQMD-portion of the South Coast Air Basin (SCAB) has been designated by the CARB as a nonattainment area for ozone, PM10 and PM2.5. Currently, the SCAB is in attainment with the ambient air quality standards for CO, lead, SO<sub>2</sub>, NO<sub>2</sub>, and sulfates and is unclassified for visibility reducing particles and Hydrogen Sulfide.

On June 20, 2002, the CARB revised the PM10 annual average standard to 20 µg/m<sup>3</sup> and established an annual average standard for PM2.5 of 12 µg/m<sup>3</sup>. These standards were approved by the Office of Administrative Law in June 2003 and are now effective. On September 27, 2007 CARB approved the South Coast Air Basin and the Coachella Valley 2007 Air Quality Management Plan for Attaining the Federal 8-hour Ozone and PM2.5 Standards. The plan projects attainment for the 8-hour Ozone standard by 2024 and the PM2.5 standard by 2015.

On December 12, 2008 the CARB adopted Resolution 08-43, which limits NO<sub>x</sub>, PM10 and PM2.5 emissions from on-road diesel truck fleets that operate in California. On October 12, 2009 Executive Order R-09-010 was adopted that codified Resolution 08-43 into Section 2025, Title 13 of the California Code of Regulations. This regulation requires that by the year 2023 all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4) or latter emission standards. In the interim period, this regulation provides annual interim targets for fleet owners to meet. This regulation also provides a few exemptions including a once-per-year 3-day pass for trucks registered outside of California.

The CARB is also responsible for regulations pertaining to toxic air contaminants. The Air Toxics “Hot Spots” Information and Assessment Act (AB 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release into the South Coast Air Basin. The data is ranked by high, intermediate, and low categories, which are determined by: the potency, toxicity, quantity, volume, and proximity of the facility to nearby receptors.

***i) AB 617 Nonvehicular Air Pollution: Criteria Air Pollutants and Toxic Air Contaminants***

This bill requires the state board to develop a uniform statewide system of annual reporting of emissions of criteria air pollutants and toxic air contaminants for use by certain categories of stationary sources. The bill requires those stationary sources to report their annual emissions of criteria air pollutants and toxic air contaminants, as specified. This bill required the state board, by October 1, 2018, to prepare a monitoring plan regarding technologies for monitoring criteria air pollutants and toxic air contaminants and the need for and benefits of additional community air monitoring systems, as defined. The bill requires the state board to select, based on the monitoring plan, the highest priority locations in the state for the deployment of community air monitoring systems. The bill requires an air district containing a selected location, by July 1, 2019, to deploy a system in the selected location. The bill would authorize the air district to require a stationary source that emits air pollutants in, or that materially affect, the selected location to deploy a fence-line monitoring system, as defined, or other specified real-time, on-site monitoring. The bill authorizes the state board, by January 1, 2020, and annually thereafter, to select additional locations for the deployment of the systems. The bill would require air districts that have deployed a system to provide to the state board air quality data produced by the system. By increasing the duties of air districts, this bill would impose a state-mandated local program. The bill requires the state board to publish the data on its Internet Web site.

**C. Regional**

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. To that end, as a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

***i) SCAG***

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. Although SCAG is not an air quality management agency, it is

responsible for developing transportation, land use, and energy conservation measures that affect air quality. SCAG's 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) identifies growth forecasts that are used in the development of air quality-related land use and transportation control strategies by the South Coast Air Quality Management District.

On April 7, 2016, SCAG's Regional Council adopted the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS or Plan). The Plan is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The Plan charts a course for closely integrating land use and transportation – so that the region can grow smartly and sustainably. It outlines more than \$556.5 billion in transportation system investments through 2040. The Plan was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses, and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. In June 2016, SCAG received its conformity determination from the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) indicating that all air quality conformity requirements for the 2016 RTP/SCS and associated 2015 FTIP Consistency Amendment through Amendment 15-12 have been met.

On May 7, 2020, SCAG's Regional Council adopted Connect SoCal (2020 - 2045 Regional Transportation Plan/Sustainable Communities Strategy) for federal transportation conformity purposes only. In light of the COVID-19 pandemic, the Regional Council will consider approval of Connect SoCal in its entirety and for all other purposes within 120 days from May 7, 2020. Connect SoCal is a long-range visioning plan that builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. Connect SoCal outlines more than \$638 billion in transportation system investments through 2045. It was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura.

**ii) South Coast Air Quality Management District (SCAQMD)**

The SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. The SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. It has responded to this requirement by preparing a sequence of AQMPs.

## **1) AQMP**

On June 30, 2016, the SCAQMD released its Draft 2016 AQMP. The 2016 AQMP is a regional blueprint for achieving the federal air quality standards and healthful air. The 2016 AQMP includes both stationary and mobile source strategies to ensure that rapidly approaching attainment deadlines are met, that public health is protected to the maximum extent feasible, and that the region is not faced with burdensome sanctions if the Plan is not approved or if the NAAQS are not met on time. As with every AQMP, a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures is updated with the latest data and methods. The most significant air quality challenge in the Basin is to reduce nitrogen oxide (NOx) emissions sufficiently to meet the upcoming ozone standard deadlines. On March 23, 2017 the CARB approved the 2016 AQMP. The primary goal of this Air Quality Management Plan is to meet clean air standards and protect public health, including ensuring benefits to environmental justice and disadvantaged communities. The Plan was approved by the EPA on June 15, 2017.

Every three (3) years the SCAQMD prepares a new AQMP, updating the previous plan and having a 20-year horizon. In May 2022, the SCAQMD completed the 2022 Draft AQMP. The 2022 Draft AQMP is focused on attaining the 2015 8-hour ozone standard (70 ppb) for the South Coast Air Basin and Coachella Valley. The Draft 2022 AQMP builds upon measures already in place from previous AQMPs. It also includes a variety of additional strategies such as regulation, accelerated deployment of available cleaner technologies (e.g., zero emission technologies, when cost-effective and feasible, and low NOx technologies in other applications), best management practices, co-benefits from existing programs (e.g., climate and energy efficiency), incentives, and other CAA measures to achieve the 2015 8-hour ozone standard. The 2022 AQMP was adopted December 2, 2022, by SCAQMD Governing Board. The 2022 AQMP was approved and adopted by CARB on January 26, 2023. The 2022 AQMP strategy includes the following:<sup>3</sup>

- Wide adoption of zero emissions technologies anywhere available.
- Low NOx technologies where zero emissions aren't feasible.
- Federal Action.
- Zero emissions technologies for residential and industrial sources such as water and space heaters in buildings and homes regionwide.
- Incentive funding in environmental justice areas.
- Prioritize benefits on the most disadvantaged communities.

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<sup>3</sup> SCAQMD 2022 AQMP Infographic. <http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/2022-aqmp-infographic>

**2) SCAQMD Rules**

During construction and operation, the project must comply with applicable rules and regulations. The following are rules that the project may be required to comply with, either directly, or indirectly:

**a) SCAQMD Rule 402**

Prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

**b) SCAQMD Rule 403**

Governs emissions of fugitive dust during construction and operation activities. Compliance with this rule is achieved through application of standard Best Management Practices, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph, and establishing a permanent ground cover on finished sites.

Rule 403 requires that fugitive dust be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off-site. Applicable dust suppression techniques from Rule 403 are summarized below. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus the PM<sub>10</sub> component). Compliance with these rules would reduce impacts on nearby sensitive receptors. Rule 403 measures may include but are not limited to the following:

- Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
- Water active sites at least three times daily. (Locations where grading is to occur will be thoroughly watered prior to earthmoving.)
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 0.6 meters (2 feet) of freeboard (vertical space between the top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code section 23114.

**c) SCAQMD Rule 445**

Prohibits permanently installed wood burning devices into any new development. A wood burning device means any fireplace, wood burning heater, or pellet-fueled wood heater, or any similarly enclosed,

permanently installed, indoor or outdoor device burning any solid fuel for aesthetic or space-heating purposes, which has a heat input of less than one million British thermal units per hour.

***d) SCAQMD Rule 481***

Applies to all spray painting and spray coating operations and equipment. The rule states that a person shall not use or operate any spray painting or spray coating equipment unless one of the following conditions is met:

- (1) The spray coating equipment is operated inside a control enclosure, which is approved by the Executive Officer. Any control enclosure for which an application for permit for new construction, alteration, or change of ownership or location is submitted after the date of adoption of this rule shall be exhausted only through filters at a design face velocity not less than 100 feet per minute nor greater than 300 feet per minute, or through a water wash system designed to be equally effective for the purpose of air pollution control.
- (2) Coatings are applied with high-volume low-pressure, electrostatic, and/or airless spray equipment.
- (3) An alternative method of coating application or control is used which has effectiveness equal to or greater than the equipment specified in the rule.

***e) SCAQMD Rule 1108***

Governs the sale, use, and manufacturing of asphalt and limits the volatile organic compound (VOC) content in asphalt used in the South Coast Air Basin. This rule would regulate the VOC content of asphalt used during construction. Therefore, all asphalt used during construction of the project must comply with SCAQMD Rule 1108.

***f) SCAQMD Rule 1113***

Governs the sale, use, and manufacturing of architectural coating and limits the VOC content in paints and paint solvents. This rule regulates the VOC content of paints available during construction. Therefore, all paints and solvents used during construction and operation of the project must comply with SCAQMD Rule 1113.

***g) SCAQMD Rule 1143***

Governs the manufacture, sale, and use of paint thinners and solvents used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations by limiting their VOC content. This rule regulates the VOC content of solvents used during construction. Solvents used during the construction phase must comply with this rule.

***h) SCAQMD Rule 1186***

Limits the presence of fugitive dust on paved and unpaved roads and sets certification protocols and requirements for street sweepers that are under contract to provide sweeping services to any federal, state, county, agency, or special district such as water, air, sanitation, transit, or school district.

***i) SCAQMD Rule 1403***

Asbestos Emissions from Demolition/Renovation Activities, specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials (ACM).

***3) SCAQMD and CEQA***

Although the SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate air quality issues associated with plans and new development projects throughout the South Coast Air Basin. Instead, this is controlled through local jurisdictions in accordance with the California Environmental Quality Act (CEQA). In order to assist local jurisdictions with air quality compliance issues the CEQA Air Quality Handbook (SCAQMD CEQA Handbook) prepared by the SCAQMD (1993) with the most current updates found at <http://www.aqmd.gov/ceqa/hdbk.html>, was developed in accordance with the projections and programs of the AQMP. The purpose of the SCAQMD CEQA Handbook is to assist Lead Agencies, as well as consultants, project proponents, and other interested parties in evaluating a proposed project's potential air quality impacts. Specifically, the SCAQMD CEQA Handbook explains the procedures that the SCAQMD recommends be followed for the environmental review process required by CEQA. The SCAQMD CEQA Handbook provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant, and how to mitigate these impacts. SCAQMD is in the process of developing an "Air Quality Analysis Guidance Handbook" to replace the CEQA Air Quality Handbook approved by the AQMD Governing Board in 1993. The 1993 CEQA Air Quality Handbook is still available but not online. In addition, there are sections of the 1993 Handbook that are obsolete. In order to assist the CEQA practitioner in conducting an air quality analysis while the new Handbook is being prepared, supplemental information regarding: significance thresholds and analysis, emissions factors, cumulative impacts emissions analysis, and other useful subjects, are available at the SCAQMD website<sup>4</sup>.

**D. Local – County of Los Angeles**

Local jurisdictions, such as the County of Los Angeles, have the authority and responsibility to reduce air pollution through its police power and decision-making authority. Specifically, the County is responsible

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<sup>4</sup> <http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook>.

for the assessment and mitigation of air emissions resulting from its land use decisions. The County is also responsible for the implementation of transportation control measures as outlined in the 2022 AQMP and SCAQMD Attainment Plans. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, the County assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

### 3. MONITORED AIR QUALITY

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin. Estimates of the existing emissions in the Basin provided in the Final 2022 Air Quality Management Plan prepared by SCAQMD (December 2022) indicate that collectively, mobile sources account for 46 percent of the VOC, 85 percent of the NO<sub>x</sub> emissions, 89 percent of the CO emissions and 29 percent of directly emitted PM<sub>2.5</sub>, with another 18 percent of PM<sub>2.5</sub> from road dust.

The EPA and the ARB designate air basins where ambient air quality standards are exceeded as “nonattainment” areas. If standards are met, the area is designated as an “attainment” area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered “unclassified”. National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or ‘form’ of what constitutes attainment, based on specific air quality statistics. For example, the Federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the Federal annual PM<sub>2.5</sub> standard is met if the three-year average of the annual average PM<sub>2.5</sub> concentration is less than or equal to the standard. Attainment status is shown in **Table 4, Air Quality Monitoring Summary**.

**Table 4**  
**Air Quality Monitoring Summary**

| Pollutant (Standard) <sup>1</sup> |                                    | Year      |           |           |
|-----------------------------------|------------------------------------|-----------|-----------|-----------|
|                                   |                                    | 2019      | 2020      | 2021      |
| Ozone:                            | Maximum 1-Hour Concentration (ppm) | 0.122     | 0.142     | 0.110     |
|                                   | Days > CAAQS (0.09 ppm)            | <b>14</b> | <b>33</b> | <b>4</b>  |
|                                   | Maximum 8-Hour Concentration (ppm) | 0.094     | 0.115     | 0.083     |
|                                   | Days > NAAQS/CAAQS (0.070 ppm)     | <b>34</b> | <b>62</b> | <b>31</b> |
| Carbon Monoxide:                  | Maximum 8-Hour Concentration (ppm) | *         | *         | *         |
|                                   | Days > CAAQS (9 ppm)               | 0         | 0         | 0         |
|                                   | Days > NAAQS (9 ppm)               | 0         | 0         | 0         |

**Table 4**  
**Air Quality Monitoring Summary**

| Pollutant (Standard) <sup>1</sup>           |  | Year      |           |           |
|---|--|-----------|-----------|-----------|
|   |  | 2019      | 2020      | 2021      |
| Nitrogen Dioxide:                           | Maximum 1-Hour Concentration (ppm)                 | 0.064     | 0.050     | 0.054     |
|   | Days > CAAQS (0.18 ppm)                            | 0         | 0         | 0         |
| Inhalable Particulates (PM10): <sup>2</sup> | Maximum 24-Hour Concentration (µg/m <sup>3</sup> ) | 93.9      | 185.2     | 138.5     |
|   | Days > NAAQS (150 µg/m <sup>3</sup> )              | 0         | *         | 0         |
|   | Days > CAAQS (50 µg/m <sup>3</sup> )               | <b>15</b> | <b>34</b> | <b>14</b> |
|   | Annual Average (µg/m <sup>3</sup> )                | 34.0      | 34.0      | 34.0      |
| Ultra-Fine Particulates (PM2.5):            | Maximum 24-Hour Concentration (µg/m <sup>3</sup> ) | 30.0      | 73.8      | 55.5      |
|   | Days > NAAQS (35 µg/m <sup>3</sup> )               | 0         | <b>3</b>  | <b>3</b>  |
|   | Annual Average (µg/m <sup>3</sup> )                | 11.9      | 11.0      | 11.6      |

*Notes:*  
Source: <http://www.arb.ca.gov/adam/topfour/topfour1.php>. Data from the Reseda 18330 Gault Street Monitoring Station, unless otherwise noted.  
(1) CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million  
(2) Data obtained from the Los Angeles - North Main Street Station.  
\* Means there was insufficient data available to determine value.

The SCAQMD has divided the South Coast Air Basin into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project site is located in the San Gabriel Mountains Source Receptor Area (SRA 15). The nearest air monitoring station to the project site is the 18330 Gault Street Monitoring Station (Reseda Station). The Reseda Station is located approximately 10.5 miles southwest of the project site. Table 4 presents the monitored pollutant levels from the Reseda Station. However, it should be noted that due to the air monitoring station distance from the project site, recorded air pollution levels at the air monitoring station reflect with varying degrees of accuracy, local air quality conditions at the project site. As PM-10 data was not available for the Reseda station, data was obtained from the Los Angeles- North Main Street Station.

Table 4 summarizes 2019 through 2021 published monitoring data, which is the most recent 3-year period available. The data shows that during the past few years, the project area has exceeded the State ozone and Particulate Matter (PM10) standards.

#### **A. Ozone**

During the 2019 to 2021 monitoring period, the State 1-hour concentration standard for ozone was exceeded between 4 and 33 days at the Reseda Station. The State/Federal 8-hour ozone standard has been exceeded between 31 and 62 days each year over the past three years at the Reseda Station. Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO<sub>2</sub>, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant

concentrations experienced in the area. Many areas of the SCAQMD contribute to the ozone levels experienced at the monitoring station, with the more significant areas being those directly upwind.

#### **B. Carbon Monoxide**

CO is another important pollutant that is due mainly to motor vehicles. The Reseda Station did not record an exceedance of the state or federal 8-hour CO standard for the last three years.

#### **C. Nitrogen Dioxide**

The Reseda Station did not record an exceedance of the State or Federal NO<sub>2</sub> standards for the last three years.

#### **D. Particulate Matter**

From 2019 to 2021, the State 24-hour concentration standards for PM<sub>10</sub> was exceeded between 14 and 34 days at the Reseda Station. There was insufficient data to determine the number of days the Federal standards for PM<sub>10</sub> were exceeded. Over the past three years, the Federal 24-hour standards for PM<sub>2.5</sub> was exceeded for 3 days at the Reseda Station.

According to the EPA, some people are much more sensitive than others to breathing fine particles (PM<sub>10</sub> and PM<sub>2.5</sub>). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death due to breathing these fine particles. People with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in PM<sub>10</sub> and PM<sub>2.5</sub>. Other groups considered sensitive are smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive, because many breathe through their mouths during exercise.

### **4. AIR QUALITY STANDARDS**

#### **A. Significance Thresholds**

##### ***i) Appendix G of the State CEQA Guidelines***

Appendix G of the State CEQA Guidelines states that, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make a significance determination. Pursuant to Appendix G, the project would result in a significant impact related to air quality if it would:

- Conflict with or obstruct the implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard;

- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The CEQA Guidelines Section 15064.7 provides the significance criteria established by the applicable air quality management district or air pollution control district, when available, may be relied upon to make determinations of significance. The potential air quality impacts of the Project are, therefore, evaluated according to thresholds developed by SCAQMD in their CEQA Air Quality Handbook, Air Quality Analysis Guidance Handbook, and subsequent guidance, which are listed below.<sup>5</sup> Therefore, the project would result in a potentially significant impact to air quality if it would:

AIR-1: Conflict with or obstruct the implementation of the applicable air quality plan;

AIR-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation as a result of:

- Criteria pollutant emissions during construction (direct and indirect) in excess of the SCAQMD's regional significance thresholds,
- Criteria pollutant emissions during operation (direct and indirect) in excess of the SCAQMD's regional significance thresholds.

AIR-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

AIR-4: Expose sensitive receptors to substantial pollutant concentrations that would:

- Exceed SCAQMD's localized significance thresholds,
- Cause or contribute to the formation of CO hotspots.

AIR-5: Create objectionable odors affecting a substantial number of people.

## **B. Regional Air Quality**

Many air quality impacts that derive from dispersed mobile sources, which are the dominate pollution generators in the basin, often occurs hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual project is generally very small and difficult to measure. Therefore, the SCAQMD has developed significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. The SCAQMD CEQA Handbook states that any project in the South Coast

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<sup>5</sup> *While the SCAQMD CEQA Air Quality Handbook contains significance thresholds for lead, Project construction and operation would not include sources of lead emissions and would not exceed the established thresholds for lead. Unleaded fuel and unleaded paints have virtually eliminated lead emissions from industrial land use projects such as the Project. As a result, lead emissions are not further evaluated herein.*

Air Basin with daily emissions that exceed any of the identified significance thresholds should be considered as having an individually and cumulatively significant air quality impact. For the purposes to this air quality impact analysis, a regional air quality impact would be considered significant if emissions exceed the SCAQMD significance thresholds identified in **Table 5, SCAQMD Air Quality Significance Thresholds**.

**Table 5**  
**SCAQMD Air Quality Significance Thresholds**

| <b>Mass Daily Thresholds</b>   |  |                            |
|--|--|----------------------------|
| <b>Pollutant</b>   | <b>Construction (lbs/day)</b>  | <b>Operation (lbs/day)</b> |
| NOx  | 100  | 55                         |
| VOC  | 75   | 55                         |
| PM10   | 150  | 150                        |
| PM2.5  | 55   | 55                         |
| SOx  | 150  | 150                        |
| CO   | 550  | 550                        |
| Lead   | 3  | 3                          |
| <b>Toxic Air Contaminants, Odor and GHG Thresholds</b>   |  |                            |
| TACs   | Maximum Incremental Cancer Risk $\geq 10$ in 1 million<br>Cancer Burden $> 0.5$ excess cancer cases (in areas $\geq 1$ in 1 million)<br>Chronic & Acute Hazard Index $> 1.0$ (project increment) |                            |
| Odor   | Project creates an odor nuisance pursuant to SCAQMD Rule 402   |                            |
| GHG  | 10,000 MT/yr CO <sub>2</sub> e for industrial projects   |                            |
| <b>Ambient Air Quality Standards</b>   |  |                            |
| <b>Pollutant</b>   | <b>SCAQMD Standards</b>  |                            |
| NO <sub>2</sub> -1-hour average  | 0.18 ppm (338 $\mu\text{g}/\text{m}^3$ )   |                            |
| Annual arithmetic mean   | 0.03 ppm (state) and 0.0534 (federal)  |                            |
| PM10 -24-hour average  |  |                            |
| Construction   | 10.4 $\mu\text{g}/\text{m}^3$  |                            |
| Operations   | 2.5 $\mu\text{g}/\text{m}^3$   |                            |
| Annual average   | 1.0 $\mu\text{g}/\text{m}^3$   |                            |
| PM2.5 -24-hour average   |  |                            |
| Construction   | 10.4 $\mu\text{g}/\text{m}^3$  |                            |
| Operations   | 2.5 $\mu\text{g}/\text{m}^3$   |                            |
| SO <sub>2</sub>  |  |                            |
| 1-hour average   | 0.25 ppm (state) and 0.075 ppm (federal – 99 <sup>th</sup> percentile)   |                            |
| 24-hour average  | 0.04 ppm (state)   |                            |
| CO   |  |                            |
| 1-hour average   | 20 ppm (23,000 $\mu\text{g}/\text{m}^3$ )  |                            |
| 8-hour average   | 9 ppm (10,000 $\mu\text{g}/\text{m}^3$ )   |                            |
| Lead   |  |                            |
| 30-day average   | 1.5 $\mu\text{g}/\text{m}^3$   |                            |
| Rolling 3-month average  | 0.15 $\mu\text{g}/\text{m}^3$  |                            |
| Quarterly average  | 1.5 $\mu\text{g}/\text{m}^3$   |                            |
| <i>Source: <a href="http://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf?sfvrsn=25">http://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf?sfvrsn=25</a></i> |  |                            |

### C. Local Air Quality and Localized Significance Thresholds

Project-related construction air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. In order to assess local air quality impacts the SCAQMD has developed Localized Significance Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. The SCAQMD has also provided Final Localized Significant Threshold Methodology (LST Methodology), June 2003 (revised July 2008), which details the methodology to analyze local air emission impacts. The Localized Significant Threshold Methodology found that the primary emissions of concern are NO<sub>2</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub>.

The significance thresholds for the local emissions of NO<sub>2</sub> and CO are determined by subtracting the highest background concentration from the last three years of these pollutants from Table 4 above, from the most restrictive ambient air quality standards for these pollutants that are outlined in the Localized Significant Thresholds. Table 5 shows the ambient air quality standards for NO<sub>2</sub>, CO, and PM<sub>10</sub> and PM<sub>2.5</sub>.

### D. Toxic Air Contaminants (TACs)

#### i) Construction

Temporary TAC emissions associated with DPM emissions from heavy construction equipment would occur during the construction phase of the Project. According to the Office of Environmental Health Hazard Assessment (OEHHA)<sup>6</sup> and the SCAQMD *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis* (August 2003),<sup>7</sup> health effects from TACs are described in terms of individual cancer risk. “Individual Cancer Risk” is the likelihood that a person exposed to concentrations of TACs over a 30-year lifetime will contract cancer based on the use of standard risk-assessment methodology. Additionally, the SCAQMD CEQA guidance does not require a HRA for short-term construction emissions. Construction activities associated with the project would be sporadic, transitory, and short-term in nature (approximately 34 months). Thus, construction of the project would not result in a substantial, long-term (i.e., 30-year) source of TAC emissions. Nonetheless, a qualitative assessment of TAC emissions associated with short-term construction TAC emissions is provided in the analysis section below.

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<sup>6</sup> Office of Environmental Health Hazard Assessment, *Air Toxic Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessment*, February 2015, <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>.

<sup>7</sup> South Coast Air Quality Management District, *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*, August 2003, <http://www.aqmd.gov/docs/default-source/ceqa/handbook/mobile-source-toxics-analysis.doc?sfvrsn=2>.

**ii) Operation**

CARB published the *Air Quality and Land Use Handbook* in April 2005 to serve as a general guide for considering impacts to sensitive receptors from facilities that emit TAC emissions. The recommendations provided therein are voluntary and do not constitute a requirement or mandate for either land use agencies or local air districts. The goal of the guidance document is to protect sensitive receptors, such as children, the elderly, acutely ill, and chronically ill persons, from exposure to TAC emissions. Some examples of CARB's siting recommendations include the following: (1) avoid siting sensitive receptors within 500 feet of a freeway, urban road with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day; (2) avoid siting sensitive receptors within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units per day, or where transport refrigeration unit operations exceed 300 hours per week); (3) avoid siting sensitive receptors within 300 feet of any dry cleaning operation using perchloroethylene and within 500 feet of operations with two or more machines; and (4) avoid siting sensitive receptors within 300 feet of a large gasoline dispensing facility (3.6 million gallons per year or more) or 50 feet of a typical gasoline dispensing facility (less than 3.6 million gallons per year). The project proposes residential uses, is located over a mile (5,775 feet) from the 210 freeway, and will not be located near any distribution centers, dry cleaners, or gas stations; therefore, operational TAC-related impacts are not anticipated.

**E. Odor Impacts**

The SCAQMD CEQA Handbook states that an odor impact would occur if the proposed project creates an odor nuisance pursuant to SCAQMD Rule 402, which states:

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

If the proposed project results in a violation of Rule 402 with regards to odor impacts, then the proposed project would create a significant odor impact.

**5. SHORT-TERM CONSTRUCTION EMISSIONS**

Construction activities associated with the proposed project would have the potential to generate air emissions, toxic air contaminant emissions, and odor impacts. Assumptions for the phasing, duration, and required equipment for the construction of the proposed project were obtained from the project applicant. The construction activities for the proposed project are anticipated to include: demolition of an

existing 22,470 SF building and approximately 58,300 square feet (SF) of existing paving<sup>8</sup> site preparation, construction of a 106,410 SF, 117-unit homeless care facility, 22-space, approximately 8,800 SF subterranean parking garage, approximately 0.5 acres of paving, and application of architectural coatings. See Appendix A for more details.

The proposed project is anticipated to start construction no sooner than October 2024 and take approximately 34 months to complete. The project is anticipated to be operational in 2027.

### **A. Methodology**

The following provides a discussion of the methodology used to calculate regional construction air emissions and an analysis of the proposed project's short-term construction emissions for the criteria pollutants. The construction-related regional air quality impacts have been analyzed for both criteria pollutants and GHGs.

Emissions are estimated using the CalEEMod (Version 2022.1.1.13) software, which is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions from a variety of land use projects. CalEEMod was developed in collaboration with the air districts of California. Regional data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions. The model is considered to be an accurate and comprehensive tool for quantifying air quality and GHG impacts from land use projects throughout California.

