CARLSBAD
FRESNO
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: April 23, 2020

TO: Robert Chiang
Clover Estate, Inc.
2361 Fullercreek Road
Chino Hills, California 91709

FROM: Michael Slavick, Senior Air Quality Specialist

SUBJECT: Air Quality and Greenhouse Gas Emissions Analysis: Proposed Chino Villas Assisted Living and Memory Care Project, City of Chino, California (LSA Project No. CHV1901)

INTRODUCTION AND PROJECT DESCRIPTION

The air quality and greenhouse gas (GHG) emissions analysis has been prepared to evaluate the potential air quality and GHG impacts associated with the proposed Chino Villas Assisted Living and Memory Care Project (proposed project) located within the Santa Ana del Chino Land Grant in the City of Chino (City). The approximately 7.3-acre project site is currently undeveloped and is adjacent to the north side of Philadelphia Street approximately 330 feet west of Benson Avenue and 1,800 feet east of Central Avenue. The proposed project comprises Assessor's Parcel Numbers (APNs) 1014-591-06 and 07, and consists of development of two lots (Lots A and B) totaling 7.01 acres. Lot A (APN 1014-591-07) is 2.61 acres and includes development of a three-story senior assisted living (87,200 square feet with 96 beds) and memory care (12,688 square feet with 24 beds) facility totaling 99,888 square feet and 120 beds. The proposed residential spaces range in size from studios (354 square feet) to two-bedroom suites (727 square feet). Lot B (APN 1014-591-06) is 4.4 acres and includes development of two three-story office buildings with a total area of 65,000 square feet. Attachment A, Figure 1 presents the location map of the proposed project and Figure 2 presents the conceptual site plan.

SURROUNDING SENSITIVE USES

Certain land uses are considered sensitive to air quality. Examples of these include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. The closest off-site sensitive receptors are the residential land uses east and northwest of the proposed project site. The nearest residential units (i.e., single-family residences) are approximately 100 feet east of proposed project site.

APPROACH TO ANALYSIS

To evaluate air pollutant emissions from the construction and operation of the project, LSA conducted the California Emission Estimator Model (CalEEMod) analysis, which is the current air quality and land use emissions model recommended by the California Air Resources Board (ARB) for evaluating emissions from land use projects. Emissions from construction were based on the CalEEMod default for the construction phase scenario and anticipated opening date schedule. Emissions from operation of the proposed Chino Villas Assisted Living and Memory Care facility include vehicle emissions, area source emissions, and energy use emissions. The construction and operational emissions were then compared with the CEQA air quality significance thresholds from

1500 Iowa Avenue, Suite 200, Riverside, California 92507 951.781.9310 www.lsa.net

the South Coast Air Quality Management District (SCAQMD). A climate action plan GHG screening tables evaluation was conducted to determine whether or not the proposed project would be consistent with the City of Chino's *Climate Action Plan*.

EXISTING SETTING

The proposed project site is located in the City of Chino, which is part of the South Coast Air Basin (Basin) and is under the jurisdiction of the SCAQMD.

Climate/Meteorology

Air quality in the planning area is affected not only by various emission sources (e.g., mobile, stationary, and area sources) but also by atmospheric conditions such as wind speed, wind direction, temperature, and rainfall. The combination of topography, low mixing height, abundant sunshine, and emissions from the second largest urban area in the United States gives the Basin the worst air pollution problem in the nation.

Climate in the Basin is determined by its terrain and geographical location. The Basin is a coastal plain with connecting broad valleys and low hills. The Pacific Ocean forms the southwestern border, and high mountains surround the rest of the Basin, which lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a climate that is mild and tempered by cool ocean breezes. This climatological pattern is rarely interrupted; however, periods of extremely hot weather, winter storms, or Santa Ana wind conditions do occur.

The annual average temperature varies throughout the Basin, ranging from the low- to middle-60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, inland areas, including the City, show more variability in annual minimum and maximum temperatures than coastal areas. The monthly average maximum temperature at Chino Airport ranges from 67.8°F in January to 93.8°F in August. The monthly average minimum temperature ranges from 37.7°F in December to 60.1°F in July (Western Regional Climate Center 2020). December and January are typically the coldest months, and July and August are typically the warmest months in this area of the Basin.

The majority of annual rainfall in the Basin occurs between November and April. Summer rainfall is minimal and is generally limited to scattered thunderstorms in inland regions and slightly heavier showers in the eastern portion of the Basin and along the coastal side of the mountains. The monthly average rainfall at Chino Airport typically varies from 2.86 inches in February to 0.00 inch in August with an annual total of 8.89 inches (Western Regional Climate Center 2020). Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

Although the Basin has a semi-arid climate, air near the surface is generally moist because of the presence of a shallow marine layer. With very low average wind speeds, there is a limited capacity to disperse air contaminants horizontally. Winds at Chino Airport blow predominantly from the west-northwest, with relatively low velocities (Western Regional Climate Center 2020). Wind speeds in Chino average between 4 and 7 miles per hour (mph). The typical wind flow pattern fluctuates only with occasional winter storms or strong northeasterly (Santa Ana) winds from the mountains and deserts northeast of the Basin. Summer wind flow patterns represent worst-case conditions because this is the period of higher temperatures and more sunlight, which result in ozone (O_3) formation.

Temperature normally decreases with altitude, and a reversal of this atmospheric state, where temperature increases with altitude, is called an inversion. The height from the Earth to the inversion base is known as the mixing height. Persistent low inversions and cool coastal air tend to create morning fog and low stratus clouds. Cloudy days are less likely in the eastern portions of the Basin and are about 25 percent more likely along the coast. The vertical dispersion of air pollutants in the Basin is limited by temperature inversions in the atmosphere close to the Earth's surface.

Inversions are generally lower in the nighttime when the ground is cooler than during daylight hours when the sun warms the ground and, in turn, the surface air layer. As this heating process continues, the temperature of the surface air layer approaches the temperature of the inversion base, causing heating along its lower edge. If enough warming takes place, the inversion layer becomes weak and opens up to allow the surface air layers to mix upward. This can be seen in the middle-to-late afternoon on a hot summer day when the smog appears to clear up suddenly. Winter inversions typically break earlier in the day, preventing excessive smog buildup.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversions or high wind speeds, ambient air pollutant concentrations are lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into San Bernardino County. In the winter, the greatest pollution problem is the accumulation of carbon monoxide (CO) and nitrogen oxides (NOx) due to extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and NOx to form photochemical smog.

Local Air Quality

The SCAQMD, together with the California ARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring station closest to the site is the Upland station,[1] which monitors most air pollutant data, except for sulfur dioxide (SO_2), which were obtained from the Fontana station.[2] The air quality trends from these two stations are used to represent the ambient air quality in the vicinity of the proposed project site. The ambient air quality data monitored at these stations within the past three years are listed in Table A.

As shown in Table A, the ambient air quality data indicate that CO, nitrogen dioxide (NO_2), and SO_2 levels are consistently below the relevant State and federal standards. The State 1-hour O_3 standard was exceeded between 25 and 66 times and the State 8-hour O_3 standard was exceeded between 54 and 89 times in the last three years. The Federal 8-hour O_3 standard was exceeded between 57 and 88 times in the last three years. The State 24-hour and annual PM_{10} standards were exceeded at least once in the last three years. The federal 24-hour and State annual $PM_{2.5}$ standards were exceeded at least once in the last three years.

1 1350 San Bernardino Road, Upland, California 91786.
2 14360 Arrow Highway, Fontana, California 92335.

Table A: Ambient Air Quality Monitored in the Project Vicinity

Pollutant	Standard	2016	2017	2018
Ozone (O_3) – Upland Monitoring Station				
Maximum 1-hour concentration (ppm)		0.156	0.150	0.133
Number of days exceeded:	State: > 0.09 ppm	53	66	25
Maximum 8-hour concentration (ppm)		0.116	0.128	0.112
Number of days exceeded:	State: > 0.07 ppm	89	89	54
	Federal: > 0.07 ppm	88	87	52
Coarse Particulates (PM_{10}) – Upland Monitoring Station				
Maximum 24-hour concentration (µg/m^3)		184.0	106.5	156.6
Number of days exceeded:	State: > 50 µg/m^3	1	1	1
	Federal: > 150 µg/m^3	1	0	1
Annual arithmetic average concentration (µg/m^3)		26.3	32.8	33.4
Exceeded for the year:	State: > 20 µg/m^3	Yes	Yes	Yes
Fine Particulates ($PM_{2.5}$) – Upland Monitoring Station				
Maximum 24-hour concentration (µg/m^3)		44.9	53.2	47.9
Number of days exceeded:	Federal: > 35 µg/m^3	1	1	1
Annual arithmetic average concentration (µg/m^3)		17.6	18.0	18.0
Exceeded for the year:	State: > 12 µg/m^3	Yes	Yes	Yes
	Federal: > 12 µg/m^3	Yes	Yes	Yes
Carbon Monoxide (CO) – Upland Monitoring Station				
Maximum 1-hour concentration (ppm)		1.7	1.9	1.7
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		1.3	1.4	1.2
Number of days exceeded:	State: ≥ 9.0 ppm	0	0	0
	Federal: ≥ 9 ppm	0	0	0
Nitrogen Dioxide (NO_2) – Upland Monitoring Station				
Maximum 1-hour concentration (ppm)		0.070	0.064	0.058
Number of days exceeded:	State: > 0.18 ppm	0	0	0
	Federal: > 0.10 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.016	0.015	0.014
Exceeded for the year:	State: > 0.030 ppm	No	No	No
	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO_2) – Fontana Monitoring Station				
Maximum 24-hour concentration (ppm)		0.0008	0.0011	0.0009
Number of days exceeded:	State: > 0.04 ppm	0	0	0
Maximum 1-hour concentration (ppm)		0.0063	0.0039	0.0029
Number of days exceeded:	State: > 0.25 ppm	0	0	0
	Federal: > 0.075 ppm	0	0	0

Source: EPA. Air Data Air Quality Monitors. Website: http://www.epa.gov/airdata/ad_maps.html (accessed April 2020).

µg/m^3 = micrograms per cubic meter
EPA = United States Environmental Protection Agency
NA = not available
ppm = parts per million

Air Pollution Constituents and Attainment Status

The ARB coordinates and oversees both State and federal air pollution control programs in the State and oversees activities of local air quality management agencies and maintains air quality monitoring stations throughout the State in conjunction with the United States Environmental Protection Agency (EPA) and local air quality districts. The ARB has divided the State into 15 air basins based on meteorological and topographical factors of air pollution. Data collected at these stations are used by the ARB and EPA to classify air basins as attainment, nonattainment, nonattainment-transitional, or unclassified, based on air quality data for the most recent three calendar years compared with the Ambient Air Quality Standards (AAQS).

Attainment areas may be:

- Attainment/unclassified ("unclassifiable" in some lists), which have never violated the air quality standard of interest or do not have enough monitoring data to establish attainment or nonattainment status;
- Attainment/maintenance (National Ambient Air Quality Standards [NAAQS] only), which violated an NAAQS that is currently in use (was nonattainment) in or after 1990, but now attains the standard and is officially re-designated as attainment by the EPA with a maintenance State Implementation Plan (SIP); or
- Attainment (usually only for California Ambient Air Quality Standards [CAAQS], but sometimes for NAAQS), which have adequate monitoring data to show attainment, have never been nonattainment, or, for NAAQS, have completed the official maintenance period.

Additional restrictions are imposed on nonattainment areas as required by the EPA. The air quality data collected from monitoring stations are also used to monitor progress in attaining air quality standards. Table B lists the attainment status for the criteria pollutants in the Basin.

