AIR QUALITY ASSESSMENT

Carefield Solana Assisted Care Facility Development
PDS2018-MPA-18-019
County of San Diego, CA

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Assembly Bill 32 (AB32)

California Air Resource Board (CARB)

California Ambient Air Quality Standards (CAAQS)

California Environmental Quality Act (CEQA)

Carbon Dioxide (CO2)

Cubic Yards (CY)

Diesel Particulate Matter (DPM)

Environmental Protection Agency (EPA)

EPA Office of Air Quality Planning and Standards (OAQPS)

Hazardous Air Pollutants (HAPs)

Hydrogen Sulfide (H2S)

International Residential Code (IRC)

Level of Service (LOS)

Low Carbon Fuel Standard (LCFS)

Methane (CH4)

National ambient air quality standards (NAAQS)

Nitrous Oxide (N2O)

North County Transit District (NCTD)

Reactive Organic Gas (ROG)

Regional Air Quality Strategy (RAQS)

San Diego Air Basin (SDAB)

San Diego Air Pollution Control District (SDAPCD)

South Coast Air Quality Management District (SCAQMD)

State Implementation Plan (SIP)

Toxic Air Contaminants (TACs)

Vehicle Miles Traveled (VMT)

EXECUTIVE SUMMARY

This air quality (AQ) impact study has been completed to determine the AQ impacts associated with the development of the Proposed Project.

The Project known as "Carefield Solana Assisted Living Development" envisions providing a 74,000 Square Foot (SF), 80-bed assisted living and memory care facility with an outdoor recreational area. The Project would be located in north San Diego County, in the unincorporated community of Bonsall.

Project design features (PDFs) have been included in this Project. The applicant has agreed to implement all PDFs and will be included in the Project's Conditions of Approval. The following PDFs applied in this analysis with the purpose of reducing air emissions include:

- The Project will utilize architectural coatings compliant with San Diego Air Pollution Control District (SDAPCD) Rule 67 (SDAPCD, 2015).
- Install high-efficiency light emitting diode (LED) street and area lighting to achieve reduction in overall lighting energy.
- In accordance with the California Integrated Waste Management Act (AB 939), and to be consistent with AB 341's statewide 75 percent diversion policy, the Project will seek to also achieve a 75 percent diversion goal by providing areas for storage and collection of recyclables and provide literature promoting recycling to achieve additional waste diversion.
- The Project applicant will be required to comply with County's Water Conservation in Landscaping Ordinance and demonstrates a 40 percent reduction in outdoor use, and will submit a Landscape Document Package to show such compliance.
- Install low flow indoor water fixtures in all residential units to achieve at lease a 20 percent reduction in indoor water use.

All construction phases of the Proposed Project are anticipated to start in 2020 and completion is expected in 2021 with full operations expected in 2022. The Project was found to have significant health risks though were mitigated to less than significant using the following mitigation measures:

- Project-related construction activities would use Tier 4 construction equipment with Diesel Particulate Filters (DPF) United States (U.S.) Environmental Protection Agency (EPA)/ California Air Resources Board (CARB)-certified construction equipment with DPF. The Project applicant has confirmed commitment to this feature.

The only source of odors during construction would be from temporary use of construction equipment and paving equipment, and the application of architectural coatings. Since odors would-be short-term events, a less than significant odor impact is expected during construction.

Based upon the analysis of construction and operation activities for the Proposed Project, neither direct operational or direct construction impacts would be expected. Furthermore, closest cumulative construction project is over two miles away. Based on this, there would be no cumulative construction impacts either for this project.

The existing County of San Diego General Plan land use designation for the Project is C30 (Office Professional) and seeks to rezone the site to C-46 (Medical Center). The Proposed Project would generate 238 average daily trips (ADT). The existing zoning would allow for a general office building of at least 50,000 SF which would have a Floor Area Ratio (FAR) of 0.25. Based on CalEEMod, a general office building generates on average 11.03 trips per 1,000 SF could generate at least 551.5 ADT. Since the Proposed Project generates fewer trips than the existing zoning designation allows, the Project would generate fewer emissions than would otherwise have been accounted for within the General Plan. Given this, the Proposed Project is consistent with the General Plan.

The environmental impact report for the General Plan analyzed the impacts of all growth under the General Plan. The existing County of San Diego General Plan land use designation for the Project is C30 (Office Professional) and seeks to rezone the site to C-46 (Medical Center). The Proposed Project would generate 238 ADT. The existing zoning would allow for a general office building of at least 50,000 SF which would have a Floor Area Ratio (FAR) of 0.25 and would generate at least 551.5 ADT which is identified in CalEEMod default settings. Given this, the Project would be less intense and therefore consistent with all applicable General Plan policies and has been designed to implement all applicable General Plan mitigation measures related to AQ. Because the Project is consistent with the projected growth of the General Plan and with the applicable General Plan AQ policies and mitigation measures, the Project will not result in a significant to AQ. Therefore, since the Project is consistent with the General Plan, and since the project does not generate any direct or cumulative impacts, the project would be consistent with the Regional Air Quality Strategy (RAQS) and State Implementation Plan (SIP).

1.0 INTRODUCTION

1.1 Purpose of this Study

The purpose of this air quality (AQ) study is to determine potential AQ impacts (if any) that may be created by construction, area, or operational emissions (short term or long term) from the Proposed Project. Should impacts be determined, the intent of this study would be to recommend suitable mitigation measures to reduce impacts to the extent feasible.

