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**Air Quality  
Report**

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# ***MELBA ROAD RESIDENTIAL SUBDIVISION PROJECT***

## **AIR QUALITY STUDY**

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**July 2021**

# MELBA ROAD RESIDENTIAL SUBDIVISION PROJECT ENCINITAS, CALIFORNIA

## AIR QUALITY STUDY

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# MELBA ROAD RESIDENTIAL SUBDIVISION PROJECT ENCINITAS, CALIFORNIA

## AIR QUALITY STUDY

This report is an analysis of the potential air quality impacts associated with the proposed Melba Road Residential Subdivision Project in the City of Encinitas, California. This report has been prepared by Birdseye Planning Group (BPG) under contract to BRG Consulting, Inc., to support preparation of the environmental documentation pursuant to the California Environmental Quality Act (CEQA). This study analyzes the potential for temporary impacts associated with construction activity and long-term impacts associated with operation of the proposed project.

### PROJECT DESCRIPTION

The Project site is located at 1220-1240 Melba Road and 1190 Island View Lane in the Old Encinitas community on San Diego County (Assessor Parcel Numbers [APN] 259-18-003, -009, -010, -016, -102, -103, and -104. The City of Encinitas is surrounded by the cities of Carlsbad to the north and Solana Beach to the south, the unincorporated community of Olivenhain to the east, and the Pacific Ocean to the west. The property is roughly t-shaped, with its southern border along Melba Road. The 6.67-acre site is located north of Melba Road, south of Oak Crest Middle School, east of Balour Drive, and west of Crest Drive.

The Project proposes to subdivide the approximately 6.67-acre site to create thirty-one (31) new single-family lots with twenty-seven (28) market-rate units and three (3) very-low affordable dwelling units (DU). The Project proposes to utilize the California State Density Bonus law to request concessions to the development standards. The 31 units will provide a mix of two-story and one-story structures. The lots will range in size from 4,144 square feet (SF) to 34,260.

Melba Road is currently a divided two-lane street that provides access to the Project area from the south. The proposed Project would construct a new 29-foot width private road from Melba Road that would extend north and end with two cul-de-sacs. Pedestrian access will be provided along the new private road.

All existing structures which comprise approximately 16,500 square feet, would be demolished and removed. Of the total 6.67-acre site, 6.271 acres would be graded/disturbed. The project would require approximately 15,000 cubic yards (CY) of cut and 10,000 CY of fill (including 5,000 CY of export) to implement the grading plans and to create the development pads and improvement areas, install all underground utilities and stormwater basins.

The proposed Project would create three separate major drainage basins. All runoff generated onsite will be conveyed to onsite biofiltration facilities, with three (3) large biofiltration basins located throughout the property. Each drainage area will be captured and conveyed to a large biofiltration basin facility located at the low end of the drainage basin, near the property

boundary, by means of curb and gutter flow in the private road as well as onsite private storm drain piping. The biofiltration basins will capture, treat, and detain storm water. Runoff will be filtered through the basin section and enter a subdrain system, which will convey treated water to an outlet structure and outfall pipe that will direct runoff offsite.

Wastewater would be conveyed off-site from new PVC sewer mains from the private road to existing sewer lines located along Melba Road to the Encina Water Pollution Control Facility (EWPCF). Two new 60" sewer manhole will be constructed along the new private roadway. The EWPCF is located at 6200 Avenida Encinas approximately 5.90 miles northwest of the site and is operated by the Cardiff Sanitation District.

The Project site is located in the City of Encinitas in the San Dieguito Water District (SDWD) service area. The Project would connect to existing SDWD distribution lines with 8" PVC sewer mains which will run under the new private road and connect to the existing 8" VCP sewer main under Melba Road. A new 8" PVC water main will also run under the new private road and connect to the exiting 6" ACP water main under Melba Road.