Table B: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
O_3 1-hour	Nonattainment	N/A
O_3 8-hour	Nonattainment	Extreme Nonattainment[1]
PM_{10}	Nonattainment	Attainment/Maintenance
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Unclassified/Attainment (1-hour) Attainment/Maintenance (Annual)
SO_2	Attainment	Unclassified/Attainment
Lead	Attainment[2]	Unclassified/Attainment[1]
All others	Attainment/Unclassified	Attainment/Unclassified

Source: ARB. Air Quality Standards and Area Designations. Website: http://www.arb.ca.gov/desig/desig.htm (accessed April 2020).

[1] Area has a design value of 0.175 ppm and above.

[2] Except in Los Angeles County.

ARB = California Air Resources Board
CO = carbon monoxide
N/A = not applicable
NO_2 = nitrogen dioxide
O_3 = ozone
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
ppm = parts per million
SO_2 = sulfur dioxide

Description of Global Climate Change and its Sources

Global climate change (GCC) is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other significant changes in climate (e.g., precipitation or wind) that last for an extended period of time. The term "global climate change" is often used interchangeably with the term "global warming," but "global climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures.

Climate change refers to any change in measures of weather (e.g., temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from natural factors (e.g., changes in the sun's intensity), natural processes within the climate system (e.g., changes in ocean circulation), or human activities (e.g., the burning of fossil fuels, land clearing, or agriculture). The primary observed effect of GCC has been a rise in the average global tropospheric[1] temperature of 0.36°F per decade, determined from meteorological measurements worldwide between 1990 and 2005. Climate change modeling shows that further warming may occur, which may induce additional changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and the environment of the State could include higher sea levels, drier or wetter weather, changes in ocean salinity, changes in wind patterns, or more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and increased intensity of tropical cyclones. Specific effects in the State might include a decline in the Sierra Nevada snowpack, erosion of the State's coastline, and seawater intrusion in the San Joaquin Delta.

Global surface temperatures have risen by 1.33°F ±0.32°F over the last 100 years. The rate of warming over the last 50 years is almost double that over the last 100 years (Intergovernmental Panel on Climate Change [IPCC] 2013). The latest projections, based on state-of-the-art climate models, indicate that temperatures in the State are expected to rise 3°F to 10.5°F by the end of the century (California Energy Commission 2006). The prevailing scientific opinion on climate change is that "most of the warming observed over the last 60 years is attributable to human activities" (IPCC 2013). Increased amounts of carbon dioxide (CO_2) and other GHGs are the primary causes of the human-induced component of warming. The observed warming effect associated with the presence of GHGs in the atmosphere (from either natural or human sources) is often referred to as "the greenhouse effect."[2]

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced GCC are:[3]

- Carbon dioxide (CO_2);

---

1 The troposphere is the zone of the atmosphere characterized by water vapor, weather, winds, and decreasing temperature with increasing altitude.

2 The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse allows heat from sunlight in and reduces the amount of heat that escapes, GHGs like CO_2, CH_4, and N_2O in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, the *naturally occurring* greenhouse effect is necessary to keep our planet at a comfortable temperature.

3 The GHGs listed are consistent with the definition in Assembly Bill 32 (Government Code 38505), as discussed later in this memorandum.

- Methane (CH_4);
- Nitrous oxide (N_2O);
- Hydrofluorocarbons (HFCs);
- Perfluorocarbons (PFCs); and
- Sulfur hexafluoride (SF_6).

Over the last 200 years, human activities have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, which some scientists believe can cause global warming. While GHGs produced by human activities include naturally occurring GHGs (e.g., CO_2, CH_4, and N_2O), some gases (e.g., HFCs, PFCs, and SF_6) are completely new to the atmosphere. Certain other gases (e.g., water vapor) are short-lived in the atmosphere compared to these GHGs, which remain in the atmosphere for significant periods of time and contribute to climate change in the long term. Water vapor is generally excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes (e.g., oceanic evaporation). For the purposes of this air quality study, the term "GHGs" will refer collectively to the six gases identified in the bulleted list provided above.

These gases vary considerably in terms of global warming potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas in absorbing infrared radiation and the length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of metric tons[1] of "CO_2 equivalents" (metric tons [MT] of CO_2e). For example, N_2O is 298 times more potent at contributing to global warming than CO_2. Table C identifies the GWP for each GHG analyzed in this memorandum.

Table C: Global Warming Potential for Selected Greenhouse Gases

Pollutant	Lifetime (Years)	Global Warming Potential (100-year)[1]
Carbon Dioxide (CO_2)	~100[2]	1
Methane (CH_4)	12	25
Nitrous Oxide (N_2O)	121	298

Source: ARB. First Update to the Climate Change Scoping Plan (2014).

[1] The 100-year global warming potential estimates are from Section 8.7.1.2 of The Global Warming Potential Concept in the IPCC 2007 Fourth Assessment Report (AR4). Website: http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm (accessed April 2020).

[2] CO_2 has a variable atmospheric lifetime and cannot be readily approximated as a single number.

ARB = California Air Resources Board
CO_2 = carbon dioxide
IPCC = Intergovernmental Panel on Climate Change

[1] A metric ton is equivalent to approximately 1.1 tons.

The following discussion summarizes the characteristics of the six primary GHGs.

Carbon Dioxide

In the atmosphere, carbon generally exists in its oxidized form, as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals, and plants; volcanic outgassing; decomposition of organic matter; and evaporation from the oceans. Human-caused sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. The Earth maintains a natural carbon balance, and when concentrations of CO_2 are upset, the system gradually returns to its natural state through natural processes. Natural changes to the carbon cycle work slowly, especially compared to the rapid rate at which humans are adding CO_2 to the atmosphere. Natural removal processes (e.g., photosynthesis by land- and ocean-dwelling plant species) cannot keep pace with this extra input of human-made CO_2, and consequently the gas is building up in the atmosphere. The concentration of CO_2 in the atmosphere has risen approximately 30 percent since the late 1800s.[1]

The transportation sector remained the largest source of GHG emissions in 2017, representing 40 percent of the State's GHG emission inventory.[2] The largest emissions category within the transportation sector is on-road, which consists of passenger vehicles (cars, motorcycles, and light-duty trucks) and heavy-duty trucks and buses. Emissions from on-road sources constitute approximately 99 percent of the transportation sector total. Industry and electricity generation were the State's second- and third-largest categories of GHG emissions, respectively.

Methane

CH_4 is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources of CH_4 include fires, geologic processes, and bacteria that produce CH_4 in a variety of settings (most notably, wetlands) (EPA 2010). Anthropogenic sources include rice cultivation, livestock, landfills and waste treatment, biomass burning, and fossil fuel combustion (e.g., the burning of coal, oil, and natural gas). As with CO_2, the major removal process of atmospheric CH_4—a chemical breakdown in the atmosphere—cannot keep pace with source emissions, and CH_4 concentrations in the atmosphere are increasing.

Nitrous Oxide

N_2O is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. N_2O is also a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion sources emit N_2O. The quantity of N_2O emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in the State.

---

1 California Environmental Protection Agency (CalEPA). 2010. Climate Action Team Report to Governor Schwarzenegger and the Legislature. December. Website: https://ww2.energy.ca.gov/2010publications/ CAT-1000-2010-005/CAT-1000-2010-005.PDF, accessed January 2020.

2 ARB. 2019a. GHG Current California Emission Inventory Data. Website: https://www.arb.ca.gov/cc/inventory/data/data.htm, accessed January 2020.

Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride

HFCs are primarily used as substitutes for O_3-depleting substances regulated under the Montreal Protocol.[1] PFCs and SF_6 are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in the State; however, the rapid growth in the semiconductor industry, which is active in the State, has led to greater use of PFCs. However, there are no known project-related emissions of these three GHGs; therefore, these substances are not discussed further in this analysis.

Emissions Sources and Inventories

An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on national, State, and local GHG emission inventories. However, because GHGs persist for a long time in the atmosphere (Table C), accumulate over time, and are generally well mixed, their impact on the atmosphere and climate cannot be tied to a specific point of emission.

United States Emissions

In 2017, the United States emitted approximately 6.456 billion MT CO_2e, down from 7.4 billion MT CO_2e in 2007. United States emissions decreased by 0.5 percent from 2016 to 2017. This decrease was largely driven by a decrease in emissions from fossil fuel combustion, which was a result of multiple factors including a continued shift from coal to natural gas and increased use of renewables in the electric-power sector, and milder weather that contributed to less overall electricity use. In 2017, the total United States GHG emissions were approximately 13 percent less than 2005 levels.[2]

State of California Emissions

According to ARB emission inventory estimates, the State emitted approximately 424 million MT CO_2e (MMT CO_2e) emissions in 2017. This is a decrease of 5 MMT CO_2e from 2016 and below the 2020 target of 431 MMT CO_2e.[3]

The transportation sector remains the largest source of GHG emissions, accounting for 40 percent, followed by electricity generation (both in-state and out-of-state) at 15 percent and industrial sources at 21 percent. The remaining sources of GHG emissions were residential and commercial

---

1 The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the O_3 layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for O_3 depletion and that are potent GHGs.

2 United States Environmental Protection Agency 2019. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2017. Website: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks, accessed April 2020.

3 California Air Resources Board 2019. GHG Current California Emission Inventory. California Greenhouse Gas Emissions for 2000 to 2017, Trends of Emissions and Other Indicators. 2019 Edition. Webpage last reviewed by ARB in 2019. Website: http://www.arb.ca.gov/cc/inventory/ data/data.htm, accessed April 2020.

activities at 9 percent, agriculture at 8 percent, high-GWP gases at 4.3 percent, and recycling and waste at 2 percent.[1]

REGULATORY SETTING

Federal Regulations/Standards

Pursuant to the Federal Clean Air Act (CAA) of 1970, the EPA established the NAAQS. The NAAQS were established for six major pollutants, termed "criteria" pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established AAQS, or criteria, for outdoor concentrations in order to protect public health.

As discussed above, data collected at permanent monitoring stations are used by the EPA to classify regions as "attainment" or "nonattainment," depending on whether the regions met the requirements stated in the primary NAAQS. Nonattainment areas are imposed with additional restrictions as required by the EPA. The EPA has designated the Southern California Association of Governments (SCAG) as the Metropolitan Planning Organization (MPO) responsible for ensuring compliance with CAA requirements for the Basin.

State Regulations/Standards

In 1967, the State Legislature passed the Mulford-Carrell Act, which combined two Department of Health bureaus (i.e., the Bureau of Air Sanitation and the Motor Vehicle Pollution Control Board), to establish the ARB. Since its formation, the ARB has worked with the public, the business sector, and local governments to find solutions to the State's air pollution problems.

The California Air Pollution Control Officers Association (CAPCOA) is a nonprofit association of the air pollution control officers from all 35 local air quality agencies throughout California. CAPCOA was formed in 1976 to promote clean air and to provide a forum for sharing knowledge, experience, and information among the air quality regulatory agencies around the State. CAPCOA meets regularly with federal and State air quality officials to develop statewide rules and to ensure consistent application of rules and regulations. CAPCOA works with specialized task forces (including regulated industry) by participating actively in the legislative process, and continuing to coordinate local efforts with those of the State and federal air agencies. The goal is to protect public health while maintaining economic vitality. California adopted the California Clean Air Act (CCAA) in 1988. The ARB administers the CAAQS for the 10 air pollutants designated in the CCAA. These 10 State air pollutants are the six criteria pollutants designated by the CAA plus four others: visibility-reducing particulates, H_2S, sulfates, and vinyl chloride.

California Climate Action Milestones

Assembly Bill (AB) 1493, authored by Assembly Member Fran Pavley in 2002, directed the ARB to adopt regulations to achieve the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles. The so-called "Pavley" regulations, or Clean Car regulations, were approved by

[1] United States Environmental Protection Agency 2019. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2017. Website: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks, accessed April 2020.

the ARB in 2004. On September 24, 2009, the ARB adopted amendments to AB 1493 that reduced GHG emissions in new passenger vehicles from 2009 through 2016. AB 1493 also directed the State's Climate Action Registry to adopt protocols for reporting reductions in GHG emissions from mobile sources prior to the operative date of the regulations.