1.2 Project Location

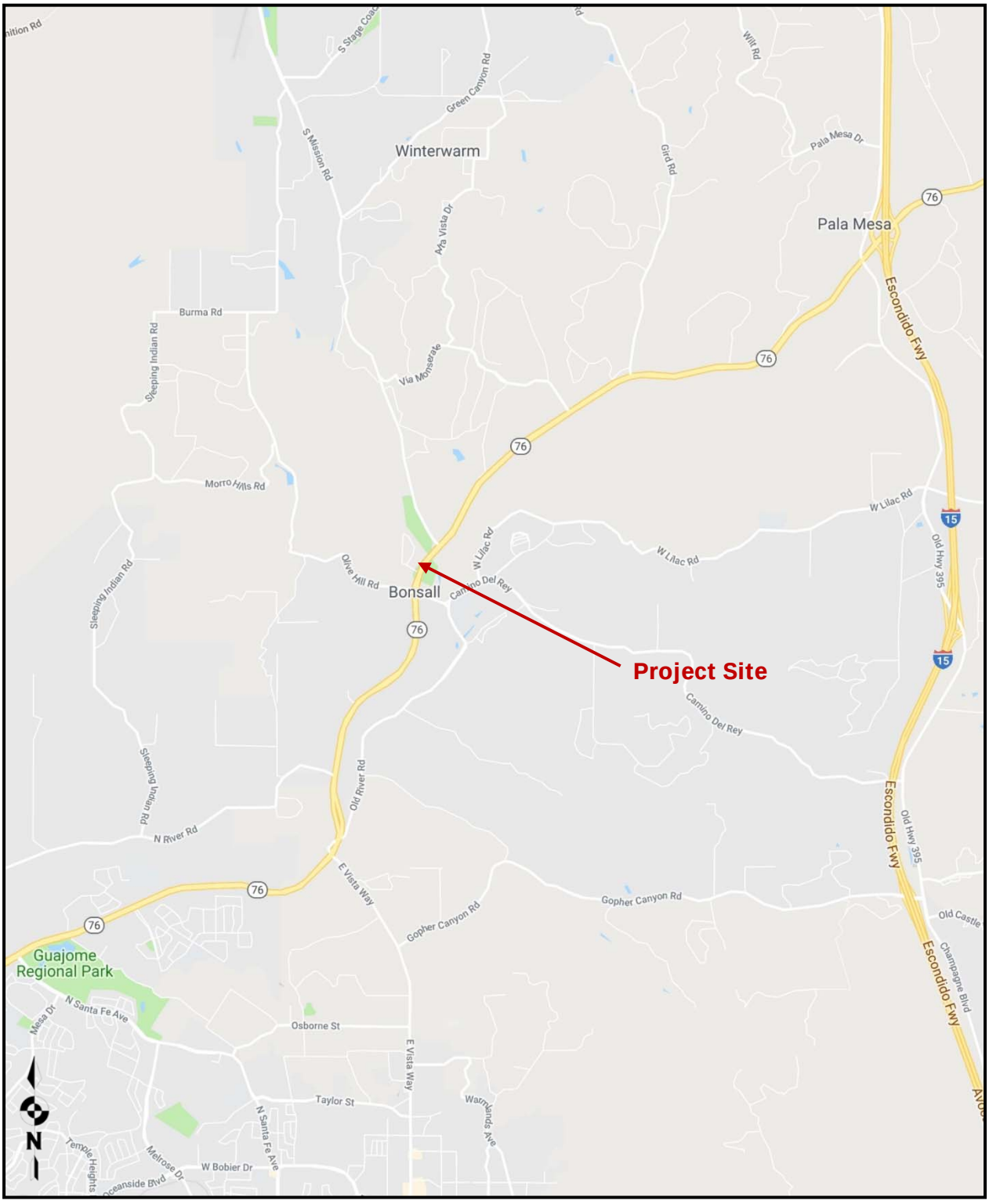
The Proposed Carefield Solana Assisted Living Project (Project) is located in north San Diego County, in the unincorporated community of Bonsall. The Project is located at 33° 17′ 30″ N and 117° 13′ 31″ W, northwest of State Route 76 along Thoroughbred Lane. The general location of the Project is shown in the Vicinity Map, Figure 1-A.

1.3 Project Description

The Proposed Project seeks to construct a 74,000 Square Foot (SF), 80-bed assisted living and memory care facility with an outdoor recreational area. The existing County of San Diego General Plan land use designation for the Project is C30 (Office Professional) and proposes to rezone the site to C-46 (Medical Center). The Project site plan is shown in Figure 1-B.

Construction of the Project would be expected to begin in 2020 with completion expected in 2021. The first full year of operations is expected in 2022.

Figure 1-A: Project Vicinity Map



Source: (Google, 2019)

Figure 1-B: Proposed Project Site Layout

Source: (Jones Ballard Architects, 2018)

1.4 Project Design Features

Project design features (PDFs) have been incorporated into the Project to reduce emissions associated with construction, energy use, area sources and water demand. The Project would include PDFs that would reduce air emissions though not all are included within the AQ modeling software due to limitations of the software. Given this, PDFs are broken out to include the following within this analysis. Since these specific PDFs are shown in modeling software, they shall therefore be considered as a condition of approval by the County.

- The Project will utilize architectural coatings compliant with SDAPCD Rule 67 (SDAPCD, 2015).
- Install high-efficiency LED street and area lighting to achieve reduction in overall lighting energy.
- In accordance with AB 939, and to be consistent with AB 341's statewide 75 percent diversion policy, the Project will seek to also achieve a 75 percent diversion goal by providing areas for storage and collection of recyclables and provide literature promoting recycling to achieve additional waste diversion.
- The Project applicant will be required to comply with County's Water Conservation in Landscaping Ordinance and demonstrates a 40 percent reduction in outdoor use and will submit a Landscape Document Package to show such compliance.
- Install low flow indoor water fixtures in all residential units to achieve at lease a 20 percent reduction in indoor water use.

The Project will also install PDFs geared to reduce both greenhouse gas (GHG) and AQ emissions that are not quantified or further discussed within this report. It should be noted that these design features are for informational purposes to this AQ report only since modeling results would not be dependent on installation of these PDFs.

- Landscaped and screened parking areas consistent with the County's Parking Design Manual, including Section 7 (Landscaping) and the "cool parking" mitigation requirements identified by the CARB.
- Building efficiency features such as High-Efficiency heating, ventilation, and cooling (HVAC) system, sealed (tight) air ducts that minimize heating and cooling HVAC losses, tankless water heaters and Low Emissivity (Low E) dual pane windows.
- Work with the regional or local water agency to determine if incentives/rebates are available for the purchase and installation of rain barrels.
- Install weather-based irrigation systems which include rain sensing timers.

2.0 EXISTING ENVIRONMENTAL SETTING

2.1 Existing Setting

The existing site is zoned C30 (Office Professional). Land uses surrounding the Project mostly include single family residential which are adjacent to the Project site and multi-family residential roughly 145 feet to the south and nearly 900 feet to the north. Finally, Bonsall Elementary School is over 2,000 feet to the southeast. Elevations at the southwestern boundary is approximately 175 feet above mean sea level (MSL) to approximately 210 feet above MSL on the northeast are of the Project.

2.2 Climate and Meteorology

Climate within the San Diego Air Basin (SDAB) area often varies dramatically over short geographical distances with cooler temperatures on the western coast gradually warming to the east as prevailing winds from the west heat up. Most of southern California is dominated by high-pressure systems for much of the year, which keeps San Diego mostly sunny and warm. Typically, during the winter months, the high-pressure system drops to the south and brings cooler, moister weather from the north. It is common for inversion layers to develop within high-pressure areas, which mostly define pressure patterns over the SDAB. These inversions are caused when a thin layer of the atmosphere increases in temperature with height. An inversion acts like a lid preventing vertical mixing of air through convective overturning. Meteorological trends within the Bonsall area generally show daytime highs ranging between 67ºF in the winter to approximately 83ºF in the summer with August usually being the hottest month. Daytime Low temperatures range from approximately 44ºF in the winter to approximately 62ºF in the summer. Precipitation is generally about 13 inches per year (WRCC, 2016). Prevailing wind patterns for the area vary during any given month during the year and also vary depending on the time of day or night. The predominant pattern though throughout the year is usually from the west or westerly (WRCC, 2018).

2.3 Regulatory Standards

2.3.1 Federal Standards and Definitions

The Federal AQ Standards were developed per the requirements of The Federal Clean Air Act, which is a federal law that was passed in 1970 and further amended in 1990. This law provides the basis for the national air pollution control effort. An important element of the act included the development of national ambient air quality standards (NAAQS) for major air pollutants.