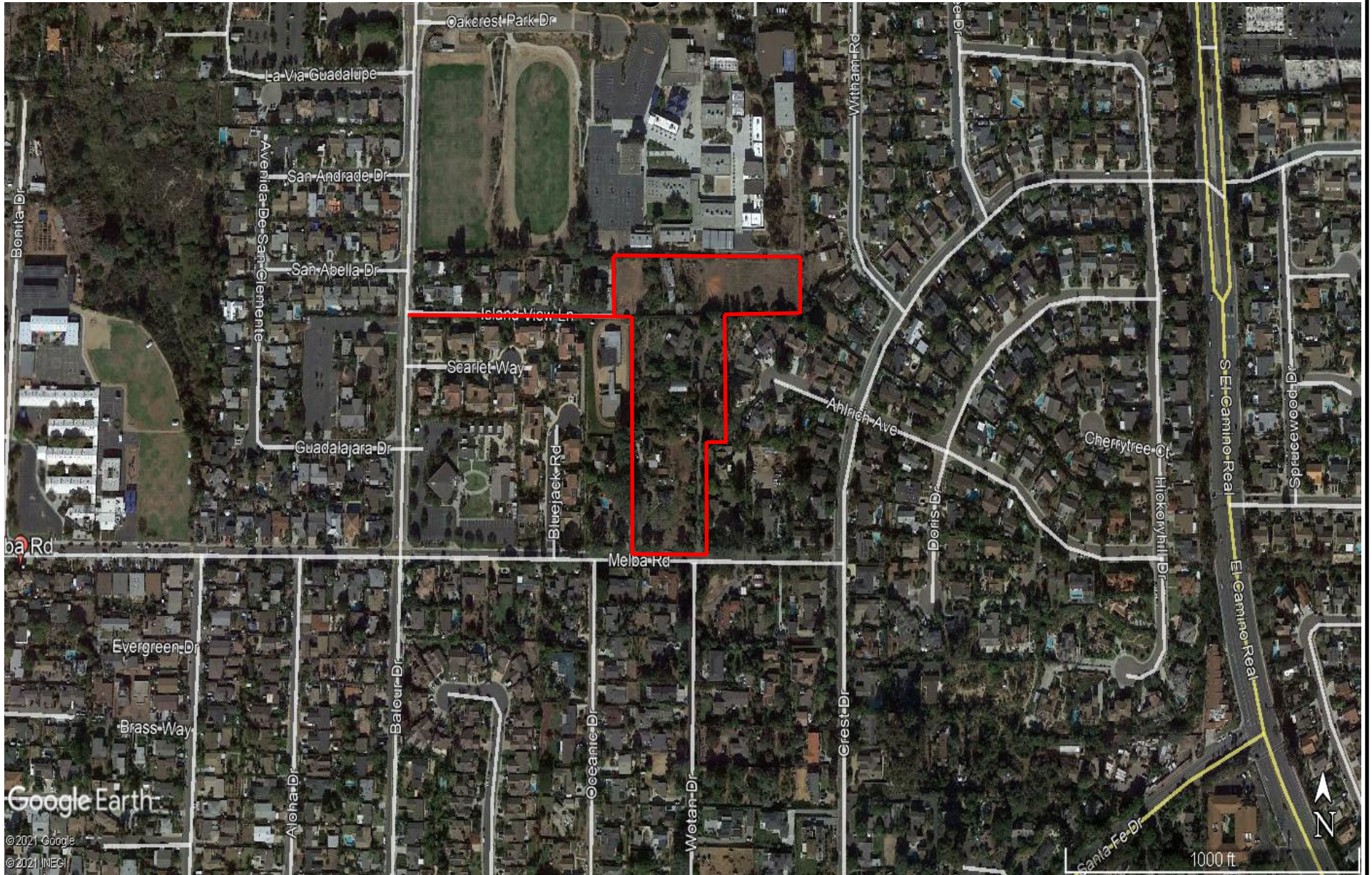
All construction activity would occur within the City's allowable construction hours (EMC Section 9.32.410), between 7:00 AM and 7:00 PM, Monday through Saturday. The number of construction staff working on the Project site at a given time would vary, depending on the phase of construction. Construction is anticipated to begin in mid-2022 and require approximately one year to complete. The project site is shown in Figure 1; the proposed site plan is shown in Figure 2.

## SETTING

### **Air Pollution Regulation**

The federal and state governments have been empowered by the federal and state Clean Air Acts to regulate emissions of airborne pollutants and have established ambient air quality standards for the protection of public health. The EPA is the federal agency designated to administer air quality regulation, while the California Air Resources Board (ARB) is the state equivalent in California. Federal and state standards have been established for six criteria pollutants, including ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulates less than 10 and 2.5 microns in diameter (PM<sub>10</sub> and PM<sub>2.5</sub>), and lead (Pb). California has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Table 1 lists the current federal and state standards for each of these pollutants. Standards have been set at levels intended to be protective of public health. California standards are generally more restrictive than federal standards for each of these pollutants except lead and the eight-hour average for CO. Air pollutants are regulated at the national, State, and air basin level; each agency has a different degree of control. The United States Environmental Protection Agency (USEPA) regulates at the national level; the California Air Resources Control Board (CARB) regulates at the State level; and the San Diego Air Pollution Control District (SDAPCD) regulates air quality in San Diego County.