Executive Order (EO) S-3-05 (June 2005) established GHG targets for the State (e.g., returning to year 2000 emission levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050). EO S-3-05 directed the Secretary of the California Environmental Protection Agency to coordinate efforts to meet the targets with the heads of other State agencies. This group became the Climate Action Team.

In 2006, the State Legislature passed the California Global Warming Solutions Act of 2006 (AB 32), which created a comprehensive, multiyear program to reduce GHG emissions in California. AB 32 required the ARB to develop a Scoping Plan that describes the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by the ARB in 2008 and must be updated every 5 years. The First Update to the Climate Change Scoping Plan was approved by the ARB on May 22, 2014. In 2016, the State Legislature passed Senate Bill (SB) 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. With SB 32, the State Legislature passed companion legislation AB 197, which provides additional direction for developing the Scoping Plan. The ARB is moving forward with a second update to the Scoping Plan to reflect the 2030 target set by EO B-30-15 and codified by SB 32.

California is implementing the world's first Low Carbon Fuel Standard for transportation fuels, pursuant to both EO S-01-07 (signed January 2007) and AB 32. The standard requires a reduction of at least 10 percent in the CO intensity of the State's transportation fuels by 2020. This reduction is expected to reduce GHG emissions in 2020 by 17.6 MMT CO_2e. Also in 2007, AB 118 created the Alternative and Renewable Fuel and Vehicle Technology Program. The California Energy Commission (CEC) and ARB administer the program. This act provides funding for alternative fuel and vehicle technology research, development, and deployment in order to attain the State's climate change goals, achieve the State's petroleum reduction objectives and clean air and GHG emission reduction standards, develop public-private partnerships, and ensure a secure and reliable fuel supply.

In addition to vehicle emissions regulations and the Low Carbon Fuel Standard, the third effort to reduce GHG emissions from transportation is the reduction in the demand for personal vehicle travel (i.e., vehicle miles traveled [VMT]). This measure was addressed in September 2008 through the Sustainable Communities and Climate Protection Act of 2008, or SB 375. The enactment of SB 375 initiated an important new regional land use planning process to mitigate GHG emissions by integrating and aligning planning for housing, land use, and transportation for California's 18 MPOs. The bill directed the ARB to set regional GHG emission reduction targets for most areas of the State. SB 375 also contained important elements related to federally mandated regional transportation plans and the alignment of State transportation and housing planning processes.

Also codified in 2008, SB 97 required the Governor's Office of Planning and Research (OPR) to develop GHG emissions criteria for use in determining project impacts under the California

Environmental Quality Act (CEQA). These criteria were developed in 2009 and went into effect in 2010.

EO S-13-08 launched a major initiative for improving the State's adaptation to climate impacts from sea level rise, increased temperatures, shifting precipitation, and extreme weather events. EO S-13-08 ordered a California Sea Level Rise Assessment Report request from the National Academy of Sciences. The order also ordered the development of a Climate Adaptation Strategy. The strategy, published in December 2009, assesses the State's vulnerability to climate change impacts, and outlines possible solutions that can be implemented within and across State agencies to promote resiliency. The Strategy focused on seven areas: public health, biodiversity and habitat, ocean and coastal resources, water management, agriculture, forestry, and transportation and energy infrastructure.

The initiatives, EOs, and statutes outlined above comprise the major milestones in California's efforts to address climate change through coordinated action on climate research, GHG mitigation, and climate change adaptation. Numerous other related efforts have been undertaken by State agencies and departments to address specific questions and programmatic needs. The Climate Action Team coordinates these efforts and others, which comprise the State's climate program.[1]

REGIONAL AIR QUALITY PLANNING FRAMEWORK

The 1976 Lewis Air Quality Management Act established the SCAQMD and other air quality districts throughout the State. The CAA Amendments of 1977 required that each state adopt an implementation plan outlining pollution control measures to attain the federal standards in nonattainment areas of the State.

The ARB is responsible for incorporating air quality management plans for local air basins into an SIP for EPA approval. Significant authority for air quality control within them has been given to local air quality districts that regulate stationary-source emissions and develop local nonattainment plans.

SCAQMD Rules

The proposed project would be required to comply with regional rules that assist in reducing short-term air pollutant emissions. SCAQMD Rule 403 requires that fugitive dust be controlled with best available control measures (BACMs) 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_{10} component). Compliance with these rules would reduce impacts on nearby sensitive receptors.

[1] State of California. 2017. Highlights of the California Climate Change Program. Website: http://www.climatechange.ca.gov/state/highlights.html, accessed January 2020.

SCAQMD Rule 403 Measures

- Water active sites at least three times daily (locations where grading is to occur will be thoroughly watered prior to earthmoving).
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).
- Traffic speeds on all unpaved roads shall be reduced to 15 mph or less.

REGIONAL AIR QUALITY MANAGEMENT PLAN

The SCAQMD is responsible for formulating and implementing the Air Quality Management Plan (AQMP) for the Basin. The main purpose of an AQMP is to bring the area into compliance with federal and State air quality standards. The SCAQMD prepares a new AQMP every three years, updating the previous plan and 20-year horizon.

The latest plan is the 2016 AQMP, which incorporates the latest scientific and technological information and planning assumptions, including the 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and updated emission inventory methodologies for various source categories. The 2016 AQMP included the integrated strategies and measures needed to meet the NAAQS, implementation of new technology measures, and demonstrations of attainment of the 1-hour and 8-hour ozone NAAQS as well as the latest 24-hour and annual $PM_{2.5}$ standards. Key elements of the 2016 AQMP include:

- Calculation and credit for co-benefits from other planning efforts (e.g., climate, energy, and transportation);
- A strategy with fair-share emission reductions at the federal, State, and local levels;
- Investment in strategies and technologies meeting multiple air quality objectives;
- Identification of new partnerships and significant funding for incentives to accelerate deployment of zero and near zero technologies;
- Enhanced socioeconomic assessment, including an expanded environmental justice analysis;
- Attainment of the 24-hour $PM_{2.5}$ standard in 2019 with no additional measures;
- Attainment of the annual $PM_{2.5}$ standard by 2025 with implementation of a portion of the ozone strategy; and
- Attainment of the 1-hour ozone standard by 2022 with no reliance on “black box” future technology (CAA Section 182(e)(5) measures).

LOCAL POLICIES

City of Chino General Plan

The City has adopted goals and policies in its General Plan 2025 (City 2010) addressing air quality and climate change issues. Air quality in the City, as part of the larger Basin, currently does not meet State and/or federal standards. The City is committed to improving air quality and addressing climate change to the degree feasible at the local level by creating policies and supporting programs that reduce air quality emissions and enable residents, business owners, and visitors to employ sustainable and energy efficient practices. The City General Plan includes the following:

Goal AQ-1 Preserve and improve air quality in Chino and the region.

Objective AQ-1.4 Reduce air pollution during construction and operations of a project.

Policies

P1. The City shall assess the air quality impacts of project construction and operations using the latest version of the *CEQA Guidelines* and the guidelines prepared by the South Coast AQMD.

P2. The City shall require best management practices to reduce air pollution associated with construction of development projects.

P3. The City shall review construction plans associated with development projects to determine if all feasible mitigation measures are included.

Goal OSC-4 Minimize the consumption of energy and nonrenewable resources, and promote environmental sustainability.

Objective OSC-4.1 Incorporate green building practices throughout the City.

Policies

P1. The City shall continue to comply with California Building Code (Title 24) provisions, including Part 11 of the Code, referred to as CALGreen or the California Green Building Standards Code and consider exceeding the standards where appropriate and as deemed necessary to meet the City's goals and/or legal obligations.

P2. The City shall encourage solar-oriented design, green roofs, and passive solar heating and cooling in all new residential, commercial and civic development.

P3. The City shall require that deciduous trees be planted on the south and west-facing sides of new buildings to reduce energy usage.

P4. The City shall encourage the use of aboveground and natural storm water facilities in new development and redevelopment. Such facilities may include grassy or vegetated swales, as well as larger-scale facilities such as constructed wetlands. Where feasible, these facilities should be made open to the public or to building users as sources of green or open space.

P5. All new public buildings constructed by the City shall adhere to green building standards and meet the U.S. Green Building Council's Leadership in Energy and

Environmental Design (LEED) certifications for green buildings, or an equivalent standard.

P6. The City shall require that all new residences sold with appliances install all Energy Star-Rated appliances. All new residences shall use compact florescent lights in all standard light installations. Installation of these measures shall be confirmed.

P7. The City shall encourage all new construction to use low- or no- toxicity building materials.

P8. New private and public development shall be encouraged to maximize opportunities for use of passive or natural heating and cooling.

P9. New private and public development shall be encouraged to use locally-sourced products that are salvaged, Forest Stewardship Council Certified, or made from recycled content materials.

P10. The City shall protect solar access by limiting the blockage of buildings from sunlight by other buildings and structures.

P11. The City shall encourage the use of cool site techniques to reduce heat islands on paved site areas, such as covered parking, light-colored paving, and tree shading.

Actions

A1. Adopt a Construction and Demolition ordinance requiring recycling of at least 50 percent of all construction and demolition waste.

A2. Review the zoning ordinance and building codes to allow for energy efficient technologies that do not conflict with other goals in the General Plan.

A3. Study potential incentives for the construction of green building and determine which are appropriate for implementation in Chino. Once this study is complete, revise policy guidance and programs accordingly.

A4. The City shall review the voluntary measures included in the State's CALGreen code and adopt appropriate measures as deemed necessary to meet the City's goals and/or legal obligations; revisit the measures following each triennial update of the California Building Code (Title 24).

Goal OSC-5 Reduce greenhouse gas emissions by 15 percent below 2008 levels by 2020.

Objective OSC-5.1 Take appropriate actions to reduce greenhouse gas emissions and Chino's contribution to global climate change.

Policies

P1. The City shall promote strategic land use patterns, a diverse and efficient public transportation system, and other measures that reduce the number and length of motor vehicle trips.

P2. The City shall seek to reduce greenhouse gas emissions associated with City operations, using measurements of its greenhouse gas emissions to quantify and improve the effectiveness of these efforts.

P3. The City shall work with homeowners and business owners to support their efforts to reduce greenhouse gas emissions.

Actions

A1. No later than December 31, 2013, the City shall develop and approve a Climate Action Plan (CAP). The CAP shall include, at a minimum, the elements specified in Exhibit D of the Settlement and Release Agreement between CREED and the City of Chino dated December 19/20, 2011.

A2. Review fee structures and identify opportunities to provide financial and administrative incentives to support land uses and development patterns that reduce the number and length of motor vehicle trips.

A3. The City shall continue to implement and revise as needed the existing schedule for citywide energy efficiency project activities for tune-ups and upgrades of aging municipal buildings, equipment, and vehicles, as well as continue to identify potential funding sources that may include Department of Energy grants, budgeted funds for the City's Capital Improvements Program, or other sources determined appropriate by the City.

A4. Inventory greenhouse gas emissions associated with City operations and identify specific approaches to reduce emissions associated with such operations. The City will consider using energy efficiency measures such as lighting, heating, cooling, roofing, insulation, and on-site renewable energy to offset City energy use. It will also consider other approaches to reducing emissions associated with its operations such as water-efficiency measures, recycling, and other waste-reduction measures, and measures to reduce solo-driving employee commutes.

A5. Explore additional options, beyond those already found in the Climate Action Plan, for requiring greenhouse gas-reducing retro fits on existing sources of greenhouse gas emissions as potential mitigation measures when discretionary actions subject to the California Environmental Quality Act are reviewed by the City.

Goal OSC-6 Prepare Chino for the expected impacts of global climate change.

Objective OSC-6.1 Implement measures to mitigate expected temperature increases.