The Clean Air Act established two types of AQ standards otherwise known as primary and secondary standards. ***Primary Standards*** set limits for the intention of protecting public

health, which includes sensitive populations such as asthmatics, children and elderly. ***Secondary Standards*** set limits to protect public welfare to include the protection against decreased visibility, damage to animals, crops, vegetation and buildings. The EPA Office of Air Quality Planning and Standards (OAQPS) has set NAAQS for principal pollutants, which are called "criteria" pollutants. These pollutants are defined below:

1. ***Carbon Monoxide (CO):*** *is a colorless, odorless, and tasteless gas and is produced from the partial combustion of carbon-containing compounds, notably in internal-combustion engines. Carbon monoxide usually forms when there is a reduced availability of oxygen present during the combustion process. Exposure to CO near the levels of the ambient AQ standards can lead to fatigue, headaches, confusion, and dizziness. CO interferes with the blood's ability to carry oxygen.*
2. ***Lead (Pb):*** *is a potent neurotoxin that accumulates in soft tissues and bone over time. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. Because lead is only slowly excreted, exposures to small amounts of lead from a variety of sources can accumulate to harmful levels. Effects from inhalation of lead near the level of the ambient AQ standard include impaired blood formation and nerve conduction. Lead can adversely affect the nervous, reproductive, digestive, immune, and blood-forming systems. Symptoms can include fatigue, anxiety, short-term memory loss, depression, weakness in the extremities, and learning disabilities in children.*
3. ***Nitrogen Dioxide (NO_2):*** *is a reactive, oxidizing gas capable of damaging cells lining the respiratory tract and is one of the nitrogen oxides emitted from high-temperature combustion, such as those occurring in trucks, cars, power plants, home heaters, and gas stoves. In the presence of other air contaminants, NO_2 is usually visible as a reddish-brown air layer over urban areas. NO_2 along with other traffic-related pollutants is associated with respiratory symptoms, respiratory illness and respiratory impairment. Studies in animals have reported biochemical, structural, and cellular changes in the lung when exposed to NO_2 above the level of the current state AQ standard. Clinical studies of human subjects suggest that NO_2 exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children.*
4. ***Particulate Matter (PM_{10} or $PM_{2.5}$):*** *is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary in shape, size and chemical composition, and can be made up of multiple materials such as metal, soot, soil, and dust. PM_{10} particles are 10 microns (µm) or less and $PM_{2.5}$ particles are 2.5 (µm) or less. These particles can contribute significantly to regional haze and reduction of visibility in California. Exposure to PM levels exceeding current AQ standards increases the risk of allergies such as asthma and respiratory illness.*
5. ***Ozone (O_3)****: is a highly oxidative unstable gas capable of damaging the linings of the respiratory tract. This pollutant forms in the atmosphere through reactions between chemicals directly emitted from vehicles, industrial plants, and many other sources. Exposure to ozone above ambient AQ standards can lead to human health effects such as lung inflammation, tissue damage and impaired lung functioning. Ozone can also damage materials such as rubber, fabrics and plastics.*
6. ***Sulfur Dioxide (SO_2)****: is a gaseous compound of sulfur and oxygen and is formed when sulfur-containing fuel is burned by mobile sources, such as locomotives, ships, and off-road diesel equipment. SO_2 is also emitted from several industrial processes, such as petroleum refining and metal processing. Effects from SO_2 exposures at levels near the one-hour standard include bronchoconstriction accompanied by symptoms, which may include wheezing, shortness of breath and chest tightness, especially during exercise or physical activity. Children, the elderly, and people with asthma, cardiovascular disease or chronic lung disease (such as bronchitis or emphysema) are most susceptible to these symptoms. Continued exposure at elevated levels of SO_2 results in*

increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality.

2.3.2 State Standards and Definitions

CARB sets the laws and regulations for AQ on the state level. The California Ambient Air Quality Standards (CAAQS) is similar to the NAAQS and also restricts four additional contaminants. Table 2.1 on the following page identifies both the NAAQS and CAAQS. The additional contaminants as regulated by the CAAQS are defined below:

1. ***Visibility Reducing Particles****: Particles in the Air that obstruct the visibility.*
2. ***Sulfates****: are salts of Sulfuric Acid. Sulfates occur as microscopic particles (aerosols) resulting from fossil fuel and biomass combustion. They increase the acidity of the atmosphere and form acid rain.*
3. ***Hydrogen Sulfide (H_2S)****: is a colorless, toxic and flammable gas with a recognizable smell of rotten eggs or flatulence. H_2S occurs naturally in crude petroleum, natural gas, volcanic gases, and hot springs. Usually, H_2S is formed from bacterial breakdown of organic matter. Exposure to low concentrations of hydrogen sulfide may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Brief exposures to high concentrations of hydrogen sulfide (greater than 500 Parts per Million (ppm)) can cause a loss of consciousness and possibly death.*
4. ***Vinyl Chloride****: also known as chloroethene and is a toxic, carcinogenic, colorless gas with a sweet odor. It is an industrial chemical mainly used to produce its polymer, polyvinyl chloride (PVC).*

2.3.3 Regional Standards

The State of California has 35 specific air districts, which are each responsible for ensuring that the criteria pollutants are below the NAAQS and CAAQS. Air basins that exceed either the NAAQS or the CAAQS for any criteria pollutants are designated as "non-attainment areas" for that pollutant. Currently, there are 15 non-attainment areas for the federal ozone standard and two non-attainment areas for the $PM_{2.5}$ standard and many areas are in non-attainment for PM_{10} as well.

The SDAPCD is the government agency which regulates sources of air pollution within the County. Therefore, the SDAPCD developed a Regional Air Quality Strategy (RAQS) to provide control measures to try to achieve attainment status for state ozone standards with control measures focused on Volatile Organic Compounds (VOCs) and oxides of nitrogen (NO_X). Currently, San Diego is in "non-attainment" status for federal and state O_3 and State PM_{10} and $PM_{2.5}$. An attainment plan is available for O_3. The RAQS was adopted in 1992 and has been updated as recently as 2016 which was the latest update incorporating minor changes to the prior 2009 update. The SDAPCD's RAQS, in combination with RAQS from other air districts with nonattainment areas of serious (or worse) air quality problems, is submitted to CARB, which develops the California State Implementation Plan (SIP) SIP and is designed to provide control measures needed to attain ambient AQ standards.

Table 2.1: Ambient Air Quality Standards

Ambient Air Quality Standards						
Pollutant	**Average Time**	**California Standards[1]**		**Federal Standards[2]**		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 µg/m3)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m3)		0.070 ppm (137 µg/m3)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m3	Gravimetric or Beta Attenuation	150 µg/m3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m3		-		
Fine Particulate Matter (PM2.5)[9]	24 Hour	No Separate State Standard		35 µg/m3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m3	Gravimetric or Beta Attenuation	12.0 µg/m3	15 µg/m3	
Carbon Monoxide (CO)	8 hour	9.0 ppm (10mg/m3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m3)	-	Non-Dispersive Infrared Photometry
	1 hour	20 ppm (23 mg/m3)		35 ppm (40 mg/m3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m3)		-	-	-
Nitrogen Dioxide (NO_2)[10]	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m3)[8]	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m3)		0.100 ppm[8] (188/ µg/m3)	-	
Sulfur Dioxide (SO_2)[11]	Annual Arithmetic Mean	-	Ultraviolet Fluorescence	0.030 ppm[10] (for Certain Areas)	-	Ultraviolet Flourescence; Spectrophotometry (Pararoosaniline Method)[9]
	24 Hour	0.04 ppm (105 µg/m3)		0.14 ppm[10] (for Certain Areas) (See Footnote 9)	-	
	3 Hour	-		-	0.5 ppm (1300 µg/m3)	
	1 Hour	0.25 ppm (655 µg/m3)		75 ppb (196 µg/m3)	-	
Lead[12,13]	30 Day Average	1.5 µg/m3	Atomic Absorption	-		-
	Calendar Quarter	-		1.5 µg/m3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average	-		0.15 µg/m3		
Visibility Reducing Particles	8 Hour	See footnote 14				
Sulfates	24 Hour	25 µg/m3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m3)	Gas Chromatography			

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.
8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m3 to 12.0 µg/m3 . The existing national 24- hour PM2.5 standards (primary and secondary) were retained at 35 µg/m3 , as was the annual secondary standard of 15 µg/m3 . The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
11. On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Source: (California Air Resources Board, 5/4/2016)

The 2016 update mostly summarizes how the 2009 update has lowered NO_X and VOCs emissions which reduces ozone and clarifies and enhances emission reductions by introducing for discussion three new VOC and four new NO_X reduction measures. NO_X and VOCs are precursors to the formation of ozone in the atmosphere. The criteria pollutant standards are generally attained when each monitor within the region has had no exceedances during the previous three calendar years. A complete listing of the current attainment status for criteria pollutants with respect to both federal and state nonattainment status by pollutants for County is shown in Table 2.2 on the following page (SDAPCD, 2019).