Daily regional emissions during construction are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile source and fugitive dust emissions factors. The input values used in this analysis were adjusted to be project-specific for the construction schedule and the equipment used was based on CalEEMod defaults. The CalEEMod program uses the EMFAC2021 computer program to calculate the emission rates specific for Los Angeles County for construction-related employee vehicle trips and the OFFROAD2017 computer program to calculate emission rates for heavy truck operations. EMFAC2021 and OFFROAD2017 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour. Daily truck trips and CalEEMod default trip length data were used to assess roadway emissions from truck exhaust. The maximum daily emissions are estimated values for the worst-case day and do not represent the emissions that would occur for every day of project construction. The maximum daily

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<sup>8</sup> *Parking lot is assumed to be 0.3 feet thick, which would yield 394 tons of asphalt.*

emissions are compared to the SCAQMD daily regional numeric indicators. Detailed construction equipment lists, construction scheduling, and emission calculations are provided in Appendix A.

The project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. Compliance with this rule is achieved through application of standard best management practices in construction and operation activities, such as application of water or chemical stabilizers to disturbed soils, managing haul road dust by application of water, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 mph, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph and establishing a permanent, stabilizing ground cover on finished sites. In addition, projects that disturb 50 acres or more of soil or move 5,000 cubic yards of materials per day are required to submit a Fugitive Dust Control Plan or a Large Operation Notification Form to SCAQMD. Based on the size of the disturbed area of the Project (approximately 1.84 acres) a Fugitive Dust Control Plan or Large Operation Notification would not be required.

SCAQMD's Rule 403 minimum requirements require that the application of the best available dust control measures is used for all grading operations and include the application of water or other soil stabilizers in sufficient quantity to prevent the generation of visible dust plumes. Compliance with Rule 403 would require the use of water trucks during all phases where earth-moving operations would occur. Compliance with Rule 403 has been included in the CalEEMod modeling for the proposed project.

Per SCAQMD Rule 1113 as amended on June 3, 2011, the architectural coatings that would be applied to buildings after January 1, 2014 will be limited to an average of 50 grams per liter or less. CalEEMod defaults have been adjusted accordingly.

The phases of the construction activities which have been analyzed below for each phase are: (1) demolition, (2) site preparation, (3) grading (4) building construction, (5) paving, and (6) application of architectural coatings. Details pertaining to the project's construction timing and the type of equipment modeled for each construction phase are available in the CalEEMod output in Appendix A of this technical report.

## **B. Construction-Related Regional Impacts**

The construction-related criteria maximum daily pollutant emissions for each phase are shown below in **Table 6 Construction-Related Regional Pollutant Emissions**. Table 6 shows the worst-case of either summer or winter criteria pollutant emissions. As the existing Sequoia Lodge is attached to an HVAC plant which includes a chiller that provides air conditioning to surrounding structures in the northern portion of the Project Site which would need to be temporarily replaced during construction of the New Sequoia Building, the operational emissions from temporary HVAC-type equipment that would be set up would overlap with the construction emissions and have been shown below in Table 6 (as emissions from

temporary operational equipment) and added to the construction emissions. As one of the project's emissions will exceed regional thresholds. Therefore, a less than significant regional air quality impact would occur from construction of the proposed project.

**Table 6**  
**Construction-Related Regional Pollutant Emissions**

| Activity   | Maximum Pollutant Emissions (pounds/day) |             |              |                 |             |             |
|--|--|-------------|--------------|-----------------|-------------|-------------|
|  | ROG                                      | NOx         | CO           | SO <sub>2</sub> | PM10        | PM2.5       |
| Maximum Daily Emissions <sup>1,2,3</sup>   | <b>11.9</b>                              | <b>15.9</b> | <b>24.8</b>  | <b>0.03</b>     | <b>3.64</b> | <b>2.05</b> |
| Emissions from temporary operational equipment <sup>4</sup>  | 0.03                                     | 0.60        | 0.25         | <0.005          | 0.05        | 0.05        |
| <b>Total Emissions</b>   | <b>11.93</b>                             | <b>16.5</b> | <b>25.05</b> | <b>0.035</b>    | <b>3.69</b> | <b>2.1</b>  |
| SCAQMD Thresholds  | 75                                       | 100         | 550          | 150             | 150         | 55          |
| Exceeds Thresholds?  | No                                       | No          | No           | No              | No          | No          |
| <i>Notes:</i>  |  |             |              |                 |             |             |
| <i>(1) Includes both on-site and off-site emissions. On-site emissions from equipment operated on-site that is not operated on public roads. On-site demolition and site preparation PM-10 and PM-2.5 emissions include compliance with SCAQMD Rule 403.</i> |  |             |              |                 |             |             |
| <i>(2) Off-site emissions from equipment operated on public roads.</i>   |  |             |              |                 |             |             |
| <i>(3) Construction, painting, and paving phases may overlap.</i>  |  |             |              |                 |             |             |
| <i>(4) Operational emissions from the temporary equipment are assumed to be similar to, and correspond with, the energy-related emissions from the operation of the project.</i>   |  |             |              |                 |             |             |
| <i>Source: CalEEMod Version 2022.1.1.13.</i>   |  |             |              |                 |             |             |

### C. Construction-Related Local Impacts

Construction-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. The proposed project has been analyzed for the potential local air quality impacts created from: construction-related fugitive dust and diesel emissions; from toxic air contaminants; and from construction-related odor impacts. The local air quality emissions from construction were analyzed using the SCAQMD's Mass Rate Localized Significant Threshold Look-up Tables and the methodology described in Localized Significance Threshold Methodology prepared by SCAQMD (revised July 2008). The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily emissions of CO, NOx, PM10, and PM2.5 from the proposed project could result in a significant impact to the local air quality. The emission thresholds were calculated based on the San Gabriel Mountains Source Receptor Area (SRA) 15 and a disturbance value of one acre per day (as the site will disturb approximately 1.84 acres). According to LST Methodology, any receptor located closer than 25 meters (82 feet) shall be based on the 25-meter thresholds. The nearest sensitive receptors to the project site are: the single-family residential use located off of Angeles Trail Way and Valley Vista Way, approximately 0.45 miles (725 meters) northwest of the western project boundary and the scattered single-family residential uses located approximately 0.28 miles (443 meters) east of the eastern project

boundary; therefore, the SCAQMD 200-meter Look-up Tables was used.<sup>9</sup> **Table 7, Local Construction Emissions at the Nearest Receptors**, shows the on-site emissions from the CalEEMod model for the different construction phases and the LST emissions thresholds. Other air quality sensitive land uses are located further from the project site and would experience lower impacts.

The data provided in Table 7 shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds at the nearest sensitive receptors. Therefore, a less than significant local air quality impact would occur from construction of the proposed project.

**Table 7**  
**Local Construction Emissions at the Nearest Receptors**

| Activity                             | On-Site Pollutant Emissions (pounds/day) |              |           |           |
|--------------------------------------|--|--------------|-----------|-----------|
|                                      | NOx                                      | CO           | PM10      | PM2.5     |
| Demolition                           | 13.2                                     | 12.2         | 1.56      | 0.67      |
| Site Preparation                     | 10.3                                     | 9.28         | 2.7       | 1.57      |
| Grading                              | 15.9                                     | 15.4         | 3.5       | 2.02      |
| Building Construction                | 8.95                                     | 10.0         | 0.33      | 0.30      |
| Paving                               | 4.30                                     | 6.49         | 0.17      | 0.16      |
| Architectural Coating                | 0.83                                     | 1.13         | 0.02      | 0.02      |
| <b>SCAQMD Thresholds<sup>1</sup></b> | <b>173</b>                               | <b>2,500</b> | <b>51</b> | <b>18</b> |
| Exceeds Threshold?                   | No                                       | No           | No        | No        |

*Notes:*  
 (1) The nearest sensitive receptors to the site are: the single-family residential use located off of Angeles Trail Way and Valley Vista Way, approximately 0.45 miles (725 meters) northwest of the western project boundary and the scattered single-family residential uses located approximately 0.28 miles (443 meters) east of the eastern project boundary; therefore, the 200-meter threshold was used.  
 Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for 1 acre, at a distance of 200 m in SRA 15 San Gabriel Mountains.

#### D. Construction-Related Toxic Contaminant Impacts

The greatest potential for toxic air contaminant emissions would be related to diesel particulate emissions associated with heavy equipment operations during construction of the proposed project. According to the Office of Environmental Health Hazard Assessment (OEHHA) and the SCAQMD Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis (August 2003), health effects from TACs are described in terms of individual cancer risk based on a lifetime (i.e., 30-year) resident exposure duration. Given the temporary and short-term construction schedule (approximately 34 months), the Project would not result in a long-term (i.e., lifetime or 30-year) exposure as a result of project construction. Furthermore, the closest sensitive receptors are located over

<sup>9</sup> The LST Look-Up tables have data for receptors located at 25, 50, 100, 200 and 500 meters from the source of emissions. To be conservative, the 200-meter thresholds were used.

a ¼ mile from the project site boundary and construction-based particulate matter (PM) emissions (including diesel exhaust emissions) do not exceed any local or regional thresholds.

The project would comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than 5 minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these would minimize emissions of TACs during construction. Therefore, impacts from TACs during construction would be less than significant.

#### **E. Construction-Related Odor Impacts**

Potential sources that may emit odors during construction activities include the application of materials such as asphalt pavement. The objectionable odors that may be produced during the construction process are of short-term in nature and the odor emissions are expected to cease upon the drying or hardening of the odor producing materials. Due to the short-term nature and limited amounts of odor producing materials being utilized, no significant impact related to odors would occur during construction of the proposed project. Diesel exhaust and VOCs would be emitted during construction of the project, which are objectionable to some; however, emissions would disperse rapidly from the project site and therefore should not reach an objectionable level at the nearest sensitive receptors.

### **6. LONG-TERM OPERATIONAL EMISSIONS**

The on-going operation of the proposed project would result in a long-term increase in air emissions. This increase would be due to emissions from the project-generated vehicle trips and through other operational emissions from the on-going use of the proposed project. The following section provides an analysis of potential long-term air quality impacts due to: regional air quality impacts with the on-going operations of the proposed project.

#### **A. Operations-Related Regional Air Quality Impacts**

The operations-related criteria air quality impacts created by the proposed project have been analyzed through the use of the CalEEMod model. The operating emissions were based on the year 2027, which is the anticipated opening year for the proposed project. To be conservative, the operations for the full buildout of 213 rooms was analyzed. The operations daily emissions printouts from the CalEEMod model are provided in Appendix A. The CalEEMod analyzes operational emissions from area sources, energy usage, and mobile sources, which are discussed below.

##### ***i) Mobile Sources***

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been analyzed by inputting the project-generated trip generation data from the Transportation Impact Analysis Screening Analysis for the *Hope*

*Gardens Expansion Project, Los Angeles County, California* (TIA), prepared by Gibson Transportation Consulting Inc. (February 2, 2023) for the proposed project into the CalEEMod Model. The TIA showed that the project would generate 1.08 trips per room.<sup>10</sup> The CalEEMod program then applies the emission factors for each trip, which is provided by the EMFAC2021 model, to determine the vehicular traffic pollutant emissions.

**ii) Area Sources**

Area sources include emissions from consumer products, landscape equipment and architectural coatings. Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers, as well as air compressors, generators, and pumps. As specifics were not known about the landscaping equipment fleet, CalEEMod defaults were used to estimate emissions from landscaping equipment. No changes were made to the default area source parameters.

**iii) Energy Usage**

Energy usage includes emissions from the generation of electricity and natural gas used on-site. No changes were made to the default energy usage parameters.

**iv) Project Impacts**

The worst-case summer or winter maximum daily criteria pollutant emissions created from the proposed project's long-term operations have been calculated and are shown in Table 8.

**Table 8**  
**Regional Operational Pollutant Emissions**

| Operational Activity                 | Pollutant Emissions (tons/year) |      |      |      |      |       |
|--------------------------------------|---------------------------------|------|------|------|------|-------|
|                                      | ROG                             | NOx  | CO   | SO2  | PM10 | PM2.5 |
| Maximum Daily Emissions              | 5.57                            | 1.67 | 24.6 | 0.04 | 1.26 | 0.28  |
| SCAQMD Thresholds                    | 55                              | 55   | 550  | 150  | 150  | 55    |
| Exceeds Threshold?                   | No                              | No   | No   | No   | No   | No    |
| <i>Source: CalEEMod 2022.1.1.13.</i> |                                 |      |      |      |      |       |

Table 8 shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from operation of the proposed project.

<sup>10</sup> As there is no land use in CalEEMod for transitional housing for families and seniors experiencing homelessness, the closest land use of congregate care (assisted living) was used in the modeling which uses dwelling units in place of rooms.

## **B. Operations-Related Local Air Quality Impacts**

Project-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. The proposed project has been analyzed for the potential local CO emission impacts from the project-generated vehicular trips and from the potential local air quality impacts from on-site operations. The following analysis analyzes the vehicular CO emissions, local impacts from on-site operations per SCAQMD LST methodology, and odor impacts.

### ***i) Local CO Emission Impacts from Project-Related Vehicular Trips***

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential local air quality impacts. Local air quality impacts can be assessed by comparing future without and with project CO levels to the State and Federal CO standards which were presented above.

To determine if the proposed project could cause emission levels in excess of the CO standards discussed above, a sensitivity analysis is typically conducted to determine the potential for CO “hot spots” at a number of intersections in the general project vicinity. Because of reduced speeds and vehicle queuing, “hot spots” potentially can occur at high traffic volume intersections with a Level of Service E or worse.

The analysis prepared for CO attainment in the South Coast Air Basin by the SCAQMD can be used to assist in evaluating the potential for CO exceedances in the South Coast Air Basin. CO attainment was thoroughly analyzed as part of the SCAQMD's 2003 Air Quality Management Plan (2003 AQMP) and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan). As discussed in the 1992 CO Plan, peak carbon monoxide concentrations in the South Coast Air Basin are due to unusual meteorological and topographical conditions, and not due to the impact of particular intersections. Considering the region's unique meteorological conditions and the increasingly stringent CO emissions standards, CO modeling was performed as part of 1992 CO Plan and subsequent plan updates and air quality management plans. In the 1992 CO Plan, a CO hot spot analysis was conducted for four busy intersections in Los Angeles at the peak morning and afternoon time periods. The intersections evaluated included: South Long Beach Boulevard and Imperial Highway (Lynwood); Wilshire Boulevard and Veteran Avenue (Westwood); Sunset Boulevard and Highland Avenue (Hollywood); and La Cienega Boulevard and Century Boulevard (Inglewood). These analyses did not predict a violation of CO standards. The busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue, which has a daily traffic volume of approximately 100,000 vehicles per day. The Los Angeles County Metropolitan Transportation Authority evaluated the Level of Service in the vicinity of the Wilshire Boulevard/Veteran Avenue intersection and found it to be Level of Service E during the morning peak hour and Level of Service F during the afternoon peak hour.

The TIA showed that the project would generate a net of approximately 100 daily vehicle trips and did not meet the County's threshold for a full transportation assessment. Therefore, as the project's traffic volumes would fall far short of 100,000 vehicles, no CO "hot spot" modeling was performed and no significant long-term air quality impact is anticipated to local air quality with the on-going use of the proposed project.

***i) Local Air Quality Impacts from On-Site Operations***

Project-related air emissions from on-site sources such as architectural coatings, landscaping equipment, on-site usage of natural gas appliances as well as the operation of vehicles on-site may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. The nearest sensitive receptors to the project site are: the single-family residential use located off of Angeles Trail Way and Valley Vista Way, approximately 0.45 miles (725 meters) northwest of the western project boundary and the scattered single-family residential uses located approximately 0.28 miles (443 meters) east of the eastern project boundary.

According to SCAQMD LST methodology, LSTs would apply to the operational phase of a project, if the project includes stationary sources, or attracts mobile sources (such as heavy-duty trucks) that may spend long periods queuing and idling at the site; such as industrial warehouse/transfer facilities. The proposed project consists of a transitional care facility for families and seniors experiencing homelessness, and does not include such uses. Therefore, due the lack of stationary source emissions, no long-term localized significance threshold analysis is warranted.

**C. Operations-Related Odor Impacts**

Potential sources that may emit odors during the on-going operations of the proposed project would include odor emissions from the intermittent diesel delivery truck emissions and trash storage areas. Due to the distance of the nearest receptors from the project site and through compliance with SCAQMD's Rule 402 no significant impact related to odors would occur during the on-going operations of the proposed project.

**7. CUMULATIVE AIR QUALITY IMPACTS**

There are a number of cumulative projects in the project area that have not yet been built or are currently under construction. Since the timing or sequencing of the cumulative projects is unknown, any quantitative analysis to ascertain daily construction emissions that assumes multiple, concurrent construction projects would be speculative. Further, cumulative projects include local development as well as general growth within the project area. However, as with most development, the greatest source of emissions is from mobile sources, which travel well out of the local area. Therefore, from an air quality

standpoint, the cumulative analysis would extend beyond any local projects and when wind patterns are considered would cover an even larger area. The SCAQMD recommends using two different methodologies: (1) that project-specific air quality impacts be used to determine the potential cumulative impacts to regional air quality;<sup>11</sup> and (2) that a project's consistency with the current AQMP be used to determine its potential cumulative impacts.

#### **A. Project Specific Impacts**

The project area is out of attainment for ozone and in 2019 was out of attainment for PM10, as indicated in Table 3. Construction and operation of cumulative projects will further degrade the local air quality, as well as the air quality of the South Coast Air Basin. The greatest cumulative impact on the quality of regional air quality will be the incremental addition of pollutants mainly from increased traffic volumes from residential, commercial, and industrial development and the use of heavy equipment and trucks associated with the construction of these projects. Air quality will be temporarily degraded during construction activities that occur separately or simultaneously. However, in accordance with the SCAQMD methodology, projects that do not exceed the SCAQMD criteria or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. A significant impact may occur if a project would add a cumulatively considerable contribution of a federal or state non-attainment pollutant. As stated previously, the Air Basin is currently in non-attainment for ozone, PM10, and PM2.5.

The project would result in the emission of criteria pollutants for which the region is in nonattainment during both construction and operation. The emissions from construction of the project are not predicted to exceed any applicable SCAQMD regional or local impact threshold and therefore, are not expected to result in ground level concentrations that exceed the NAAQS or CAAQS. Therefore, the project would not result in a cumulatively considerable net increase for non-attainment pollutants or ozone precursors and would result in a less than significant impact for construction emissions.

Project operations would generate emissions of NO<sub>x</sub>, ROG, CO, PM10, and PM2.5, which would not exceed the SCAQMD regional or local thresholds and would not be expected to result in ground level concentrations that exceed the NAAQS or CAAQS. Since the project would not introduce any substantial stationary sources of emissions, CO is the benchmark pollutant for assessing local area air quality impacts from post-construction motor vehicle operations. As indicated earlier, no violations of the state and federal CO standards are projected to occur for the project, based on the magnitude of traffic the project is anticipated to create. Therefore, operation of the project would not result in a cumulatively considerable net increase for non-attainment of criteria pollutants or ozone precursors. As a result, the project would result in a less than significant cumulative impact for operational emissions.

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<sup>11</sup> *South Coast Air Quality Management District, Potential Control Strategies to Address Cumulative Impacts from Air Pollution White Paper, 1993, <http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook>.*

## **B. Air Quality Compliance**

The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a proposed project and applicable General Plans and Regional Plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD Air Quality Management Plan (AQMP). Therefore, this section discusses any potential inconsistencies of the proposed project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-makers determine that the proposed project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended General Plan Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP". Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

- (1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.
- (2) Whether the project will exceed the assumptions in the AQMP in 2022 or increments based on the year of project buildout and phase.

Both of these criteria are evaluated below.

### ***i) Air Quality Compliance Analysis***

#### ***a) Criteria 1 – Increase in the Frequency or Severity of Violations***

Based on the air quality modeling analysis contained in this Air Quality Analysis, short-term construction impacts will not result in significant impacts based on the SCAQMD regional and local thresholds of significance. This Air Analysis also found that long-term operations impacts will not result in significant impacts based on the SCAQMD local and regional thresholds of significance.

Therefore, the proposed project is not projected to contribute to the exceedance of any air pollutant concentration standards and is found to be consistent with the AQMP for the first criterion.

**b) Criteria 2 – Exceed Assumptions in the AQMP?**

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the AQMP. The emphasis of this criterion is to ensure that the analyses conducted for the proposed project are based on the same forecasts as the AQMP. The 2020-2045 Regional Transportation/Sustainable Communities Strategy prepared by SCAG (2020) includes chapters on: the challenges in a changing region, creating a plan for our future, and the road to greater mobility and sustainable growth. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA.

For this project, the County of Los Angeles General Plan defines the assumptions that are represented in the AQMP.

The County General Plan 2035's land use designation for the Project Site is RL1 (Rural Land 1) within the County's Kagel/Lopez Canyons community area. Additionally, the Project Site is zoned A-2-2 (Heavy Agriculture – Two-Acre Minimum Required Lot Area) within the Mount Gleason zoned district. Adult residential facilities having seven or more persons are defined in the Los Angeles County Zoning Code Section 22.24.030 as uses requiring a CUP in the A-2-2 zone. The existing use of the Project Site conforms to General Plan and zoning requirements and the project proposes the expansion of the existing use. Therefore, the proposed project is consistent with the existing zoning/land use, would not exceed the AQMP assumptions for the project site, and is found to be consistent with the AQMP for the second criterion. Based on the above, the proposed project will not result in an inconsistency with the SCAQMD AQMP. Therefore, a less than significant impact will occur.

### III. GLOBAL CLIMATE CHANGE ANALYSIS

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#### 1. EXISTING GREENHOUSE GAS ENVIRONMENT

Constituent gases of Earth’s atmosphere, called atmospheric greenhouse gases (GHG), play a critical role in Earth’s radiation amount by trapping infrared radiation emitted from Earth’s surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), ozone, water vapor, nitrous oxide (N<sub>2</sub>O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of Earth’s natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Transportation is responsible for 41 percent of the State’s greenhouse gas emissions, followed by electricity generation. Emissions of CO<sub>2</sub> and nitrous oxide (NO<sub>x</sub>) are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO<sub>2</sub>, where CO<sub>2</sub> is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. The following provides a description of each of the greenhouse gases and their global warming potential.

##### A. Water Vapor

Water vapor is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to “hold” more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a “positive feedback loop”. The extent to which this positive feedback loop will continue is unknown as there is also dynamics that put the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth’s surface and heat it up).

**B. Carbon Dioxide (CO<sub>2</sub>)**

The natural production and absorption of CO<sub>2</sub> is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid-1700s. Each of these activities has increased in scale and distribution. CO<sub>2</sub> was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC Fifth Assessment Report, 2014) Emissions of CO<sub>2</sub> from fossil fuel combustion and industrial processes contributed about 78% of the total GHG emissions increase from 1970 to 2010, with a similar percentage contribution for the increase during the period 2000 to 2010. Globally, economic and population growth continued to be the most important drivers of increases in CO<sub>2</sub> emissions from fossil fuel combustion. The contribution of population growth between 2000 and 2010 remained roughly identical to the previous three decades, while the contribution of economic growth has risen sharply.

**C. Nitrous Oxide (N<sub>2</sub>O)**

Concentrations of N<sub>2</sub>O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration of this GHG was documented at 314 parts per billion (ppb). N<sub>2</sub>O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is also commonly used as an aerosol spray propellant, (i.e., in whipped cream bottles, in potato chip bags to keep chips fresh, and in rocket engines and in race cars).

**D. Hydrofluorocarbons (HFC)**

HFCs are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF<sub>3</sub>), HFC-134a (CF<sub>3</sub>CH<sub>2</sub>F), and HFC-152a (CH<sub>3</sub>CHF<sub>2</sub>). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 and HFC-134a in the atmosphere are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are manmade for applications such as automobile air conditioners and refrigerants.

**E. Perfluorocarbons (PFC)**

PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two

common PFCs are tetrafluoromethane (CF<sub>4</sub>) and hexafluoroethane (C<sub>2</sub>F<sub>6</sub>). Concentrations of CF<sub>4</sub> in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

#### **F. Sulfur Hexafluoride (SF<sub>6</sub>)**

SF<sub>6</sub> is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF<sub>6</sub> has the highest global warming potential of any gas evaluated; 23,900 times that of CO<sub>2</sub>. Concentrations in the 1990s were about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

#### **G. Aerosols**

Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning due to the incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

#### **H. Global Warming Potential**

The Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different gases. Specifically, it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of carbon dioxide (CO<sub>2</sub>). The larger the GWP, the more that a given gas warms the Earth compared to CO<sub>2</sub> over that time period. The time period usually used for GWPs is 100 years. GWPs provide a common unit of measure, which allows analysts to add up emissions estimates of different gases (e.g., to compile a national GHG inventory), and allows policymakers to compare emissions reduction opportunities across sectors and gases. A summary of the atmospheric lifetime and the global warming potential of selected gases are summarized in **Table 9, Global Warming Potentials and Atmospheric Lifetimes**. As shown in **Table 9**, the global warming potential of GHGs ranges from 1 to 22,800.

**Table 9**  
**Global Warming Potentials and Atmospheric Lifetimes**

| <b>Gas</b>                              | <b>Atmospheric Lifetime</b> | <b>Global Warming Potential<sup>1</sup><br/>(100 Year Horizon)</b> |
|---|-----------------------------|--|
| Carbon Dioxide (CO <sub>2</sub> )       | — <sup>2</sup>              | 1  |
| Methane (CH <sub>4</sub> )              | 12                          | 28-36  |
| Nitrous Oxide (NO)                      | 114                         | 298  |
| Hydrofluorocarbons (HFCs)               | 1-270                       | 12-14,800  |
| Perfluorocarbons (PFCs)                 | 2,600-50,000                | 7,390-12,200   |
| Nitrogen trifluoride (NF <sub>3</sub> ) | 740                         | 17,200   |
| Sulfur Hexafluoride (SF <sub>6</sub> )  | 3,200                       | 22,800   |

Notes:

(1) Compared to the same quantity of CO<sub>2</sub> emissions.

(2) Carbon dioxide's lifetime is poorly defined because the gas is not destroyed over time, but instead moves among different parts of the ocean-atmosphere-land system. Some of the excess carbon dioxide will be absorbed quickly (for example, by the ocean surface), but some will remain in the atmosphere for thousands of years, due in part to the very slow process by which carbon is transferred to ocean sediments.

Source: <http://www3.epa.gov/climatechange/ghgemissions/gases.html>

## 2. GREENHOUSE GAS STANDARDS AND REGULATION

### A. International

#### i) *Montreal Protocol*

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

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—CFCs, halons, carbon tetrachloride, and methyl chloroform—were to be phased out, with the first three by the year 2000 and methyl chloroform by 2005.

#### ii) *The Paris Agreement*

The Paris Agreement became effective on November 4, 2016. Thirty days after this date at least 55 Parties to the United Nations Framework Convention on Climate Change (Convention), accounting in total for at least an estimated 55 % of the total global greenhouse gas emissions, had deposited their instruments of ratification, acceptance, approval, or accession with the Depositary.

The Paris Agreement built upon the Convention and – for the first time – attempted to bring all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects, with enhanced support to assist developing countries to do so. As such, it charts a new course in the global climate effort.

The Paris Agreement’s central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change. To reach these ambitious goals, appropriate financial flows, a new technology framework and an enhanced capacity building framework will be put in place, thus supporting action by developing countries and the most vulnerable countries, in line with their own national objectives. The Agreement also provides for enhanced transparency of action and support through a more robust transparency framework.

## **B. Federal**

The United States Environmental Protection Agency (USEPA) is responsible for implementing federal policy to address GHGs. The federal government administers a wide array of public-private partnerships to reduce the GHG intensity generated in the United States. These programs focus on energy efficiency, renewable energy, methane and other non-CO<sub>2</sub> gases, agricultural practices, and implementation of technologies to achieve GHG reductions. The USEPA implements numerous voluntary programs that contribute to the reduction of GHG emissions. These programs (e.g., the ENERGY STAR labeling system for energy-efficient products) play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

In *Massachusetts v. Environmental Protection Agency* (Docket No. 05–1120), argued November 29, 2006 and decided April 2, 2007, the U.S. Supreme Court held that not only did the EPA have authority to regulate greenhouse gases, but the EPA's reasons for not regulating this area did not fit the statutory requirements. As such, the U.S. Supreme Court ruled that the EPA should be required to regulate CO<sub>2</sub> and other greenhouse gases as pollutants under the federal Clean Air Act (CAA).