Policies

P1. The City shall mitigate climate change by decreasing heat gain from pavement and other hard surfaces associated with infrastructure.

P2. The City shall actively inspect non-residential buildings and enforce State requirements for cool roofs on non-residential reroofing projects.

Actions

A1. Develop a program to prepare for extreme heat events, including outreach and notification focused on sensitive populations and the establishment of new and maintenance of existing cooling centers.

A2. Consider preparation of a Heat Island Mitigation Plan that requires cool roofs, cool pavements, and strategically placed shade trees.

City of Chino Climate Action Plan

To comply with AB 32 and SB 32 at a citywide level, the City of Chino adopted a CAP, which went into effect on January 2, 2014, and its upcoming Updates were drafted March 2020. As part of the City of Chino's CAP, the City selected a goal to reduce its community GHG emissions to a level that is 15 percent below its 2008 GHG emissions levels by 2020, in conformance with AB 32 and the ARB Scoping Plan. SB 32 provides statewide targets to reduce GHG emissions to 40 percent below 1990 levels by 2030. To ensure conformity with the latest State climate change regulations, the City is currently updating its 2013 CAP.

In order to fulfill this commitment, GHG emissions-reducing development and performance standards have been established under the Chino Climate Action Plan as codified at Chino Municipal Code Chapter 15.45 – Climate Action Plan Implementation and are summarized as follows:

Municipal Code Section 15.45.040 identifies specific development standards applicable to new non-residential development. In summary, new non-residential development would be required to install ENERGY STAR appliances in instances where ENERGY STAR rated appliances are available. New non-residential construction would be required to divert or salvage at least 65 percent of non-hazardous construction and demolition debris generated at the site.

Municipal Code Section 15.45.070 establishes GHG performance standards for new development, and requires that all new development contribute to the reduction of greenhouse gas emissions by demonstrating consistency with the Chino Climate Action Plan through implementation of one or a combination of the following three options:

1. Exceed by 3 percent the mandatory California Energy Code Title 24, Part 6 standards, in effect at the time of development application submittal for discretionary review; or
2. Achieve an equivalent reduction through voluntary measures in the California Green Building Standards Code, Title 24, Part 11 (CALGreen) in effect at the time of development application submittal for discretionary review; or
3. Provide other equivalent GHG reductions through measures including, but not limited to, non-vehicle transportation infrastructure, transit, ZEV (zero emission vehicle) infrastructure or other incentives, waste diversion, water conservation, tree planting, renewable energy option packages, or any combination of these or other measures such that GHG emissions are reduced by 0.11 MT CO_2e per thousand square feet of commercial/industrial development per year.

The CAP is not intended to limit future development or economic growth within Chino; rather, by adopting a CAP, the City has established the compliance and performance standards that a project is to meet in order to satisfy State mandates.

AIR QUALITY IMPACT ANALYSIS

(a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact.

Discussion of Effects: The proposed project site is in the South Coast Air Basin, which is managed by the SCAQMD. The EPA has designated the status of the Basin as nonattainment for O_3, PM_{10}, and $PM_{2.5}$ under the CAAQS. Under the NAAQS, the EPA has designated the status of the Basin as nonattainment for O_3 and $PM_{2.5}$.

The SCAQMD and SCAG are responsible for formulating and implementing the AQMP for the Basin. The applicable AQMP is the SCAQMD Final 2016 AQMP. The 2016 AQMP incorporates local General Plan land use assumptions and regional growth projections developed by SCAG to estimate stationary and mobile source emissions associated with projected population and planned land uses. If a new land use is consistent with the local General Plan and the regional growth projections adopted in the 2016 AQMP, then the added emissions are considered to have been evaluated, are contained in the 2016 AQMP, and would not conflict with or obstruct implementation of the regional 2016 AQMP.

The proposed project is not considered a project of statewide, regional, or area-wide significance (e.g., large-scale projects such as airports, electrical generating facilities, petroleum and gas refineries, residential development of more than 500 dwelling units, or shopping center or business establishment employing more than 1,000 persons or encompassing more than 500,000 square feet of floor space) as defined in the California Code of Regulations (Title 14, Division 6, Chapter 3, Article 13, §15206(b)).

As previously noted, the project includes development of two currently vacant lots (Lot A and B). Lot A of the conceptual site plan is the development of a three-story senior assisted living and memory care center, totaling 99,888 square feet on 2.61 acres with associated parking. Lot B includes the development of two three-story medical office buildings with associated parking. The two buildings combined total 65,000 square feet and will be completed with the interior left vacant for the purpose of leaving potential renters to implement their own floor plans for desired use. The proposed project is located in the City of Chino, San Bernardino County, and comprises APNs 1014-591-06 and 07. No changes are proposed to either the General Plan land use designation or zoning. Therefore, the project would not generate any increase in population that otherwise would not have been planned for in the City. Since the proposed project is consistent with the City's General Plan land use and zoning designation and would not generate any increase in population beyond that which has already been planned for by SCAG and the City, the proposed project is consistent with the 2016 AQMP. Impacts would be less than significant and no mitigation is required.

(b) Would the project result in a cumulatively considerable net increase of any criteria pollutant under an applicable federal or State ambient air quality standard?

Less than Significant Impact.

Discussion of Effects: The SCAQMD's CEQA *Air Quality Handbook* establishes suggested significance thresholds based on the volume of pollution emitted. According to the *Handbook*, any project in the Basin with daily emissions that exceed any of the following thresholds should be considered as having an individually and cumulatively significant air quality impact:

- 55 lbs. per day of VOC (volatile organic compounds) (75 lbs./day during construction);
- 55 lbs. per day of NOx (oxides of nitrogen) (100 lbs./day during construction);
- 550 lbs. per day of CO (carbon monoxide) (550 lbs./day during construction);
- 150 lbs. per day of PM_{10} (particulate matter with a diameter of 10 microns or smaller) (150 lbs./day during construction);
- 55 lbs. per day of $PM_{2.5}$ (particulate matter with a diameter of 2.5 microns or smaller) (55 lbs./day during construction); and
- 150 lbs. per day of SOx (oxides of sulfur) (150 lbs./day during construction).

The most recent version of the CalEEMod (Version 2016.3.2) was used to calculate construction and operation emissions from development of the proposed project (Attachment B).

No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. The SCAQMD developed the thresholds of significance based on the level above which a project's individual emissions would result in a cumulatively considerable contribution to the Basin's existing air quality conditions. Therefore, a project that exceeds the SCAQMD project-specific thresholds would also have a cumulatively considerable contribution to a significant cumulative impact.

Construction Emissions: During construction, short-term degradation of air quality may occur due to the release of particulate matter emissions (i.e., fugitive dust) generated by site leveling, trenching, paving, and other activities. Emissions from construction equipment are also anticipated and would include CO, NOx, VOC, directly-emitted $PM_{2.5}$ or PM_{10}, and toxic air contaminants (TACs) such as diesel exhaust particulate matter. Construction emissions were estimated for the project using CalEEMod Version 2016.3.2, consistent with SCAQMD recommendations for the proposed project. For purposes of air quality analysis, it is assumed that construction would happen in phases. Each individual phase of project development would vary based on lot designation and function (Lot A and B). Lot A construction activities include site preparation, grading of entire 7.01-acre project site, building construction, paving, and architectural coating (painting) on 2.61 acres. Lot B construction activities on 4.40 acres include site preparation, building construction, paving, and architectural coatings. The construction analysis includes estimating the construction equipment that would be used during each construction activity, the hours of use for that construction equipment, the quantities of earth and debris to be moved, and on-road vehicle trips (worker, soils hauling, and vendor trips) (Attachment B). CalEEMod modeling and defaults are assumed for the construction activities, off-road equipment, on-road construction fleet mix and trip lengths. All off-road equipment over 50 horsepower rating will utilize EPA Tier 2 engines as required under the Nonroad

Compression-Ignition Engines: Exhaust Emission Standards (EPA 2016). Fugitive dust emission control measure such as watering the exposed surface area will occur at least three times daily in accordance with the SCAQMD Rule 403. The proposed project phases will begin construction in separate months to meet the proposed goal of operational use in early 2022. Lot A construction will begin in October 2020 and last approximately 18 months, until the operational opening date of April 2022. Lot B will begin construction February 2021 and last approximately 10 months, until operational opening date in January 2022.

Table D and Table E identify the maximum daily emissions associated with construction activities during each phase, and indicate no criteria pollutant emission thresholds would be exceeded from construction of the proposed project.

Table D: Lot A Short-Term Regional Construction Emissions

Construction Phase	Maximum Daily Regional Pollutant Emissions (lbs/day)							
	VOCs	NOx	CO	SOx	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	1.31	33.79	23.77	0.04	7.25	0.95	3.93	0.95
Grading	1.09	26.33	19.67	0.03	2.68	0.77	1.35	0.77
Building Construction	2.08	26.82	24.30	0.05	1.57	0.91	0.42	0.91
Paving	1.27	20.16	17.87	0.02	0.17	0.67	0.04	0.67
Architectural Coating	32.74	2.43	2.78	0.01	0.28	0.10	0.07	0.10
Peak Daily Emissions	**32.74**	**33.79**	**24.30**	**0.05**	**8.19**		**4.87**	
SCAQMD Thresholds	**75.00**	**100.00**	**550.00**	**150.00**	**150.00**		**55.00**	
Significant?	**No**	**No**	**No**	**No**	**No**		**No**	

Source: Compiled by LSA (Appendix A).

Note: Numbers may appear to not sum correctly due to rounding.

CO = carbon monoxide
lbs/day = pounds per day
NOx = nitrogen oxides
$PM_{2.5}$ = fine inhalable particulate matter less than 2.5 microns in size
PM_{10} = coarse inhalable particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SOx = sulfur oxides
VOCs = volatile organic compounds

Table E: Lot B Short-Term Regional Construction Emissions

Construction Phase	Maximum Daily Regional Pollutant Emissions (lbs/day)							
	VOCs	NOx	CO	SOx	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	1.29	33.78	23.64	0.04	7.25	0.95	3.93	0.95
Building Construction	1.66	26.24	21.19	0.04	0.91	0.89	0.24	0.89
Paving	1.27	16.14	14.28	0.02	0.22	0.56	0.06	0.56
Architectural Coating	12.74	2.39	2.32	0.00	0.15	0.10	0.04	0.10
Peak Daily Emissions	**12.74**	**33.78**	**23.64**	**0.04**	**8.19**		**4.87**	
SCAQMD Thresholds	**75.00**	**100.00**	**550.00**	**150.00**	**150.00**		**55.00**	
Significant?	**No**	**No**	**No**	**No**	**No**		**No**	

Table E: Lot B Short-Term Regional Construction Emissions

Construction Phase	Maximum Daily Regional Pollutant Emissions (lbs/day)							
	VOCs	NOx	CO	SOx	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$

Source: Compiled by LSA (Appendix A).

Note: Numbers may appear to not sum correctly due to rounding.

CO = carbon monoxide
lbs/day = pounds per day
NOx = nitrogen oxides
$PM_{2.5}$ = fine inhalable particulate matter less than 2.5 microns in size
PM_{10} = coarse inhalable particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SOx = sulfur oxides
VOCs = volatile organic compounds

Operational Emissions: Long-term air pollutant emissions associated with operation of the proposed project include emissions from stationary, energy, and mobile sources. Stationary sources include area sources such as architectural coatings, consumer products, and landscaping. Small energy sources include electricity for night lighting. Mobile-source emissions are from vehicle trips associated with operation of the project. Table F and Table G detail operational emissions based on the stationary source parameters in CalEEMod for assisted living facility and office building trip generation rates estimated for the proposed project. Lot A would be in operation first while Lot B is being constructed. Table F presents the operational emissions associated with Lot A. Table G presents the operational emissions associated with Lot A and Lot B. Projects in the Basin with operation-related emissions that exceed any of the listed emission thresholds are considered potentially significant by the SCAQMD.