The RAQS is largely based on population projections by the San Diego Association of Governments (SANDAG). SANDAG's population projections are developed based on proposed buildout of land uses identified in the County's General Plan. Therefore, projects that produce less growth than predicted by SANDAG would generally conform to the RAQS. Projects that create more growth than projected by SANDAG may create a significant impact if the Project produces unmitigable AQ emissions or if the Project produces cumulative impacts.

Table 2.2: San Diego County Air Basin Attainment Status by Pollutant

Criteria Pollutant	Federal Designation	State Designation
Ozone (8-Hour)	Nonattainment	Nonattainment
Ozone (1-Hour)	Attainment *	Nonattainment
Carbon Monoxide	Attainment	Attainment
PM10	Unclassifiable **	Nonattainment
PM2.5	Attainment	Nonattainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	No Federal Standard	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Visibility	No Federal Standard	Unclassified

** The federal 1-hour standard of 12 pphm was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in State Implementation Plans.*
*** At the time of designation, if the available data does not support a designation of attainment or nonattainment, the area is designated as unclassifiable.*
(SDAPCD, 2019)

2.4 California Environmental Quality Act Significance Thresholds

The California Environmental Quality Act (CEQA) has provided a checklist to identify the significance of AQ impacts. These guidelines are found in Appendix G of the CEQA guidelines and are as follows:

AIR QUALITY -- Where available, the significance criteria established by the applicable AQ management or air pollution control district may be relied upon to make the following determinations. Would the Project:

A: Conflict with or obstruct implementation of the San Diego RAQS or applicable portions of the SIP?

B: Result in emissions that would violate any AQ standard or contribute substantially to an existing or projected AQ violation?

C: Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable Federal or State ambient AQ standard (PM_{10}, $PM_{2.5}$ or exceed quantitative thresholds for O_3 precursors, NO_X and VOCs)?

D: Expose sensitive receptors (including, but not limited to, schools, hospitals, resident care facilities, residential uses or day-care centers) to substantial pollutant concentrations?

E: Create objectionable odors affecting a substantial number of people?

2.5 SDAPCD Rule 20.2 – Air Quality Impact Assessment Screening Thresholds

The SDAPCD has established thresholds in Rule 20.2 for new or modified stationary sources. The County's Guidelines for Determining Significance and Report Format and Content Requirements incorporate screening level thresholds from Rule 20.2 for use in all County related AQ Impact Assessments and for determining CEQA AQ impacts (County of San Diego, 2007). These screening criteria can be used to demonstrate that a project's total emissions would not result in a significant impact as defined by CEQA. Also, since SDAPCD does not have AQ impact threshold for VOCs, it is acceptable to use the Coachella Valley VOC threshold from South Coast Air Quality Management District. Should emissions be found to exceed these thresholds, additional modeling is required to demonstrate that the project's total AQ impacts are below the state and federal ambient AQ standards. These screening thresholds for construction and daily operations are shown in Table 2.3 on the following page.

Non-Criteria pollutants such as Hazardous Air Pollutants (HAPs) or Toxic Air Contaminants (TACs) are also regulated by the SDAPCD. Rule 1200 (Toxic Air Contaminants - New Source Review) adopted on June 12, 1996, requires evaluation of potential health risks for any new, relocated, or modified emission unit which may increase emissions of one or more toxic air contaminants. The rule requires that projects that propose to increase cancer risk to between 1 and 10 in one million need to implement toxics best available control technology (T-BACT) or impose the most effective emission limitation, emission control device or control technique to reduce the cancer risk. At no time shall a project increase the incremental cancer risk to

over 10 in one million with the application of T-BACT or a health hazard index (chronic and acute) greater than one. Projects creating cancer risks less than one in one million are not required to implement T-BACT technology.

The U.S. EPA uses the term VOC and the CARB's Emission Inventory Branch (EIB) uses the term Reactive Organic Gases (ROG) to essentially define the same thing. There are minor deviations between compounds that define each term however for purposes of this study we will assume they are essentially the same due to the fact SCAQMD interchanges these words and because AQ models directly calculates ROG in place of VOC.

Table 2.3: SDAPCD Screening Level Thresholds for Criteria Pollutants

Pollutant	Total Emissions (Pounds per Day)
Construction Emissions	
Respirable Particulate Matter (PM_{10} and $PM_{2.5}$)	100 and 55
Nitrogen Oxide (NO_x)	250
Sulfur Oxide (SO_x)	250
Carbon Monoxide (CO)	550
Volatile Organic Compounds (VOCs)	75
Reactive Organic Gases (ROG) SCAQMD	75
Operational Emissions	
Respirable Particulate Matter (PM_{10} and $PM_{2.5}$)	100 and 55
Nitrogen Oxide (NO_x)	250
Sulfur Oxide (SO_x)	250
Carbon Monoxide (CO)	550
Lead and Lead Compounds	3.2
Volatile Organic Compounds (VOCs)	75
Reactive Organic Gases (ROG) SCAQMD	75