**FIGURE 1—Vicinity Map**



- Project Site





Figure 2— Site Plan



**Table 1  
 State and Federal Ambient Air Quality Standards**

POLLUTANT	AVERAGE TIME	CALIFORNIA STANDARDS <sup>1</sup>		NATIONAL STANDARDS <sup>2</sup>		
		Concentration <sup>3</sup>	Method <sup>4</sup>	Primary <sup>3,5</sup>	Secondary <sup>3,6</sup>	Method <sup>7</sup>
Ozone <sup>8</sup> (O <sub>3</sub> )	1 hour	0.09 ppm (180 µg/m <sup>3</sup> )	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 hours	0.070 ppm (137 µg/m <sup>3</sup> )		0.070 ppm (137 µg/m <sup>3</sup> )		
Carbon Monoxide (CO)	8 hours	9.0 ppm (10 mg/m <sup>3</sup> )	Non-Dispersive Infrared Spectroscopy (NDIR)	9 ppm (10 mg/m <sup>3</sup> )	--	Non-Dispersive Infrared Spectroscopy (NDIR)
	1 hour	20 ppm (23 mg/m <sup>3</sup> )		35 ppm (40 mg/m <sup>3</sup> )		
Nitrogen Dioxide (NO <sub>2</sub> ) <sup>10</sup>	Annual Average	0.030 ppm (57 µg/m <sup>3</sup> )	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m <sup>3</sup> )	Same as Primary Standard	Gas Phase Chemiluminescence
	1 hour	0.18 ppm (339 µg/m <sup>3</sup> )		100 ppb (188 µg/m <sup>3</sup> )		
Sulfur Dioxide (SO <sub>2</sub> ) <sup>11</sup>	Annual Average	--	Ultraviolet Fluorescence	0.03 ppm (80 µg/m <sup>3</sup> )	--	Pararosaniline
	24 hours	0.04 ppm (105 µg/m <sup>3</sup> )		0.14 ppm (365 µg/m <sup>3</sup> )	--	
	3 hours	--		--	0.5 ppm (1300 µg/m <sup>3</sup> )	
	1 hour	0.25 ppm (655 µg/m <sup>3</sup> )		75 ppb (196 µg/m <sup>3</sup> )	--	
Respirable Particulate Matter (PM <sub>10</sub> ) <sup>9</sup>	24 hours	50 µg/m <sup>3</sup>	Gravimetric or Beta Attenuation	150 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m <sup>3</sup>		--	--	
Fine Particulate Matter (PM <sub>2.5</sub> ) <sup>9</sup>	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	Gravimetric or Beta Attenuation	12 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>	Inertial Separation and Gravimetric Analysis
	24 hours	--		35 µg/m <sup>3</sup>	Same as Primary Standard	
Sulfates	24 hours	25 µg/m <sup>3</sup>	Ion Chromatography	--	--	--
Lead <sup>12, 13</sup> (Pb)	30-day Average	1.5 µg/m <sup>3</sup>	Atomic Absorption	--	--	High Volume Sampler and Atomic Absorption
	Calendar Quarter	--		1.5 µg/m <sup>3</sup>	--	

POLLUTANT	AVERAGE TIME	CALIFORNIA STANDARDS <sup>1</sup>		NATIONAL STANDARDS <sup>2</sup>		
		Concentration <sup>3</sup>	Method <sup>4</sup>	Primary <sup>3,5</sup>	Secondary <sup>3,6</sup>	Method <sup>7</sup>
	3-month Rolling Average	--		0.15 µg/m <sup>3</sup>	Same as Primary Standard	
Hydrogen Sulfide (H <sub>2</sub> S)	1 hour	0.03 ppm (42 µg/m <sup>3</sup> )	Ultraviolet Fluorescence	--	--	--
Vinyl Chloride <sup>12</sup>	24 hours	0.010 ppm (26 µg/m <sup>3</sup> )	Gas Chromatography	--	--	--