The proposed project is estimated to generate 2,563 vehicle trips per day (LSA 2020).

Table F and Table G indicate that the emissions of criteria pollutants generated from operation of the proposed project would not exceed the corresponding SCAQMD daily emission thresholds.

The proposed project is required to comply with SCAQMD Rule 403, which includes implementation of standard control measures for fugitive dust. Tables D through G demonstrate that, with compliance with applicable regulatory policy designed to reduce emissions, the proposed project would not exceed any SCAQMD threshold during construction or operation. Therefore, the proposed project would not contribute significantly to cumulative impacts on any pollutants for which the region is in nonattainment. Specifically, the proposed project construction and operational emissions would not exceed the SCAQMD's mass daily thresholds for VOC and NOx that serve as project and cumulative impact thresholds of significance for gauging regional O_3 impacts. Therefore, the proposed project's contribution to cumulative air quality impacts would not be cumulatively considerable.

Compliance with SCAQMD Rules 402, 403, and 431.2, which include implementation of standard control measures for diesel equipment emissions, fugitive dust, and construction methods is a regulatory requirement for all projects in the Basin. Other regulatory measures such as Title 13-

Section 2449 of the California Code of Regulations; and CalRecycle/Green Building Program regulations will also be implemented for the proposed project. Through compliance with these regulations as part of applicable policy designed to reduce emissions, the proposed project would not exceed any SCAQMD threshold or contribute to a substantial increase in regional air emissions. Therefore, the proposed project would not result in a cumulatively considerable contribution to significant air quality impacts. Cumulative air quality impacts would be **less than significant** and no mitigation is required.

Table F: Lot A Operational Emissions with Regional Effects

Source	Pollutant Emissions (lbs/day)					
	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Area Sources	2.49	0.11	9.92	<0.01	0.05	0.05
Energy Sources	0.05	0.45	0.19	<0.01	0.04	0.04
Mobile Sources	0.67	4.35	8.02	0.03	2.36	0.64
Total Project Emissions	**3.22**	**4.92**	**18.12**	**0.03**	**2.45**	**0.74**
SCAQMD Thresholds	**55.0**	**55.0**	**550.0**	**150.00**	**150.00**	**55.00**
Significant?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA (Appendix A).
Note: Numbers may appear to not sum correctly due to rounding.

CO = carbon monoxide
lbs/day = pounds per day
NOx = nitrogen oxides
$PM_{2.5}$ = fine inhalable particulate matter less than 2.5 microns in size
PM_{10} = coarse inhalable particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SOx = sulfur oxides
VOC = volatile organic compounds

Table G: Lot A and Lot B Operational Emissions with Regional Effects

Source	Pollutant Emissions (lbs/day)					
	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Area Sources	3.96	0.11	9.95	<0.01	0.05	0.05
Energy Sources	0.06	0.51	0.24	<0.01	0.04	0.04
Mobile Sources	4.01	19.48	48.70	0.18	14.83	4.06
Total Project Emissions	**8.03**	**20.10**	**58.89**	**0.18**	**14.93**	**4.16**
SCAQMD Thresholds	**55.0**	**55.0**	**550.0**	**150.00**	**150.00**	**55.00**
Significant?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA (Appendix A).
Note: Numbers may appear to not sum correctly due to rounding.

CO = carbon monoxide
lbs/day = pounds per day
NOx = nitrogen oxides
$PM_{2.5}$ = fine inhalable particulate matter less than 2.5 microns in size
PM_{10} = coarse inhalable particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SOx = sulfur oxides
VOC = volatile organic compounds

(c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact.

Discussion of Effects: Localized Significance Thresholds (LSTs) are developed based upon the size or total area of the emissions source from the construction equipment activities, the ambient air quality levels in each source receptor area (SRA) in which the emission source is located, and the distance to the sensitive receptor. The nearest residential homes (i.e., single-

family residences) are approximately 279 feet east from the project site. LSTs represent the maximum emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable federal or State ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each SRA. For the proposed project, the appropriate SRA for the LST is SRA 33 (Southwest San Bernardino Valley).

LSTs only apply to CO, NO_2, PM_{10}, and $PM_{2.5}$ emissions during construction and operation at the discretion of the lead agency. Screening-level analysis of LSTs is only recommended for construction activities at project sites that are approx. 5 acres or less. The proposed project site would be split into two lots, Lot A at 2.61 acres and Lot B at 4.40 acres respectively. The maximum daily disturbance to any part of the project site is 3 acres during the construction phase. Therefore, screening-level analysis of LSTs for 3 acres was used for construction and operational activities.

Localized significance is determined by comparing the on-site-only portion of the construction and operational emissions with emissions thresholds derived by the SCAQMD to ensure pollutant concentrations at nearby sensitive receptors would be below the LST threshold established by the SCAQMD. Tables H and I summarize the construction air pollutant emissions at Lots A and B. Table J summarizes Lot A operational air pollutant emissions and Table K shows combined Lot A and B operational air pollutant emissions.

Table H: Summary of Lot A Construction Emissions, Localized Significance

Source	Pollutant Emissions			
	NOx (lbs/day)	**CO (lbs/day)**	**PM_{10} (lbs/day)**	**$PM_{2.5}$ (lbs/day)**
On-Site Emissions	34	23	8.0	4.8
LST Thresholds	281	3,385	43.0	14.0
Significant?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (Appendix A).

CO = carbon monoxide
ppm =parts per million
$\mu g/m^3$ =microgram per cubic meter air
LST = localized significance threshold
NO_2 = nitrogen dioxide
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

Table I: Summary of Lot B Construction Emissions, Localized Significance

Source	Pollutant Emissions			
	NOx (lbs/day)	**CO (lbs/day)**	**PM_{10} (lbs/day)**	**$PM_{2.5}$ (lbs/day)**
On-Site Emissions	34	23	8.0	4.8
LST Thresholds	281	3,385	43.0	14.0
Significant?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (Appendix A).

CO = carbon monoxide
ppm =parts per million
$\mu g/m^3$ =microgram per cubic meter air
LST = localized significance threshold
NO_2 = nitrogen dioxide
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

Table J: Summary of Lot A Operational Emissions, Localized Significance

Source	Pollutant Emissions			
	NOx (lbs/day)	CO (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
On-Site Emissions	0.33	10.32	0.17	0.09
LST Thresholds	281	3,385	11.0	3.7
Significant?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (Appendix A).

CO = carbon monoxide
ppm =parts per million
$\mu g/m^3$ =microgram per cubic meter air
LST = localized significance threshold
NOx = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

Table K: Summary of Lot A and Lot B Operational Emissions, Localized Significance

Source	Pollutant Emissions			
	NOx (lbs/day)	CO (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
On-Site Emissions	1.09	12.39	0.80	0.26
LST Thresholds	281	3,385	11.0	3.7
Significant?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (Appendix A).

CO = carbon monoxide
ppm =parts per million
$\mu g/m^3$ =microgram per cubic meter air
LST = localized significance threshold
NOx = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

As detailed in Tables H through K, construction and operational emissions would not exceed LST thresholds. Therefore, the project would not expose sensitive receptors to substantial pollutant concentrations. Impacts related to substantial pollutant concentrations for construction and operation would be **less than significant**. No mitigation is required.

Although project-level NOx emissions would generate ozone precursor emissions, as identified in Tables D through K, these levels do not exceed any established SCAQMD daily emission thresholds. The project's peak operation NOx emissions amount to approximately 42 pounds per day. Due to the incremental size of the proposed project, the level of emissions is not sufficiently high to use a regional modeling program to correlate health effects on a basin-wide level. On a regional scale, the quantity of emissions from the project is incrementally minor. Because the SCAQMD has not identified an accurate method to quantify health impacts from small projects and, due to the size of the project, it is speculative to assign any specific health effects to small project-related emissions.

(d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less than Significant Impact.

Discussion of Effects: Other emissions, including nuisance odors, may occur during the operation of diesel-fueled equipment during construction and operation of the project.

However, these emissions would be short-term in duration and are expected to be isolated to the immediate vicinity of the construction site or transport route. SCAQMD Rules 402, 403, and 431.2, as well as Title 13, Section 2449(d)(d) of the California Code of Regulations (CCR), require the project applicant to include implementation of standard control measures for fugitive dust and diesel equipment emissions. Additionally, operators of off-road vehicles (i.e., self-propelled diesel-fueled vehicles 25 horsepower and up that were not designed to be driven on road) are required to limit vehicle idling to five minutes or less; register and label vehicles in accordance with the ARB Diesel Off-Road Online Reporting System; restrict the inclusion of older vehicles into fleets; and retire, replace, or repower older engines or install Verified Diesel Emission Control Strategies (i.e., exhaust retrofits). Additionally, SCAQMD Rule 402 regarding nuisances 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 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." Adherence to these rules is standard regulatory policy for all development and would reduce impacts from other emissions such as nuisance odors to **less than significant** levels. No mitigation is required.

ENERGY IMPACT ANALYSIS

(a) Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less Than Significant Impact.

Discussion of Effects: The project's consumption of energy during construction and operation is calculated via CalEEMod, as detailed in Attachment B.

The anticipated construction schedule assumes that Lot A of the proposed project would be built in approximately 18 months and Lot B would be built in approximately 10 months. The proposed project would require site preparation, grading, building construction, paving, and architectural coatings.

Construction: Construction of the proposed project would require energy for activities such as the manufacture and transportation of building materials, grading activities, and building construction. Construction of the proposed project would require electricity use to power the construction-related equipment. The electricity use during construction would vary during different phases of construction, where the majority of construction equipment during grading would be gas-powered or diesel-powered and the later construction phases would require electricity-, such as interior construction and architectural coatings.

Construction of the project would not involve the consumption of natural gas. The construction-related equipment would not be powered by natural gas and no natural gas demand is anticipated during construction.

Transportation energy represents the largest energy use during construction and would occur from the transport and use of construction equipment, delivery vehicles and haul trucks, and construction worker vehicles that would use petroleum fuels (e.g., diesel fuel and/or gasoline). Therefore, the analysis of energy use during construction focuses on fuel consumption. The use of energy resources would fluctuate according to the phase of construction. The majority of construction equipment during grading would be gasoline-powered or diesel-powered, and the later construction phases would be electricity-powered. Construction trucks and vendor trucks hauling materials to and from the project site would be anticipated to use diesel fuel, whereas construction workers traveling to and from the project site would be anticipated to use gasoline-powered vehicles. Fuel consumption from transportation uses depends on the type and number of trips, vehicles miles traveled, fuel efficiency of vehicles, and travel modes.

Diesel fuel usage from construction off-road equipment was calculated using the CalEEMod assumptions used in the *Air Quality and Greenhouse Gas Analysis*. The CalEEMod utilized the construction equipment shown in Table L for Lot A and Table M for Lot B. Average brake-specific fuel consumption and diesel fuel properties (heating value and density) from the EPA AP-42 were used to obtain a fuel per horsepower-hour factor (EPA 1995). These factors and other calculations are shown in Table N, which shows total fuel usage from construction off-road equipment is estimated to be 70,277 gallons, the consumption of which would occur over the 16 months of construction. As also shown in Table N, the greatest amount of fuel (80,430 gallons) would be consumed by off-road equipment during the building construction.