2.6 Local Air Quality

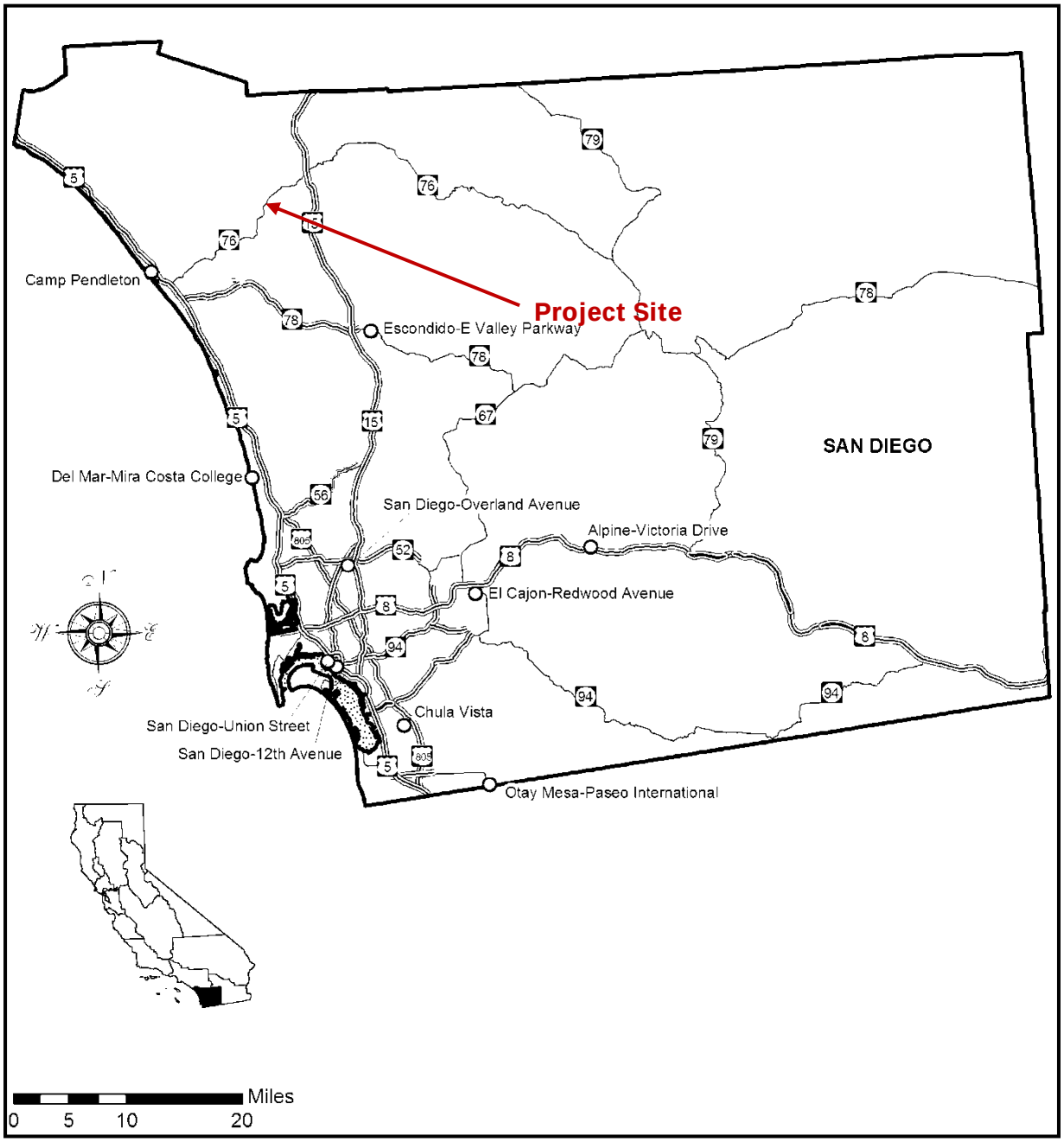
Criteria pollutants are measured continuously throughout the SDAB. This data is used to track ambient AQ patterns throughout the County and to determine attainment status when compared to the NAAQS and CAAQS. The SDAPCD is responsible for monitoring and reporting data (SDAPCD, 2018). SDAPCD operates monitoring sites, which collect data on criteria pollutants. The closest monitoring locations to the Project site is the Escondido monitoring location roughly 14 miles to the south-southeast, and the Camp Pendleton monitoring station. Table 2.4 on the following page identifies the criteria pollutants monitored at the aforementioned stations.

Table 2.4: Three-Year Ambient Air Quality Summary near the Project Site

Pollutant	Closest Recorded Ambient Monitoring Site	Averaging Time	CAAQS	NAAQS	2015	2016	2017	Days Exceeded over 3 years
O_3 (ppm)	Camp Pendleton or Escondido Monitoring Station	1 Hour	0.09 ppm	No Standard	0.09	0.08	0.09	0
		8 Hour	0.070 ppm	0.070 ppm	0.08	0.07	0.08	10
* PM_{10} ($\mu g/m^3$)		24 Hour	50 $\mu g/m^3$	150 $\mu g/m^3$	30	-	-	N/A
		Annual Arithmetic Mean	20 $\mu g/m^3$	No Standard	19.4	-	-	N/A
* $PM_{2.5}$ ($\mu g/m^3$)		24 Hour	No Standard	35 $\mu g/m^3$	29.4	-	-	N/A
		Annual Arithmetic Mean	12 $\mu g/m^3$	15 $\mu g/m^3$	8.6	-	-	N/A
NO_2 (ppm)		Annual Arithmetic Mean	0.030 ppm	0.053 ppm	0.006	0.006	0.006	N/A
		1 Hour	0.18 ppm	0.100 ppm	0.060	0.072	0.063	N/A
* CO (ppm)		1 Hour	20 ppm	35 ppm	3.1	-	-	N/A
		8 Hour	9 ppm	9 ppm	2.0	-	-	N/A

Notes:
1. - Yearly maximums marked with "-" indicated data was not available for either monitoring station.
2. Days exceeded marked with "N/A" indicate no data available
3. * Data was selected from the Escondido Monitoring Station. All other data presented was collected at the Camp Pendleton Monitoring Station.
4. SO_2 is only monitored at the El Cajon Monitoring Station. Within the entire County of San Diego, SO_2 emissions within the County are essentially zero for all metrics including the average, maximum 24 hour and 1- hour standards. The highest 1-hr measurement identified is .004 ppm and the most restrictive standard (CAAQS for SO_2) is 0.25 ppm.

Figure 2-A: Ambient Air Quality Monitoring Stations within SDAB – CARB



3.0 METHODOLOGY

3.1 Construction Emissions Calculations

Air Quality impacts related to construction and daily operations were calculated using the latest CalEEMod 2016.3.2 air quality model, which was developed by BREEZE Software for South Coast Air Quality Management District (SCAQMD) in 2017. The construction module in CalEEMod is used to calculate the emissions associated with the construction of the Project and uses methodologies presented in the U.S. EPA AP-42 document with emphasis on Chapter 11.9. The CalEEMod input/output model is shown in ***Attachment A*** to this report.

The AERMOD dispersion model will be used to determine the concentration for air pollutants at any location near the pollutant generator. Additionally, the model will predict the maximum exposure distance and concentrations. The notable toxic air contaminant from construction is diesel exhaust, since exposure to diesel exhaust is known to cause cancer and acute and chronic health effects. Diesel exhaust emissions can be estimated using the annual PM_{10} exhaust emissions from onsite construction operations obtained from the annual CalEEMod model output by summing each onsite source for the construction duration. The AERMOD files for the Project are provided in ***Attachments B and C*** for both unmitigated and mitigated scenarios which include Tier 4 diesel engines with adjacent or nearby sensitive receptors included. Both these scenarios are further discussed later in this report.