Notes:

ppm = parts per million

µg/m<sup>3</sup> = micrograms per cubic meter

mg/m<sup>3</sup> = milligrams per cubic meter

Source: California Air Resources Board 2017

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM<sub>10</sub>, PM<sub>2.5</sub>, 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 PM<sub>10</sub>, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m<sup>3</sup> is equal to or less than one. For PM<sub>2.5</sub>, 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 measurement method which can be shown to the satisfaction of the CARB 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 PM<sub>2.5</sub> primary standard was lowered from 15 µg/ m<sup>3</sup> to 12.0 µg/ m<sup>3</sup>. The existing national 24-hour PM<sub>2.5</sub> standards (primary and secondary) were retained at 35 µg/ m<sup>3</sup>, as was the annual secondary standard of 15 µg/ m<sup>3</sup>. The existing 24-hour PM<sub>10</sub> standards (primary and secondary) of 150 µg/ m<sup>3</sup> 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 SO<sub>2</sub> 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 SO<sub>2</sub> 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.  
  
Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
12. The CARB 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/ m<sup>3</sup> 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 CARB 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.

The federal and state governments have been empowered by the federal and state Clean Air Acts to regulate the emission of airborne pollutants and have established ambient air quality standards for the protection of public health. The USEPA is the federal agency designated to administer national air quality regulations, while CARB is the state equivalent in the California Environmental Protection Agency. Local control over air quality management is provided by CARB through multi-county and county-level Air Pollution Control Districts (APCDs) (also referred to as Air Quality Management Districts). CARB establishes statewide air quality standards and is responsible for the control of mobile emission sources, while the local APCDs are responsible for enforcing standards and regulating stationary sources. CARB has established 15 air basins statewide. The project site is located in the San Diego Air Basin (SDAB), which is under the jurisdiction of the SDAPCD.

### **California Air Resources Board**

CARB, which became part of the California EPA (CalEPA) in 1991, is responsible for ensuring implementation of the California Clean Air Act (CCAA), meeting state requirements of the federal Clean Air Act and establishing California Ambient Air Quality Standards (CAAQSs). It is also responsible for setting emission standards for vehicles sold in California and for other emission sources such as consumer products and certain off-road equipment. CARB also established passenger vehicle fuel specifications and oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county level. The CCAA is administered by CARB at the state level and by the Air Quality Management Districts at the regional level. Both state and federal

standards are summarized in Table 1. The federal "primary" standards have been established to protect the public health. The federal "secondary" standards are intended to protect the nation's welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the general welfare.

### **San Diego Air Pollution Control District**

The SDAPCD was created to protect the public from the harmful effects of air pollution, achieve and maintain air quality standards, foster community involvement and develop and implement cost-effective programs that meet state and federal mandates while considering environmental and economic impacts.

Specifically, the SDAPCD is responsible for monitoring air quality and planning, implementing, and enforcing programs designed to attain and maintain state and federal ambient air quality standards in the district. Programs developed include air quality rules and regulations that regulate stationary source emissions, including area sources, point sources, and certain mobile source emissions. The SDAPCD is also responsible for establishing permitting requirements for stationary sources and ensuring that new, modified or relocated stationary sources do not create net emissions increases; and thus, are consistent with the region's air quality goals. The SDAPCD provides significance thresholds in Regulation II, Rule 20.2, Table 20-2-1. "AQIA Trigger Levels." These trigger levels were established for stationary sources of air pollution and are commonly used for environmental evaluations. The SDAPCD enforces air quality rules and regulations through a variety of means, including inspections, educational or training programs, or fines, when necessary.

### **State Implementation Plan/Air Quality Management Plan/Regional Air Quality Strategy**

The federal Clean Air Act Amendments (CAAA) mandate that states submit and implement a State Implementation Plan (SIP) for areas not meeting air quality standards. SIPs are comprehensive plans that describe how an area will attain national and state ambient air quality standards. SIPs are a compilation of new and previously submitted plans, programs (i.e., monitoring, modeling and permitting programs), district rules, state regulations and federal controls and include pollution control measures that demonstrate how the standards will be met through those measures.