Table L: Construction Off-Road Equipment for Lot A

Phase	Off-road Equipment Type	Amount	Usage Hour/ Day	Total Usage Days	Total Usage Hours/ Equipment
Site Preparation	Rubber-Tired Dozers	3	8	10	240
	Tractors/Loaders/ Backhoes	4	8	10	320
Grading	Excavators	1	8	25	200
	Graders	1	8	25	200
	Rubber-Tired Dozers	1	8	25	200
	Tractors/Loaders/ Backhoes	3	8	25	600
Building Construction	Cranes	1	7	300	2,100
	Forklifts	3	8	300	7,200
	Generator Sets	1	8	300	2,400
	Tractors/Loaders/ Backhoes	3	7	300	6,300
	Welders	1	8	300	2,400
Paving	Pavers	2	8	20	320
	Paving Equipment	2	8	20	320
	Rollers	2	8	20	320
Architectural Coating	Air Compressors	1	6	20	120

Source: *Air Quality and GHG Analysis* (Chino Villas Assisted Living and Memory Care Project, April 2020)

Table M: Construction Off-Road Equipment for Lot B

Phase	Off-road Equipment Type	Amount	Usage Hour/ Day	Total Usage Days	Total Usage Hours/ Equipment
Site Preparation	Rubber-Tired Dozers	3	8	5	120
	Tractors/Loaders/ Backhoes	4	8	5	160
Building Construction	Cranes	1	7	200	1,400
	Forklifts	3	8	200	4,800
	Generator Sets	1	8	200	1,600
	Tractors/Loaders/ Backhoes	3	7	200	4,200
	Welders	1	8	200	1,600
Paving	Cement and Mortar Mixers	1	6	18	108
	Pavers	1	8	18	144
	Paving Equipment	2	6	18	216
	Rollers	2	6	18	216
	Tractors/Loaders/ Backhoes	1	8	18	144
Architectural Coating	Air Compressors	1	6	18	108

Source: *Air Quality and GHG Analysis* (Chino Villas Assisted Living and Memory Care Project, April 2020)

Table N: Off-Road Construction Equipment Diesel Fuel Usage for Lot A

Phase	Off-road Equipment Type	Horsepower[1]	Load Factor[1]	Total Usage Hours/ Equipment	Horsepower-Hour[2]	Fuel Usage (gallons)[3]
Site Prep	Rubber-Tired Dozers	247	0.4	48	35,568	1,821
	Tractors/Loaders/ Backhoes	97	0.37	44	17,227	882
					Total Fuel Use: Infrastructure (gallons)	**2,703**
Grading	Excavators	158	0.38	76	12,008	615
	Graders	187	0.41	82	15,334	785
	Rubber-Tired Dozers	247	0.4	80	19,760	1,012
	Tractors/Loaders/ Backhoes	97	0.37	74	21,534	1,103
					Total Fuel Use: Grading (gallons)	**3,514**
Building Construction	Cranes	231	0.29	1,015	234,465	12,005
	Forklifts	89	0.2	800	213,600	10,936
	Generator Sets	84	0.74	2,960	248,640	12,730
	Tractors/Loaders/ Backhoes	97	0.37	1,295	376,845	19,294

Table N: Off-Road Construction Equipment Diesel Fuel Usage for Lot A

Phase	Off-road Equipment Type	Horsepower[1]	Load Factor[1]	Total Usage Hours/ Equipment	Horsepower-Hour[2]	Fuel Usage (gallons)[3]
	Welders	46	0.45	1,080	82,800	4,239
Total Fuel Use: Building Construction (gallons)						**59,205**
	Cement and Mortar Mixers	9	0.56	60	544	28
Paving	Pavers	130	0.42	128	33,197	1,700
	Paving Equipment	132	0.36	109	28,892	1,479
	Rollers	80	0.38	116	18,483	946
	Tractors/Loaders/ Backhoes	97	0.37	53	5,168	265
Total Fuel Use: Paving (gallons)						**4,418**
Architectural Coating	Air Compressors	78	0.48	109	8,536	437
Total Fuel Use: Building Construction and Architectural Coating (gallons)						**437**
Total Fuel Usage (gallons)						**70,277**

Source: *Air Quality and GHG Impact Analysis* (Chino Villas Assisted Living and Memory Care Project, April 2020)

[1] Load factor and horsepower are CalEEMod defaults for the equipment type and were obtained from the *Air Quality Impact Analysis.*

[2] HP-Hour is the basis for the fuel calculation. HP-Hour is calculated using the following formula: HP-Hour = Total Hours × LF × HP.

[3] Off-road mobile source fuel usage is calculated using a fuel usage rate of 0.0512 gallons of diesel per horsepower (HP)-hour. This is calculated based on diesel.

Total fuel consumption in San Bernardino County totaled 2.19 billion gallons in 2018. Vehicle consumption accounts for the majority of the total fuel consumption in California. In 2018, 1,241 million gallons of diesel fuel and 94.9 million gallons of gasoline were consumed from vehicle trips in San Bernardino based on EMFAC2017. Compared to the annual fuel consumption from vehicle trips in San Bernardino County, the peak annual fuel consumption of 70,277 gallons from off-road construction equipment during construction would be small fraction of the annual fuel consumption in San Bernardino County.

Fuel use from construction trucks and construction worker vehicles traveling to the project site was based on the estimated number of trips that project construction would generate and the average trip distance using the CalEEMod assumptions *Air Quality and GHG Analysis.* Fuel efficiencies were estimated for the first full year of construction (2021) using the ARB EMFAC2017 model as shown in Table O. It should be noted that calculating the fuel efficiency of vehicles for the year 2021 is a conservative approach because fuel efficiency is expected to continue to increase and improve during construction as new fuel economy standards are established. Construction on-road vehicle fuel consumption calculations are shown in Table P and Table Q for construction trucks and construction worker vehicles, respectively.

Table O: Construction Truck and Construction Worker Vehicle Fuel Efficiency

Vehicle Type	Vehicle Class	EMFAC2017 Outputs[2]		Diesel Fuel Efficiency[3] (miles/gallon)
		Diesel Fuel Consumption (1,000 gallons/day)	VMT (miles/day)	
Construction Truck	MHDT	727.46	7,535,147.50	10.36
	HHDT	1,774.20	11,545,819.98	6.51
Construction Worker Vehicle	LDA	46.12	2,185,238.84	47.38
	LDT1	0.43	9,520.38	22.14
	LDT2	15.84	548,393.87	34.62

Source: EMFAC2017 (CARB 2020) and *Air Quality and GHG Impact Analysis* (Chino Villas Assisted Living and Memory Care Project, April 2020)

[1] For construction trucks assumes 50 percent HHDT and 50 percent MHDT vehicles, consistent with assumptions in CalEEMod for hauling trucks. For construction worker vehicles assumes 50 percent LDA, 25 percent LDT1, and 25 percent LDT2 vehicles, consistent with assumptions in CalEEMod for worker vehicles.

[2] EMFAC2017 was run for South Coast Air Basin for the construction year 2021. Data was aggregated over all vehicle model years and speed bins.

[3] The fuel efficiency was calculated by dividing the VMT (miles/day) by the fuel consumption (gallons/day).

HHDT = Heavy Heavy Duty Trucks MHDT = Medium Heavy Duty Trucks VMT = vehicle miles traveled

Table P: Construction Truck Fuel Use (Diesel Fuel Use)

Phase	Total One-Way Trips	Total Days	Trip Length (miles)	Total Vehicle Miles Traveled (VMT)	Diesel Fuel Efficiency (miles/gallon)	Fuel Usage (gallons/ year)
Building Construction	28	250	6.90	48,300	10.36	4,662
Building Construction	28	250	6.90	48,300	6.51	7,419
					Total Diesel Fuel Usage	12,081

Source: CalEEMod 2016.3.2 and EMFAC2017 (CARB 2019) and *Air Quality and GHG Impact Analysis* (Chino Villas Assisted Living and Memory Care Project, April 2020)

[1] Assumes 50 percent HHDT and 50 percent MHDT vehicles, consistent with assumptions in CalEEMod for hauling trucks.

[2] EMFAC2017 was run for South Coast Air Basin for the construction years 2020–2021. Data were aggregated over all vehicle model years and speed bins.

[3] The fuel efficiency was calculated by dividing the VMT (miles/day) by the fuel consumption (gallons/day).

HHDT = Heavy Heavy Duty Trucks MHDT = Medium Heavy Duty Trucks VMT = vehicle miles traveled

Table Q: Construction Worker Vehicle Gasoline Fuel Use

Phase	Total One-Way Trips/ Day	Total Days	Trip Length (miles)	Total Vehicle Miles Traveled (VMT)	Gasoline Fuel Efficiency (miles/gallon)	Fuel Usage (gallons/year)
Site Prep	18	15	14.70	3,969	22.0	180
Grading	15	25	14.70	5,513	22.0	251
Building Construction	124	300	14.70	546,840	22.0	24,856
Building Construction	65	200	14.70	191,100	22.0	8,686
Paving	35	20	14.70	10,290	22.0	468
Architectural Coating	38	25	14.70	13,965	22.0	635
					Total Gasoline Fuel Usage	35,076

Sources: CalEEMod 2016.3.2 and EMFAC2017 (CARB 2019) and *Air Quality and GHG Impact Analysis* (Chino Villas Assisted Living and Memory Care Project, April 2020)

As shown in Table P, total diesel fuel consumption would be 12,081 gallons from construction truck trips. As shown in Table Q, total gasoline consumption would be 35,076 gallons from construction worker vehicle trips. During the construction period, an estimated 47,157 gallons of fuel would be consumed. In 2018, 1,241 million gallons of diesel fuel and 94.9 million gallons of gasoline were consumed from vehicle trips in San Bernardino County based on EMFAC2017. Therefore, peak annual gasoline demand generated by on-road trips during construction would be approximately 0.000049 percent of the total annual gasoline and diesel fuel consumption in San Bernardino County.

Impacts related to energy use during construction would be temporary and would be relatively small in comparison to the San Bernardino County's overall usage and the State's available energy sources. Additionally, implementation of Regulatory Compliance Measure EN-1 (RCM-EN-1) would require the construction contractor to ensure that all non-essential idling of construction equipment is restricted to five minutes or less in compliance with CARB Rule 2449, thus reducing transportation energy consumption. For these reasons, project construction would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. Impacts would be **less than significant** and no mitigation is required.

Operation: Energy consumed by the proposed project would be associated with natural gas use, electricity consumption, and fuel used for vehicle trips associated with the project.

Energy and natural gas consumption was estimated for the project using the CalEEMod results in the *Air Quality and Greenhouse Gas Analysis* prepared for the proposed project. The proposed buildings would be constructed to CALGreen standards, which were included in CalEEMod inputs. Electricity, natural gas, and gasoline usage estimates associated with the operation of the proposed project are shown in Table R.

Table R: Estimated Annual Energy Use of Proposed Project

Land Use	Electricity Use (kWh/year)	Natural Gas (kBTU/year)	Patrons and Employees Gasoline Vehicles (gallons/year)
Senior Living Facility Lot A	548,125	1,775,290	47,902
Parking Lot A	31,559	0	N/A
Medical Office Buildings Lot B	618,800	225,550	200,416
Parking Lot B	36,820	0	N/A

Source: California Emissions Estimator Model (CalEEMod). Compiled by LSA. April 2020.
kWh = kilowatt hours
kBTU = Thousand British Thermal Units

As shown in Table R, proposed uses on the site would generate a total of 1,235,304 kilowatt-hours (kWh) of electricity per year. In addition, the project would result in energy usage associated with motor vehicle gasoline to fuel project-related trips. The proposed project would result in an increase of 2,563 net new daily trips and would have an annual VMT of 5,463,002.

Using the 2015 fuel economy estimate of 22 mpg, the proposed project would result in the consumption of approximately 248,318 gallons of gasoline per year.[1]

Electricity is provided in the State through a complex grid of power plants and transmission lines. In 2018, California's in-state electric generation totaled 194,842 gigawatt-hours (GWh); the State's total system electric generation, which includes imported electricity, totaled 285,488 GWh.[2] Population growth is the primary source of increased energy consumption in the State; due to population projections, annual electricity use is anticipated to increase by approximately 1 percent per year through 2027.[3] The project's net electricity usage would total less than 0.01 percent[4] of electricity generated in the State in 2018, which would not represent a substantial demand on available electricity resources.