Once the dispersed concentrations of diesel particulates are estimated in the surrounding air, they are used to evaluate estimated exposure to people. Exposure is evaluated by calculating the dose in milligrams per kilogram body weight per day (mg/kg/d). For residential exposure, the breathing rates are determined for specific age groups, so inhalation dose (Dose-air) is calculated for each of these age groups, 3rd trimester, 0<2, 2<9, 2<16, 16<30 and 16-70 years. The following algorithms calculate this dose for exposure through the inhalation pathways. The worst-case cancer risk dose calculation is defined in Equation 1 below (County of San Diego, 2007):

Equation 1 $$Dose_{air} = C_{air} * (BR/BW) * A * EF * (1x10^{-6})$$

$Dose_{air}$	=	Dose through inhalation (mg/kg/d)
C_{air}	=	Concentration in air (µg/m3) Annual average DPM concentration in µg/m3 - AERMOD predicts annual averages.
BR/BW	=	Daily breathing rate normalized to body weight (L/kg BW-day). See Table I.2 for the daily breathing rate for each age range.
A	=	Inhalation absorption factor (assumed to be 1)
EF	=	Exposure frequency (unitless, days/365 days)
1x10-6	=	Milligrams to micrograms conversion (10^{-3} mg/ µg), cubic meters to liters conversion (10^{-3} m^3/l)

Cancer risk is calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor, the frequency of time spent at home and the exposure duration divided by averaging time, to yield the excess cancer risk. As described below, the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk for any given location. Specific factors as modeled are shown within the Project models attached to this report. The worst case cancer risk calculation is defined in Equation 2 below (OEHHA, February 2015):

Equation 2

$$RISK_{inh\text{-}res} = DOSE_{air} \times CPF \times ASF \times ED/AT \times FAH$$

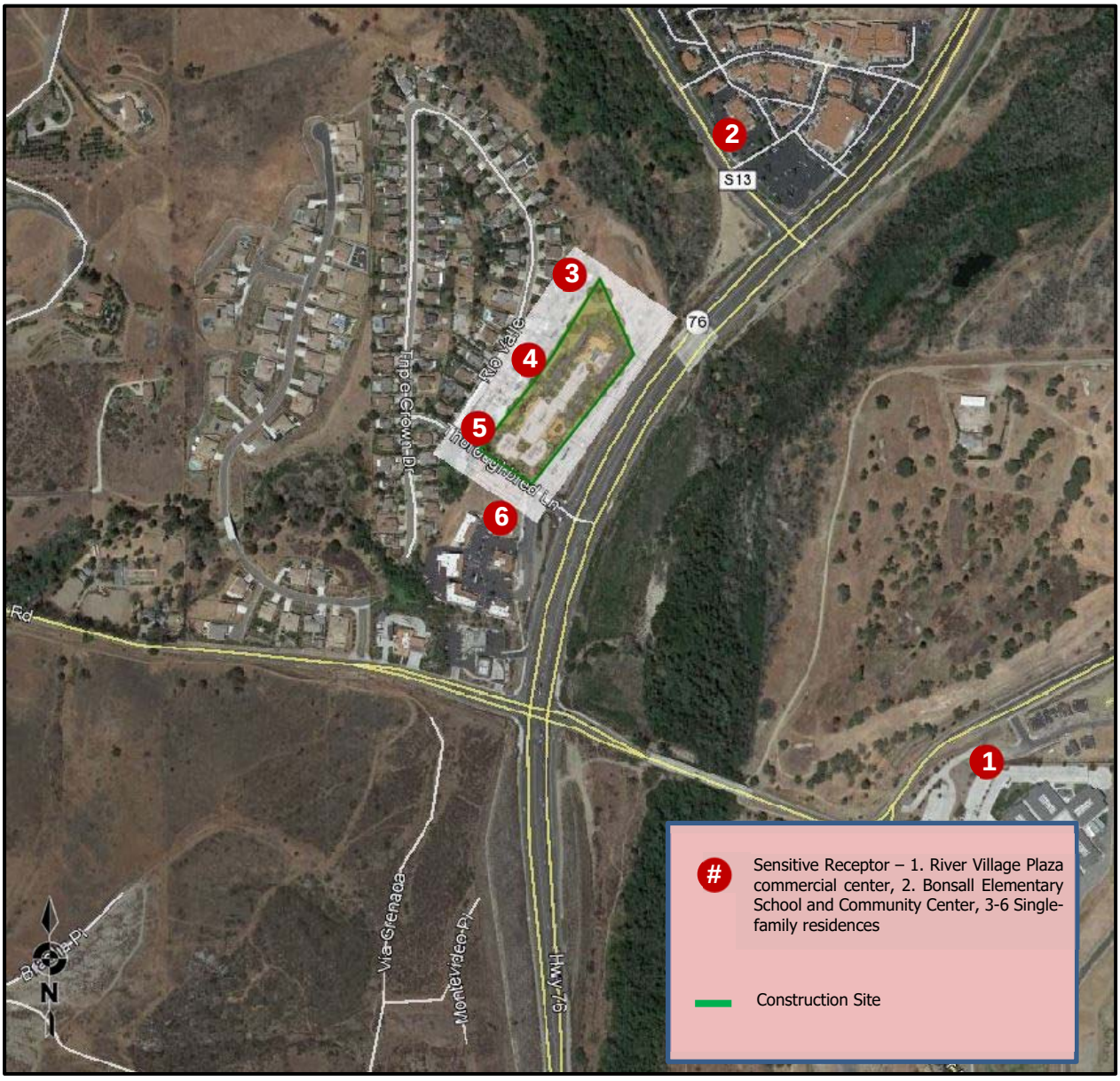
$RISK_{inh\text{-}res}$	=	Residential inhalation cancer risk
$DOSE_{air}$	=	Daily inhalation dose (mg/kg-day)
CPF	=	Inhalation cancer potency factor ($mg/kg\text{-}day^{-1}$)
ASF	=	Age sensitivity factor for a specified age group (unitless)
ED	=	Exposure duration (in years) for a specified age group
AT	=	Averaging time for lifetime cancer risk (years)
FAH	=	Fraction of time spent at home (unitless)

The California Office of Environmental Health Hazard Assessment (OEHHA) recommends that an exposure duration (residency time) of 30 years be used to estimate individual cancer risk for the Maximally Exposed Individual Resident (MEIR). OEHHA also recommends that the 30-year exposure duration be used as the basis for public notification and risk reduction audits and plans. Exposure durations of 9-years and 70-years are also recommended to be evaluated for the MEIR to show the range of cancer risk based on residency periods. If a facility is notifying the public regarding cancer risk, the 9-and 70-year cancer risk estimates are useful for people who have resided in their current residence for periods shorter and longer than 30 years. Health risk calculations are shown in ***Attachment D*** to this report.

Non-Cancer risks or risks defined as chronic or acute are also known with respect to DPM and are determined by the hazard index. To calculate hazard index, DPM concentration is divided by its chronic Reference Exposure Levels (REL). Where the total equals or exceeds one, a health hazard is presumed to exist. RELs are published by the Office of Environmental Health Hazard Assessment (OEHHA, February 2015). Diesel Exhaust has a REL of 5 $\mu g/m^3$ and targets the respiratory system.

A graphical representation of the modeling locations is shown on a site aerial below in Figure 3-A. The red points (1-6) represent the sensitive residential receptor locations where air quality emissions are calculated by AERMOD. Nearby sensitive receptors represented in the modeling include River Village Plaza commercial center (red point 1), Bonsall Elementary School and Community Center (red point 2), and single-family residences (red points 3 through 6). For purposes of analysis an unmitigated and mitigated model was created.

Figure 3-A: Construction Health Risk Model Setup



Source: (Google Earth Pro, 2019)

3.2 Construction Assumptions

The Project construction dates were estimated based on a construction kickoff in 2020 with construction completed in 2021. CalEEMod Version 2016.3.2 was utilized for all construction calculations and has been manually updated to reflect SDAPCD Rule 67 paint Volatile Organic Compound (VOC) limits. Table 3.1 shows the expected timeframes for the construction processes for all the Proposed Project infrastructure, facilities, improvements and structures at the site, as well as the expected number of pieces of equipment have been verified by the applicants Project Engineer.