In response to the FY2008 Consolidations Appropriations Act (H.R. 2764; Public Law 110-161), EPA proposed a rule on March 10, 2009 that requires mandatory reporting of GHG emissions from large sources in the United States. On September 22, 2009, the Final Mandatory Reporting of GHG Rule was signed and published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. This rule requires suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to EPA.

On December 7, 2009, the EPA Administrator signed two distinct findings under section 202(a) of the Clean Air Act. One is an endangerment finding that finds concentrations of the six GHGs in the atmosphere threaten the public health and welfare of current and future generations. The other is a cause or contribute finding, that finds emissions from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare. These actions will not themselves impose any requirements on industry or other entities. However, it is a prerequisite to finalizing the EPA's proposed GHG emission standards for light-duty vehicles, which were jointly proposed by the EPA and Department of Transportation on September 15, 2009.

***i) Clean Air Act***

In *Massachusetts v. Environmental Protection Agency* (Docket No. 05–1120), the U.S. Supreme Court held in April of 2007 that the USEPA has statutory authority under Section 202 of the federal Clean Air Act (CAA) to regulate GHGs. The court did not hold that the USEPA was required to regulate GHG emissions; however, it indicated that the agency must decide whether GHGs cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare. On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA. The USEPA adopted a Final Endangerment Finding for the six defined GHGs (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, and SF<sub>6</sub>) on December 7, 2009. The Endangerment Finding is required before USEPA can regulate GHG emissions under Section 202(a)(1) of the CAA consistently with the United States Supreme Court decision. The USEPA also adopted a Cause or Contribute Finding in which the USEPA Administrator found that GHG emissions from new motor vehicle and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. These findings do not, by themselves, impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

***ii) Energy Independence Security Act***

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

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

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

Additional provisions of EISA address energy savings in government and public institutions, promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of green jobs.<sup>8</sup>

### **iii) Executive Order 13432**

In response to the *Massachusetts v. Environmental Protection Agency* ruling, the President signed Executive Order 13432 on May 14, 2007, directing the USEPA, along with the Departments of Transportation, Energy, and Agriculture, to initiate a regulatory process that responds to the Supreme Court's decision. Executive Order 13432 was codified into law by the 2009 Omnibus Appropriations Law signed on February 17, 2009. The order sets goals in the areas of energy efficiency, acquisition, renewable energy, toxics reductions, recycling, sustainable buildings, electronics stewardship, fleets, and water conservation. Light-Duty Vehicle Greenhouse Gas and Corporate Average Fuel Economy Standards.

On May 19, 2009, President Obama announced a national policy for fuel efficiency and emissions standards in the United States auto industry. The adopted federal standard applies to passenger cars and light-duty trucks for model years 2012 through 2016. The rule surpasses the prior Corporate Average Fuel Economy standards (CAFE)<sup>9</sup> and requires an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO<sub>2</sub> per mile by model year 2016, based on USEPA calculation methods. These standards were formally adopted on April 1, 2010. In August 2012, standards were adopted for model year 2017 through 2025 for passenger cars and light-duty trucks. By 2025, vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO<sub>2</sub> per mile. According to the USEPA, a model year 2025 vehicle would emit one-half of the GHG emissions

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<sup>8</sup> *A green job, as defined by the United States Department of Labor, is a job in business that produces goods or provides services that benefit the environment or conserve natural resources.*

<sup>9</sup> *The Corporate Average Fuel Economy standards are regulations in the United States, first enacted by Congress in 1975, to improve the average fuel economy of cars and light trucks. The U.S Department of Transportation has delegated the National Highway Traffic Safety Administration as the regulatory agency for the Corporate Average Fuel Economy standards.*

from a model year 2010 vehicle.<sup>10</sup> In 2017, the USEPA recommended no change to the GHG standards for light-duty vehicles for model years 2022-2025.

In August 2018, the USEPA and NHTSA proposed the Safer Affordable Fuel-Efficient Vehicles Rule that would, if adopted, maintain the CAFE and CO<sub>2</sub> standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO<sub>2</sub> standards for model year 2020 are 43.7 mpg and 204 grams of CO<sub>2</sub> per mile for passenger cars and 31.3 mpg and 284 grams of CO<sub>2</sub> per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012. The proposal, if adopted, would also exclude CO<sub>2</sub>-equivalent emission improvements associated with air conditioning refrigerants and leakage (and, optionally, offsets for nitrous oxide and methane emissions) after model year 2020.<sup>11</sup>

On May 12, 2021, the National Highway Traffic Safety Administration (NHTSA) published a notice of proposed rulemaking in the Federal Register, proposing to repeal “The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program,” published Sept. 27, 2019 (SAFE I Rule), in which NHTSA codified regulatory text and made additional pronouncements regarding the preemption of state and local laws related to fuel economy standards. Specifically, this document proposes to fully repeal the regulatory text and appendices promulgated in the SAFE I Rule. In addition, this document proposes to repeal and withdraw the interpretative statements made by the Agency in the SAFE I Rule preamble, including those regarding the preemption of particular state Greenhouse Gas (GHG) Emissions standards or Zero Emissions Vehicle (ZEV) mandates. As such, this document proposes to establish a clean slate with respect to NHTSA’s regulations and interpretations concerning preemption under the Energy Policy and Conservation Act (EPCA).<sup>12</sup>

### **C. State of California**

#### **i) California Air Resources Board**

CARB, a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets state ambient air quality standards (California Ambient Air

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<sup>10</sup> *United States Environmental Protection Agency, EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks, August 2012, <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100EZ7C.PDF?Dockkey=P100EZ7C.PDF>.*

<sup>11</sup> *National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA), 2018. Federal Register / Vol. 83, No. 165 / Friday, August 24, 2018 / Proposed Rules, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks 2018. Available at: <https://www.gpo.gov/fdsys/pkg/FR-2018-08-24/pdf/2018-16820.pdf>.*

<sup>12</sup> *<https://www.federalregister.gov/documents/2021/05/12/2021-08758/corporate-average-fuel-economy-cafe-preemption>*

Quality Standards [CAAQS]), compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

In 2004, the California Air Resources Board (CARB) adopted an Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other toxic air contaminants (Title 13 California Code of Regulations [CCR], Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure generally does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given location with certain exemptions for equipment in which idling is a necessary function such as concrete trucks. While this measure primarily targets diesel particulate matter emissions, it has co-benefits of minimizing GHG emissions from unnecessary truck idling.

In 2008, CARB approved the Truck and Bus regulation to reduce particulate matter and nitrogen oxide emissions from existing diesel vehicles operating in California (13 CCR, Section 2025, subsection (h)). CARB has also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower such as bulldozers, loaders, backhoes, and forklifts, as well as many other self-propelled off-road diesel vehicles. The regulation, adopted by the CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models. While these regulations primarily target reductions in criteria air pollutant emission, they have co-benefits of minimizing GHG emissions due to improved engine efficiencies.

The State currently has no regulations that establish ambient air quality standards for GHGs. However, the State has passed laws directing CARB to develop actions to reduce GHG emissions, which are listed below.

***ii) Assembly Bill 1493***

California Assembly Bill 1493 enacted on July 22, 2002, required the CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2005, the CARB submitted a “waiver” request to the EPA from a portion of the federal Clean Air Act in order to allow the State to set more stringent tailpipe emission standards for CO<sub>2</sub> and other GHG emissions from passenger vehicles and light duty trucks. On December 19, 2007 the EPA announced that it denied the “waiver” request. On January 21, 2009, CARB submitted a letter to the EPA administrator regarding the State’s request to reconsider the waiver denial. The EPA approved the waiver on June 30, 2009. EPA’s recent withdrawal of the waiver was upheld by the Ninth Circuit on February 10, 2021. Per CARB, while the federal action is in effect, CARB will administer the zero-emission vehicle program on a voluntary basis.

After adopting these initial greenhouse gas standards for passenger vehicles, CARB adopted continuing standards for future model years.

**iii) Executive Order S-3-05**

The California Governor issued Executive Order S-3-05, GHG Emission, in June 2005, which established the following reduction targets:

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

The Executive Order directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. To comply with the Executive Order, the secretary of CalEPA created the California Climate Action Team (CAT), made up of members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of businesses, local governments, and communities and through State incentive and regulatory programs.

**iv) Executive Order N-79-20**

Executive Order N-79-20 Signed in September 2020, Executive Order N-79-20 establishes as a goal that where feasible, all new passenger cars and trucks, as well as all drayage/cargo trucks and off-road vehicles and equipment, sold in California, will be zero-emission by 2035. The executive order sets a similar goal requiring that all medium and heavy-duty vehicles will be zero-emission by 2045 where feasible. It also directs CARB to develop and propose rulemaking for passenger vehicles and trucks, medium-and heavy-duty fleets where feasible, drayage trucks, and off-road vehicles and equipment “requiring increasing volumes” of new zero emission vehicles (ZEVs) “towards the target of 100 percent.” The executive order directs the California Environmental Protection Agency, the California Geologic Energy Management Division (CalGEM), and the California Natural Resources Agency to transition and repurpose oil production facilities with a goal toward meeting carbon neutrality by 2045. Executive Order N-79-20 builds upon the CARB Advanced Clean Trucks regulation, which was adopted by CARB in July 2020.

**v) Assembly Bill 32 (California Health and Safety Code, Division 25.2. – California Global Warming Solutions Act of 2006)**

In 2006, the California State Legislature adopted Assembly Bill (AB) 32 (codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines GHGs as CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, and SF<sub>6</sub> and represents the first enforceable statewide program to limit emissions of

these GHGs from all major industries with penalties for noncompliance. The law further requires that reduction measures be technologically feasible and cost effective. Under HSC Division 25.5, CARB has the primary responsibility for reducing GHG emissions. CARB is required to adopt rules and regulations directing state actions that would achieve GHG emissions reductions equivalent to 1990 statewide levels by 2020.

**vi) Senate Bill 32 and Assembly Bill 197**

In 2016, the California State Legislature adopted Senate Bill (SB) 32 and its companion bill AB 197, and both were signed by Governor Brown. SB 32 and AB 197 amends HSC Division 25.5 and establishes a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and includes provisions to ensure the benefits of state climate policies reach into disadvantaged communities.

**vii) Climate Change Scoping Plan (2008)**

A specific requirement of AB 32 was to prepare a Climate Change Scoping Plan for achieving the maximum technologically feasible and cost-effective GHG emission reduction by 2020 (Health and Safety Code section 38561 (h)). CARB developed an AB 32 Scoping Plan that contains strategies to achieve the 2020 emissions cap. The initial Scoping Plan was approved in 2008, and contains a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the State's long-range climate objectives.

As required by HSC Division 25.5, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was originally set at 427 MMTCO<sub>2e</sub> using the GWP values from the IPCC SAR. CARB also projected the state's 2020 GHG emissions under no-action-taken (NAT) conditions – that is, emissions that would occur without any plans, policies, or regulations to reduce GHG emissions. CARB originally used an average of the state's GHG emissions from 2002 through 2004 and projected the 2020 levels at approximately 596 MMTCO<sub>2e</sub> (using GWP values from the IPCC SAR). Therefore, under the original projections, the state must reduce its 2020 NAT emissions by 28.4 percent in order to meet the 1990 target of 427 MMTCO<sub>2e</sub>.

**viii) First Update to the Climate Change Scoping Plan (2014)**

The First Update to the Scoping Plan was approved by CARB in May 2014 and builds upon the initial Scoping Plan with new strategies and recommendations. In 2014, CARB revised the target using the GWP values from the IPCC AR4 and determined that the 1990 GHG emissions inventory and 2020 GHG emissions limit is 431 MMTCO<sub>2e</sub>. CARB also updated the State's 2020 NAT emissions estimate to account for the effect of the 2007–2009 economic recession, new estimates for future fuel and energy demand, and the reductions required by regulation that were recently adopted for motor vehicles and renewable

energy. CARB's projected statewide 2020 emissions estimate using the GWP values from the IPCC AR4 is 509.4 MMTCO<sub>2e</sub>.

**ix) 2017 Climate Change Scoping Plan**

In response to the 2030 GHG reduction target, CARB adopted the 2017 Climate Change Scoping Plan at a public meeting held in December 2017. The 2017 Scoping Plan outlines the strategies the State will implement to achieve the 2030 GHG reduction target of 40 percent below 1990 levels. The 2017 Scoping Plan also addresses GHG emissions from natural and working lands of California, including the agriculture and forestry sectors. The 2017 Scoping Plan considered the Scoping Plan Scenario and four alternatives for achieving the required GHG reductions but ultimately selected the Scoping Plan Scenario.

CARB states that the Scoping Plan Scenario "is the best choice to achieve the State's climate and clean air goals."<sup>13</sup> Under the Scoping Plan Scenario, the majority of the reductions would result from the continuation of the Cap-and-Trade regulation. Additional reductions are achieved from electricity sector standards (i.e., utility providers to supply at least 50 percent renewable electricity by 2030), doubling the energy efficiency savings at end uses, additional reductions from the LCFS, implementing the short-lived GHG strategy (e.g., hydrofluorocarbons), and implementing the mobile source strategy and sustainable freight action plan. The alternatives were designed to consider various combinations of these programs, as well as consideration of a carbon tax in the event the Cap-and-Trade regulation is not continued. However, in July 2017, the California Legislature voted to extend the Cap-and-Trade regulation to 2030. Implementing this Scoping Plan will ensure that California's climate actions continue to promote innovation, drive the generation of new jobs, and achieve continued reductions of smog and air toxics. The ambitious approach draws on a decade of successful programs that address the major sources of climate-changing gases in every sector of the economy:

- **More Clean Cars and Trucks:** The plan sets out far-reaching programs to incentivize the sale of millions of zero-emission vehicles, drive the deployment of zero-emission trucks, and shift to a cleaner system of handling freight statewide.
- **Increased Renewable Energy:** California's electric utilities are ahead of schedule meeting the requirement that 33 percent of electricity come from renewable sources by 2020. The Scoping Plan guides utilities to 50 percent renewables, as required under SB 350.
- **Slashing Super-Pollutants:** The plan calls for a significant cut in super-pollutants such as methane and HFC refrigerants, which are responsible for as much as 40 percent of global warming.

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<sup>13</sup> California Air Resources Board, *California's 2017 Climate Change Scoping Plan*, November 2017, [https://www.arb.ca.gov/cc/scopingplan/scoping\\_plan\\_2017.pdf](https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf)

- **Cleaner Industry and Electricity:** California’s renewed cap-and-trade program extends the declining cap on emissions from utilities and industries and the carbon allowance auctions. The auctions will continue to fund investments in clean energy and efficiency, particularly in disadvantaged communities.
- **Cleaner Fuels:** The Low Carbon Fuel Standard will drive further development of cleaner, renewable transportation fuels to replace fossil fuels.
- **Smart Community Planning:** Local communities will continue developing plans which will further link transportation and housing policies to create sustainable communities.
- **Improved Agriculture and Forests:** The Scoping Plan also outlines innovative programs to account for and reduce emissions from agriculture, as well as forests and other natural lands.

The 2017 Scoping Plan also evaluates reductions of smog-causing pollutants through California’s climate programs.

**x) 2022 Climate Change Scoping Plan**

CARB adopted the 2022 Scoping Plan for Achieving Carbon Neutrality on November 16, 2022. The 2022 Scoping Plan lays out the sector-by-sector roadmap for California, the world’s fifth largest economy, to achieve carbon neutrality by 2045 or earlier, outlining a technologically feasible, cost-effective, and equity-focused path to achieve the state’s climate target. The Plan addresses recent legislation and direction from Governor Newsom and extends and expands upon earlier plans with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. The plan also takes the unprecedented step of adding carbon neutrality as a science-based guide and touchstone for California’s climate work. Specifically, this plan:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 and a reduction in anthropogenic emissions by 85 percent below 1990 levels.
- Focuses on strategies for reducing California’s dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California’s most impacted communities as driving principles throughout the document.

- Incorporates the contribution of natural and working lands (NWL) to the state’s GHG emissions, as well as their role in achieving carbon neutrality.
- Relies on the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture.
- Evaluates the substantial health and economic benefits of taking action.
- Identifies key implementation actions to ensure success.

***xj) Senate Bill 32, California Global Warming Solutions Act 2006***

- (1) The California Global Warming Solutions Act of 2006 designates the State Air Resources Board as the state agency charged with monitoring and regulating sources of emissions of greenhouse gases. The state board is required to approve a statewide greenhouse gas emissions limit equivalent to the statewide greenhouse gas emissions level in 1990 to be achieved by 2020 and to adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective greenhouse gas emissions reductions. This bill would require the state board to ensure that statewide greenhouse gas emissions are reduced to 40% below the 1990 level by 2030.
- (2) This bill would become operative only if AB 197 of the 2015–16 Regular Session is enacted and becomes effective on or before January 1, 2017. AB 197 requires that the California Air Resources Board, which directs implementation of emission-reduction programs, should target direct reductions at both stationary and mobile sources. AB 197 of the 2015-2016 Regular Session was approved on September 8, 2016.

***xii) Executive Order S-1-07***

Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State’s GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Order also directs the CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009 CARB approved the proposed regulation to implement the low carbon fuel standard and began implementation on January 1, 2011. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. CARB approved some amendments to the LCFS in December 2011, which were implemented on January 1, 2013. In September 2015, the Board approved the re-adoption of the LCFS, which became effective on January 1, 2016, to address procedural

deficiencies in the way the original regulation was adopted. In 2018, the Board approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector.

The LCFS is designed to encourage the use of cleaner low-carbon transportation fuels in California, encourage the production of those fuels, and therefore, reduce GHG emissions and decrease petroleum dependence in the transportation sector. Separate standards are established for gasoline and diesel fuels and the alternative fuels that can replace each. The standards are “back-loaded”, with more reductions required in the last five years, than during the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today’s fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the low carbon fuel standard will be based on a combination of both lower carbon fuels and more efficient vehicles.

Reformulated gasoline mixed with corn-derived ethanol at ten percent by volume and low sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel as appropriate. Compressed natural gas and liquefied natural gas also may be low carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles are also considered as low carbon fuels for the low carbon fuel standard.

***xiii) Senate Bill 97***

Senate Bill 97 (SB 97) was adopted August 2007 and acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. SB 97 directed the Governor’s Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to the CARB guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, by July 1, 2009. The Natural Resources Agency was required to certify and adopt those guidelines by January 1, 2010.

Pursuant to the requirements of SB 97 as stated above, on December 30, 2009, the Natural Resources Agency adopted amendments to the state CEQA guidelines that address GHG emissions. The CEQA Guidelines Amendments changed 14 sections of the CEQA Guidelines and incorporate GHG language throughout the Guidelines. However, no GHG emissions thresholds of significance were provided and no specific mitigation measures were identified. The GHG emission reduction amendments went into effect on March 18, 2010, and are summarized below:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that “to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation”.
- OPR’s emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports (EIRs) must specifically consider a project’s energy use and energy efficiency potential.

***xiv) Senate Bill 100***

Senate Bill 100 (SB 100) requires 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045. SB 100 was adopted September 2018.

The interim thresholds from prior Senate Bills and Executive Orders would also remain in effect. These include Senate Bill 1078 (SB 1078), which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) which changed the target date to 2010. Executive Order S-14-08, which was signed on November 2008 and expanded the State’s Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed the CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020.

**xv) Senate Bill 375**

Senate Bill 375 (SB 375) was adopted September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP). The CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. The CARB is also charged with reviewing each MPO's sustainable communities strategy or alternate planning strategy for consistency with its assigned targets.

The proposed project is located within the Southern California Association of Governments (SCAG) jurisdiction, which has authority to develop the SCS or APS. For the SCAG region, the targets set by the CARB are at eight percent below 2005 per capita GHG emissions levels by 2020 and 19 percent below 2005 per capita GHG emissions levels by 2035. These reduction targets became effective October 2018.

**xvi) Senate Bill X7-7**

Senate Bill X7-7 (SB X7-7), enacted on November 9, 2009, mandates water conservation targets and efficiency improvements for urban and agricultural water suppliers. SB X7-7 requires the Department of Water Resources (DWR) to develop a task force and technical panel to develop alternative best management practices for the water sector. In addition, SB X7-7 required the DWR to develop criteria for baseline uses for residential, commercial, and industrial uses for both indoor and landscaped area uses. The DWR was also required to develop targets and regulations that achieve a statewide 20 percent reduction in water usage.

**xvii) Assembly Bill 939 and Senate Bill 1374**

Assembly Bill 939 (AB 939) requires that each jurisdiction in California to divert at least 50 percent of its waste away from landfills, whether through waste reduction, recycling, or other means. Senate Bill 1374 (SB 1374) requires the California Integrated Waste Management Board to adopt a model ordinance by March 1, 2004, suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition of waste materials from landfills.

**xviii) California Code of Regulations (CCR) Title 24, Part 6**

CCR Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24) were first established in 1978 in response to a legislative mandate to reduce California's energy

consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions, electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

The Energy Commission adopted 2008 Standards on April 23, 2008, and Building Standards Commission approved them for publication on September 11, 2008. These updates became effective on August 1, 2009. CalEEMod modeling defaults to 2008 standards. 2013 Standards were approved and have been effective since July 1, 2014. 2016 Standards were adopted January 1, 2017. 2019 standards were published July 1, 2019 and became effective January 1, 2020. All buildings for which an application for a building permit is submitted on or after January 1, 2020 must follow the 2019 standards. The 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards, whereas the 2019 residential standards were estimated to be approximately 7 percent more efficient than the 2016 standards. Furthermore, once rooftop solar electricity generation is factored in, 2019 residential standards were estimated to be approximately 53 percent more efficient than the 2016 standards. Under the 2019 standards, nonresidential buildings are estimated to be approximately 30 percent more efficient than the 2016 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

Per Section 100 Scope, the 2019 Title 24, Part 6 Building Code now requires healthcare facilities, such as assisted living facilities, hospitals, and nursing homes, to meet documentation requirements of Title 24, Part 1 Chapter 7 – Safety Standards for Health Facilities. A healthcare facility is defined as any building or portion thereof licensed pursuant to California Health and Safety Code Division 2, Chapter 1, Section 1204 or Chapter 2, Section 1250. Section 120.1 Ventilation and Indoor Air Quality included both additions and revisions in the 2019 Code. This section now requires nonresidential and hotel/motel buildings to have air filtration systems that use forced air ducts to supply air to occupiable spaces to have air filters. Further, the air filter efficiency must be either MERV 13 or use a particle size efficiency rating specific in the Energy Code AND be equipped with air filters with a minimum 2-inch depth or minimum 1-inch depth if sized according to the equation 120.1-A. If natural ventilation is to be used the space must also use mechanical unless ventilation openings are either permanently open or controlled to stay open during occupied times. The 2019 version of the Code also completely revised the minimum ventilation requirements including DVC airflow rates within Section 120.1 Table 120.1–A. Table 120.1-A now includes air classification and recirculation limitations, these are based on either the number of occupants or the CFM/ft<sup>2</sup> (cubic feet per minute per square foot), whichever is greater.

Section 120.1 Ventilation and Indoor Air Quality also included additions for high-rise residential buildings. Requirements include that mechanical systems must provide air filters that and that air filters must be MERV 13 or use a particle size efficiency rating specified in the Energy Code. Window operation is no

longer a method allowed to meet ventilation requirements, continuous operation of central forced air system handlers used in central fan integrated ventilation system is not a permissible method of providing the dwelling unit ventilation airflow, and central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow to each dwelling unit. In addition, requirements for kitchen range hoods were also provided in the updated Section 120.1.

Per Section 120.1(a) healthcare facilities must be ventilated in accordance with Chapter 4 of the California Mechanical Code and are NOT required to meet the ventilations requirements of Title 24, Part 6. Section 140.4 Space Conditioning Systems included both additions and revisions within the 2019 Code. The changes provided new requirements for cooling tower efficiency, new chilled water-cooling system requirements, as well as new formulas for calculating allowed fan power. Section 140.4(n) also provide a new exception for mechanical system shut-offs for high-rise multifamily dwelling units, while Section 140.4(o) added new requirements for conditioned supply air being delivered to space with mechanical exhaust.

Section 120.6 Covered Processes added information in regards to adiabatic chiller requirements that included that all condenser fans for air-cooled converseness, evaporative-cooled condensers, adiabatic condensers, gas coolers, air or water fluid coolers or cooling towers must be continuously variable speed, with the speed of all fans serving a common condenser high side controlled in unison .Further, the mid-condensing setpoint must be 70 degrees Fahrenheit for all of the above mentioned systems.

New regulations were also adopted under Section 130.1 Indoor Lighting Controls. These included new exceptions being added for restrooms, the exception for classrooms being removed, as well as exceptions in regards to sunlight provided through skylights and overhangs.

Section 130.2 Outdoor Lighting Controls and Equipment added automatic scheduling controls which included that outdoor lighting power must be reduced by 50 to 90 percent, turn the lighting off during unoccupied times and have at least two scheduling options for each luminaire independent from each other and with a 2-hour override function. Furthermore, motion sensing controls must have the ability to reduce power within 15 minutes of area being vacant and be able to come back on again when occupied. An exception allows for lighting subject to a health or life safety statute, ordinance, or regulation may have a minimum time-out period longer than 15 minutes or a minimum dimming level above 50% when necessary to comply with the applicable law.

The 2022 Building Energy Efficiency Standards will become effective on January 1, 2023.<sup>14</sup> The core focus of the building standards has been efficiency, but the 2019 Energy Code ventured into onsite generation

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<sup>14</sup> *California Energy Commission (CEC). 2022. Building Energy Efficiency Standards. <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency>.*

by requiring solar PV on new homes, providing significant GHG savings. The 2022 update builds off this progress with expanded solar standards and the move to onsite energy storage that will help Californians save on utility bills while bolstering the grid. The 2022 Energy Code update focuses on four key areas in new construction of homes and businesses:

- Encouraging electric heat pump technology and use, which consumes less energy and produces fewer emissions than traditional HVACs and water heaters.
- Establishing electric-ready requirements when natural gas is installed, which positions owners to use cleaner electric heating, cooking and electric vehicle (EV) charging options whenever they choose to adopt those technologies.
- Expanding solar photovoltaic (PV) system and battery storage standards to make clean energy available onsite and complement the state’s progress toward a 100 percent clean electricity grid.
- Strengthening ventilation standards to improve indoor air quality.

The 2022 Energy Code affects homes by establishing energy budgets based on efficient heat pumps for space or water heating to encourage builders to install heat pumps over gas-fueled HVAC units; requiring homes to be electric-ready, with dedicated 240-volt outlets and space (with plumbing for water heaters) so electric appliances can eventually replace installed gas appliances; increasing minimum kitchen ventilation requirements so that fans over cooktops have higher airflow or capture efficiency to better exhaust pollution from gas cooking and improve indoor air quality; and allowing exceptions to existing solar PV standards when roof area is not available (such as for smaller homes). In addition, the effect on businesses includes establishing combined solar PV and battery standards for select businesses with systems being sized to maximize onsite use of solar energy and avoid electricity demand during times when the grid must use gas-powered plants; establishing new efficiency standards for commercial greenhouses (primarily cannabis growing); and improving efficiency standards for building envelope, various internal systems, and grid integration equipment, such as demand-responsive controls to buoy grid stability.<sup>15,16</sup>

***xix) California Code of Regulations (CCR) Title 24, Part 11***

CCR Title 24, Part 6: California’s Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24) were first established in 1978 in response to a legislative mandate to reduce California’s energy

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<sup>15</sup> <https://www.lightnowblog.com/2021/08/california-energy-commission-adopts-2022-building-energy-efficiency-standards/>

<sup>16</sup> *State of California Energy Commission. 2022 Building Energy Efficiency Standards Summary.* [https://www.energy.ca.gov/sites/default/files/2021-08/CEC\\_2022\\_EnergyCodeUpdateSummary\\_ADA.pdf](https://www.energy.ca.gov/sites/default/files/2021-08/CEC_2022_EnergyCodeUpdateSummary_ADA.pdf)

consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions, electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

The Energy Commission adopted 2008 Standards on April 23, 2008, and Building Standards Commission approved them for publication on September 11, 2008. These updates became effective on August 1, 2009. 2013 Standards were approved and were effective July 1, 2014. 2016 Standards were adopted January 1, 2017. 2019 standards were published July 1, 2019 and became effective January 1, 2020.