State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB forwards SIP revisions to the USEPA for approval and publication in the Federal Register. Thus, the Regional Air Quality Strategy (RAQS) and Air Quality Management Plan (AQMP) prepared by SDAPCD and referenced herein become part of the SIP as the material relates to efforts ongoing in San Diego to achieve the national and state ambient air quality standards. The most recent SIP element for San Diego County is the San Diego Ozone SIP which CARB adopted on November 19, 2020. The document identifies control measures and associated emission reductions necessary to achieve aggregate emission reductions in San Diego County outlined in the 2020 Plan of 4 tons per day of NO<sub>x</sub> reductions in San Diego County by 2032 in order to attain the 70 ppb 8-hour ozone standard.



The San Diego RAQS was developed pursuant to California Clean Air Act (CCAA) requirements. The RAQS was initially adopted in 1991 and was updated in 1995, 1998, 2001, 2004, 2009 and 2016. The RAQS can be found at the following: <http://www.sdapcd.org/content/dam/sdc/apcd/PDF/Air%20Quality%20Planning/2016%20RAQS.pdf>. The RAQS identifies feasible emission control measures to provide progress in San Diego County toward attaining the State ozone standard. The pollutants addressed in the RAQS are volatile organic compounds (VOC) and oxides of nitrogen (NOx), precursors to the photochemical formation of ozone (the primary component of smog). The RAQS was initially adopted by the San Diego County Air Pollution Control Board on June 30, 1992, and amended on March 2, 1993, in response to ARB comments. At present, no attainment plan for particulate matter less than 10 microns in diameter (PM<sub>10</sub>) or particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>) is required by the state regulations; however, SDAPCD has adopted measures to reduce particulate matter in San Diego County. These measures range from regulation against open burning to incentive programs that introduce cleaner technology. These measures can be found in a report titled "*Measures to Reduce Particulate Matter in San Diego County*" December 2005 and can be found at: <https://www.sdapcd.org/content/dam/sdc/apcd/PDF/Air%20Quality%20Planning/PM-Measures.pdf>.

The RAQS relies on information from CARB and San Diego Association of Governments (SANDAG), including mobile and area source emissions, as well as information regarding projected growth in the County, to estimate future emissions and then determine strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends as well as land use plans developed by the cities and the County as part of the development of the individual General Plans. As such, projects that propose development consistent with the growth anticipated by the general plans would be consistent with the RAQS. If a project proposes development which is less dense than anticipated within the General Plan, the project would likewise be consistent with the RAQS. If a project proposes development that is greater than that anticipated in the General Plan and SANDAG's growth projections, the project might conflict with the RAQS and SIP; and thus, have a potentially significant impact on air quality.

Under state law, the SDAPCD is required to prepare an AQMP for pollutants for which the SDAB is designated non-attainment. Each iteration of the SDAPCD's AQMP is an update of the previous plan and has a 20-year horizon. Currently the SDAPCD has implemented a 2012 8-hour National Ozone Implementation/Maintenance Plan, a 2007 8-hour Ozone Plan, and a 2004 Carbon Monoxide Plan. The SDAPCD adopted the 2008 8-hour Ozone Attainment Plan for San Diego County on December 16, 2016. CARB adopted the ozone plan as a revision to the California SIP on March 23, 2017. The ozone plan was submitted to the USEPA for review on April 12, 2017. Comments from the USEPA are pending. These plans are available for download on the ARB website located at the following URL: <http://www.arb.ca.gov/planning/sip/planarea/sansip.htm>.

## **Regional Climate**

The weather of San Diego County is profoundly influenced by the Pacific Ocean and its semi-permanent high-pressure systems that result in dry, warm summers and mild, occasionally wet winters. The average minimum temperature for January ranges from the mid-40s to the high-50s degrees Fahrenheit (4 to 15 degrees Celsius) across the county. July maximum temperatures average in the mid-80s to the high-90s degrees Fahrenheit (high-20s to the high-30s degrees Celsius). Most of the county's precipitation falls from November to April, with infrequent (approximately 10 percent) precipitation during the summer. The average seasonal precipitation along the coast is approximately 10 inches (254 millimeters); the amount increases with elevations as moist air is lifted over the mountains.

The interaction of ocean, land, and the Pacific High-Pressure Zone maintains clear skies for much of the year and drives the prevailing winds. Local terrain is often the dominant factor inland and winds in inland mountainous areas tend to blow upwards in the valleys during the day and down the hills and valleys at night.