Table 3.1: Expected Construction Equipment

Equipment Identification	Proposed Start	Proposed Complete	Quantity
Site Preparation	04/01/2020	04/07/2020	
Rubber Tired Dozers			3
Tractors/Loaders/Backhoes			4
Grading	04/08/2020	04/17/2020	
Excavators			1
Graders			1
Rubber Tired Dozers			1
Tractors/Loaders/Backhoes			3
Building Construction	04/18/2020	03/05/2021	
Cranes			1
Forklifts			3
Generator Sets			1
Tractors/Loaders/Backhoes			3
Welders			1
Paving	03/06/2021	03/31/2021	
Pavers			1
Paving Equipment			2
Rollers			2
Architectural Coating	04/01/2021	04/26/2021	
Air Compressors			1
This equipment and durations were selected based on Project applicant inputs.			

3.3 Operational Emissions

Once construction is completed the Proposed Project would generate emissions from daily operations which would include sources such as area, energy, waste and water uses, which are also calculated within CalEEMod. Area Sources include consumer products, landscaping and architectural coatings as part of regular maintenance. It is assumed that an average of 10 percent of the structural surface area will be re-painted each year. Energy sources would

be from uses such as onsite natural gas use and electricity which are based on default settings within CalEEMod.

Finally, the Project would also generate emissions through the use of vehicles for transportation. The Project was estimated to generate 238 ADT as identified within the Project traffic study (Darnell and Associates, 2019). These daily trips were utilized within the CalEEMod analysis using a rural setting which assumes an average trip length of 16.8 miles for construction vehicles and operational commute trips. The operational model is also shown in ***Attachment A*** at the end of this report.

3.4 Micro Scale Operational Emissions

Air pollutant emissions related to Project traffic have the potential to create new, or worsen existing localized air quality violations with respect to CO. These increased carbon monoxide "Hot Spots" are determined through the utilization of the ITS Transportation Project-Level Carbon Monoxide Protocol (University of California, Davis for California Department of Transportation, 1997).

In the event the Project traffic adds vehicular trips to either an intersection that operates at Level of Service (LOS) E or F or any intersection where the Project trips re-classify the intersection level of service from an acceptable LOS to LOS E or F and when peak-hour trips exceed 3,000 the Project must quantify CO levels (County of San Diego, 2007).

Based on the Project traffic study the Project will add only 238 ADT which would not warrant a LOS study. Since the Proposed Project wouldn't add a significant amount of traffic the Project would not require any micro-scale CO emission analysis in this report.

3.5 Odor Impacts (Onsite)

Potential onsite odor generators would include short-term construction odors from activities such as paving and painting, as well as exhaust from construction equipment Odors created during short term construction activities such as the laying of asphalt are from the bitumen and solvents used within hot asphalt, and architectural coatings. Due to the high dispersive nature of exhaust emissions, the concentration of emissions would be reduced with distance between the project site and the sensitive receptors adjacent to the project site. Operations from the Project would be typical of an assisted living facility and would not be associated with long term odors. Because construction odors would be temporary and the Project is not associated with long-term odors, a less than significant odor impact is expected.

4.0 FINDINGS

4.1 Construction Findings

Emissions from construction activities and equipment use, identified in Section 3.2, are presented in pounds per day and are shown in Table 4.1 below. Based on these numbers, the Project would not exceed SDAPCD Rule 20.2 standards and would not require mitigation to comply. Also, it should be noted that the following PDFs were included:

- The Project will utilize architectural coatings compliant with SDAPCD Rule 67 (SDAPCD, 2015).

Table 4.1: Expected Construction Emissions Summary – Pounds per Day (lb/day)

Year	ROG	NO_x	CO	SO_2	PM_{10} (Dust)	PM_{10} (Exhaust)	PM_{10} (Total)	$PM_{2.5}$ (Dust)	$PM_{2.5}$ (Exhaust)	$PM_{2.5}$ (Total)
2020	4.17	42.48	22.26	0.04	18.30	2.20	20.50	9.99	2.02	12.01
2021	52.00	18.73	19.39	0.04	0.90	0.97	1.86	0.24	0.91	1.15
Significance Threshold (lb/day)	75	250	550	250	-	-	100	-	-	55
SDAPCD Impact?	**No**	**No**	**No**	**No**	-	-	**No**	-	-	**No**

4.2 Health Risk

The nearest sensitive receptors are residential and are adjacent to the Project site. Also, the Bonsall Elementary School is located over 2,000 feet away from the site. Based upon the annual AQ modeling outputs, worst-case PM_{10} generated from onsite construction exhaust would cumulatively produce 0.1403 tons over the construction duration 390-calendar days or an average of 0.00377 grams/second. The average emission rate over the grading area is 2.03×10^{-7} g/m^2/s, which was calculated as follows:

$$\frac{0.00377 \frac{grams}{second}}{4.6\ acres * 4{,}046 \frac{meters^2}{acre}} = 2.03 * 10^{-7}\ \frac{\frac{grams}{meters^2}}{second}$$

Utilizing the AERMOD dispersion model, we find that the peak maximum annual concentration is 2.155 µg/m^3 during the worst-case construction period. Utilizing the risk equation identified above in Section 3.1, the inhalation cancer risk for the worst-case residential receptor is greater than the one in one million threshold without T-BACT applied.

It was found that these impacts can be reduced to less than significant through the utilization of Tier 4 equipment with Diesel Particulate Filters (DPF). This equipment would cumulatively produce a total of 0.00079 tons of PM_{10} over the two year construction duration above which equates to 0.000021 grams/second. Based on this the mitigated average emission rate over the grading area is $1.14x10^{-9}$ $g/m^2/s$. Utilizing the AERMOD dispersion model, we find that the annual concentration is 0.012 $\mu g/m^3$ during construction. Given this, the inhalation cancer risk for the closest residential receptor was found to be 2.28 per one million exposed which would be considered a less than significant impact under the 10 in one million exposed threshold with T-BACT applied. Additionally, as noted earlier in this report, detailed calculations for both the unmitigated and mitigated scenarios are shown in ***Attachments B and -C*** of this report.

Finally, there are known chronic health risks associated with diesel exhaust which are considered non-cancer risks. These risks are calculated based on methods identified in Section 3.1 of this report. From this we find that the annual concentration of 0.012 µg/m3 divided by the REL of 5 $\mu g/m^3$ yields a Health Hazard Index of 0.0024, which is less than one. Therefore, no chronic health risks are expected and all health risks are considered less than significant.