All buildings for which an application for a building permit is submitted on or after January 1, 2020 must follow the 2019 standards. The 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards, whereas the 2019 residential standards are estimated to be approximately 7 percent more efficient than the 2016 standards. Furthermore, once rooftop solar electricity generation is factored in, 2019 residential standards are estimated to be approximately 53 percent more efficient than the 2016 standards. Under the 2019 standards, nonresidential buildings are estimated to be approximately 30 percent more efficient than the 2016 standards<sup>17</sup>. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

**xx) California Green Building Standards**

2022 CALGreen Code: During the 2022-2023 fiscal year, the Department of Housing and Community Development (HCD) updated CALGreen through the 2021 Triennial Code Adoption Cycle. The 2022 Cal green code built upon both the 2016 and the 2019 code.

**a) 2016**

In 2016 HCD adopted three new definitions related to electric vehicle charging regulations. These definitions provided clarity to the code user as to the differences between an electric vehicle charging space and an electric vehicle charging station. HCD replaced the term “electric vehicle charging stations” with “electric vehicle charging spaces” since the term “electric vehicle charging space” better describes a space available for future installation of electric vehicle supply equipment, but with no electric vehicle charger installed.

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<sup>17</sup> California Energy Commission, Efficiency Division, 2019 Building Energy Efficiency Standards, Frequently Asked Questions, website: [https://www.energy.ca.gov/sites/default/files/2020-03/Title\\_24\\_2019\\_Building\\_Standards\\_FAQ\\_ada.pdf](https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf), accessed: December 11, 2020.

HCD also increased the required construction waste reduction from 50 percent to 65 percent of the total building site waste. This increase aids in meeting CalRecycle's statewide solid waste recycling goal of 75 percent for 2020 as stated in Chapter 476, Statutes of 2011 (AB 341). HCD adopted new regulations requiring recycling areas for multifamily projects of five or more dwelling units. This regulation requires developers to provide readily accessible areas adequate in size to accommodate containers for depositing, storage and collection of non-hazardous materials (including organic waste) for recycling. This requirement assists businesses that were required as of April 1, 2016, to meet the requirements of Chapter 727, Statutes of 2014 (AB 1826).

HCD adopted new regulations to require information on photovoltaic systems and electric vehicle chargers to be included in operation and maintenance manuals. Currently, CALGreen section 4.410.1 Item 2(a) requires operation and maintenance instructions for equipment and appliances. Photovoltaic systems and electric vehicle chargers are systems that play an important role in many households in California, and their importance is increasing every day. HCD incorporated these two terms in the existing language in order to provide clarity to code users as to additional systems requiring operation and maintenance instructions.

HCD updated the reference to Clean Air Standards of the United States Environmental Protection Agency applicable to woodstoves and pellet stoves. HCD also adopted a new requirement for woodstoves and pellet stoves to have a permanent label indicating they are certified to meet the emission limits. This requirement provides clarity to the code user and is consistent with the United States Environmental Protection Agency's New Source Performance Standards. HCD updated the list of standards which can be used for verification of compliance for exterior grade composite wood products. This list now includes four standards from the Canadian Standards Association (CSA): CSA O121, CSA O151, CSA O153 and CSA O325. HCD updated heating and air-conditioning system design references to the ANSI/ACCA 2 Manual J, ANSI/ACCA 1 Manual D, and ANSI/ACCA 3 Manual S to the most recent versions approved by ANSI. HCD adopted a new elective measure for hot water recirculation systems for water conservation. The United States Department of Energy estimates that 3,600 to 12,000 gallons of water per year can be saved by the typical household (with four points of hot water use) if a hot water recirculation system is installed.

***b)***      **2019**

2019 CALGreen Code: During the 2019-2020 fiscal year, the HCD updated CALGreen through the 2019 Triennial Code Adoption Cycle.

HCD modified the best management practices for stormwater pollution prevention adding Section 5.106.2 for projects that disturb one or more acres of land. This section requires projects that disturb one acre or more of land or less than one acre of land but are part of a larger common plan of development or sale must comply with the postconstruction requirement detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with

Construction and Land Disturbance Activities issued by the State Water Resources Control Board. The NPDES permits require postconstruction runoff (post-project hydrology) to match the preconstruction runoff (pre-project hydrology) with installation of postconstruction stormwater management measures.

HCD added sections 5.106.4.1.3 and 5.106.4.1.5 in regards to bicycle parking. Section 5.106.4.1.3 requires new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility. In addition, Section 5.106.4.1.5 states that acceptable bicycle parking facility for Sections 5.106.4.1.2 through 5.106.4.1.4 shall be convenient from the street and shall meeting one of the following: (1) covered, lockable enclosures with permanently anchored racks for bicycles; (2) lockable bicycle rooms with permanently anchored racks; or (3) lockable, permanently anchored bicycle lockers.

HCD amended section 5.106.5.3.5 allowing future charging spaces to qualify as designated parking for clean air vehicles.

HCD updated section 5.303.3.3 in regards to showerhead flow rates. This update reduced the flow rate to 1.8 GPM.

HCD amended section 5.304.1 for outdoor potable water use in landscape areas and repealed sections 5.304.2 and 5.304.3. The update requires nonresidential developments to comply with a local water efficient landscape ordinance or the current California Department of Water Resource's Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent. Some updates were also made in regards to the outdoor potable water use in landscape areas for public schools and community colleges.

HCD updated Section 5.504.5.3 in regards to the use of MERV filters in mechanically ventilated buildings. This update changed the filter use from MERV 8 to MERV 13. MERV 13 filters are to be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.

### **c) 2022**

The 2022 California Green Building Standards Code will become effective on January 1, 2023.<sup>18</sup>

HCD amended Section 5.106.5.3 in regard to increasing the EV capable space percentages and adding a new requirement for installed Level 2 DCFC chargers.

HCD under Section 5.106.5.4 added new regulation for electric vehicle charging readiness requirements for new construction of warehouse, grocery stores, and retail stores with planned off-street loading spaces.<sup>19</sup>

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<sup>18</sup> California Building Standards Commission (CBSC). 2022. California Green Building Standards. Website: <https://codes.iccsafe.org/content/CAGBC2022P1>.

<sup>19</sup> <https://www.dgs.ca.gov/BSC/Resources/2022-Title-24-California-Code-Changes>

**xxi) Executive Order B-30-15**

On April 29, 2015, Governor Brown issued Executive Order B-30-15. Therein, the Governor directed the following:

- Established a new interim statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030.
- Ordered all state agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 reduction targets.
- Directed CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent.

**xxii) Executive Order B-29-15**

Executive Order B-29-15, mandates a statewide 25 percent reduction in potable water usage. EO B-29-15 signed into law on April 1, 2015.

**xxiii) Executive Order B-37-16**

Executive Order B-37-16, continuing the State's adopted water reductions, was signed into law on May 9, 2016. The water reductions build off the mandatory 25 percent reduction called for in EO B-29-15.

**xxiv) Senate Bill X1 2**

Signed into law in April 2011, Senate Bill (SB)X1 2, requires one-third of the State's electricity to come from renewable sources. The legislation increases California's current 20 percent renewables portfolio standard target in 2010 to a 33 percent renewables portfolio standard by December 31, 2020.

**xxv) Senate Bill 350**

Signed into law October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard (RPS) eligible resources, including solar, wind, biomass, geothermal, and others. In addition, SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030. To help ensure these goals are met and the greenhouse gas emission reductions are realized, large utilities will be required to develop and submit Integrated Resource Plans (IRPs). These IRPs will detail how each entity will meet their customers resource needs, reduce greenhouse gas emissions, and ramp up the deployment of clean energy resources.

**xxvi) Energy Sector and CEQA Guidelines Appendix F**

The CEC first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR, Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the state. Although not originally intended to reduce GHG emissions, increased energy efficiency and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically (typically every three years) to allow for the consideration and inclusion of new energy efficiency technologies and methods. The 2019 update to the Energy Efficiency Standards for Residential and Nonresidential Buildings focuses on several key areas to improve the energy efficiency of renovations and addition to existing buildings as well as newly constructed buildings and renovations and additions to existing buildings. The major efficiency improvements to the residential Standards involve improvements for attics, walls, water heating, and lighting, whereas the major efficiency improvements to the nonresidential Standards include alignment with the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1-2013 national standards. Furthermore, the 2019 update requires that enforcement agencies determine compliance with CCR, Title 24, Part 6 before issuing building permits for any construction.<sup>20</sup>

Part 11 of the Title 24 Building Energy Efficiency Standards is referred to as the California Green Building Standards (CALGreen) Code. The purpose of the CALGreen Code is to “improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5) Environmental air quality.”<sup>21</sup> As of January 1, 2011, the CALGreen Code is mandatory for all new buildings constructed in the state. The CALGreen Code establishes mandatory measures for new residential and non-residential buildings. Such mandatory measures include energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code was most recently updated in 2022 to include new mandatory measures for residential and nonresidential uses; the new measures took effect on January 1, 2023.

**D. Regional – South Coast Air Quality Management District**

The project is within the South Coast Air Basin, which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD).

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<sup>20</sup> California Energy Commission, 2016 Building Energy Efficiency Standards, June 2015, <http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf>

<sup>21</sup> California Building Standards Commission, 2010 California Green Building Standards Code, (2010).

***i) SCAQMD Regulation XXVII, Climate Change***

SCAQMD Regulation XXVII currently includes three rules:

- The purpose of Rule 2700 is to define terms and post global warming potentials.
- The purpose of Rule 2701, SoCal Climate Solutions Exchange, is to establish a voluntary program to encourage, quantify, and certify voluntary, high quality certified greenhouse gas emission reductions in the SCAQMD.
- Rule 2702, Greenhouse Gas Reduction Program, was adopted on February 6, 2009. The purpose of this rule is to create a Greenhouse Gas Reduction Program for greenhouse gas emission reductions in the SCAQMD. The SCAQMD will fund projects through contracts in response to requests for proposals or purchase reductions from other parties.

A variety of agencies have developed greenhouse gas emission thresholds and/or have made recommendations for how to identify a threshold. However, the thresholds for projects in the jurisdiction of the SCAQMD remain in flux. The California Air Pollution Control Officers Association explored a variety of threshold approaches, but did not recommend one approach (2008). The ARB recommended approaches for setting interim significance thresholds (California Air Resources Board 2008b), in which a draft industrial project threshold suggests that non-transportation related emissions under 7,000 MTCO<sub>2e</sub> per year would be less than significant; however, the ARB has not approved those thresholds and has not published anything since then. The SCAQMD is in the process of developing thresholds, as discussed below.

***ii) SCAQMD Threshold Development***

On December 5, 2008, the SCAQMD Governing Board adopted an interim greenhouse gas significance threshold for stationary sources, rules, and plans where the SCAQMD is lead agency (SCAQMD permit threshold). The SCAQMD permit threshold consists of five tiers. However, the SCAQMD is not the lead agency for this project. Therefore, the five permit threshold tiers do not apply to the proposed project.

The SCAQMD is in the process of preparing recommended significance thresholds for greenhouse gases for local lead agency consideration (“SCAQMD draft local agency threshold”); however, the SCAQMD Board has not approved the thresholds as of the date of the Notice of Preparation. The current draft thresholds consist of the following tiered approach:

- Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether the project is consistent with a greenhouse gas reduction plan. If a project is consistent with a qualifying local greenhouse gas reduction plan, it does not have significant greenhouse gas emissions.

- Tier 3 consists of screening values, which the lead agency can choose, but must be consistent with all projects within its jurisdiction. A project's construction emissions are averaged over 30 years and are added to a project's operational emissions. If a project's emissions are under one of the following screening thresholds, then the project is less than significant:
  - All land use types: 3,000 MTCO<sub>2</sub>e per year
  - Based on land use type: residential: 3,500 MTCO<sub>2</sub>e per year; commercial: 1,400 MTCO<sub>2</sub>e per year; or mixed use: 3,000 MTCO<sub>2</sub>e per year.
  - Based on land type: Industrial (where SCAQMD is the lead agency), 10,000 MTCO<sub>2</sub>e per year.
- Tier 4 has the following options:
  - Option 1: Reduce emissions from business as usual (BAU) by a certain percentage; this percentage is currently undefined.
  - Option 2: Early implementation of applicable AB 32 Scoping Plan measures.
  - Option 3, 2020 target for service populations (SP), which includes residents and employees: 4.8 MTCO<sub>2</sub>e/SP/year for projects and 6.6 MTCO<sub>2</sub>e/SP/year for plans;
  - Option 3, 2035 target: 3.0 MTCO<sub>2</sub>e/SP/year for projects and 4.1 MTCO<sub>2</sub>e/SP/year for plans.
- Tier 5 involves mitigation offsets to achieve target significance threshold.

The SCAQMD's draft threshold uses the Executive Order S-3-05 goal as the basis for the Tier 3 screening level. Achieving the Executive Order's objective would contribute to worldwide efforts to cap carbon dioxide concentrations at 450 ppm, thus stabilizing global climate. Specifically, the Tier 3 screening level for stationary sources is based on an emission capture rate of 90 percent for all new or modified projects. A 90 percent emission capture rate means that 90 percent of total emissions from all new or modified stationary source projects would be subject to a CEQA analysis, including a negative declaration, a mitigated negative declaration, or an environmental impact report, which includes analyzing feasible alternatives and imposing feasible mitigation measures. A GHG significance threshold based on a 90 percent emission capture rate may be more appropriate to address the long-term adverse impacts associated with global climate change because most projects will be required to implement GHG reduction measures. Further, a 90 percent emission capture rate sets the emission threshold low enough to capture a substantial fraction of future stationary source projects that will be constructed to accommodate future statewide population and economic growth, while setting the emission threshold high enough to exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions. This assertion is based on the fact that staff estimates that these GHG emissions would account for slightly less than one percent of future 2050 statewide GHG emissions target (85 MMTCO<sub>2</sub>eq/year). In addition, these small projects may be subject to future applicable GHG control regulations that would further reduce their overall future contribution to the statewide GHG inventory. Finally, these small sources are already subject to BACT for criteria pollutants and are more likely to be single-permit facilities, so they are more likely to have few opportunities readily available to reduce GHG emissions from other parts of their facility.

### **E. Local – County of Los Angeles**

In August 2015, the County of Los Angeles approved and adopted the *Unincorporated Los Angeles County Community Climate Action Plan 2020*. To reduce the impacts of climate change, the County set a target to reduce GHG emissions from community activities in the unincorporated areas of Los Angeles County by at least 11% below 2010 levels by 2020. This Community Climate Action Plan (CCAP) described the County's plan for achieving this goal, including specific strategy areas for each of the major emissions sectors, and provided details on the 2010 and projected 2020 emissions in the unincorporated areas. The CCAP was a component of the Los Angeles County General Plan.

Implementing State measures and the local measures in the CCAP would avoid the generation of more than 1.9 million metric tons of carbon dioxide equivalent (MTCO<sub>2e</sub>), which is equivalent to the following actions in 2020 (U.S. Environmental Protection Agency 2014):

- Removing more than 411,000 passenger vehicles from the road.
- Reducing gasoline consumption by more than 220 million gallons.
- Providing renewable energy to power over 178,000 homes.

The actions in the CCAP are priority actions and intended for near-term implementation, such that the County can achieve its GHG reduction goal for 2020 for the unincorporated areas of Los Angeles County.

The County of Los Angeles produced a revised draft of the 2045 Climate Action Plan on March 2023. The *2045 Los Angeles County Climate Action Plan (2045 CAP)* is LA County's path toward meeting the goals of the Paris Agreement and achieving carbon neutrality for unincorporated areas of the County. The 2045 CAP builds on previous climate action work from the Unincorporated Los Angeles County Community Climate Action Plan 2020 (2020 CCAP), adopted in October 2015 as a subcomponent of the Air Quality Element of the Los Angeles County General Plan 2035 (General Plan). The 2045 CAP identifies strategies, measures, and actions to mitigate emissions from community activities, which may include some municipal operations; however, municipal operations are not the focus of this plan.

The 2045 CAP is an update to the 2020 CCAP, and it sets new GHG emissions reduction targets beyond the 2020 time frame that are consistent with state goals. The 2045 CAP includes the following elements:

- A GHG emissions inventory from community-wide activities in unincorporated Los Angeles County in 2018, along with a baseline inventory for 2015.
- Projections of future emissions for 2030, 2035, and 2045.
- GHG reduction targets for 2030 and 2035
- A long-term aspirational goal for carbon neutrality by 2045.

- Climate strategies, measures, and actions to reduce GHG emissions from major sectors.
- Implementation and monitoring measures to ensure successful climate action.

Achieving carbon neutrality will require ambitious climate actions that address GHG emissions from all sectors and sources. To reduce emissions across all sectors, the 2045 CAP establishes two GHG emissions reduction targets and one long-term aspirational goal:

- *Target:* By 2030, reduce GHG emissions by 40 percent below 2015 levels.
- *Target:* By 2035, reduce GHG emissions by 50 percent below 2015 levels.
- *Aspirational Goal:* By 2045, achieve carbon neutrality in unincorporated Los Angeles County.

As the Draft 2045 CAP has not been fully approved and adopted, the adopted 2020 CCAP is the plan that is in force.

### **3. SIGNIFICANCE THRESHOLDS**

#### **A. Appendix G of State CEQA Guidelines**

The CEQA Guidelines recommend that a lead agency consider the following when assessing the significance of impacts from GHG emissions on the environment:

- The extent to which the project may increase (or reduce) GHG emissions as compared to the existing environmental setting;
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;
- The extent to which the project complies with regulations or requirements adopted to implement an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions<sup>22</sup>.

#### **B. Thresholds of Significance for this Project**

To determine whether the project's GHG emissions are significant, this analysis uses the SCAQMD screening threshold of 3,000 MTCO<sub>2e</sub> per year for all land uses.

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<sup>22</sup> *The Governor's Office of Planning and Research recommendations include a requirement that such a plan must be adopted through a public review process and include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.*

## 4. METHODOLOGY

CalEEMod Version 2022.1.1.13 was used to calculate the GHG emissions from the proposed project. This analysis quantifies the project's total annual GHG emissions, taking into account compliance with regulation and GHG emission reduction features that would be incorporated into the Project's design.

The proposed project is anticipated to generate GHG emissions from area sources, energy usage, mobile sources, waste, water, and construction equipment. The following provides the methodology used to calculate the project-related GHG emissions and the project impacts.

The CalEEMod annual emissions for year 2027 are available in Appendix B. Each source of GHG emissions is described in greater detail below.

### A. Area Sources

Area sources include emissions from consumer products, landscape equipment and architectural coatings. No changes were made to the default area source emissions.

### B. Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site. No other changes were made to the default energy usage parameters.

### C. Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been analyzed by inputting the project-generated trip generation data from the Transportation Impact Analysis Screening Analysis for the Hope Gardens Expansion Project, Los Angeles County, California (TIA), prepared by Gibson Transportation Consulting Inc. (February 2, 2023), for the proposed project into the CalEEMod Model. The TIA showed that the project would generate 1.08 trips/room. See Section II for details.

### D. Waste

Waste includes the GHG emissions generated from the processing of waste from the proposed project as well as the GHG emissions from the waste once it is interred into a landfill. AB 341 requires that 75 percent of waste be diverted from landfills by 2020. No other changes were made to the default waste parameters.

### E. Water

Water includes the water used for the interior of the building as well as for landscaping and is based on the GHG emissions associated with the energy used to transport and filter the water. CALGreen requires

a 20 percent reduction in indoor water use and water efficient irrigation systems. To be conservative, no reductions were taken and no changes were made to the default water usage parameters.

#### F. Construction

The construction-related GHG emissions were also included in the analysis and were based on a 30-year amortization rate as recommended in the SCAQMD GHG Working Group meeting on November 19, 2009. The construction-related GHG emissions were calculated by CalEEMod using the methodology detailed above in *Section II, Air Quality Analysis*, of this technical report.

### 5. PROJECT GREENHOUSE GAS EMISSIONS

The GHG emissions have been calculated based on the parameters described above. A summary of the results is shown in Table 10 below. Table 10, shows that the project's total emissions would be 1,027.73 MTCO<sub>2</sub>e per year.

**Table 10**  
**Project-Related GHG Emissions**

| <b>Emissions Source</b>  | <b>Estimated Project Generated CO<sub>2</sub>e Emissions (Metric Tons per Year)</b> |
|--|---|
| Maximum Annual Project Operations                                  | 987   |
| Construction Emissions   | 1,222   |
| Amortized Construction Emissions                                   | 40.73   |
| <b>Project Total</b>   | <b>1,027.73</b>   |
| <i>Source: CalEEMod Version 2022.1.1.13 for Opening Year 2027.</i> |   |

### 6. CONSISTENCY WITH APPLICABLE GREENHOUSE GAS REDUCTION PLANS AND POLICIES

The proposed project would have the potential to conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

As stated previously, the 2020 LA County CCAP is the currently adopted plan for reducing GHG emissions in the County of Los Angeles. The 2020 CCAP has the following strategy areas to reduce GHG emissions:

- **Green building and energy:** Building energy consumption accounts for about 49% of the County's GHG inventory. The County has already developed and implemented a number of energy efficiency and renewable energy programs to reduce building energy related emissions. Additional strategies include expanding green building initiatives and popular efficiency programs that are not only cost-effective, but also deliver community co-benefits.

- **Land use and transportation:** As a significant portion of the County’s emissions are from on-road transportation sources, which is the case with most communities in the state, developing realistic ways to reduce vehicle trips and vehicle miles traveled (VMT), improve vehicle fuel economy, and reduce the carbon intensity of transportation fuels is an important strategy for the CCAP (Urban Land Institute 2007). Opportunities to address transportation-related emissions include changes in density and mixed use, increased transit, enhanced pedestrian and bicycle trails, and expanded incentives and opportunities for alternative modes of transportation and electric vehicle (EV) charging.
- **Water conservation and wastewater:** Water conservation has been an important management objective for the County over the past several decades. Additional strategies to further reduce GHG emissions from community water consumption and wastewater generation focus on optimizing the operation of pumping infrastructure and expanding water conservation.
- **Waste reduction, reuse, and recycling:** While waste production represents a small portion of the County’s inventory, a number of cost-effective and relatively simple activities can be undertaken to increase the volume of waste that is either recycled or composted.
- **Land conservation and tree planting:** The unincorporated areas support a diversity of natural resources and habitats. Expanding and enhancing these areas not only contributes to GHG emissions reductions, but also provides recreational opportunities and a variety of other community co-benefits.

The Project proposes a new CUP to increase the on-site maximum residential capacity from 300 to 525 formerly homeless single women and their children (less than 18 years old) at the Project Site, and the demolition of the existing one-story, approximately 22,470-square-foot Sequoia Lodge at the Project’s Development Site and construct a new, larger multi-use building to accommodate the residential capacity increase as well as increase the ability of URM to provide support services and life skills training for residents as they transition from homelessness to a position of financial stability to provide for their own housing.

The objectives and underlying purposes of the Project are as follows:

1. Provide a new, modern facility adequately sized to increase the transitional housing capacity and associated support services at Hope Gardens Family Center for single women and their children less than 18 years of age as well as senior women experiencing homelessness in Los Angeles County.
2. Create an environmentally sensitive development by locating the new building in an optimal area of the existing campus that utilizes the existing built environment and graded, developed pads; avoids the loss of on-site recreational open spaces; and minimizes impacts to surrounding oak

- woodlands and forestland, including the Angeles National Forest, and other ungraded, undeveloped areas of the campus.
3. Utilize existing properties owned and operated by Union Rescue Mission to expand the effectiveness of this faith-based nonprofit organization's mission to help those experiencing homelessness with housing and support services intended to get individuals and families back into a stable situation.
  4. Provide modern construction that incorporates current building code requirements including design considerations for fire resistance to best safeguard residents and staff at the campus.

The Project will comply with the CCAP as follows:

- **Green building and energy:** The Project would comply with the requirements in the County's Green Building Code and Title 24, which requires buildings to be designed to include green building measures for energy efficiency, water conservation, recycling, light pollution reduction, electric vehicle charging stations, Energy Star-rated appliances, eco-friendly building materials, non-volatile organic compound paints/adhesives, drought-tolerant planting, and high-performance building envelopment.
- **Land use and transportation:** The Project involves the expansion of a homeless care facility. As many of the residents will not be driving vehicles, the Project would generate a low VMT (as shown in the Gibson TIA) and will not conflict with the County's goals and policies to reduce VMT and the emissions associated with transportation.
- **Water conservation and wastewater:** The Project will comply with CALGreen requirements regarding water conservation and will not conflict with the goals of CCAP.
- **Waste reduction, reuse, and recycling:** The Project will include recycling per CALGreen and Title 24 requirements and will not conflict with the goals of the CCAP.
- **Land conservation and tree planting:** As stated above, the Project will construct the new building in an optimal area of the existing campus that utilizes the existing built environment and graded, developed pads; avoids the loss of on-site recreational open spaces; and minimizes impacts to surrounding oak woodlands and forestland, including the Angeles National Forest, and other ungraded, undeveloped areas of the campus. Therefore, the Project is consistent with the goals of the CCAP.

Therefore, the Project will not conflict with the strategy areas of the CCAP and will not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. Impacts are less than significant.

## 7. CUMULATIVE GREENHOUSE GAS IMPACTS

Although the project is expected to emit GHGs, the emission of GHGs by a single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of GHG from more than one project and many sources in the atmosphere that may result in global climate change. Therefore, in the case of global climate change, the proximity of the project to other GHG emission generating activities is not directly relevant to the determination of a cumulative impact because climate change is a global condition. According to CAPCOA, “GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective.”<sup>23</sup> The resultant consequences of that climate change can cause adverse environmental effects. A project’s GHG emissions typically would be very small in comparison to state or global GHG emissions and, consequently, they would, in isolation, have no significant direct impact on climate change.

The state has mandated a goal of reducing statewide emissions to 1990 levels by 2020, even though statewide population and commerce are predicted to continue to expand. In order to achieve this goal, CARB is in the process of establishing and implementing regulations to reduce statewide GHG emissions.

As discussed in the Consistency With Applicable Greenhouse Gas Reduction Plans and Policies section above, the project is consistent with the goals and objectives of the County’s CCAP. Therefore, the project’s incremental contribution to greenhouse gas emissions and their effects on climate change would not be cumulatively considerable.

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<sup>23</sup> Source: California Air Pollution Control Officers Association, *CEQA & Climate change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act, (2008)*.

## IV. EMISSIONS REDUCTION MEASURES

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### 1. CONSTRUCTION MEASURES

Adherence to SCAQMD Rule 403 is required.

### 2. OPERATIONAL MEASURES

None required.