As shown in Table R, the estimated potential increased natural gas demand associated with the proposed project is 2,000,840 thousand British Thermal Units (kBTU) per year compared to the existing vacant land of the project site. Total natural gas consumption in San Bernardino County in 2018 was 500 billion kBTUs. Therefore, natural gas demand associated with the proposed project would be less than 0.001 percent of San Bernardino County.

The average fuel economy for light-duty vehicles (autos, pickups, vans, and SUVs) in the United States has steadily increased from about 14.9 mpg in 1980 to 22.0 mpg in 2015.[5] Federal fuel economy standards have changed substantially since the Energy Independence and Security Act was passed in 2007, which originally mandated a national fuel economy standard of 35 mpg by the year 2020, and would be applicable to cars and light trucks of Model Years 2011 through 2020.[6] In early August 2018, the EPA and Department of Transportation issued a new ruling, *Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule*, which would freeze the fuel economy goals to the 2021 target of 37 mpg for model years 2021 through 2026.[7]

As stated previously, implementation of the proposed project would increase the project-related annual gasoline demand by 248,318 gallons. However, new automobiles purchased by patrons and employees driving to and from the project site would be subject to fuel economy and efficiency standards applied throughout the State. As such, the fuel efficiency of vehicles associated with the project site would increase throughout the life of the project. Therefore,

---

1 5,463,002 VMT per year ÷ 22 mpg = 248,318 gallons of gasoline per year.

2 California Energy Commission. Total System Electric Generation. https://www.energy.ca.gov/almanac/electricity_data/total_system_power.html, accessed April 13, 2020.

3 California Energy Commission. California Energy Demand 2018-2030 Revised Forecast. https://efiling.energy.ca.gov/URLRedirectPage.aspx?TN=TN222287_20180120T141708_The_California_Energy_Demand_20182030_Revised_Forecast.pdf, accessed April 13, 2020.

4 Calculation: 0.29 GWh (proposed project) / 194,842 GWh (generated in State in 2018) = < 0.01 percent.

5 U.S. Department of Transportation. "Table 4-23: Average Fuel Efficiency of U.S. Light Duty Vehicles." https://www.bts.gov/archive/publications/national_transportation_statistics/table_04_23/, accessed April 13, 2020.

6 U.S. Department of Energy. "Energy Independence & Security Act of 2007." https://www.afdc.energy.gov/laws/eisa, accessed April 13, 2020.

7 U.S. Department of Transportation. Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule. https://www.nhtsa.gov/corporate-average-fuel-economy/safe.

implementation of the proposed project would not result in a substantial increase in transportation-related energy uses.

In summary, construction and operation of the proposed project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. Consumption of energy resources as a result of implementation of the proposed project would be comparable to other assisted living facilities or medical office developments in the City. Impacts would be **less than significant** and no mitigation would be required.

(b) Would the project conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

Less Than Significant Impact.

Discussion of Effects: The proposed project would be required to comply with the California Building Code (CBC) and California Green Building Standards Code (CALGreen Code) pertaining to energy and water conservation standards in effect at the time of construction. Therefore, the proposed project would be consistent with applicable plans related to renewable energy and energy efficiency. Impacts would be **less than significant** and no mitigation is required.

GREENHOUSE GAS IMPACT ANALYSIS

(a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant Impact.

State CEQA Guidelines Section 15064(b) provides that the "determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data," and further states that an "ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting." Climate change is a global issue and is described in the context of the cumulative environment. Therefore, the project is considered in the context of multiple sectors and the combined efforts of many industries, including development. The primary GHG emissions generated by the project would be CO_2. This analysis represents an estimate of the project's GHG emissions through the quantification of CO_2 emissions (Attachment B). The following project activities were analyzed for their contribution to global CO_2 emissions.

The SCAQMD has adopted a significance threshold of 10,000 MT CO_2e per year (MT CO_2e/yr) for permitted (stationary) sources of GHG emissions for which it is the designated lead agency. To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, the SCAQMD has convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting held in September 2010

(Meeting No. 15), the SCAQMD is proposing to adopt a tiered approach for evaluating GHG emissions for development projects where it is not the lead agency:

- **Tier 1: Exemptions.** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.
- **Tier 2: Consistency with a Locally Adopted GHG Reduction Plan.** If the project complies with a climate action plan, GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.
- **Tier 3: Numerical Screening-Level Threshold.** If GHG emissions are less than the numerical screening-level threshold, project-level and cumulative GHG emissions are less than significant.

For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, the SCAQMD requires an assessment of GHG emissions. The SCAQMD, under Option 1, is proposing a "bright-line" screening-level threshold of 3,000 MT CO_2e/yr for all land use types or, under Option 2, the following land-use-specific thresholds: 1,400 MT CO_2e for commercial projects, 3,500 MT CO_2e for residential projects, or 3,000 MT CO_2e for mixed-use projects. This bright-line threshold is based on a review of the OPR database of CEQA projects. Based on SCAQMD's review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds identified above. Therefore, projects that do not exceed the bright-line threshold would have a nominal and therefore less than cumulatively considerable impact related to GHG emissions.

- **Tier 4: Performance Standards.** If emissions exceed the numerical screening threshold, a more detailed review of the project's GHG emissions is warranted. The SCAQMD has proposed an efficiency target for projects that exceed the bright-line threshold. The current recommended approach is per capita efficiency targets. The SCAQMD is not recommending use of a percentage emissions reduction target. Instead, the SCAQMD proposes a 2020 efficiency target of 4.8 MT CO_2e per year per service population (MT CO_2e/year/SP) for project-level analyses and 6.6 MT CO_2e/year/SP for plan-level projects (e.g., program-level projects such as general plans).

This section evaluates potential significant impacts related to GHG using the Tier 2 approach in compliance with the City of Chino CAP Updates for implementation of the proposed project. Therefore, in order to demonstrate consistency with the City's CAP, the project must complete a CAP Project Review Checklist or CAP Screening Tables.

The proposed project would be subject to all applicable City Draft CAP Update requirements, which would also reduce its GHG emissions. The City's procedures for evaluating GHG mitigation measures for CEQA purposes by utilizing the screening tables to mitigate project GHG emissions that exceed the threshold level are in the City's CAP. The purpose of the CAP screening tables is to provide guidance in measuring the reduction of GHG emissions attributable to certain design and construction measures incorporated into development projects. The analysis, methodology, and significance determination (thresholds) are based upon the CAP and CAP Update, which

include GHG emission inventories (2008 and 2016); forecasts for years 2020, 2030, and 2045; 2020 and 2030 emission reduction targets; and the goals and policies to reach the targets.

The screening tables can be used by the City for review of development projects in order to ensure that the specific reduction strategies in the CAP are implemented as part of the CEQA process for development projects. The screening tables provide a menu of options that both ensures implementation of the reduction strategies and flexibility on how development projects will implement the reduction strategies to achieve an overall reduction of emissions, consistent with the reduction target of the CAP.

Projects that garner at least 100 points will be consistent with the reduction quantities anticipated in the City's CAP. As such, those projects that garner a total of 100 points or greater would not require quantification of project specific GHG emissions. Consistent with *CEQA Guidelines*, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions.

The Project Applicant will have the option of selecting the project-specific measures from the screening tables listed in Table S to quantify and mitigate GHG emissions. All of the information in the Table S uses a base level of efficiency that corresponds to the California Building Energy Efficiency Standards for Residential and Non-residential Buildings (Title 24, Part 6) that became effective January 1, 2020. These are the statewide minimum requirements of efficiency that are currently in effect.

Table S: Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
Reduction Measure Energy: Exceed Energy Efficiency Standards in New Commercial Units			
Building Envelope			
Insulation	• 2019 Title 24 Requirements (walls R-16; roof/attic R-32)	0 points	9 pts
	• Modestly Enhanced Insulation (walls R-15, roof/attic R-38)	9 points	
	• Enhanced Insulation (rigid wall insulation R-13, roof/attic R-38)	11 points	
	• Greatly Enhanced Insulation (spray foam insulated walls R-18 or higher, roof/attic R-38 or higher)	12 points	
Windows	• 2019 Title 24 Windows (0.3 U-factor, 0.23 solar heat gain coefficient [SHGC])	0 points	4 pts
	• Enhanced Window (0.28 U-Factor, 0.22 SHGC)	4 points	
	• Greatly Enhanced Window (less than 0.28 U-Factor, less than 0.22 SHGC)	5 points	
Cool Roofs	• Enhanced Cool Roof (CRRC Rated 0.2 aged solar reflectance, 0.75 thermal emittance)	7 points	7 pts
	• Greatly Enhanced Cool Roof (CRRC Rated 0.35 aged solar reflectance, 0.75 thermal emittance)	8 points	
Air Infiltration	Minimizing leaks in the building envelope is as important as the insulation properties of the building. Insulation does not work effectively if there is excess air leakage.		

Table S: Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
	• Air barrier applied to exterior walls, calking, and visual inspection such as the HERS Verified Quality Insulation Installation (QII or equivalent)	7 points	7 pts
	• Blower Door HERS Verified Envelope Leakage or equivalent	6 points	
Thermal Storage of Building	Thermal storage is a design characteristic that helps keep a constant temperature in the building. Common thermal storage devices include strategically placed water filled columns, water storage tanks, and thick masonry walls.		
	• Modest Thermal Mass (10% of floor or 10% of walls 12" or more thick exposed concrete or masonry with no permanently installed floor covering such as carpet, linoleum, wood, or other insulating materials)	2 points	0 pt
	• Enhanced Thermal Mass (20% of floor or 20% of walls 12" or more thick exposed concrete or masonry with no permanently installed floor covering such as carpet, linoleum, wood, or other insulating materials)	4 points	
	• Enhanced Thermal Mass (80% of floor or 80% of walls 12" or more thick exposed concrete or masonry with no permanently installed floor covering such as carpet, linoleum, wood, or other insulating materials)	14 points	
Indoor Space Efficiencies			
Heating/Cooling Distribution System	• Modest Duct insulation (R-6 required)	0 points	5 pts
	• Enhanced Duct Insulation (R-8)	5 points	
	• Distribution loss reduction with inspection (HERS Verified Duct Leakage or equivalent)	6 points	
Space Heating/ Cooling Equipment	• 2019 Title 24 Minimum HVAC Efficiency (SEER 13/75% AFUE or 7.7 HSPF)	0 points	4 pts
	• Improved Efficiency HVAC (SEER 14/78% AFUE or 8 HSPF)	4 points	
	• High Efficiency HVAC (SEER 15/80% AFUE or 8.5 HSPF)	5 points	
	• Very High Efficiency HVAC (SEER 16/82% AFUE or 9 HSPF)	7 points	
Commercial Heat Recovery Systems	Heat recovery strategies employed with commercial laundry, cooking equipment, and other commercial heat sources for reuse in HVAC air intake or other appropriate heat recovery technology. Point values for these types of systems will be determined based upon design and engineering data documenting the energy savings.	TBD	
Water Heaters	• 2019 Title 24 Minimum Efficiency (0.57 Energy Factor)	0 points	8 pts
	• Improved Efficiency Water Heater (0.675 Energy Factor)	8 points	
	• High Efficiency Water Heater (0.72 Energy Factor)	10 points	
	• Very High Efficiency Water Heater (0.92 Energy Factor)	11 points	
	• Solar Pre-heat System (0.2 Net Solar Fraction)	2 points	
	• Enhanced Solar Pre-heat System (0.35 Net Solar Fraction)	5 points	
Daylighting	Daylighting is the ability of each room within the building to provide outside light during the day reducing the need for artificial lighting during daylight hours.		