It should be noted that the mitigation measure to utilize Tier 4 or better equipment with DPF would further reduce Air Quality emissions identified in Section 4.1 above. Since unmitigated emissions do not exceed Rule 20.2, by default mitigated emissions would also be considered less than significant. Mitigated construction emissions are shown in Table 4.2 below:

Table 4.2: Mitigated Construction Emissions (lb/day) Summary (Tier 4 with DPF)

Year	ROG	NO_x	CO	SO_2	PM_{10} (Dust)	PM_{10} (Exhaust)	PM_{10} (Total)	$PM_{2.5}$ (Dust)	$PM_{2.5}$ (Exhaust)	$PM_{2.5}$ (Total)
2020	0.697	3.660	21.620	0.040	18.296	0.017	18.307	9.992	0.017	10.002
2021	51.813	3.528	20.272	0.038	0.898	0.014	0.911	0.240	0.013	0.253
Significance Threshold (lb/day)	75	250	550	250	-	-	100	-	-	55
SDAPCD Impact?	**No**	**No**	**No**	**No**	-	-	**No**	-	-	**No**

4.3 Operational Findings

Project buildout and full operations are expected in 2022. Project trip generation was provided in the traffic study by Darnell and Associates (2019) and included in CalEEMod 2016.3.2. Additionally, the model was run for the winter and summer scenarios to determine operational impacts for the buildout year of full operations. The expected daily pollutant generation was

calculated in CalEEMod utilizing the methodologies identified in Section 3 of this report and are shown for both summer and winter scenarios in Tables 4.3 and 4.4. Also, it should be noted that the following PDFs were included:

- Install high-efficiency LED street and area lighting to achieve reduction in overall lighting energy.
- In accordance with AB 939, and to be consistent with AB 341's statewide 75 percent diversion policy, the Project will seek to also achieve a 75 percent diversion goal by providing areas for storage and collection of recyclables and provide literature promoting recycling to achieve additional waste diversion.
- The Project applicant will be required to comply with County's Water Conservation in Landscaping Ordinance and demonstrates a 40 percent reduction in outdoor use and will submit a Landscape Document Package to show such compliance.
- Install low flow indoor water fixtures in all residential units to achieve at lease a 20 percent reduction in indoor water use.

Table 4.3: Expected Summer Daily Pollutant Generation

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Area	2.045	0.076	6.612	0.000	0.037	0.037
Energy	0.018	0.150	0.064	0.001	0.012	0.012
Mobile	0.444	1.898	5.795	0.021	1.894	0.518
Total (Unmitigated)	**2.506**	**2.124**	**12.471**	**0.023**	**1.943**	**0.566**
SDAPCD Thresholds	75	250	550	250	100	55
Significant?	**No**	**No**	**No**	**No**	**No**	**No**
The final numbers are all rounded within Excel and are reported as rounded numbers.						

Table 4.4: Expected Winter Daily Pollutant Generation

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Area	2.045	0.076	6.612	0.000	0.037	0.037
Energy	0.018	0.150	0.064	0.001	0.012	0.012
Mobile	0.431	1.960	5.599	0.020	1.895	0.518
Total (Unmitigated)	**2.493**	**2.186**	**12.275**	**0.022**	**1.943**	**0.566**
SDAPCD Thresholds	75	250	550	250	100	55
Significant?	**No**	**No**	**No**	**No**	**No**	**No**
Daily emissions are based on CalEEMod default average daily miles traveled under a rural land use scenario and PDFs identified as being included in modeling in Section 1.4 of this report. The final numbers are all rounded within Excel and are reported as rounded numbers.						

Based upon these calculations, the Proposed Project would not exceed SDAPCD operational AQ significance thresholds and would not be required to implement specific mitigation measures to comply with CEQA and SDAPCD thresholds. It should be noted however that PDFs identified in Section 1.4 of this report will be conditions of approval by the County.

4.4 Cumulative Impact Findings

The Project would not generate significant construction or operational impacts as demonstrated within this analysis. Furthermore, the Project would not cause any significant traffic impacts or add a significant number of vehicular trips to the offsite roadway network as was identified in the project traffic study.

An AERMOD analysis has been prepared with six sensitive receptors adjacent and near the Project site, including the Bonsall Elementary School over 2,000 feet away. It was found that potentially significant cancer health risks could be tied to construction and therefore would require mitigation to comply. Using Tier 4 construction equipment with DPF would reduce cancer risks to less than significant at all receptors surrounding the Project site.

Based on conversations with both the County and the applicant the nearest cumulative construction project would be Ocean Breeze Ranch to the east though is over one mile away. As a condition of the project, prior to receiving grading permits, the proposed project applicant would coordinate with County staff to ensure construction phases for which significant emissions are generated (i.e., grading) would not occur simultaneous to similar construction phases for the Ocean Breeze Ranch project, to the extent feasible. Given this, the proposed project is expected to generate less than significant cumulative construction impacts.

Finally, the existing County of San Diego General Plan land use designation for the Project is C30 (Office Professional) and seeks to rezone the site to C-46 (Medical Center). The Proposed Project would generate 238 ADT. The existing zoning would allow for a general office building of at least 50,000 SF which would have a Floor Area Ratio (FAR) of 0.25. Based on CalEEMod Trip generation for a general office building generates on average 11.03 trips per 1,000 SF or at least 551.5 ADT. Since the Proposed Project generates approximately 43 percent of the trips as compared to the potential General Plan buildout assumption, the Project would generate fewer emissions than would otherwise have been accounted for within the General Plan. It should be noted that vehicle trips are the primary contributor to emissions during operations of projects, thus, it can be concluded that a project that generates fewer trips would also generate fewer Air Quality emissions in total. Given this, the Proposed Project is anticipated to generate fewer emissions during operations than what is currently allowed on site. Thus, the project would be consistent with the growth assumptions in the General Plan, and would not conflict with the County's ability to comply with the RAQS/SIP.

4.5 Conclusion of Findings

Based upon the analysis of construction and operation activities for the Proposed Project would generate less than significant direct operational and direct construction impacts related to fugitive dust.

It was found that significant cancer health risks could be tied to construction and therefore would require mitigation to comply. Using Tier 4 construction equipment with DPF attached would reduce cancer risks to less than significant at all receptors surrounding the Project site.

The existing County of San Diego General Plan land use designation for the Project is C30 (Office Professional) and seeks to rezone the site to C-46 (Medical Center). The Proposed Project would generate 238 ADT. The existing zoning would allow for a general office building of at least 50,000 SF which would have a Floor Area Ratio (FAR) of 0.25 and would generate at least 551.5 ADT which is identified in CalEEMod default settings. Since the Proposed Project generates approximately 43 percent of the total trips that would be generated based on General Plan buildout assumption. Given this, the proposed project is anticipated to generate fewer mobile emissions during operations than would be assumed for the project area under the General Plan. Thus would not conflict with the County's ability to comply with the RAQS/SIP.

Project design features (PDFs) have been included in this Project. The applicant has agreed to implement all PDFs and will be included in the Project's Conditions of Approval. The following PDFs are included.

- The Project will utilize architectural coatings compliant with SDAPCD Rule 67 (SDAPCD, 2015).
- Install high-efficiency LED street and area lighting to achieve reduction in overall lighting energy.
- In accordance with AB 939, and to be consistent with AB 341's statewide 75 percent diversion policy, the Project will seek to also achieve a 75 percent diversion goal by providing areas for storage and collection of recyclables and provide literature promoting recycling to achieve additional waste diversion.
- The Project applicant will be required to comply with County's Water Conservation in Landscaping Ordinance and demonstrates a 40 percent reduction in outdoor use, and will submit a Landscape Document Package to show such compliance.
- Install low flow indoor water fixtures in all residential units to achieve at lease a 20 percent reduction in indoor water use.

5.0 REFERENCES

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6.0 CERTIFICATIONS

The contents of this report represent an accurate depiction of the air quality environment and impacts within and surrounding the Proposed development. This report was prepared utilizing the latest emission rates and reduction methodologies. This report was prepared by Jeremy Louden; a County approved CEQA Consultant for Air Quality.

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Date April 8, 2020

ATTACHMENT A

CalEEMod

ATTACHMENT B

AERMOD Unmitigated

ATTACHMENT C

AERMOD Mitigated

ATTACHMENT D

Health Risk Calculations