## V. LIST OF ACRONYMS AND ABBREVIATIONS

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|                      |  |
|----------------------|--|
| AQMP                 | Air Quality Management Plan                              |
| BACT                 | Best Available Control Technologies                      |
| CAAQS                | California Ambient Air Quality Standards                 |
| CalEPA               | California Environmental Protection Agency               |
| CARB                 | California Air Resources Board                           |
| CCAA                 | California Clean Air Act                                 |
| CCAR                 | California Climate Action Registry                       |
| CEQA                 | California Environmental Quality Act                     |
| CFCs                 | Chlorofluorocarbons                                      |
| CH <sub>4</sub>      | Methane  |
| CNG                  | Compressed natural gas                                   |
| CO                   | Carbon monoxide  |
| CO <sub>2</sub>      | Carbon dioxide   |
| CO <sub>2</sub> e    | Carbon dioxide equivalent                                |
| DPM                  | Diesel particulate matter                                |
| EPA                  | U.S. Environmental Protection Agency                     |
| GHG                  | Greenhouse gas   |
| GWP                  | Global warming potential                                 |
| HIDPM                | Hazard Index Diesel Particulate Matter                   |
| HFCs                 | Hydrofluorocarbons                                       |
| IPCC                 | International Panel on Climate Change                    |
| LCFS                 | Low Carbon Fuel Standard                                 |
| LST                  | Localized Significant Thresholds                         |
| MTCO <sub>2</sub> e  | Metric tons of carbon dioxide equivalent                 |
| MMTCO <sub>2</sub> e | Million metric tons of carbon dioxide equivalent         |
| MPO                  | Metropolitan Planning Organization                       |
| NAAQS                | National Ambient Air Quality Standards                   |
| NO <sub>x</sub>      | Nitrogen Oxides  |
| NO <sub>2</sub>      | Nitrogen dioxide   |
| N <sub>2</sub> O     | Nitrous oxide  |
| O <sub>3</sub>       | Ozone  |
| OPR                  | Governor's Office of Planning and Research               |
| PFCs                 | Perfluorocarbons   |
| PM                   | Particulate matter                                       |
| PM10                 | Particles that are less than 10 micrometers in diameter  |
| PM2.5                | Particles that are less than 2.5 micrometers in diameter |

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|                 |  |
|-----------------|--|
| PMI             | Point of maximum impact                        |
| PPM             | Parts per million                              |
| PPB             | Parts per billion                              |
| RTIP            | Regional Transportation Improvement Plan       |
| RTP             | Regional Transportation Plan                   |
| SCAB            | South Coast Air Basin                          |
| SCAG            | Southern California Association of Governments |
| SCAQMD          | South Coast Air Quality Management District    |
| SSAB            | Salton Sea Air Basin                           |
| SF <sub>6</sub> | Sulfur hexafluoride                            |
| SIP             | State Implementation Plan                      |
| SO <sub>x</sub> | Sulfur Oxides                                  |
| TAC             | Toxic air contaminants                         |
| VOC             | Volatile organic compounds                     |

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# APPENDIX A: CALEEMOD MODEL EMISSIONS PRINTOUTS

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# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field                  | Value  |
|-----------------------------|--|
| Project Name                | Hope Gardens Construction Only               |
| Construction Start Date     | 10/1/2024                                    |
| Lead Agency                 | Los Angeles County                           |
| Land Use Scale              | Project/site                                 |
| Analysis Level for Defaults | County                                       |
| Windspeed (m/s)             | 2.50   |
| Precipitation (days)        | 24.2   |
| Location                    | 12249 Lopez Canyon Rd, Sylmar, CA 91342, USA |
| County                      | Los Angeles-South Coast                      |
| City                        | Unincorporated                               |
| Air District                | South Coast AQMD                             |
| Air Basin                   | South Coast                                  |
| TAZ                         | 3692   |
| EDFZ                        | 7  |
| Electric Utility            | Southern California Edison                   |
| Gas Utility                 | Southern California Gas                      |
| App Version                 | 2022.1.1.13                                  |

## 1.2. Land Use Types

| Land Use Subtype                  | Size | Unit          | Lot Acreage | Building Area (sq ft) | Landscape Area (sq ft) | Special Landscape Area (sq ft) | Population | Description |
|-----------------------------------|------|---------------|-------------|-----------------------|------------------------|--------------------------------|------------|-------------|
| Congregate Care (Assisted Living) | 117  | Dwelling Unit | 0.70        | 106,410               | 0.00                   | —                              | 346        | —           |

|                                |      |       |      |       |      |   |   |   |
|--------------------------------|------|-------|------|-------|------|---|---|---|
| Enclosed Parking with Elevator | 22.0 | Space | 0.20 | 8,800 | 0.00 | — | — | — |
| Other Asphalt Surfaces         | 0.50 | Acre  | 0.50 | 0.00  | 0.00 | — | — | — |

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

## 2. Emissions Summary

### 2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit.             | ROG  | NOx  | CO   | SO2     | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T  | CH4  | N2O  | R    | CO2e  |
|---------------------|------|------|------|---------|-------|-------|-------|--------|--------|--------|------|-------|-------|------|------|------|-------|
| Daily, Summer (Max) | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —    | —    | —     |
| Unmit.              | 11.9 | 14.2 | 24.8 | 0.03    | 0.45  | 1.66  | 2.11  | 0.42   | 0.39   | 0.81   | —    | 4,921 | 4,921 | 0.20 | 0.14 | 6.00 | 4,973 |
| Daily, Winter (Max) | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —    | —    | —     |
| Unmit.              | 11.9 | 15.9 | 23.8 | 0.03    | 0.74  | 2.89  | 3.64  | 0.68   | 1.37   | 2.05   | —    | 4,840 | 4,840 | 0.16 | 0.22 | 0.16 | 4,885 |
| Average Daily (Max) | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —    | —    | —     |
| Unmit.              | 2.65 | 7.07 | 11.2 | 0.02    | 0.24  | 0.89  | 1.13  | 0.22   | 0.21   | 0.43   | —    | 2,431 | 2,431 | 0.10 | 0.08 | 1.74 | 2,461 |
| Annual (Max)        | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —    | —    | —     |
| Unmit.              | 0.48 | 1.29 | 2.04 | < 0.005 | 0.04  | 0.16  | 0.21  | 0.04   | 0.04   | 0.08   | —    | 403   | 403   | 0.02 | 0.01 | 0.29 | 407   |

### 2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Year                 | ROG  | NOx  | CO   | SO2     | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T  | CH4     | N2O     | R    | CO2e  |
|----------------------|------|------|------|---------|-------|-------|-------|--------|--------|--------|------|-------|-------|---------|---------|------|-------|
| Daily - Summer (Max) | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —     | —       | —       | —    | —     |
| 2025                 | 1.46 | 9.83 | 16.4 | 0.02    | 0.33  | 1.27  | 1.60  | 0.31   | 0.30   | 0.61   | —    | 3,460 | 3,460 | 0.14    | 0.12    | 5.66 | 3,504 |
| 2026                 | 1.35 | 9.39 | 15.9 | 0.02    | 0.30  | 1.27  | 1.57  | 0.27   | 0.30   | 0.57   | —    | 3,427 | 3,427 | 0.14    | 0.12    | 5.21 | 3,471 |
| 2027                 | 11.9 | 14.2 | 24.8 | 0.03    | 0.45  | 1.66  | 2.11  | 0.42   | 0.39   | 0.81   | —    | 4,921 | 4,921 | 0.20    | 0.14    | 6.00 | 4,973 |
| Daily - Winter (Max) | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —     | —       | —       | —    | —     |
| 2024                 | 1.69 | 15.9 | 16.1 | 0.03    | 0.74  | 2.89  | 3.64  | 0.68   | 1.37   | 2.05   | —    | 3,272 | 3,272 | 0.15    | 0.22    | 0.09 | 3,342 |
| 2025                 | 1.45 | 9.89 | 15.5 | 0.02    | 0.33  | 1.27  | 1.60  | 0.31   | 0.30   | 0.61   | —    | 3,396 | 3,396 | 0.14    | 0.12    | 0.15 | 3,436 |
| 2026                 | 1.35 | 9.45 | 15.0 | 0.02    | 0.30  | 1.27  | 1.57  | 0.27   | 0.30   | 0.57   | —    | 3,366 | 3,366 | 0.14    | 0.12    | 0.14 | 3,405 |
| 2027                 | 11.9 | 14.4 | 23.8 | 0.03    | 0.45  | 1.66  | 2.11  | 0.42   | 0.39   | 0.81   | —    | 4,840 | 4,840 | 0.16    | 0.14    | 0.16 | 4,885 |
| Average Daily        | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —     | —       | —       | —    | —     |
| 2024                 | 0.23 | 2.25 | 2.14 | < 0.005 | 0.10  | 0.36  | 0.46  | 0.09   | 0.15   | 0.24   | —    | 407   | 407   | 0.02    | 0.01    | 0.10 | 412   |
| 2025                 | 1.03 | 7.07 | 11.2 | 0.02    | 0.24  | 0.89  | 1.13  | 0.22   | 0.21   | 0.43   | —    | 2,431 | 2,431 | 0.10    | 0.08    | 1.74 | 2,461 |
| 2026                 | 0.96 | 6.78 | 10.9 | 0.02    | 0.21  | 0.89  | 1.11  | 0.19   | 0.21   | 0.41   | —    | 2,416 | 2,416 | 0.10    | 0.08    | 1.61 | 2,445 |
| 2027                 | 2.65 | 5.68 | 9.37 | 0.01    | 0.17  | 0.74  | 0.91  | 0.16   | 0.18   | 0.33   | —    | 2,039 | 2,039 | 0.07    | 0.07    | 1.20 | 2,061 |
| Annual               | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —     | —       | —       | —    | —     |
| 2024                 | 0.04 | 0.41 | 0.39 | < 0.005 | 0.02  | 0.07  | 0.08  | 0.02   | 0.03   | 0.04   | —    | 67.4  | 67.4  | < 0.005 | < 0.005 | 0.02 | 68.2  |
| 2025                 | 0.19 | 1.29 | 2.04 | < 0.005 | 0.04  | 0.16  | 0.21  | 0.04   | 0.04   | 0.08   | —    | 403   | 403   | 0.02    | 0.01    | 0.29 | 407   |
| 2026                 | 0.18 | 1.24 | 1.99 | < 0.005 | 0.04  | 0.16  | 0.20  | 0.04   | 0.04   | 0.07   | —    | 400   | 400   | 0.02    | 0.01    | 0.27 | 405   |
| 2027                 | 0.48 | 1.04 | 1.71 | < 0.005 | 0.03  | 0.14  | 0.17  | 0.03   | 0.03   | 0.06   | —    | 338   | 338   | 0.01    | 0.01    | 0.20 | 341   |

### 3. Construction Emissions Details

#### 3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location            | ROG  | NOx  | CO   | SO2     | PM10E | PM10D | PM10T | PM2.5E | PM2.5D  | PM2.5T  | BCO2 | NBCO2 | CO2T  | CH4     | N2O     | R    | CO2e  |
|---------------------|------|------|------|---------|-------|-------|-------|--------|---------|---------|------|-------|-------|---------|---------|------|-------|
| Onsite              | —    | —    | —    | —       | —     | —     | —     | —      | —       | —       | —    | —     | —     | —       | —       | —    | —     |
| Daily, Summer (Max) | —    | —    | —    | —       | —     | —     | —     | —      | —       | —       | —    | —     | —     | —       | —       | —    | —     |
| Daily, Winter (Max) | —    | —    | —    | —       | —     | —     | —     | —      | —       | —       | —    | —     | —     | —       | —       | —    | —     |
| Off-Road Equipment  | 1.38 | 13.2 | 12.2 | 0.02    | 0.57  | —     | 0.57  | 0.52   | —       | 0.52    | —    | 1,913 | 1,913 | 0.08    | 0.02    | —    | 1,919 |
| Demolition          | —    | —    | —    | —       | —     | 0.99  | 0.99  | —      | 0.15    | 0.15    | —    | —     | —     | —       | —       | —    | —     |
| Onsite truck        | 0.00 | 0.00 | 0.00 | 0.00    | 0.00  | 0.00  | 0.00  | 0.00   | 0.00    | 0.00    | —    | 0.00  | 0.00  | 0.00    | 0.00    | 0.00 | 0.00  |
| Average Daily       | —    | —    | —    | —       | —     | —     | —     | —      | —       | —       | —    | —     | —     | —       | —       | —    | —     |
| Off-Road Equipment  | 0.08 | 0.72 | 0.67 | < 0.005 | 0.03  | —     | 0.03  | 0.03   | —       | 0.03    | —    | 105   | 105   | < 0.005 | < 0.005 | —    | 105   |
| Demolition          | —    | —    | —    | —       | —     | 0.05  | 0.05  | —      | 0.01    | 0.01    | —    | —     | —     | —       | —       | —    | —     |
| Onsite truck        | 0.00 | 0.00 | 0.00 | 0.00    | 0.00  | 0.00  | 0.00  | 0.00   | 0.00    | 0.00    | —    | 0.00  | 0.00  | 0.00    | 0.00    | 0.00 | 0.00  |
| Annual              | —    | —    | —    | —       | —     | —     | —     | —      | —       | —       | —    | —     | —     | —       | —       | —    | —     |
| Off-Road Equipment  | 0.01 | 0.13 | 0.12 | < 0.005 | 0.01  | —     | 0.01  | 0.01   | —       | 0.01    | —    | 17.4  | 17.4  | < 0.005 | < 0.005 | —    | 17.4  |
| Demolition          | —    | —    | —    | —       | —     | 0.01  | 0.01  | —      | < 0.005 | < 0.005 | —    | —     | —     | —       | —       | —    | —     |
| Onsite truck        | 0.00 | 0.00 | 0.00 | 0.00    | 0.00  | 0.00  | 0.00  | 0.00   | 0.00    | 0.00    | —    | 0.00  | 0.00  | 0.00    | 0.00    | 0.00 | 0.00  |
| Offsite             | —    | —    | —    | —       | —     | —     | —     | —      | —       | —       | —    | —     | —     | —       | —       | —    | —     |
| Daily, Summer (Max) | —    | —    | —    | —       | —     | —     | —     | —      | —       | —       | —    | —     | —     | —       | —       | —    | —     |

|                     |         |         |      |         |         |         |         |         |         |         |   |       |       |         |         |         |       |
|---------------------|---------|---------|------|---------|---------|---------|---------|---------|---------|---------|---|-------|-------|---------|---------|---------|-------|
| Daily, Winter (Max) | —       | —       | —    | —       | —       | —       | —       | —       | —       | —       | — | —     | —     | —       | —       | —       | —     |
| Worker              | 0.03    | 0.04    | 0.48 | 0.00    | 0.00    | 0.10    | 0.10    | 0.00    | 0.02    | 0.02    | — | 100   | 100   | < 0.005 | < 0.005 | 0.01    | 102   |
| Vendor              | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | — | 0.00  | 0.00  | 0.00    | 0.00    | 0.00    | 0.00  |
| Hauling             | 0.03    | 1.63    | 0.60 | 0.01    | 0.02    | 0.33    | 0.35    | 0.02    | 0.09    | 0.11    | — | 1,259 | 1,259 | 0.07    | 0.20    | 0.08    | 1,321 |
| Average Daily       | —       | —       | —    | —       | —       | —       | —       | —       | —       | —       | — | —     | —     | —       | —       | —       | —     |
| Worker              | < 0.005 | < 0.005 | 0.03 | 0.00    | 0.00    | 0.01    | 0.01    | 0.00    | < 0.005 | < 0.005 | — | 5.58  | 5.58  | < 0.005 | < 0.005 | 0.01    | 5.66  |
| Vendor              | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | — | 0.00  | 0.00  | 0.00    | 0.00    | 0.00    | 0.00  |
| Hauling             | < 0.005 | 0.09    | 0.03 | < 0.005 | < 0.005 | 0.02    | 0.02    | < 0.005 | < 0.005 | 0.01    | — | 69.0  | 69.0  | < 0.005 | 0.01    | 0.07    | 72.4  |
| Annual              | —       | —       | —    | —       | —       | —       | —       | —       | —       | —       | — | —     | —     | —       | —       | —       | —     |
| Worker              | < 0.005 | < 0.005 | 0.01 | 0.00    | 0.00    | < 0.005 | < 0.005 | 0.00    | < 0.005 | < 0.005 | — | 0.92  | 0.92  | < 0.005 | < 0.005 | < 0.005 | 0.94  |
| Vendor              | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | — | 0.00  | 0.00  | 0.00    | 0.00    | 0.00    | 0.00  |
| Hauling             | < 0.005 | 0.02    | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 11.4  | 11.4  | < 0.005 | < 0.005 | 0.01    | 12.0  |

### 3.3. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location            | ROG  | NOx  | CO   | SO2  | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T  | CH4  | N2O  | R | CO2e  |
|---------------------|------|------|------|------|-------|-------|-------|--------|--------|--------|------|-------|-------|------|------|---|-------|
| Onsite              | —    | —    | —    | —    | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —    | — | —     |
| Daily, Summer (Max) | —    | —    | —    | —    | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —    | — | —     |
| Daily, Winter (Max) | —    | —    | —    | —    | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —    | — | —     |
| Off-Road Equipment  | 1.04 | 10.3 | 9.28 | 0.01 | 0.46  | —     | 0.46  | 0.42   | —      | 0.42   | —    | 1,496 | 1,496 | 0.06 | 0.01 | — | 1,501 |

|                             |      |      |      |         |         |      |         |         |      |         |   |      |      |         |         |      |      |
|-----------------------------|------|------|------|---------|---------|------|---------|---------|------|---------|---|------|------|---------|---------|------|------|
| Dust From Material Movement | —    | —    | —    | —       | —       | 2.24 | 2.24    | —       | 1.15 | 1.15    | — | —    | —    | —       | —       | —    | —    |
| Onsite truck                | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |
| Average Daily               | —    | —    | —    | —       | —       | —    | —       | —       | —    | —       | — | —    | —    | —       | —       | —    | —    |
| Off-Road Equipment          | 0.06 | 0.56 | 0.51 | < 0.005 | 0.03    | —    | 0.03    | 0.02    | —    | 0.02    | — | 82.0 | 82.0 | < 0.005 | < 0.005 | —    | 82.3 |
| Dust From Material Movement | —    | —    | —    | —       | —       | 0.12 | 0.12    | —       | 0.06 | 0.06    | — | —    | —    | —       | —       | —    | —    |
| Onsite truck                | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |
| Annual                      | —    | —    | —    | —       | —       | —    | —       | —       | —    | —       | — | —    | —    | —       | —       | —    | —    |
| Off-Road Equipment          | 0.01 | 0.10 | 0.09 | < 0.005 | < 0.005 | —    | < 0.005 | < 0.005 | —    | < 0.005 | — | 13.6 | 13.6 | < 0.005 | < 0.005 | —    | 13.6 |
| Dust From Material Movement | —    | —    | —    | —       | —       | 0.02 | 0.02    | —       | 0.01 | 0.01    | — | —    | —    | —       | —       | —    | —    |
| Onsite truck                | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |
| Offsite                     | —    | —    | —    | —       | —       | —    | —       | —       | —    | —       | — | —    | —    | —       | —       | —    | —    |
| Daily, Summer (Max)         | —    | —    | —    | —       | —       | —    | —       | —       | —    | —       | — | —    | —    | —       | —       | —    | —    |
| Daily, Winter (Max)         | —    | —    | —    | —       | —       | —    | —       | —       | —    | —       | — | —    | —    | —       | —       | —    | —    |
| Worker                      | 0.02 | 0.03 | 0.32 | 0.00    | 0.00    | 0.07 | 0.07    | 0.00    | 0.02 | 0.02    | — | 66.9 | 66.9 | < 0.005 | < 0.005 | 0.01 | 67.7 |
| Vendor                      | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |
| Hauling                     | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |

|               |         |         |         |      |      |         |         |      |         |         |   |      |      |         |         |         |      |
|---------------|---------|---------|---------|------|------|---------|---------|------|---------|---------|---|------|------|---------|---------|---------|------|
| Average Daily | —       | —       | —       | —    | —    | —       | —       | —    | —       | —       | — | —    | —    | —       | —       | —       | —    |
| Worker        | < 0.005 | < 0.005 | 0.02    | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 3.72 | 3.72 | < 0.005 | < 0.005 | 0.01    | 3.77 |
| Vendor        | 0.00    | 0.00    | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | 0.00 |
| Hauling       | 0.00    | 0.00    | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | 0.00 |
| Annual        | —       | —       | —       | —    | —    | —       | —       | —    | —       | —       | — | —    | —    | —       | —       | —       | —    |
| Worker        | < 0.005 | < 0.005 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 0.62 | 0.62 | < 0.005 | < 0.005 | < 0.005 | 0.62 |
| Vendor        | 0.00    | 0.00    | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | 0.00 |
| Hauling       | 0.00    | 0.00    | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | 0.00 |

### 3.5. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location                    | ROG  | NOx  | CO   | SO2     | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T  | CH4  | N2O     | R    | CO2e  |
|-----------------------------|------|------|------|---------|-------|-------|-------|--------|--------|--------|------|-------|-------|------|---------|------|-------|
| Onsite                      | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —       | —    | —     |
| Daily, Summer (Max)         | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —       | —    | —     |
| Daily, Winter (Max)         | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —       | —    | —     |
| Off-Road Equipment          | 1.65 | 15.9 | 15.4 | 0.02    | 0.74  | —     | 0.74  | 0.68   | —      | 0.68   | —    | 2,454 | 2,454 | 0.10 | 0.02    | —    | 2,462 |
| Dust From Material Movement | —    | —    | —    | —       | —     | 2.76  | 2.76  | —      | 1.34   | 1.34   | —    | —     | —     | —    | —       | —    | —     |
| Onsite truck                | 0.00 | 0.00 | 0.00 | 0.00    | 0.00  | 0.00  | 0.00  | 0.00   | 0.00   | 0.00   | —    | 0.00  | 0.00  | 0.00 | 0.00    | 0.00 | 0.00  |
| Average Daily               | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —       | —    | —     |
| Off-Road Equipment          | 0.09 | 0.87 | 0.84 | < 0.005 | 0.04  | —     | 0.04  | 0.04   | —      | 0.04   | —    | 134   | 134   | 0.01 | < 0.005 | —    | 135   |

|                             |         |         |      |         |      |         |         |      |         |         |   |      |      |         |         |         |      |
|-----------------------------|---------|---------|------|---------|------|---------|---------|------|---------|---------|---|------|------|---------|---------|---------|------|
| Dust From Material Movement | —       | —       | —    | —       | —    | 0.15    | 0.15    | —    | 0.07    | 0.07    | — | —    | —    | —       | —       | —       | —    |
| Onsite truck                | 0.00    | 0.00    | 0.00 | 0.00    | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | 0.00 |
| Annual                      | —       | —       | —    | —       | —    | —       | —       | —    | —       | —       | — | —    | —    | —       | —       | —       | —    |
| Off-Road Equipment          | 0.02    | 0.16    | 0.15 | < 0.005 | 0.01 | —       | 0.01    | 0.01 | —       | 0.01    | — | 22.3 | 22.3 | < 0.005 | < 0.005 | —       | 22.3 |
| Dust From Material Movement | —       | —       | —    | —       | —    | 0.03    | 0.03    | —    | 0.01    | 0.01    | — | —    | —    | —       | —       | —       | —    |
| Onsite truck                | 0.00    | 0.00    | 0.00 | 0.00    | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | 0.00 |
| Offsite                     | —       | —       | —    | —       | —    | —       | —       | —    | —       | —       | — | —    | —    | —       | —       | —       | —    |
| Daily, Summer (Max)         | —       | —       | —    | —       | —    | —       | —       | —    | —       | —       | — | —    | —    | —       | —       | —       | —    |
| Daily, Winter (Max)         | —       | —       | —    | —       | —    | —       | —       | —    | —       | —       | — | —    | —    | —       | —       | —       | —    |
| Worker                      | 0.04    | 0.06    | 0.64 | 0.00    | 0.00 | 0.13    | 0.13    | 0.00 | 0.03    | 0.03    | — | 134  | 134  | 0.01    | < 0.005 | 0.01    | 135  |
| Vendor                      | 0.00    | 0.00    | 0.00 | 0.00    | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | 0.00 |
| Hauling                     | 0.00    | 0.00    | 0.00 | 0.00    | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | 0.00 |
| Average Daily               | —       | —       | —    | —       | —    | —       | —       | —    | —       | —       | — | —    | —    | —       | —       | —       | —    |
| Worker                      | < 0.005 | < 0.005 | 0.04 | 0.00    | 0.00 | 0.01    | 0.01    | 0.00 | < 0.005 | < 0.005 | — | 7.44 | 7.44 | < 0.005 | < 0.005 | 0.01    | 7.54 |
| Vendor                      | 0.00    | 0.00    | 0.00 | 0.00    | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | 0.00 |
| Hauling                     | 0.00    | 0.00    | 0.00 | 0.00    | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | 0.00 |
| Annual                      | —       | —       | —    | —       | —    | —       | —       | —    | —       | —       | — | —    | —    | —       | —       | —       | —    |
| Worker                      | < 0.005 | < 0.005 | 0.01 | 0.00    | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.23 | 1.23 | < 0.005 | < 0.005 | < 0.005 | 1.25 |
| Vendor                      | 0.00    | 0.00    | 0.00 | 0.00    | 0.00 | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | 0.00 |

|         |      |      |      |      |      |      |      |      |      |      |      |   |      |      |      |      |      |
|---------|------|------|------|------|------|------|------|------|------|------|------|---|------|------|------|------|------|
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
|---------|------|------|------|------|------|------|------|------|------|------|------|---|------|------|------|------|------|