Table S: Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
	• All peripheral rooms within building have at least one window or skylight	0 points	0 pt
	• All rooms within building have daylight (through use of windows, solar tubes, skylights, etc.)	1 point	
	• All rooms daylighted	1 point	
Artificial Lighting	• Efficient Lights (25% of in-unit fixtures considered high efficiency. High efficiency is defined as 40 lumens/watt for 15 watt or less fixtures; 50 lumens/watt for 15-40 watt fixtures, 60 lumens/watt for fixtures >40 watt)	5 points	7 pts
	• High Efficiency Lights (50% of in-unit fixtures are high efficiency)	7 points	
	• Very High Efficiency Lights (100% of in-unit fixtures are high efficiency)	8 points	
Appliances	• Energy Star Commercial Refrigerator (new)	2 points	6 pts
	• Energy Star Commercial Dishwasher (new)	2 points	
	• Energy Star Commercial Clothes Washer	2 points	
Miscellaneous Commercial Building Efficiencies			
Building Placement	North/south alignment of building or other building placement such that the orientation of the buildings optimizes conditions for natural heating, cooling, and lighting.	4 points	4 pts
Shading	At least 90% of south-facing glazing will be shaded by vegetation or overhangs at noon on June 21st.	6 points	6 pts
Other	This allows innovation by the applicant to provide design features that increase the energy efficiency of the project not provided in the table. Note that engineering data will be required documenting the energy efficiency of innovative designs and point values given based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.	TBD	
Existing Commercial Buildings Retrofits	The applicant may wish to provide energy efficiency retrofit projects to existing commercial buildings to further the point value of their project. Retrofitting existing commercial buildings within the City is a key reduction measure that is needed to reach the reduction goal. The potential for an applicant to take advantage of this program will be decided on a case-by-case basis and shall have the approval from the City of Chino Planning Department. The decision to allow applicants to participate in this program will be evaluated based upon, but not limited to the following:	TBD	
	• Will the energy efficiency retrofit project benefit low income or disadvantaged communities?		
	• Does the energy efficiency retrofit project provide co-benefits important to the City?		
	• Point value will be determined based upon engineering and design criteria of the energy efficiency retrofit project.		
Reduction Measure Energy 3- All Electric Buildings			
All-Electric Buildings	All electric buildings reduce GHG emissions, as the grid electricity they use is generated using less carbon over time. Grid electricity in California	15 points	

Table S: Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
	will be 60 percent renewable energy by 2030 and 100 percent renewable energy by 2040.		
Reduction Measure Energy-7: Clean Energy			
Commercial/Industrial Renewable Energy Generation			
Photovoltaic	Solar Photovoltaic panels installed on commercial buildings or in collective arrangements within a commercial development such that the total power provided augments:		
	• 30 percent of the power needs of the project	8 points	19 pts
	• 40 percent of the power needs of the project	12 points	
	• 50 percent of the power needs of the project	16 points	
	• 60 percent of the power needs of the project	19 points	
	• 70 percent of the power needs of the project	23 points	
	• 80 percent of the power needs of the project	26 points	
	• 90 percent of the power needs of the project	30 points	
	• 100 percent of the power needs of the project	34 points	
Wind Turbines	Some areas of the City lend themselves to wind turbine applications. Analysis of the areas capability to support wind turbines should be evaluated prior to choosing this feature. Wind turbines as part of the commercial development such that the total power provided augments:		
	• 30 percent of the power needs of the project	8 points	0 pt
	• 40 percent of the power needs of the project	12 points	
	• 50 percent of the power needs of the project	16 points	
	• 60 percent of the power needs of the project	19 points	
	• 70 percent of the power needs of the project	23 points	
	• 80 percent of the power needs of the project	26 points	
	• 90 percent of the power needs of the project	30 points	
	• 100 percent of the power needs of the project	34 points	
Off-site Renewable Energy Project	The applicant may submit a proposal to supply an off-site renewable energy project such as renewable energy retrofits of existing residential or existing commercial/industrial. These off-site renewable energy retrofit project proposals will be determined on a case-by-case basis accompanied by a detailed plan documenting the quantity of renewable energy the proposal will generate. Point values will be based upon the energy generated by the proposal.	TBD	
Other Renewable Energy Generation	The applicant may have innovative designs or unique site circumstances (such as geothermal) that allow the project to generate electricity from renewable energy not provided in the table. The ability to supply other renewable energy and the point values allowed would be decided based upon engineering data documenting the ability to generate electricity.	TBD	
Reduction Measure Water 1-3: Exceed Water Efficiency Standards			
Commercial Irrigation and Landscaping			
Water Efficient Landscaping	• Eliminate conventional turf from landscaping	0 point	3 pts
	• Only moderate water using plants	2 points	

Table S: Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
	• Only low water using plants	3 points	
	• Only California Native landscape that requires no or only supplemental irrigation	5 points	
Water Efficient Irrigation Systems	• Low precipitation spray heads< .75”/hr or drip irrigation	1 point	1 pt
	• Weather-based irrigation control systems combined with drip irrigation (demonstrate 20% reduced water use)	3 points	
Storm Water Reuse Systems	Innovative on-site storm water collection, filtration, and reuse systems are being developed that provide supplemental irrigation water and provide vector control. These systems can greatly reduce the irrigation needs of a project. Point values for these types of systems will be determined based upon design and engineering data documenting the water savings.	TBD	
Commercial Potable Water			
Showers	Water Efficient Showerheads (2.0 gpm)	2 points	2 pts
Toilets	• Water Efficient Toilets/Urinals (1.5 gpm)	3 points	3 pts
	• Waterless Urinals (note that commercial buildings having both waterless urinals and high efficiency toilets will have a combined point value of 6 points)	3 points	
Faucets	Water Efficient faucets (1.28 gpm)	2 points	2 pts
Commercial Dishwashers	Water Efficient dishwashers (20% water savings)	2 points	2 pts
Commercial Laundry Washers	• Water Efficient laundry (15% water savings)	2 points	4 pts
	• High Efficiency laundry Equipment that captures and reuses rinse water (30% water savings)	4 points	
Commercial Water Operations Program	Establish an operational program to reduce water loss from pools, water features, etc., by covering pools, adjusting fountain operational hours, and using water treatment to reduce draw down and replacement of water. Point values for these types of plans will be determined based upon design and engineering data documenting the water savings.	TBD	
Increase Commercial/Industrial Reclaimed Water Use			
Recycled Water	Graywater (purple pipe) irrigation system on site	5 points	
Reduction Measure OnRoad: Alternative Transportation Options			
Mixed-Use Development			
Mixed-Use	Mixes of land uses that complement one another in a way that reduces the need for vehicle trips can greatly reduce GHG emissions. The point value of mixed-use projects will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled.	TBD	
Local Retail Near Residential (Commercial only Projects)	Having residential developments within walking and biking distance of local retail helps to reduce vehicle trips and/or vehicle miles traveled. The point value of residential projects in close proximity to local retail will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled.	TBD	

Table S: Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
Preferential Parking			
Parking	• Provide reserved preferential parking spaces for car-share, carpool, and ultra-low or zero emission vehicles.	1 point	1 pts
	• Provide larger parking spaces that can accommodate vans used for ride-sharing programs and reserve them for vanpools and include adequate passenger waiting/loading areas.	1 point	
Signal Synchronization and Intelligent Traffic Systems			
Signal Improvements	Techniques for improving traffic flow include: traffic signal coordination to reduce delay, incident management to increase response time to breakdowns and collisions, Intelligent Transportation Systems (ITS) to provide real-time information regarding road conditions and directions, and speed management to reduce high free-flow speeds.		
	• Synchronize signals along arterials used by project.	1 point/signal	
	• Connect signals along arterials to existing ITS.	3 points/signal	
Increase Public Transit			
Public Transit	• The point value of a project's ability to increase public transit use will be determined based upon a Transportation Impact Analysis (TIA) demonstrating decreased use of private vehicles and increased use of public transportation.	TBD	
	• Increased transit accessibility (1–15 points)	TBD	
Reduction Measure: Adopt and Implement a Bicycle Master Plan to Expand Bike Routes around the City			
Sidewalks	• Provide sidewalks on both sides of the street (required)	1 point	1 pt
	• Provide pedestrian linkage between commercial and residential land uses within 1 mile	3 points	
Bicycle Paths	• Provide bicycle paths within project boundaries	1 point	
	• Provide bicycle path linkages between commercial and other land uses	2 points	
	• Provide bicycle path linkages between commercial and transit	5 points	
Reduction Measure: Reduce Waste to Landfills			
Recycling	City initiated recycling program diverting 80% of waste requires coordination with commercial development to realize this goal. The following recycling features will help the City fulfill this goal:		
	• Provide separated recycling bins within each commercial building/floor and provide large external recycling collection bins at central location for collection truck pick-up	2 points	4 pts
	• Provide commercial/industrial recycling programs that fulfills an on-site goal of 80% diversion of solid waste	5 points	
	• Recycle construction waste	4 points	
Other GHG Reduction Feature Implementation			
Other GHG Emissions Reduction Features	This allows innovation by the applicant to provide commercial design features that the GHG emissions from construction and/or operation of the project not provided in the table. Note that engineering data will be required documenting the GHG reduction amount and point values given	TBD	

Table S: Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
	based upon emission reductions calculations using approved models, methods, and protocols.		
Total Points Earned by Commercial/Industrial Project:			**109**

As shown in Table S, the proposed project reached at 109 points, which is consistent with the reduction quantities anticipated in the CAP Update. Therefore, impacts related to the generation of GHG emissions, either directly, indirectly or cumulatively, that may have a significant impact on the environment would be **less than significant**. No mitigation is required.

(b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant Impact.

Discussion of Effects: The ARB, a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and State air pollution control and climate change programs within California. In this capacity, the ARB conducts research, sets CAAQS, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. The ARB establishes emissions standards for motor vehicles sold in California, consumer products, and various types of commercial equipment. In March 2020, the City of Chino updated its CAP to focus on adaptive GHG measures in the CAP Screening Table that reduce GHG emissions and help the City to meet the State compliance requirements for climate change.

The proposed project is required to comply with Title 13-Section 2449 of the CCR and the CalRecycle Sustainable (Green) Building Program regulations, which include implementation of standard control measures for equipment emissions. Adherence to these regulations, including the implementation of Best Available Control Measures (BACMs) is a standard requirement for any construction or ground-disturbance activity occurring within the South Coast Air Basin.

BACMs include, but are not limited to, requirements that the project proponent utilize only low-sulfur fuel (i.e., having a sulfur content of 15 ppm by weight or less); ensure off-road vehicles (i.e., self-propelled diesel-fueled vehicles 25 horsepower and up that were not designed to be driven on road) limit vehicle idling to five minutes or less; register and label vehicles in accordance with the ARB Diesel Off-Road Online Reporting System; restrict the inclusion of older vehicles into fleets; and retire, replace, or repower older engines or install Verified Diesel Emission Control Strategies (i.e., exhaust retrofits). Additionally, the construction contractor will recycle/reuse at least 50 percent of the construction material (including, but not limited to, proposed aggregate base, soil, mulch, vegetation, concrete, lumber, metal, and cardboard) and use “Green Building Materials,” such as those materials that are rapidly renewable or resource

efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the project, in accordance with CalRecycle regulations.

Long-term (operational) project emissions typically include emissions from use of consumer products, energy and water usage, vehicles, and facility use emissions.

As stated previously, the proposed project is required to comply with the City's current 2013 CAP, forthcoming 2020 CAP Updates, and current Chino Municipal Code Chapter 15.45, Plan Implementing Measures. The GHG evaluation demonstrates that the proposed project is consistent with the City's CAP Update. Consistent with *CEQA Guidelines*, the proposed project would be determined to have a less than significant individual and cumulative impact related to GHG emissions. Therefore, the proposed project will not generate GHG that will have a significant impact on the environment, nor will the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Associated impacts will be **less than significant** and no mitigation is required.

ATTACHMENTS

- Attachment A: Figures
- Attachment B: CalEEMod Output Files

ATTACHMENT A:

FIGURES

Figure 1 Project Location

Figure 2 Site Plan

ATTACHMENT B:

CALEEMOD OUTPUT FILES