### 3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location            | ROG  | NOx  | CO   | SO2     | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T  | CH4  | N2O     | R    | CO2e  |
|---------------------|------|------|------|---------|-------|-------|-------|--------|--------|--------|------|-------|-------|------|---------|------|-------|
| Onsite              | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —       | —    | —     |
| Daily, Summer (Max) | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —       | —    | —     |
| Off-Road Equipment  | 1.07 | 8.95 | 10.0 | 0.02    | 0.33  | —     | 0.33  | 0.30   | —      | 0.30   | —    | 1,801 | 1,801 | 0.07 | 0.01    | —    | 1,807 |
| Onsite truck        | 0.00 | 0.00 | 0.00 | 0.00    | 0.00  | 0.00  | 0.00  | 0.00   | 0.00   | 0.00   | —    | 0.00  | 0.00  | 0.00 | 0.00    | 0.00 | 0.00  |
| Daily, Winter (Max) | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —       | —    | —     |
| Off-Road Equipment  | 1.07 | 8.95 | 10.0 | 0.02    | 0.33  | —     | 0.33  | 0.30   | —      | 0.30   | —    | 1,801 | 1,801 | 0.07 | 0.01    | —    | 1,807 |
| Onsite truck        | 0.00 | 0.00 | 0.00 | 0.00    | 0.00  | 0.00  | 0.00  | 0.00   | 0.00   | 0.00   | —    | 0.00  | 0.00  | 0.00 | 0.00    | 0.00 | 0.00  |
| Average Daily       | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —       | —    | —     |
| Off-Road Equipment  | 0.76 | 6.37 | 7.15 | 0.01    | 0.23  | —     | 0.23  | 0.22   | —      | 0.22   | —    | 1,283 | 1,283 | 0.05 | 0.01    | —    | 1,287 |
| Onsite truck        | 0.00 | 0.00 | 0.00 | 0.00    | 0.00  | 0.00  | 0.00  | 0.00   | 0.00   | 0.00   | —    | 0.00  | 0.00  | 0.00 | 0.00    | 0.00 | 0.00  |
| Annual              | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —       | —    | —     |
| Off-Road Equipment  | 0.14 | 1.16 | 1.30 | < 0.005 | 0.04  | —     | 0.04  | 0.04   | —      | 0.04   | —    | 212   | 212   | 0.01 | < 0.005 | —    | 213   |
| Onsite truck        | 0.00 | 0.00 | 0.00 | 0.00    | 0.00  | 0.00  | 0.00  | 0.00   | 0.00   | 0.00   | —    | 0.00  | 0.00  | 0.00 | 0.00    | 0.00 | 0.00  |
| Offsite             | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —       | —    | —     |

|                     |         |      |      |         |         |      |      |         |         |         |   |       |       |         |         |      |       |
|---------------------|---------|------|------|---------|---------|------|------|---------|---------|---------|---|-------|-------|---------|---------|------|-------|
| Daily, Summer (Max) | —       | —    | —    | —       | —       | —    | —    | —       | —       | —       | — | —     | —     | —       | —       | —    | —     |
| Worker              | 0.38    | 0.38 | 6.12 | 0.00    | 0.00    | 1.15 | 1.15 | 0.00    | 0.27    | 0.27    | — | 1,216 | 1,216 | 0.05    | 0.04    | 4.45 | 1,234 |
| Vendor              | 0.01    | 0.50 | 0.25 | < 0.005 | 0.01    | 0.12 | 0.13 | < 0.005 | 0.03    | 0.04    | — | 443   | 443   | 0.02    | 0.06    | 1.21 | 463   |
| Hauling             | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | — | 0.00  | 0.00  | 0.00    | 0.00    | 0.00 | 0.00  |
| Daily, Winter (Max) | —       | —    | —    | —       | —       | —    | —    | —       | —       | —       | — | —     | —     | —       | —       | —    | —     |
| Worker              | 0.37    | 0.42 | 5.19 | 0.00    | 0.00    | 1.15 | 1.15 | 0.00    | 0.27    | 0.27    | — | 1,152 | 1,152 | 0.05    | 0.04    | 0.12 | 1,167 |
| Vendor              | 0.01    | 0.52 | 0.25 | < 0.005 | 0.01    | 0.12 | 0.13 | < 0.005 | 0.03    | 0.04    | — | 443   | 443   | 0.02    | 0.06    | 0.03 | 462   |
| Hauling             | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | — | 0.00  | 0.00  | 0.00    | 0.00    | 0.00 | 0.00  |
| Average Daily       | —       | —    | —    | —       | —       | —    | —    | —       | —       | —       | — | —     | —     | —       | —       | —    | —     |
| Worker              | 0.26    | 0.33 | 3.88 | 0.00    | 0.00    | 0.81 | 0.81 | 0.00    | 0.19    | 0.19    | — | 833   | 833   | 0.04    | 0.03    | 1.37 | 844   |
| Vendor              | 0.01    | 0.38 | 0.18 | < 0.005 | < 0.005 | 0.08 | 0.09 | < 0.005 | 0.02    | 0.03    | — | 315   | 315   | 0.01    | 0.04    | 0.37 | 329   |
| Hauling             | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | — | 0.00  | 0.00  | 0.00    | 0.00    | 0.00 | 0.00  |
| Annual              | —       | —    | —    | —       | —       | —    | —    | —       | —       | —       | — | —     | —     | —       | —       | —    | —     |
| Worker              | 0.05    | 0.06 | 0.71 | 0.00    | 0.00    | 0.15 | 0.15 | 0.00    | 0.03    | 0.03    | — | 138   | 138   | 0.01    | < 0.005 | 0.23 | 140   |
| Vendor              | < 0.005 | 0.07 | 0.03 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | < 0.005 | — | 52.2  | 52.2  | < 0.005 | 0.01    | 0.06 | 54.5  |
| Hauling             | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | — | 0.00  | 0.00  | 0.00    | 0.00    | 0.00 | 0.00  |

### 3.9. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location            | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---------------------|-----|-----|----|-----|-------|-------|-------|--------|--------|--------|------|-------|------|-----|-----|---|------|
| Onsite              | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Daily, Summer (Max) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |

|                     |      |      |      |         |      |      |      |         |      |      |   |       |       |      |         |      |       |
|---------------------|------|------|------|---------|------|------|------|---------|------|------|---|-------|-------|------|---------|------|-------|
| Off-Road Equipment  | 1.01 | 8.57 | 9.96 | 0.02    | 0.29 | —    | 0.29 | 0.27    | —    | 0.27 | — | 1,801 | 1,801 | 0.07 | 0.01    | —    | 1,807 |
| Onsite truck        | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | — | 0.00  | 0.00  | 0.00 | 0.00    | 0.00 | 0.00  |
| Daily, Winter (Max) | —    | —    | —    | —       | —    | —    | —    | —       | —    | —    | — | —     | —     | —    | —       | —    | —     |
| Off-Road Equipment  | 1.01 | 8.57 | 9.96 | 0.02    | 0.29 | —    | 0.29 | 0.27    | —    | 0.27 | — | 1,801 | 1,801 | 0.07 | 0.01    | —    | 1,807 |
| Onsite truck        | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | — | 0.00  | 0.00  | 0.00 | 0.00    | 0.00 | 0.00  |
| Average Daily       | —    | —    | —    | —       | —    | —    | —    | —       | —    | —    | — | —     | —     | —    | —       | —    | —     |
| Off-Road Equipment  | 0.72 | 6.12 | 7.11 | 0.01    | 0.21 | —    | 0.21 | 0.19    | —    | 0.19 | — | 1,286 | 1,286 | 0.05 | 0.01    | —    | 1,291 |
| Onsite truck        | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | — | 0.00  | 0.00  | 0.00 | 0.00    | 0.00 | 0.00  |
| Annual              | —    | —    | —    | —       | —    | —    | —    | —       | —    | —    | — | —     | —     | —    | —       | —    | —     |
| Off-Road Equipment  | 0.13 | 1.12 | 1.30 | < 0.005 | 0.04 | —    | 0.04 | 0.04    | —    | 0.04 | — | 213   | 213   | 0.01 | < 0.005 | —    | 214   |
| Onsite truck        | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | — | 0.00  | 0.00  | 0.00 | 0.00    | 0.00 | 0.00  |
| Offsite             | —    | —    | —    | —       | —    | —    | —    | —       | —    | —    | — | —     | —     | —    | —       | —    | —     |
| Daily, Summer (Max) | —    | —    | —    | —       | —    | —    | —    | —       | —    | —    | — | —     | —     | —    | —       | —    | —     |
| Worker              | 0.32 | 0.34 | 5.68 | 0.00    | 0.00 | 1.15 | 1.15 | 0.00    | 0.27 | 0.27 | — | 1,191 | 1,191 | 0.05 | 0.04    | 4.03 | 1,209 |
| Vendor              | 0.01 | 0.48 | 0.23 | < 0.005 | 0.01 | 0.12 | 0.13 | < 0.005 | 0.03 | 0.04 | — | 435   | 435   | 0.02 | 0.06    | 1.18 | 455   |
| Hauling             | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | — | 0.00  | 0.00  | 0.00 | 0.00    | 0.00 | 0.00  |
| Daily, Winter (Max) | —    | —    | —    | —       | —    | —    | —    | —       | —    | —    | — | —     | —     | —    | —       | —    | —     |
| Worker              | 0.32 | 0.38 | 4.85 | 0.00    | 0.00 | 1.15 | 1.15 | 0.00    | 0.27 | 0.27 | — | 1,129 | 1,129 | 0.05 | 0.04    | 0.10 | 1,143 |

|               |         |      |      |         |         |      |      |         |         |         |   |      |      |         |         |      |      |
|---------------|---------|------|------|---------|---------|------|------|---------|---------|---------|---|------|------|---------|---------|------|------|
| Vendor        | 0.01    | 0.50 | 0.24 | < 0.005 | 0.01    | 0.12 | 0.13 | < 0.005 | 0.03    | 0.04    | — | 435  | 435  | 0.02    | 0.06    | 0.03 | 454  |
| Hauling       | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |
| Average Daily | —       | —    | —    | —       | —       | —    | —    | —       | —       | —       | — | —    | —    | —       | —       | —    | —    |
| Worker        | 0.23    | 0.30 | 3.62 | 0.00    | 0.00    | 0.81 | 0.81 | 0.00    | 0.19    | 0.19    | — | 819  | 819  | 0.04    | 0.03    | 1.25 | 830  |
| Vendor        | 0.01    | 0.36 | 0.17 | < 0.005 | < 0.005 | 0.08 | 0.09 | < 0.005 | 0.02    | 0.03    | — | 311  | 311  | 0.01    | 0.04    | 0.36 | 325  |
| Hauling       | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |
| Annual        | —       | —    | —    | —       | —       | —    | —    | —       | —       | —       | — | —    | —    | —       | —       | —    | —    |
| Worker        | 0.04    | 0.05 | 0.66 | 0.00    | 0.00    | 0.15 | 0.15 | 0.00    | 0.03    | 0.03    | — | 136  | 136  | 0.01    | < 0.005 | 0.21 | 137  |
| Vendor        | < 0.005 | 0.07 | 0.03 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | < 0.005 | — | 51.4 | 51.4 | < 0.005 | 0.01    | 0.06 | 53.7 |
| Hauling       | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |

### 3.11. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location            | ROG  | NOx  | CO   | SO2  | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T  | CH4  | N2O  | R    | CO2e  |
|---------------------|------|------|------|------|-------|-------|-------|--------|--------|--------|------|-------|-------|------|------|------|-------|
| Onsite              | —    | —    | —    | —    | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —    | —    | —     |
| Daily, Summer (Max) | —    | —    | —    | —    | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —    | —    | —     |
| Off-Road Equipment  | 0.97 | 8.25 | 9.91 | 0.02 | 0.26  | —     | 0.26  | 0.24   | —      | 0.24   | —    | 1,801 | 1,801 | 0.07 | 0.01 | —    | 1,807 |
| Onsite truck        | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00   | 0.00   | 0.00   | —    | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00  |
| Daily, Winter (Max) | —    | —    | —    | —    | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —    | —    | —     |
| Off-Road Equipment  | 0.97 | 8.25 | 9.91 | 0.02 | 0.26  | —     | 0.26  | 0.24   | —      | 0.24   | —    | 1,801 | 1,801 | 0.07 | 0.01 | —    | 1,807 |
| Onsite truck        | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00   | 0.00   | 0.00   | —    | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00  |

|                     |      |      |      |         |         |      |      |         |      |      |   |       |       |         |         |      |       |
|---------------------|------|------|------|---------|---------|------|------|---------|------|------|---|-------|-------|---------|---------|------|-------|
| Average Daily       | —    | —    | —    | —       | —       | —    | —    | —       | —    | —    | — | —     | —     | —       | —       | —    | —     |
| Off-Road Equipment  | 0.53 | 4.51 | 5.41 | 0.01    | 0.14    | —    | 0.14 | 0.13    | —    | 0.13 | — | 983   | 983   | 0.04    | 0.01    | —    | 987   |
| Onsite truck        | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | — | 0.00  | 0.00  | 0.00    | 0.00    | 0.00 | 0.00  |
| Annual              | —    | —    | —    | —       | —       | —    | —    | —       | —    | —    | — | —     | —     | —       | —       | —    | —     |
| Off-Road Equipment  | 0.10 | 0.82 | 0.99 | < 0.005 | 0.03    | —    | 0.03 | 0.02    | —    | 0.02 | — | 163   | 163   | 0.01    | < 0.005 | —    | 163   |
| Onsite truck        | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | — | 0.00  | 0.00  | 0.00    | 0.00    | 0.00 | 0.00  |
| Offsite             | —    | —    | —    | —       | —       | —    | —    | —       | —    | —    | — | —     | —     | —       | —       | —    | —     |
| Daily, Summer (Max) | —    | —    | —    | —       | —       | —    | —    | —       | —    | —    | — | —     | —     | —       | —       | —    | —     |
| Worker              | 0.31 | 0.30 | 5.28 | 0.00    | 0.00    | 1.15 | 1.15 | 0.00    | 0.27 | 0.27 | — | 1,169 | 1,169 | 0.05    | 0.04    | 3.64 | 1,186 |
| Vendor              | 0.01 | 0.46 | 0.22 | < 0.005 | < 0.005 | 0.12 | 0.12 | < 0.005 | 0.03 | 0.04 | — | 426   | 426   | 0.02    | 0.06    | 1.11 | 446   |
| Hauling             | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | — | 0.00  | 0.00  | 0.00    | 0.00    | 0.00 | 0.00  |
| Daily, Winter (Max) | —    | —    | —    | —       | —       | —    | —    | —       | —    | —    | — | —     | —     | —       | —       | —    | —     |
| Worker              | 0.31 | 0.38 | 4.48 | 0.00    | 0.00    | 1.15 | 1.15 | 0.00    | 0.27 | 0.27 | — | 1,108 | 1,108 | 0.02    | 0.04    | 0.09 | 1,121 |
| Vendor              | 0.01 | 0.48 | 0.22 | < 0.005 | < 0.005 | 0.12 | 0.12 | < 0.005 | 0.03 | 0.04 | — | 427   | 427   | 0.02    | 0.06    | 0.03 | 445   |
| Hauling             | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | — | 0.00  | 0.00  | 0.00    | 0.00    | 0.00 | 0.00  |
| Average Daily       | —    | —    | —    | —       | —       | —    | —    | —       | —    | —    | — | —     | —     | —       | —       | —    | —     |
| Worker              | 0.17 | 0.21 | 2.57 | 0.00    | 0.00    | 0.62 | 0.62 | 0.00    | 0.14 | 0.14 | — | 614   | 614   | 0.01    | 0.02    | 0.86 | 622   |
| Vendor              | 0.01 | 0.26 | 0.12 | < 0.005 | < 0.005 | 0.06 | 0.07 | < 0.005 | 0.02 | 0.02 | — | 233   | 233   | 0.01    | 0.03    | 0.26 | 243   |
| Hauling             | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | — | 0.00  | 0.00  | 0.00    | 0.00    | 0.00 | 0.00  |
| Annual              | —    | —    | —    | —       | —       | —    | —    | —       | —    | —    | — | —     | —     | —       | —       | —    | —     |
| Worker              | 0.03 | 0.04 | 0.47 | 0.00    | 0.00    | 0.11 | 0.11 | 0.00    | 0.03 | 0.03 | — | 102   | 102   | < 0.005 | < 0.005 | 0.14 | 103   |

|         |         |      |      |         |         |      |      |         |         |         |   |      |      |         |      |      |      |
|---------|---------|------|------|---------|---------|------|------|---------|---------|---------|---|------|------|---------|------|------|------|
| Vendor  | < 0.005 | 0.05 | 0.02 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 38.6 | 38.6 | < 0.005 | 0.01 | 0.04 | 40.2 |
| Hauling | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | 0.00 |

### 3.13. Paving (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location            | ROG  | NOx  | CO   | SO2     | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4     | N2O     | R    | CO2e |
|---------------------|------|------|------|---------|-------|-------|-------|--------|--------|--------|------|-------|------|---------|---------|------|------|
| Onsite              | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —    | —       | —       | —    | —    |
| Daily, Summer (Max) | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —    | —       | —       | —    | —    |
| Off-Road Equipment  | 0.46 | 4.30 | 6.49 | 0.01    | 0.17  | —     | 0.17  | 0.16   | —      | 0.16   | —    | 992   | 992  | 0.04    | 0.01    | —    | 995  |
| Paving              | 0.04 | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —    | —       | —       | —    | —    |
| Onsite truck        | 0.00 | 0.00 | 0.00 | 0.00    | 0.00  | 0.00  | 0.00  | 0.00   | 0.00   | 0.00   | —    | 0.00  | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |
| Daily, Winter (Max) | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —    | —       | —       | —    | —    |
| Off-Road Equipment  | 0.46 | 4.30 | 6.49 | 0.01    | 0.17  | —     | 0.17  | 0.16   | —      | 0.16   | —    | 992   | 992  | 0.04    | 0.01    | —    | 995  |
| Paving              | 0.04 | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —    | —       | —       | —    | —    |
| Onsite truck        | 0.00 | 0.00 | 0.00 | 0.00    | 0.00  | 0.00  | 0.00  | 0.00   | 0.00   | 0.00   | —    | 0.00  | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |
| Average Daily       | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —    | —       | —       | —    | —    |
| Off-Road Equipment  | 0.06 | 0.53 | 0.80 | < 0.005 | 0.02  | —     | 0.02  | 0.02   | —      | 0.02   | —    | 122   | 122  | < 0.005 | < 0.005 | —    | 123  |
| Paving              | 0.01 | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —    | —       | —       | —    | —    |
| Onsite truck        | 0.00 | 0.00 | 0.00 | 0.00    | 0.00  | 0.00  | 0.00  | 0.00   | 0.00   | 0.00   | —    | 0.00  | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |
| Annual              | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —    | —       | —       | —    | —    |

|                     |         |         |      |         |         |         |         |         |         |         |   |      |      |         |         |         |      |
|---------------------|---------|---------|------|---------|---------|---------|---------|---------|---------|---------|---|------|------|---------|---------|---------|------|
| Off-Road Equipment  | 0.01    | 0.10    | 0.15 | < 0.005 | < 0.005 | —       | < 0.005 | < 0.005 | —       | < 0.005 | — | 20.2 | 20.2 | < 0.005 | < 0.005 | —       | 20.3 |
| Paving              | < 0.005 | —       | —    | —       | —       | —       | —       | —       | —       | —       | — | —    | —    | —       | —       | —       | —    |
| Onsite truck        | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | 0.00 |
| Offsite             | —       | —       | —    | —       | —       | —       | —       | —       | —       | —       | — | —    | —    | —       | —       | —       | —    |
| Daily, Summer (Max) | —       | —       | —    | —       | —       | —       | —       | —       | —       | —       | — | —    | —    | —       | —       | —       | —    |
| Worker              | 0.04    | 0.04    | 0.75 | 0.00    | 0.00    | 0.16    | 0.16    | 0.00    | 0.04    | 0.04    | — | 166  | 166  | 0.01    | 0.01    | 0.52    | 169  |
| Vendor              | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | 0.00 |
| Hauling             | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | 0.00 |
| Daily, Winter (Max) | —       | —       | —    | —       | —       | —       | —       | —       | —       | —       | — | —    | —    | —       | —       | —       | —    |
| Worker              | 0.04    | 0.05    | 0.64 | 0.00    | 0.00    | 0.16    | 0.16    | 0.00    | 0.04    | 0.04    | — | 157  | 157  | < 0.005 | 0.01    | 0.01    | 159  |
| Vendor              | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | 0.00 |
| Hauling             | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | 0.00 |
| Average Daily       | —       | —       | —    | —       | —       | —       | —       | —       | —       | —       | — | —    | —    | —       | —       | —       | —    |
| Worker              | 0.01    | 0.01    | 0.08 | 0.00    | 0.00    | 0.02    | 0.02    | 0.00    | < 0.005 | < 0.005 | — | 19.7 | 19.7 | < 0.005 | < 0.005 | 0.03    | 20.0 |
| Vendor              | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | 0.00 |
| Hauling             | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | 0.00 |
| Annual              | —       | —       | —    | —       | —       | —       | —       | —       | —       | —       | — | —    | —    | —       | —       | —       | —    |
| Worker              | < 0.005 | < 0.005 | 0.02 | 0.00    | 0.00    | < 0.005 | < 0.005 | 0.00    | < 0.005 | < 0.005 | — | 3.26 | 3.26 | < 0.005 | < 0.005 | < 0.005 | 3.30 |
| Vendor              | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | 0.00 |
| Hauling             | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00    | 0.00 |

### 3.15. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location               | ROG     | NOx  | CO   | SO2     | PM10E   | PM10D | PM10T   | PM2.5E  | PM2.5D | PM2.5T  | BCO2 | NBCO2 | CO2T | CH4     | N2O     | R    | CO2e |
|------------------------|---------|------|------|---------|---------|-------|---------|---------|--------|---------|------|-------|------|---------|---------|------|------|
| Onsite                 | —       | —    | —    | —       | —       | —     | —       | —       | —      | —       | —    | —     | —    | —       | —       | —    | —    |
| Daily, Summer (Max)    | —       | —    | —    | —       | —       | —     | —       | —       | —      | —       | —    | —     | —    | —       | —       | —    | —    |
| Off-Road Equipment     | 0.11    | 0.83 | 1.13 | < 0.005 | 0.02    | —     | 0.02    | 0.02    | —      | 0.02    | —    | 134   | 134  | 0.01    | < 0.005 | —    | 134  |
| Architectural Coatings | 9.93    | —    | —    | —       | —       | —     | —       | —       | —      | —       | —    | —     | —    | —       | —       | —    | —    |
| Onsite truck           | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00  | 0.00    | 0.00    | 0.00   | 0.00    | —    | 0.00  | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |
| Daily, Winter (Max)    | —       | —    | —    | —       | —       | —     | —       | —       | —      | —       | —    | —     | —    | —       | —       | —    | —    |
| Off-Road Equipment     | 0.11    | 0.83 | 1.13 | < 0.005 | 0.02    | —     | 0.02    | 0.02    | —      | 0.02    | —    | 134   | 134  | 0.01    | < 0.005 | —    | 134  |
| Architectural Coatings | 9.93    | —    | —    | —       | —       | —     | —       | —       | —      | —       | —    | —     | —    | —       | —       | —    | —    |
| Onsite truck           | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00  | 0.00    | 0.00    | 0.00   | 0.00    | —    | 0.00  | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |
| Average Daily          | —       | —    | —    | —       | —       | —     | —       | —       | —      | —       | —    | —     | —    | —       | —       | —    | —    |
| Off-Road Equipment     | 0.02    | 0.15 | 0.21 | < 0.005 | < 0.005 | —     | < 0.005 | < 0.005 | —      | < 0.005 | —    | 24.9  | 24.9 | < 0.005 | < 0.005 | —    | 25.0 |
| Architectural Coatings | 1.85    | —    | —    | —       | —       | —     | —       | —       | —      | —       | —    | —     | —    | —       | —       | —    | —    |
| Onsite truck           | 0.00    | 0.00 | 0.00 | 0.00    | 0.00    | 0.00  | 0.00    | 0.00    | 0.00   | 0.00    | —    | 0.00  | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |
| Annual                 | —       | —    | —    | —       | —       | —     | —       | —       | —      | —       | —    | —     | —    | —       | —       | —    | —    |
| Off-Road Equipment     | < 0.005 | 0.03 | 0.04 | < 0.005 | < 0.005 | —     | < 0.005 | < 0.005 | —      | < 0.005 | —    | 4.12  | 4.12 | < 0.005 | < 0.005 | —    | 4.13 |

|                           |         |         |      |      |      |      |      |      |         |         |   |      |      |         |         |      |      |
|---------------------------|---------|---------|------|------|------|------|------|------|---------|---------|---|------|------|---------|---------|------|------|
| Architectu<br>Coatings    | 0.34    | —       | —    | —    | —    | —    | —    | —    | —       | —       | — | —    | —    | —       | —       | —    | —    |
| Onsite<br>truck           | 0.00    | 0.00    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |
| Offsite                   | —       | —       | —    | —    | —    | —    | —    | —    | —       | —       | — | —    | —    | —       | —       | —    | —    |
| Daily,<br>Summer<br>(Max) | —       | —       | —    | —    | —    | —    | —    | —    | —       | —       | — | —    | —    | —       | —       | —    | —    |
| Worker                    | 0.06    | 0.06    | 1.06 | 0.00 | 0.00 | 0.23 | 0.23 | 0.00 | 0.05    | 0.05    | — | 234  | 234  | 0.01    | 0.01    | 0.73 | 237  |
| Vendor                    | 0.00    | 0.00    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |
| Hauling                   | 0.00    | 0.00    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |
| Daily,<br>Winter<br>(Max) | —       | —       | —    | —    | —    | —    | —    | —    | —       | —       | — | —    | —    | —       | —       | —    | —    |
| Worker                    | 0.06    | 0.08    | 0.90 | 0.00 | 0.00 | 0.23 | 0.23 | 0.00 | 0.05    | 0.05    | — | 222  | 222  | < 0.005 | 0.01    | 0.02 | 224  |
| Vendor                    | 0.00    | 0.00    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |
| Hauling                   | 0.00    | 0.00    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |
| Average<br>Daily          | —       | —       | —    | —    | —    | —    | —    | —    | —       | —       | — | —    | —    | —       | —       | —    | —    |
| Worker                    | 0.01    | 0.01    | 0.18 | 0.00 | 0.00 | 0.04 | 0.04 | 0.00 | 0.01    | 0.01    | — | 41.9 | 41.9 | < 0.005 | < 0.005 | 0.06 | 42.4 |
| Vendor                    | 0.00    | 0.00    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |
| Hauling                   | 0.00    | 0.00    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |
| Annual                    | —       | —       | —    | —    | —    | —    | —    | —    | —       | —       | — | —    | —    | —       | —       | —    | —    |
| Worker                    | < 0.005 | < 0.005 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 6.94 | 6.94 | < 0.005 | < 0.005 | 0.01 | 7.02 |
| Vendor                    | 0.00    | 0.00    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |
| Hauling                   | 0.00    | 0.00    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | — | 0.00 | 0.00 | 0.00    | 0.00    | 0.00 | 0.00 |

## 4. Operations Emissions Details

### 4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Vegetation          | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---------------------|-----|-----|----|-----|-------|-------|-------|--------|--------|--------|------|-------|------|-----|-----|---|------|
| Daily, Summer (Max) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Total               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Daily, Winter (Max) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Total               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Annual              | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Total               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use            | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---------------------|-----|-----|----|-----|-------|-------|-------|--------|--------|--------|------|-------|------|-----|-----|---|------|
| Daily, Summer (Max) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Total               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Daily, Winter (Max) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Total               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Annual              | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Total               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Species             | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---------------------|-----|-----|----|-----|-------|-------|-------|--------|--------|--------|------|-------|------|-----|-----|---|------|
| Daily, Summer (Max) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Avoided             | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Subtotal            | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Sequestered         | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Subtotal            | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Removed             | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Subtotal            | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| —                   | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Daily, Winter (Max) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Avoided             | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Subtotal            | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Sequestered         | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Subtotal            | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Removed             | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Subtotal            | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| —                   | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Annual              | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Avoided             | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Subtotal            | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Sequestered         | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Subtotal            | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |

|          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|----------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Removed  | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| —        | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 5. Activity Data

### 5.1. Construction Schedule

| Phase Name            | Phase Type            | Start Date | End Date   | Days Per Week | Work Days per Phase | Phase Description |
|-----------------------|-----------------------|------------|------------|---------------|---------------------|-------------------|
| Demolition            | Demolition            | 10/1/2024  | 10/29/2024 | 5.00          | 20.0                | —                 |
| Site Preparation      | Site Preparation      | 10/30/2024 | 11/26/2024 | 5.00          | 20.0                | —                 |
| Grading               | Grading               | 11/27/2024 | 12/24/2024 | 5.00          | 20.0                | —                 |
| Building Construction | Building Construction | 1/2/2025   | 10/6/2027  | 5.00          | 720                 | —                 |
| Paving                | Paving                | 8/2/2027   | 10/2/2027  | 5.00          | 45.0                | —                 |
| Architectural Coating | Architectural Coating | 7/3/2027   | 10/6/2027  | 5.00          | 68.0                | —                 |

### 5.2. Off-Road Equipment

#### 5.2.1. Unmitigated

| Phase Name       | Equipment Type            | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|------------------|---------------------------|-----------|-------------|----------------|---------------|------------|-------------|
| Demolition       | Tractors/Loaders/Backhoes | Diesel    | Average     | 1.00           | 8.00          | 84.0       | 0.37        |
| Demolition       | Rubber Tired Dozers       | Diesel    | Average     | 1.00           | 8.00          | 367        | 0.40        |
| Demolition       | Concrete/Industrial Saws  | Diesel    | Average     | 1.00           | 8.00          | 33.0       | 0.73        |
| Site Preparation | Rubber Tired Dozers       | Diesel    | Average     | 1.00           | 7.00          | 367        | 0.40        |
| Site Preparation | Tractors/Loaders/Backhoes | Diesel    | Average     | 1.00           | 8.00          | 84.0       | 0.37        |
| Grading          | Graders                   | Diesel    | Average     | 1.00           | 8.00          | 148        | 0.41        |

|                       |                           |        |         |      |      |      |      |
|-----------------------|---------------------------|--------|---------|------|------|------|------|
| Grading               | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 7.00 | 84.0 | 0.37 |
| Grading               | Rubber Tired Dozers       | Diesel | Average | 1.00 | 8.00 | 367  | 0.40 |
| Building Construction | Cranes                    | Diesel | Average | 1.00 | 6.00 | 367  | 0.29 |
| Building Construction | Forklifts                 | Diesel | Average | 1.00 | 6.00 | 82.0 | 0.20 |
| Building Construction | Generator Sets            | Diesel | Average | 1.00 | 8.00 | 14.0 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 6.00 | 84.0 | 0.37 |
| Building Construction | Welders                   | Diesel | Average | 3.00 | 8.00 | 46.0 | 0.45 |
| Paving                | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 8.00 | 84.0 | 0.37 |
| Paving                | Pavers                    | Diesel | Average | 1.00 | 6.00 | 81.0 | 0.42 |
| Paving                | Paving Equipment          | Diesel | Average | 1.00 | 8.00 | 89.0 | 0.36 |
| Paving                | Rollers                   | Diesel | Average | 1.00 | 7.00 | 36.0 | 0.38 |
| Paving                | Cement and Mortar Mixers  | Diesel | Average | 1.00 | 6.00 | 10.0 | 0.56 |
| Architectural Coating | Air Compressors           | Diesel | Average | 1.00 | 6.00 | 37.0 | 0.48 |

### 5.3. Construction Vehicles

#### 5.3.1. Unmitigated

| Phase Name       | Trip Type    | One-Way Trips per Day | Miles per Trip | Vehicle Mix   |
|------------------|--------------|-----------------------|----------------|---------------|
| Demolition       | —            | —                     | —              | —             |
| Demolition       | Worker       | 7.50                  | 18.5           | LDA,LDT1,LDT2 |
| Demolition       | Vendor       | —                     | 10.2           | HHDT,MHDT     |
| Demolition       | Hauling      | 17.9                  | 20.0           | HHDT          |
| Demolition       | Onsite truck | —                     | —              | HHDT          |
| Site Preparation | —            | —                     | —              | —             |
| Site Preparation | Worker       | 5.00                  | 18.5           | LDA,LDT1,LDT2 |

|                       |              |      |      |               |
|-----------------------|--------------|------|------|---------------|
| Site Preparation      | Vendor       | —    | 10.2 | HHDT,MHDT     |
| Site Preparation      | Hauling      | 0.00 | 20.0 | HHDT          |
| Site Preparation      | Onsite truck | —    | —    | HHDT          |
| Grading               | —            | —    | —    | —             |
| Grading               | Worker       | 10.0 | 18.5 | LDA,LDT1,LDT2 |
| Grading               | Vendor       | —    | 10.2 | HHDT,MHDT     |
| Grading               | Hauling      | 0.00 | 20.0 | HHDT          |
| Grading               | Onsite truck | —    | —    | HHDT          |
| Building Construction | —            | —    | —    | —             |
| Building Construction | Worker       | 87.9 | 18.5 | LDA,LDT1,LDT2 |
| Building Construction | Vendor       | 13.9 | 10.2 | HHDT,MHDT     |
| Building Construction | Hauling      | 0.00 | 20.0 | HHDT          |
| Building Construction | Onsite truck | —    | —    | HHDT          |
| Paving                | —            | —    | —    | —             |
| Paving                | Worker       | 12.5 | 18.5 | LDA,LDT1,LDT2 |
| Paving                | Vendor       | —    | 10.2 | HHDT,MHDT     |
| Paving                | Hauling      | 0.00 | 20.0 | HHDT          |
| Paving                | Onsite truck | —    | —    | HHDT          |
| Architectural Coating | —            | —    | —    | —             |
| Architectural Coating | Worker       | 17.6 | 18.5 | LDA,LDT1,LDT2 |
| Architectural Coating | Vendor       | —    | 10.2 | HHDT,MHDT     |
| Architectural Coating | Hauling      | 0.00 | 20.0 | HHDT          |
| Architectural Coating | Onsite truck | —    | —    | HHDT          |

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

| Control Strategies Applied                      | PM10 Reduction | PM2.5 Reduction |
|---|----------------|-----------------|
| Water unpaved roads twice daily                 | 55%            | 55%             |
| Limit vehicle speeds on unpaved roads to 25 mph | 44%            | 44%             |

## 5.5. Architectural Coatings

| Phase Name            | Residential Interior Area Coated (sq ft) | Residential Exterior Area Coated (sq ft) | Non-Residential Interior Area Coated (sq ft) | Non-Residential Exterior Area Coated (sq ft) | Parking Area Coated (sq ft) |
|-----------------------|--|--|--|--|-----------------------------|
| Architectural Coating | 215,480                                  | 71,827                                   | 388  | 43.1   | 1,824                       |

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

| Phase Name       | Material Imported (cy) | Material Exported (cy) | Acres Graded (acres) | Material Demolished (Ton of Debris) | Acres Paved (acres) |
|------------------|------------------------|------------------------|----------------------|-------------------------------------|---------------------|
| Demolition       | 0.00                   | 0.00                   | 0.00                 | 1,428                               | —                   |
| Site Preparation | —                      | —                      | 8.75                 | 0.00                                | —                   |
| Grading          | —                      | —                      | 20.0                 | 0.00                                | —                   |
| Paving           | 0.00                   | 0.00                   | 0.00                 | 0.00                                | 0.70                |

### 5.6.2. Construction Earthmoving Control Strategies

| Control Strategies Applied | Frequency (per day) | PM10 Reduction | PM2.5 Reduction |
|----------------------------|---------------------|----------------|-----------------|
| Water Exposed Area         | 2                   | 61%            | 61%             |
| Water Demolished Area      | 2                   | 36%            | 36%             |

## 5.7. Construction Paving

| Land Use                          | Area Paved (acres) | % Asphalt |
|-----------------------------------|--------------------|-----------|
| Congregate Care (Assisted Living) | —                  | 0%        |

|                                |      |      |
|--------------------------------|------|------|
| Enclosed Parking with Elevator | 0.20 | 100% |
| Other Asphalt Surfaces         | 0.50 | 100% |

### 5.8. Construction Electricity Consumption and Emissions Factors

#### kWh per Year and Emission Factor (lb/MWh)

| Year | kWh per Year | CO2 | CH4  | N2O     |
|------|--------------|-----|------|---------|
| 2024 | 0.00         | 349 | 0.03 | < 0.005 |
| 2025 | 0.00         | 349 | 0.03 | < 0.005 |
| 2026 | 0.00         | 346 | 0.03 | < 0.005 |
| 2027 | 0.00         | 346 | 0.03 | < 0.005 |

### 5.18. Vegetation

#### 5.18.1. Land Use Change

##### 5.18.1.1. Unmitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|--------------------------|----------------------|---------------|-------------|
|--------------------------|----------------------|---------------|-------------|

#### 5.18.1. Biomass Cover Type

##### 5.18.1.1. Unmitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|--------------------|---------------|-------------|
|--------------------|---------------|-------------|

#### 5.18.2. Sequestration

##### 5.18.2.1. Unmitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|-----------|--------|------------------------------|------------------------------|
|-----------|--------|------------------------------|------------------------------|

## 6. Climate Risk Detailed Report

### 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

| Climate Hazard               | Result for Project Location | Unit                                       |
|------------------------------|-----------------------------|--|
| Temperature and Extreme Heat | 17.6                        | annual days of extreme heat                |
| Extreme Precipitation        | 5.85                        | annual days with precipitation above 20 mm |
| Sea Level Rise               | 0.00                        | meters of inundation depth                 |
| Wildfire                     | 8.48                        | annual hectares burned                     |

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

### 6.2. Initial Climate Risk Scores

| Climate Hazard               | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|------------------------------|----------------|-------------------|-------------------------|---------------------|
| Temperature and Extreme Heat | 2              | 0                 | 0                       | N/A                 |
| Extreme Precipitation        | N/A            | N/A               | N/A                     | N/A                 |
| Sea Level Rise               | 1              | 0                 | 0                       | N/A                 |
| Wildfire                     | 1              | 0                 | 0                       | N/A                 |
| Flooding                     | N/A            | N/A               | N/A                     | N/A                 |
| Drought                      | N/A            | N/A               | N/A                     | N/A                 |

|                         |     |     |     |     |
|-------------------------|-----|-----|-----|-----|
| Snowpack Reduction      | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 0   | 0   | 0   | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

### 6.3. Adjusted Climate Risk Scores

| Climate Hazard               | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|------------------------------|----------------|-------------------|-------------------------|---------------------|
| Temperature and Extreme Heat | 2              | 1                 | 1                       | 3                   |
| Extreme Precipitation        | N/A            | N/A               | N/A                     | N/A                 |
| Sea Level Rise               | 1              | 1                 | 1                       | 2                   |
| Wildfire                     | 1              | 1                 | 1                       | 2                   |
| Flooding                     | N/A            | N/A               | N/A                     | N/A                 |
| Drought                      | N/A            | N/A               | N/A                     | N/A                 |
| Snowpack Reduction           | N/A            | N/A               | N/A                     | N/A                 |
| Air Quality Degradation      | 1              | 1                 | 1                       | 2                   |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

### 6.4. Climate Risk Reduction Measures

## 7. Health and Equity Details

### 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|-----------|---------------------------------|
|-----------|---------------------------------|

|                                 |      |
|---------------------------------|------|
| Exposure Indicators             | —    |
| AQ-Ozone                        | 97.1 |
| AQ-PM                           | 50.4 |
| AQ-DPM                          | 0.76 |
| Drinking Water                  | 78.9 |
| Lead Risk Housing               | 46.0 |
| Pesticides                      | 12.3 |
| Toxic Releases                  | 48.5 |
| Traffic                         | 72.4 |
| Effect Indicators               | —    |
| CleanUp Sites                   | 88.8 |
| Groundwater                     | 56.1 |
| Haz Waste Facilities/Generators | 11.1 |
| Impaired Water Bodies           | 0.00 |
| Solid Waste                     | 94.7 |
| Sensitive Population            | —    |
| Asthma                          | 27.8 |
| Cardio-vascular                 | 10.6 |
| Low Birth Weights               | —    |
| Socioeconomic Factor Indicators | —    |
| Education                       | 61.4 |
| Housing                         | —    |
| Linguistic                      | —    |
| Poverty                         | 61.3 |
| Unemployment                    | —    |

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

| Indicator                                    | Result for Project Census Tract |
|--|---------------------------------|
| Economic                                     | —                               |
| Above Poverty                                | —                               |
| Employed                                     | —                               |
| Median HI                                    | —                               |
| Education                                    | —                               |
| Bachelor's or higher                         | —                               |
| High school enrollment                       | —                               |
| Preschool enrollment                         | —                               |
| Transportation                               | —                               |
| Auto Access                                  | —                               |
| Active commuting                             | —                               |
| Social                                       | —                               |
| 2-parent households                          | —                               |
| Voting                                       | —                               |
| Neighborhood                                 | —                               |
| Alcohol availability                         | —                               |
| Park access                                  | —                               |
| Retail density                               | —                               |
| Supermarket access                           | —                               |
| Tree canopy                                  | —                               |
| Housing                                      | —                               |
| Homeownership                                | —                               |
| Housing habitability                         | —                               |
| Low-inc homeowner severe housing cost burden | —                               |
| Low-inc renter severe housing cost burden    | —                               |
| Uncrowded housing                            | —                               |

|                                       |      |
|---------------------------------------|------|
| Health Outcomes                       | —    |
| Insured adults                        | —    |
| Arthritis                             | 0.0  |
| Asthma ER Admissions                  | 55.4 |
| High Blood Pressure                   | 0.0  |
| Cancer (excluding skin)               | 0.0  |
| Asthma                                | 0.0  |
| Coronary Heart Disease                | 0.0  |
| Chronic Obstructive Pulmonary Disease | 0.0  |
| Diagnosed Diabetes                    | 0.0  |
| Life Expectancy at Birth              | 0.0  |
| Cognitively Disabled                  | 43.0 |
| Physically Disabled                   | 73.0 |
| Heart Attack ER Admissions            | 66.5 |
| Mental Health Not Good                | 0.0  |
| Chronic Kidney Disease                | 0.0  |
| Obesity                               | 0.0  |
| Pedestrian Injuries                   | 0.0  |
| Physical Health Not Good              | 0.0  |
| Stroke                                | 0.0  |
| Health Risk Behaviors                 | —    |
| Binge Drinking                        | 0.0  |
| Current Smoker                        | 0.0  |
| No Leisure Time for Physical Activity | 0.0  |
| Climate Change Exposures              | —    |
| Wildfire Risk                         | 57.0 |
| SLR Inundation Area                   | 0.0  |

|                                  |      |
|----------------------------------|------|
| Children                         | 99.4 |
| Elderly                          | 32.8 |
| English Speaking                 | 0.0  |
| Foreign-born                     | 0.0  |
| Outdoor Workers                  | 49.2 |
| Climate Change Adaptive Capacity | —    |
| Impervious Surface Cover         | 97.3 |
| Traffic Density                  | 0.0  |
| Traffic Access                   | 23.0 |
| Other Indices                    | —    |
| Hardship                         | 0.0  |
| Other Decision Support           | —    |
| 2016 Voting                      | 0.0  |

### 7.3. Overall Health & Equity Scores

| Metric  | Result for Project Census Tract |
|---|---------------------------------|
| CalEnviroScreen 4.0 Score for Project Location (a)                                  | —                               |
| Healthy Places Index Score for Project Location (b)                                 | —                               |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535)           | No                              |
| Project Located in a Low-Income Community (Assembly Bill 1550)                      | No                              |
| Project Located in a Community Air Protection Program Community (Assembly Bill 617) | No                              |

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

### 7.4. Health & Equity Measures

No Health & Equity Measures selected.

### 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

## 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

## 8. User Changes to Default Data

| Screen                               | Justification  |
|--------------------------------------|--|
| Characteristics: Project Details     | Site is suburban.  |
| Land Use                             | 117 unit, 106,410 SF homeless care facility. Improvement footprint area is ~ 1.84 total acres, building footprint is 30,640 SF (0.7 acres) |
| Construction: Construction Phases    | Project to start construction ~October 2024 and take ~ 3 years to complete.  |
| Construction: Off-Road Equipment     | Partial demolition of building only and minor site prep.   |
| Construction: Architectural Coatings | Per SCAQMD Rule 1113 paints limited to 50g/L VOC   |

# Hope Gardens Operational Detailed Report

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## 8. User Changes to Default Data

# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field                  | Value  |
|-----------------------------|--|
| Project Name                | Hope Gardens Operational                     |
| Operational Year            | 2027   |
| Lead Agency                 | —  |
| Land Use Scale              | Project/site                                 |
| Analysis Level for Defaults | County                                       |
| Windspeed (m/s)             | 2.50   |
| Precipitation (days)        | 24.2   |
| Location                    | 12249 Lopez Canyon Rd, Sylmar, CA 91342, USA |
| County                      | Los Angeles-South Coast                      |
| City                        | Unincorporated                               |
| Air District                | South Coast AQMD                             |
| Air Basin                   | South Coast                                  |
| TAZ                         | 3692   |
| EDFZ                        | 7  |
| Electric Utility            | Southern California Edison                   |
| Gas Utility                 | Southern California Gas                      |
| App Version                 | 2022.1.1.13                                  |

## 1.2. Land Use Types

| Land Use Subtype                  | Size | Unit          | Lot Acreage | Building Area (sq ft) | Landscape Area (sq ft) | Special Landscape Area (sq ft) | Population | Description |
|-----------------------------------|------|---------------|-------------|-----------------------|------------------------|--------------------------------|------------|-------------|
| Congregate Care (Assisted Living) | 213  | Dwelling Unit | 0.70        | 151,666               | 0.00                   | 21,700                         | 630        | —           |

|                                |      |       |      |       |      |   |   |   |
|--------------------------------|------|-------|------|-------|------|---|---|---|
| Enclosed Parking with Elevator | 22.0 | Space | 0.20 | 8,800 | 0.00 | — | — | — |
| Other Asphalt Surfaces         | 0.50 | Acre  | 0.50 | 0.00  | 0.00 | — | — | — |

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

## 2. Emissions Summary

### 2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit.             | ROG  | NOx  | CO   | SO2  | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T  | CH4  | N2O  | R    | CO2e  |
|---------------------|------|------|------|------|-------|-------|-------|--------|--------|--------|------|-------|-------|------|------|------|-------|
| Daily, Summer (Max) | —    | —    | —    | —    | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —    | —    | —     |
| Unmit.              | 5.57 | 1.67 | 24.6 | 0.04 | 0.07  | 1.19  | 1.26  | 0.07   | 0.21   | 0.28   | 325  | 4,870 | 5,196 | 32.8 | 0.16 | 12.0 | 6,076 |
| Daily, Winter (Max) | —    | —    | —    | —    | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —    | —    | —     |
| Unmit.              | 4.43 | 1.64 | 10.8 | 0.03 | 0.07  | 1.19  | 1.26  | 0.07   | 0.21   | 0.28   | 325  | 4,699 | 5,024 | 32.8 | 0.16 | 2.19 | 5,896 |
| Average Daily (Max) | —    | —    | —    | —    | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —    | —    | —     |
| Unmit.              | 5.20 | 1.74 | 19.7 | 0.04 | 0.07  | 1.19  | 1.26  | 0.07   | 0.21   | 0.28   | 325  | 4,759 | 5,084 | 32.8 | 0.17 | 6.29 | 5,960 |
| Annual (Max)        | —    | —    | —    | —    | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —    | —    | —     |
| Unmit.              | 0.95 | 0.32 | 3.60 | 0.01 | 0.01  | 0.22  | 0.23  | 0.01   | 0.04   | 0.05   | 53.8 | 788   | 842   | 5.43 | 0.03 | 1.04 | 987   |

### 2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Sector              | ROG  | NOx  | CO   | SO2     | PM10E   | PM10D | PM10T   | PM2.5E  | PM2.5D | PM2.5T  | BCO2 | NBCO2 | CO2T  | CH4     | N2O     | R    | CO2e  |
|---------------------|------|------|------|---------|---------|-------|---------|---------|--------|---------|------|-------|-------|---------|---------|------|-------|
| Daily, Summer (Max) | —    | —    | —    | —       | —       | —     | —       | —       | —      | —       | —    | —     | —     | —       | —       | —    | —     |
| Mobile              | 0.90 | 0.96 | 11.9 | 0.03    | 0.02    | 1.19  | 1.21    | 0.02    | 0.21   | 0.23    | —    | 3,254 | 3,254 | 0.12    | 0.11    | 10.1 | 3,300 |
| Area                | 4.63 | 0.12 | 12.5 | < 0.005 | < 0.005 | —     | < 0.005 | 0.01    | —      | 0.01    | 0.00 | 33.9  | 33.9  | < 0.005 | < 0.005 | —    | 34.0  |
| Energy              | 0.03 | 0.60 | 0.25 | < 0.005 | 0.05    | —     | 0.05    | 0.05    | —      | 0.05    | —    | 1,530 | 1,530 | 0.14    | 0.01    | —    | 1,536 |
| Water               | —    | —    | —    | —       | —       | —     | —       | —       | —      | —       | 15.2 | 52.8  | 68.0  | 1.57    | 0.04    | —    | 118   |
| Waste               | —    | —    | —    | —       | —       | —     | —       | —       | —      | —       | 310  | 0.00  | 310   | 31.0    | 0.00    | —    | 1,085 |
| Refrig.             | —    | —    | —    | —       | —       | —     | —       | —       | —      | —       | —    | —     | —     | —       | —       | 1.93 | 1.93  |
| Total               | 5.57 | 1.67 | 24.6 | 0.04    | 0.07    | 1.19  | 1.26    | 0.07    | 0.21   | 0.28    | 325  | 4,870 | 5,196 | 32.8    | 0.16    | 12.0 | 6,076 |
| Daily, Winter (Max) | —    | —    | —    | —       | —       | —     | —       | —       | —      | —       | —    | —     | —     | —       | —       | —    | —     |
| Mobile              | 0.89 | 1.05 | 10.6 | 0.03    | 0.02    | 1.19  | 1.21    | 0.02    | 0.21   | 0.23    | —    | 3,116 | 3,116 | 0.12    | 0.12    | 0.26 | 3,155 |
| Area                | 3.51 | 0.00 | 0.00 | 0.00    | 0.00    | —     | 0.00    | 0.00    | —      | 0.00    | 0.00 | 0.00  | 0.00  | 0.00    | 0.00    | —    | 0.00  |
| Energy              | 0.03 | 0.60 | 0.25 | < 0.005 | 0.05    | —     | 0.05    | 0.05    | —      | 0.05    | —    | 1,530 | 1,530 | 0.14    | 0.01    | —    | 1,536 |
| Water               | —    | —    | —    | —       | —       | —     | —       | —       | —      | —       | 15.2 | 52.8  | 68.0  | 1.57    | 0.04    | —    | 118   |
| Waste               | —    | —    | —    | —       | —       | —     | —       | —       | —      | —       | 310  | 0.00  | 310   | 31.0    | 0.00    | —    | 1,085 |
| Refrig.             | —    | —    | —    | —       | —       | —     | —       | —       | —      | —       | —    | —     | —     | —       | —       | 1.93 | 1.93  |
| Total               | 4.43 | 1.64 | 10.8 | 0.03    | 0.07    | 1.19  | 1.26    | 0.07    | 0.21   | 0.28    | 325  | 4,699 | 5,024 | 32.8    | 0.16    | 2.19 | 5,896 |
| Average Daily       | —    | —    | —    | —       | —       | —     | —       | —       | —      | —       | —    | —     | —     | —       | —       | —    | —     |
| Mobile              | 0.88 | 1.06 | 10.9 | 0.03    | 0.02    | 1.19  | 1.21    | 0.02    | 0.21   | 0.23    | —    | 3,153 | 3,153 | 0.12    | 0.12    | 4.36 | 3,196 |
| Area                | 4.28 | 0.08 | 8.54 | < 0.005 | < 0.005 | —     | < 0.005 | < 0.005 | —      | < 0.005 | 0.00 | 23.2  | 23.2  | < 0.005 | < 0.005 | —    | 23.3  |
| Energy              | 0.03 | 0.60 | 0.25 | < 0.005 | 0.05    | —     | 0.05    | 0.05    | —      | 0.05    | —    | 1,530 | 1,530 | 0.14    | 0.01    | —    | 1,536 |
| Water               | —    | —    | —    | —       | —       | —     | —       | —       | —      | —       | 15.2 | 52.8  | 68.0  | 1.57    | 0.04    | —    | 118   |
| Waste               | —    | —    | —    | —       | —       | —     | —       | —       | —      | —       | 310  | 0.00  | 310   | 31.0    | 0.00    | —    | 1,085 |
| Refrig.             | —    | —    | —    | —       | —       | —     | —       | —       | —      | —       | —    | —     | —     | —       | —       | 1.93 | 1.93  |

|         |      |      |      |         |         |      |         |         |      |         |      |       |       |         |         |      |       |
|---------|------|------|------|---------|---------|------|---------|---------|------|---------|------|-------|-------|---------|---------|------|-------|
| Total   | 5.20 | 1.74 | 19.7 | 0.04    | 0.07    | 1.19 | 1.26    | 0.07    | 0.21 | 0.28    | 325  | 4,759 | 5,084 | 32.8    | 0.17    | 6.29 | 5,960 |
| Annual  | —    | —    | —    | —       | —       | —    | —       | —       | —    | —       | —    | —     | —     | —       | —       | —    | —     |
| Mobile  | 0.16 | 0.19 | 1.99 | 0.01    | < 0.005 | 0.22 | 0.22    | < 0.005 | 0.04 | 0.04    | —    | 522   | 522   | 0.02    | 0.02    | 0.72 | 529   |
| Area    | 0.78 | 0.01 | 1.56 | < 0.005 | < 0.005 | —    | < 0.005 | < 0.005 | —    | < 0.005 | 0.00 | 3.84  | 3.84  | < 0.005 | < 0.005 | —    | 3.86  |
| Energy  | 0.01 | 0.11 | 0.05 | < 0.005 | 0.01    | —    | 0.01    | 0.01    | —    | 0.01    | —    | 253   | 253   | 0.02    | < 0.005 | —    | 254   |
| Water   | —    | —    | —    | —       | —       | —    | —       | —       | —    | —       | 2.52 | 8.74  | 11.3  | 0.26    | 0.01    | —    | 19.6  |
| Waste   | —    | —    | —    | —       | —       | —    | —       | —       | —    | —       | 51.3 | 0.00  | 51.3  | 5.13    | 0.00    | —    | 180   |
| Refrig. | —    | —    | —    | —       | —       | —    | —       | —       | —    | —       | —    | —     | —     | —       | —       | 0.32 | 0.32  |
| Total   | 0.95 | 0.32 | 3.60 | 0.01    | 0.01    | 0.22 | 0.23    | 0.01    | 0.04 | 0.05    | 53.8 | 788   | 842   | 5.43    | 0.03    | 1.04 | 987   |

## 4. Operations Emissions Details

### 4.1. Mobile Emissions by Land Use

#### 4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use                          | ROG  | NOx  | CO   | SO2  | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T  | CH4  | N2O  | R    | CO2e  |
|-----------------------------------|------|------|------|------|-------|-------|-------|--------|--------|--------|------|-------|-------|------|------|------|-------|
| Daily, Summer (Max)               | —    | —    | —    | —    | —     | —     | —     | —      | —      | —      | —    | —     | —     | —    | —    | —    | —     |
| Congregate Care (Assisted Living) | 0.90 | 0.96 | 11.9 | 0.03 | 0.02  | 1.19  | 1.21  | 0.02   | 0.21   | 0.23   | —    | 3,254 | 3,254 | 0.12 | 0.11 | 10.1 | 3,300 |
| Enclosed Parking with Elevator    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00   | 0.00   | 0.00   | —    | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00  |
| Other Asphalt Surfaces            | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00   | 0.00   | 0.00   | —    | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00  |

|                                   |      |      |      |      |         |      |      |         |      |      |   |       |       |      |      |      |       |
|-----------------------------------|------|------|------|------|---------|------|------|---------|------|------|---|-------|-------|------|------|------|-------|
| Total                             | 0.90 | 0.96 | 11.9 | 0.03 | 0.02    | 1.19 | 1.21 | 0.02    | 0.21 | 0.23 | — | 3,254 | 3,254 | 0.12 | 0.11 | 10.1 | 3,300 |
| Daily, Winter (Max)               | —    | —    | —    | —    | —       | —    | —    | —       | —    | —    | — | —     | —     | —    | —    | —    | —     |
| Congregate Care (Assisted Living) | 0.89 | 1.05 | 10.6 | 0.03 | 0.02    | 1.19 | 1.21 | 0.02    | 0.21 | 0.23 | — | 3,116 | 3,116 | 0.12 | 0.12 | 0.26 | 3,155 |
| Enclosed Parking with Elevator    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | — | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00  |
| Other Asphalt Surfaces            | 0.00 | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | — | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00  |
| Total                             | 0.89 | 1.05 | 10.6 | 0.03 | 0.02    | 1.19 | 1.21 | 0.02    | 0.21 | 0.23 | — | 3,116 | 3,116 | 0.12 | 0.12 | 0.26 | 3,155 |
| Annual                            | —    | —    | —    | —    | —       | —    | —    | —       | —    | —    | — | —     | —     | —    | —    | —    | —     |
| Congregate Care (Assisted Living) | 0.16 | 0.19 | 1.99 | 0.01 | < 0.005 | 0.22 | 0.22 | < 0.005 | 0.04 | 0.04 | — | 522   | 522   | 0.02 | 0.02 | 0.72 | 529   |
| Enclosed Parking with Elevator    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | — | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00  |
| Other Asphalt Surfaces            | 0.00 | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | 0.00    | 0.00 | 0.00 | — | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00  |
| Total                             | 0.16 | 0.19 | 1.99 | 0.01 | < 0.005 | 0.22 | 0.22 | < 0.005 | 0.04 | 0.04 | — | 522   | 522   | 0.02 | 0.02 | 0.72 | 529   |

## 4.2. Energy

### 4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use                          | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4     | N2O     | R | CO2e |
|-----------------------------------|-----|-----|----|-----|-------|-------|-------|--------|--------|--------|------|-------|------|---------|---------|---|------|
| Daily, Summer (Max)               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —       | —       | — | —    |
| Congregate Care (Assisted Living) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | 741   | 741  | 0.07    | 0.01    | — | 745  |
| Enclosed Parking with Elevator    | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | 30.8  | 30.8 | < 0.005 | < 0.005 | — | 31.0 |
| Other Asphalt Surfaces            | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | 0.00  | 0.00 | 0.00    | 0.00    | — | 0.00 |
| Total                             | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | 771   | 771  | 0.07    | 0.01    | — | 776  |
| Daily, Winter (Max)               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —       | —       | — | —    |
| Congregate Care (Assisted Living) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | 741   | 741  | 0.07    | 0.01    | — | 745  |
| Enclosed Parking with Elevator    | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | 30.8  | 30.8 | < 0.005 | < 0.005 | — | 31.0 |
| Other Asphalt Surfaces            | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | 0.00  | 0.00 | 0.00    | 0.00    | — | 0.00 |
| Total                             | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | 771   | 771  | 0.07    | 0.01    | — | 776  |
| Annual                            | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —       | —       | — | —    |

|                                |   |   |   |   |   |   |   |   |   |   |   |      |      |         |         |   |      |
|--------------------------------|---|---|---|---|---|---|---|---|---|---|---|------|------|---------|---------|---|------|
| Congregate                     | — | — | — | — | — | — | — | — | — | — | — | 123  | 123  | 0.01    | < 0.005 | — | 123  |
| Enclosed Parking with Elevator | — | — | — | — | — | — | — | — | — | — | — | 5.10 | 5.10 | < 0.005 | < 0.005 | — | 5.13 |
| Other Asphalt Surfaces         | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00    | 0.00    | — | 0.00 |
| Total                          | — | — | — | — | — | — | — | — | — | — | — | 128  | 128  | 0.01    | < 0.005 | — | 128  |

#### 4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use                          | ROG  | NOx  | CO   | SO2     | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4  | N2O     | R | CO2e |
|-----------------------------------|------|------|------|---------|-------|-------|-------|--------|--------|--------|------|-------|------|------|---------|---|------|
| Daily, Summer (Max)               | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —    | —    | —       | — | —    |
| Congregate Care (Assisted Living) | 0.03 | 0.60 | 0.25 | < 0.005 | 0.05  | —     | 0.05  | 0.05   | —      | 0.05   | —    | 758   | 758  | 0.07 | < 0.005 | — | 760  |
| Enclosed Parking with Elevator    | 0.00 | 0.00 | 0.00 | 0.00    | 0.00  | —     | 0.00  | 0.00   | —      | 0.00   | —    | 0.00  | 0.00 | 0.00 | 0.00    | — | 0.00 |
| Other Asphalt Surfaces            | 0.00 | 0.00 | 0.00 | 0.00    | 0.00  | —     | 0.00  | 0.00   | —      | 0.00   | —    | 0.00  | 0.00 | 0.00 | 0.00    | — | 0.00 |
| Total                             | 0.03 | 0.60 | 0.25 | < 0.005 | 0.05  | —     | 0.05  | 0.05   | —      | 0.05   | —    | 758   | 758  | 0.07 | < 0.005 | — | 760  |
| Daily, Winter (Max)               | —    | —    | —    | —       | —     | —     | —     | —      | —      | —      | —    | —     | —    | —    | —       | — | —    |

|                                   |      |      |      |         |      |   |      |      |   |      |   |      |      |      |         |   |      |
|-----------------------------------|------|------|------|---------|------|---|------|------|---|------|---|------|------|------|---------|---|------|
| Congregate Care (Assisted Living) | 0.03 | 0.60 | 0.25 | < 0.005 | 0.05 | — | 0.05 | 0.05 | — | 0.05 | — | 758  | 758  | 0.07 | < 0.005 | — | 760  |
| Enclosed Parking with Elevator    | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00    | — | 0.00 |
| Other Asphalt Surfaces            | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00    | — | 0.00 |
| Total                             | 0.03 | 0.60 | 0.25 | < 0.005 | 0.05 | — | 0.05 | 0.05 | — | 0.05 | — | 758  | 758  | 0.07 | < 0.005 | — | 760  |
| Annual                            | —    | —    | —    | —       | —    | — | —    | —    | — | —    | — | —    | —    | —    | —       | — | —    |
| Congregate Care (Assisted Living) | 0.01 | 0.11 | 0.05 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 126  | 126  | 0.01 | < 0.005 | — | 126  |
| Enclosed Parking with Elevator    | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00    | — | 0.00 |
| Other Asphalt Surfaces            | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00    | — | 0.00 |
| Total                             | 0.01 | 0.11 | 0.05 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 126  | 126  | 0.01 | < 0.005 | — | 126  |

### 4.3. Area Emissions by Source

#### 4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Source | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|--------|-----|-----|----|-----|-------|-------|-------|--------|--------|--------|------|-------|------|-----|-----|---|------|
|--------|-----|-----|----|-----|-------|-------|-------|--------|--------|--------|------|-------|------|-----|-----|---|------|

|                        |      |      |      |         |         |   |         |      |   |      |      |      |      |         |         |   |      |
|------------------------|------|------|------|---------|---------|---|---------|------|---|------|------|------|------|---------|---------|---|------|
| Daily, Summer (Max)    | —    | —    | —    | —       | —       | — | —       | —    | — | —    | —    | —    | —    | —       | —       | — | —    |
| Hearths                | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | — | 0.00    | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | — | 0.00 |
| Consumer Products      | 3.25 | —    | —    | —       | —       | — | —       | —    | — | —    | —    | —    | —    | —       | —       | — | —    |
| Architectural Coatings | 0.26 | —    | —    | —       | —       | — | —       | —    | — | —    | —    | —    | —    | —       | —       | — | —    |
| Landscaping Equipment  | 1.12 | 0.12 | 12.5 | < 0.005 | < 0.005 | — | < 0.005 | 0.01 | — | 0.01 | —    | 33.9 | 33.9 | < 0.005 | < 0.005 | — | 34.0 |
| Total                  | 4.63 | 0.12 | 12.5 | < 0.005 | < 0.005 | — | < 0.005 | 0.01 | — | 0.01 | 0.00 | 33.9 | 33.9 | < 0.005 | < 0.005 | — | 34.0 |
| Daily, Winter (Max)    | —    | —    | —    | —       | —       | — | —       | —    | — | —    | —    | —    | —    | —       | —       | — | —    |
| Hearths                | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | — | 0.00    | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | — | 0.00 |
| Consumer Products      | 3.25 | —    | —    | —       | —       | — | —       | —    | — | —    | —    | —    | —    | —       | —       | — | —    |
| Architectural Coatings | 0.26 | —    | —    | —       | —       | — | —       | —    | — | —    | —    | —    | —    | —       | —       | — | —    |
| Total                  | 3.51 | 0.00 | 0.00 | 0.00    | 0.00    | — | 0.00    | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | — | 0.00 |
| Annual                 | —    | —    | —    | —       | —       | — | —       | —    | — | —    | —    | —    | —    | —       | —       | — | —    |
| Hearths                | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | — | 0.00    | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00    | 0.00    | — | 0.00 |
| Consumer Products      | 0.59 | —    | —    | —       | —       | — | —       | —    | — | —    | —    | —    | —    | —       | —       | — | —    |
| Architectural Coatings | 0.05 | —    | —    | —       | —       | — | —       | —    | — | —    | —    | —    | —    | —       | —       | — | —    |

|               |      |      |      |         |         |   |         |         |   |         |      |      |      |         |         |   |      |
|---------------|------|------|------|---------|---------|---|---------|---------|---|---------|------|------|------|---------|---------|---|------|
| Landscap<br>e | 0.14 | 0.01 | 1.56 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | —    | 3.84 | 3.84 | < 0.005 | < 0.005 | — | 3.86 |
| Total         | 0.78 | 0.01 | 1.56 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | 0.00 | 3.84 | 3.84 | < 0.005 | < 0.005 | — | 3.86 |

#### 4.4. Water Emissions by Land Use

##### 4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use                                       | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4  | N2O  | R | CO2e |
|--|-----|-----|----|-----|-------|-------|-------|--------|--------|--------|------|-------|------|------|------|---|------|
| Daily,<br>Summer<br>(Max)                      | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —    | —    | — | —    |
| Congrega<br>te<br>Care<br>(Assisted<br>Living) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | 15.2 | 52.8  | 68.0 | 1.57 | 0.04 | — | 118  |
| Enclosed<br>Parking<br>with<br>Elevator        | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | 0.00 | 0.00  | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Other<br>Asphalt<br>Surfaces                   | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | 0.00 | 0.00  | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total  | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | 15.2 | 52.8  | 68.0 | 1.57 | 0.04 | — | 118  |
| Daily,<br>Winter<br>(Max)                      | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —    | —    | — | —    |
| Congrega<br>te<br>Care<br>(Assisted<br>Living) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | 15.2 | 52.8  | 68.0 | 1.57 | 0.04 | — | 118  |

|                                   |   |   |   |   |   |   |   |   |   |   |      |      |      |      |      |   |      |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|------|------|------|------|------|---|------|
| Enclosed Parking with Elevator    | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Other Asphalt Surfaces            | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total                             | — | — | — | — | — | — | — | — | — | — | 15.2 | 52.8 | 68.0 | 1.57 | 0.04 | — | 118  |
| Annual                            | — | — | — | — | — | — | — | — | — | — | —    | —    | —    | —    | —    | — | —    |
| Congregate Care (Assisted Living) | — | — | — | — | — | — | — | — | — | — | 2.52 | 8.74 | 11.3 | 0.26 | 0.01 | — | 19.6 |
| Enclosed Parking with Elevator    | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Other Asphalt Surfaces            | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total                             | — | — | — | — | — | — | — | — | — | — | 2.52 | 8.74 | 11.3 | 0.26 | 0.01 | — | 19.6 |

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use            | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---------------------|-----|-----|----|-----|-------|-------|-------|--------|--------|--------|------|-------|------|-----|-----|---|------|
| Daily, Summer (Max) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |

|                                   |   |   |   |   |   |   |   |   |   |   |      |      |      |      |      |   |       |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|------|------|------|------|------|---|-------|
| Congregate Care (Assisted Living) | — | — | — | — | — | — | — | — | — | — | 310  | 0.00 | 310  | 31.0 | 0.00 | — | 1,085 |
| Enclosed Parking with Elevator    | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00  |
| Other Asphalt Surfaces            | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00  |
| Total                             | — | — | — | — | — | — | — | — | — | — | 310  | 0.00 | 310  | 31.0 | 0.00 | — | 1,085 |
| Daily, Winter (Max)               | — | — | — | — | — | — | — | — | — | — | —    | —    | —    | —    | —    | — | —     |
| Congregate Care (Assisted Living) | — | — | — | — | — | — | — | — | — | — | 310  | 0.00 | 310  | 31.0 | 0.00 | — | 1,085 |
| Enclosed Parking with Elevator    | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00  |
| Other Asphalt Surfaces            | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00  |
| Total                             | — | — | — | — | — | — | — | — | — | — | 310  | 0.00 | 310  | 31.0 | 0.00 | — | 1,085 |
| Annual                            | — | — | — | — | — | — | — | — | — | — | —    | —    | —    | —    | —    | — | —     |
| Congregate Care (Assisted Living) | — | — | — | — | — | — | — | — | — | — | 51.3 | 0.00 | 51.3 | 5.13 | 0.00 | — | 180   |

|                                |   |   |   |   |   |   |   |   |   |   |      |      |      |      |      |   |      |
|--------------------------------|---|---|---|---|---|---|---|---|---|---|------|------|------|------|------|---|------|
| Enclosed Parking with Elevator | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Other Asphalt Surfaces         | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total                          | — | — | — | — | — | — | — | — | — | — | 51.3 | 0.00 | 51.3 | 5.13 | 0.00 | — | 180  |

### 4.6. Refrigerant Emissions by Land Use

#### 4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use                          | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R    | CO2e |
|-----------------------------------|-----|-----|----|-----|-------|-------|-------|--------|--------|--------|------|-------|------|-----|-----|------|------|
| Daily, Summer (Max)               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | —    | —    |
| Congregate Care (Assisted Living) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | 1.93 | 1.93 |
| Total                             | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | 1.93 | 1.93 |
| Daily, Winter (Max)               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | —    | —    |
| Congregate Care (Assisted Living) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | 1.93 | 1.93 |
| Total                             | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | 1.93 | 1.93 |
| Annual                            | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | —    | —    |

|            |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |      |      |
|------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|------|------|
| Congregate | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.32 | 0.32 |
| Total      | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.32 | 0.32 |

### 4.7. Offroad Emissions By Equipment Type

#### 4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type      | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---------------------|-----|-----|----|-----|-------|-------|-------|--------|--------|--------|------|-------|------|-----|-----|---|------|
| Daily, Summer (Max) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Total               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Daily, Winter (Max) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Total               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Annual              | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Total               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |

### 4.8. Stationary Emissions By Equipment Type

#### 4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type      | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---------------------|-----|-----|----|-----|-------|-------|-------|--------|--------|--------|------|-------|------|-----|-----|---|------|
| Daily, Summer (Max) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |

|                     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total               | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total               | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual              | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total               | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.9. User Defined Emissions By Equipment Type

#### 4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type      | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---------------------|-----|-----|----|-----|-------|-------|-------|--------|--------|--------|------|-------|------|-----|-----|---|------|
| Daily, Summer (Max) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Total               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Daily, Winter (Max) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Total               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Annual              | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Total               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |

### 4.10. Soil Carbon Accumulation By Vegetation Type

#### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Vegetatio           | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---------------------|-----|-----|----|-----|-------|-------|-------|--------|--------|--------|------|-------|------|-----|-----|---|------|
| Daily, Summer (Max) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Total               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Daily, Winter (Max) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Total               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Annual              | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Total               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use            | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---------------------|-----|-----|----|-----|-------|-------|-------|--------|--------|--------|------|-------|------|-----|-----|---|------|
| Daily, Summer (Max) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Total               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Daily, Winter (Max) | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Total               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Annual              | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |
| Total               | —   | —   | —  | —   | —     | —     | —     | —      | —      | —      | —    | —     | —    | —   | —   | — | —    |

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Species | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---------|-----|-----|----|-----|-------|-------|-------|--------|--------|--------|------|-------|------|-----|-----|---|------|
|---------|-----|-----|----|-----|-------|-------|-------|--------|--------|--------|------|-------|------|-----|-----|---|------|

|                     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided             | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal            | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered         | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal            | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed             | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal            | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| —                   | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided             | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal            | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered         | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal            | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed             | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal            | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| —                   | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual              | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided             | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal            | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered         | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal            | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed             | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal            | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

## 5. Activity Data

### 5.9. Operational Mobile Sources

#### 5.9.1. Unmitigated

| Land Use Type                     | Trips/Weekday | Trips/Saturday | Trips/Sunday | Trips/Year | VMT/Weekday | VMT/Saturday | VMT/Sunday | VMT/Year  |
|-----------------------------------|---------------|----------------|--------------|------------|-------------|--------------|------------|-----------|
| Congregate Care (Assisted Living) | 230           | 230            | 230          | 83,965     | 4,267       | 4,267        | 4,267      | 1,557,421 |
| Enclosed Parking with Elevator    | 0.00          | 0.00           | 0.00         | 0.00       | 0.00        | 0.00         | 0.00       | 0.00      |
| Other Asphalt Surfaces            | 0.00          | 0.00           | 0.00         | 0.00       | 0.00        | 0.00         | 0.00       | 0.00      |

### 5.10. Operational Area Sources

#### 5.10.1. Hearths

##### 5.10.1.1. Unmitigated

| Hearth Type                       | Unmitigated (number) |
|-----------------------------------|----------------------|
| Congregate Care (Assisted Living) | —                    |
| Wood Fireplaces                   | 0                    |
| Gas Fireplaces                    | 0                    |
| Propane Fireplaces                | 0                    |
| Electric Fireplaces               | 0                    |
| No Fireplaces                     | 0                    |
| Conventional Wood Stoves          | 0                    |
| Catalytic Wood Stoves             | 0                    |

|                           |   |
|---------------------------|---|
| Non-Catalytic Wood Stoves | 0 |
| Pellet Wood Stoves        | 0 |

### 5.10.2. Architectural Coatings

| Residential Interior Area Coated (sq ft) | Residential Exterior Area Coated (sq ft) | Non-Residential Interior Area Coated (sq ft) | Non-Residential Exterior Area Coated (sq ft) | Parking Area Coated (sq ft) |
|--|--|--|--|-----------------------------|
| 307123.64999999997                       | 102,375                                  | 388  | 43.1   | 1,824                       |

### 5.10.3. Landscape Equipment

| Season      | Unit   | Value |
|-------------|--------|-------|
| Snow Days   | day/yr | 0.00  |
| Summer Days | day/yr | 250   |

## 5.11. Operational Energy Consumption

### 5.11.1. Unmitigated

#### Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

| Land Use                          | Electricity (kWh/yr) | CO2 | CH4    | N2O    | Natural Gas (kBTU/yr) |
|-----------------------------------|----------------------|-----|--------|--------|-----------------------|
| Congregate Care (Assisted Living) | 780,823              | 346 | 0.0330 | 0.0040 | 2,365,758             |
| Enclosed Parking with Elevator    | 32,485               | 346 | 0.0330 | 0.0040 | 0.00                  |
| Other Asphalt Surfaces            | 0.00                 | 346 | 0.0330 | 0.0040 | 0.00                  |

## 5.12. Operational Water and Wastewater Consumption

### 5.12.1. Unmitigated

| Land Use | Indoor Water (gal/year) | Outdoor Water (gal/year) |
|----------|-------------------------|--------------------------|
|----------|-------------------------|--------------------------|

|                                   |           |         |
|-----------------------------------|-----------|---------|
| Congregate Care (Assisted Living) | 7,939,319 | 304,333 |
| Enclosed Parking with Elevator    | 0.00      | 0.00    |
| Other Asphalt Surfaces            | 0.00      | 0.00    |

### 5.13. Operational Waste Generation

#### 5.13.1. Unmitigated

| Land Use                          | Waste (ton/year) | Cogeneration (kWh/year) |
|-----------------------------------|------------------|-------------------------|
| Congregate Care (Assisted Living) | 575              | —                       |
| Enclosed Parking with Elevator    | 0.00             | —                       |
| Other Asphalt Surfaces            | 0.00             | —                       |

### 5.14. Operational Refrigeration and Air Conditioning Equipment

#### 5.14.1. Unmitigated

| Land Use Type                     | Equipment Type  | Refrigerant | GWP   | Quantity (kg) | Operations Leak Rate | Service Leak Rate | Times Serviced |
|-----------------------------------|---|-------------|-------|---------------|----------------------|-------------------|----------------|
| Congregate Care (Assisted Living) | Average room A/C & Other residential A/C and heat pumps | R-410A      | 2,088 | < 0.005       | 2.50                 | 2.50              | 10.0           |
| Congregate Care (Assisted Living) | Household refrigerators and/or freezers                 | R-134a      | 1,430 | 0.22          | 0.60                 | 0.00              | 1.00           |

### 5.15. Operational Off-Road Equipment

#### 5.15.1. Unmitigated

| Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|----------------|-----------|-------------|----------------|---------------|------------|-------------|
|----------------|-----------|-------------|----------------|---------------|------------|-------------|

### 5.16. Stationary Sources

### 5.16.1. Emergency Generators and Fire Pumps

| Equipment Type | Fuel Type | Number per Day | Hours per Day | Hours per Year | Horsepower | Load Factor |
|----------------|-----------|----------------|---------------|----------------|------------|-------------|
|----------------|-----------|----------------|---------------|----------------|------------|-------------|

### 5.16.2. Process Boilers

| Equipment Type | Fuel Type | Number | Boiler Rating (MMBtu/hr) | Daily Heat Input (MMBtu/day) | Annual Heat Input (MMBtu/yr) |
|----------------|-----------|--------|--------------------------|------------------------------|------------------------------|
|----------------|-----------|--------|--------------------------|------------------------------|------------------------------|

### 5.17. User Defined

| Equipment Type | Fuel Type |
|----------------|-----------|
| —              | —         |

### 5.18. Vegetation

#### 5.18.1. Land Use Change

##### 5.18.1.1. Unmitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|--------------------------|----------------------|---------------|-------------|
|--------------------------|----------------------|---------------|-------------|

#### 5.18.1. Biomass Cover Type

##### 5.18.1.1. Unmitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|--------------------|---------------|-------------|
|--------------------|---------------|-------------|

#### 5.18.2. Sequestration

##### 5.18.2.1. Unmitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|-----------|--------|------------------------------|------------------------------|
|-----------|--------|------------------------------|------------------------------|

## 6. Climate Risk Detailed Report

### 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

| Climate Hazard               | Result for Project Location | Unit                                       |
|------------------------------|-----------------------------|--|
| Temperature and Extreme Heat | 17.6                        | annual days of extreme heat                |
| Extreme Precipitation        | 5.85                        | annual days with precipitation above 20 mm |
| Sea Level Rise               | 0.00                        | meters of inundation depth                 |
| Wildfire                     | 8.48                        | annual hectares burned                     |

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

### 6.2. Initial Climate Risk Scores

| Climate Hazard               | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|------------------------------|----------------|-------------------|-------------------------|---------------------|
| Temperature and Extreme Heat | 2              | 0                 | 0                       | N/A                 |
| Extreme Precipitation        | N/A            | N/A               | N/A                     | N/A                 |
| Sea Level Rise               | 1              | 0                 | 0                       | N/A                 |
| Wildfire                     | 1              | 0                 | 0                       | N/A                 |
| Flooding                     | N/A            | N/A               | N/A                     | N/A                 |
| Drought                      | N/A            | N/A               | N/A                     | N/A                 |

|                         |     |     |     |     |
|-------------------------|-----|-----|-----|-----|
| Snowpack Reduction      | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 0   | 0   | 0   | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

### 6.3. Adjusted Climate Risk Scores

| Climate Hazard               | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|------------------------------|----------------|-------------------|-------------------------|---------------------|
| Temperature and Extreme Heat | 2              | 1                 | 1                       | 3                   |
| Extreme Precipitation        | N/A            | N/A               | N/A                     | N/A                 |
| Sea Level Rise               | 1              | 1                 | 1                       | 2                   |
| Wildfire                     | 1              | 1                 | 1                       | 2                   |
| Flooding                     | N/A            | N/A               | N/A                     | N/A                 |
| Drought                      | N/A            | N/A               | N/A                     | N/A                 |
| Snowpack Reduction           | N/A            | N/A               | N/A                     | N/A                 |
| Air Quality Degradation      | 1              | 1                 | 1                       | 2                   |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

### 6.4. Climate Risk Reduction Measures

## 7. Health and Equity Details

### 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|-----------|---------------------------------|
|-----------|---------------------------------|

|                                 |      |
|---------------------------------|------|
| Exposure Indicators             | —    |
| AQ-Ozone                        | 97.1 |
| AQ-PM                           | 50.4 |
| AQ-DPM                          | 0.76 |
| Drinking Water                  | 78.9 |
| Lead Risk Housing               | 46.0 |
| Pesticides                      | 12.3 |
| Toxic Releases                  | 48.5 |
| Traffic                         | 72.4 |
| Effect Indicators               | —    |
| CleanUp Sites                   | 88.8 |
| Groundwater                     | 56.1 |
| Haz Waste Facilities/Generators | 11.1 |
| Impaired Water Bodies           | 0.00 |
| Solid Waste                     | 94.7 |
| Sensitive Population            | —    |
| Asthma                          | 27.8 |
| Cardio-vascular                 | 10.6 |
| Low Birth Weights               | —    |
| Socioeconomic Factor Indicators | —    |
| Education                       | 61.4 |
| Housing                         | —    |
| Linguistic                      | —    |
| Poverty                         | 61.3 |
| Unemployment                    | —    |

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

| Indicator                                    | Result for Project Census Tract |
|--|---------------------------------|
| Economic                                     | —                               |
| Above Poverty                                | —                               |
| Employed                                     | —                               |
| Median HI                                    | —                               |
| Education                                    | —                               |
| Bachelor's or higher                         | —                               |
| High school enrollment                       | —                               |
| Preschool enrollment                         | —                               |
| Transportation                               | —                               |
| Auto Access                                  | —                               |
| Active commuting                             | —                               |
| Social                                       | —                               |
| 2-parent households                          | —                               |
| Voting                                       | —                               |
| Neighborhood                                 | —                               |
| Alcohol availability                         | —                               |
| Park access                                  | —                               |
| Retail density                               | —                               |
| Supermarket access                           | —                               |
| Tree canopy                                  | —                               |
| Housing                                      | —                               |
| Homeownership                                | —                               |
| Housing habitability                         | —                               |
| Low-inc homeowner severe housing cost burden | —                               |
| Low-inc renter severe housing cost burden    | —                               |
| Uncrowded housing                            | —                               |

|                                       |      |
|---------------------------------------|------|
| Health Outcomes                       | —    |
| Insured adults                        | —    |
| Arthritis                             | 0.0  |
| Asthma ER Admissions                  | 55.4 |
| High Blood Pressure                   | 0.0  |
| Cancer (excluding skin)               | 0.0  |
| Asthma                                | 0.0  |
| Coronary Heart Disease                | 0.0  |
| Chronic Obstructive Pulmonary Disease | 0.0  |
| Diagnosed Diabetes                    | 0.0  |
| Life Expectancy at Birth              | 0.0  |
| Cognitively Disabled                  | 43.0 |
| Physically Disabled                   | 73.0 |
| Heart Attack ER Admissions            | 66.5 |
| Mental Health Not Good                | 0.0  |
| Chronic Kidney Disease                | 0.0  |
| Obesity                               | 0.0  |
| Pedestrian Injuries                   | 0.0  |
| Physical Health Not Good              | 0.0  |
| Stroke                                | 0.0  |
| Health Risk Behaviors                 | —    |
| Binge Drinking                        | 0.0  |
| Current Smoker                        | 0.0  |
| No Leisure Time for Physical Activity | 0.0  |
| Climate Change Exposures              | —    |
| Wildfire Risk                         | 57.0 |
| SLR Inundation Area                   | 0.0  |

|                                  |      |
|----------------------------------|------|
| Children                         | 99.4 |
| Elderly                          | 32.8 |
| English Speaking                 | 0.0  |
| Foreign-born                     | 0.0  |
| Outdoor Workers                  | 49.2 |
| Climate Change Adaptive Capacity | —    |
| Impervious Surface Cover         | 97.3 |
| Traffic Density                  | 0.0  |
| Traffic Access                   | 23.0 |
| Other Indices                    | —    |
| Hardship                         | 0.0  |
| Other Decision Support           | —    |
| 2016 Voting                      | 0.0  |

### 7.3. Overall Health & Equity Scores

| Metric  | Result for Project Census Tract |
|---|---------------------------------|
| CalEnviroScreen 4.0 Score for Project Location (a)                                  | —                               |
| Healthy Places Index Score for Project Location (b)                                 | —                               |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535)           | No                              |
| Project Located in a Low-Income Community (Assembly Bill 1550)                      | No                              |
| Project Located in a Community Air Protection Program Community (Assembly Bill 617) | No                              |

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

### 7.4. Health & Equity Measures

No Health & Equity Measures selected.

### 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

### 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

## 8. User Changes to Default Data

| Screen                             | Justification                                    |
|------------------------------------|--|
| Characteristics: Project Details   | Site is suburban                                 |
| Land Use                           | Full buildout will have 213 rooms.               |
| Operations: Vehicle Data           | 1.08 trips per room (DU) per TIA.                |
| Operations: Architectural Coatings | Per SCAQMD Rule 1113 paints limited to 50g/L VOC |
| Operations: Hearths                | No fireplaces or woodstoves.                     |