In conjunction with the onshore/offshore wind patterns, there are two types of temperature inversions (reversals of the normal decrease of temperature with height), which occur within the region that affect atmospheric dispersive capability and that act to degrade local air quality. In the summer, an inversion at about 1,100 to 2,500 feet (335 to 765 meters) is formed over the entire coastal plain when the warm air mass over land is undercut by a shallow layer of cool marine air flowing onshore. The prevailing sunny days in this region further exacerbate the smog problem by inducing additional adverse photochemical reactions. During the winter, a nightly shallow inversion layer (usually at about 800 feet or 243 meters) forms between the cooled air at the ground and the warmer air above, which can trap vehicular pollutants. The days of highest Carbon Monoxide (CO) concentrations occur during the winter months. The predominant onshore/offshore wind pattern is sometimes interrupted by so-called Santa Ana conditions, when high pressure over the Nevada-Utah region overcomes the prevailing westerly wind direction. This draws strong, steady, hot, and dry winds from the east over the mountains and out to sea. Strong Santa Ana winds tend to blow pollutants out over the ocean, producing clear days. However, at the onset or breakdown of these conditions or if the Santa Ana is weak, prevailing northwesterly winds are reestablished which send polluted air from the Los Angeles basin ashore in the SDAB. "Smog transport from the South Coast Air Basin (the metropolitan areas of Los Angeles, Orange, San Bernardino, and Riverside counties) is a key factor on more than half the days San Diego exceeds clean air standards" (San Diego Air Pollution Control District, 2010).

## **Pollutants**

The SDAPCD is required to monitor air pollutant levels to ensure that air quality standards are met and, if they are not met, to develop strategies to meet the standards. Depending on whether the standards are met or exceeded, the local air basin is classified as being in "attainment" or "non-attainment." San Diego County is listed as a federal non-attainment area for ozone (eight hour) and a state non-attainment area for ozone (one hour and eight-hour standards), PM<sub>10</sub> and

PM<sub>2.5</sub>. As shown in Table 2, the SDAB is in attainment for the state and federal standards for nitrogen dioxide, carbon monoxide, sulfur dioxide and lead. Characteristics of ozone, carbon monoxide, nitrogen dioxide, and suspended particulates are described below.

**Table 2**  
**San Diego County Attainment Status**

Criteria Pollutant	Federal Designation	State Designation
Ozone (one hour)	Attainment*	Non-Attainment
Ozone (eight hour)	Non-Attainment	Non-Attainment
Carbon Monoxide	Attainment	Attainment
PM <sub>10</sub>	Unclassifiable**	Non-Attainment
PM <sub>2.5</sub>	Attainment	Non-Attainment
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 ppm was in effect from 1979 through June 1, 2005. The revoked standard is referenced here because it was used for such a long period and because this benchmark is addressed in State Implementation Plans (SIPs).

\*\* At the time of designation, if the available data does not support a designation of attainment or non-attainment, the area is designated as unclassifiable.

Source: San Diego Air Pollution Control District. June, 2016. <http://www.sandiegocounty.gov/content/sdc/apcd/en/air-quality-planning/attainment-status.html>

Ozone. Ozone is produced by a photochemical reaction (triggered by sunlight) between nitrogen oxides (NO<sub>x</sub>) and reactive organic gases (ROG)<sup>1</sup>. Nitrogen oxides are formed during the combustion of fuels, while reactive organic compounds are formed during combustion and evaporation of organic solvents. Because ozone requires sunlight to form, it mostly occurs in concentrations considered serious between the months of April and October. Ozone is a pungent, colorless, toxic gas with direct health effects on humans including respiratory and eye irritation and possible changes in lung functions. Groups most sensitive to ozone include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors.

Carbon Monoxide. Carbon monoxide (CO) is a local pollutant that is found in high concentrations only near the source. The major source of carbon monoxide, a colorless, odorless, poisonous gas, is automobile exhaust. Elevated CO concentrations; therefore, are usually only found near areas of high traffic volumes operating in congested conditions. Carbon monoxide

<sup>1</sup> Organic compound precursors of ozone are routinely described by a number of variations of three terms: hydrocarbons (HC), organic gases (OG), and organic compounds (OC). These terms are often modified by adjectives such as total, reactive, or volatile, and result in a rather confusing array of acronyms: HC, THC (total hydrocarbons), RHC (reactive hydrocarbons), TOG (total organic gases), ROG (reactive organic gases), TOC (total organic compounds), ROC (reactive organic compounds), and VOC (volatile organic compounds). While most of these differ in some significant way from a chemical perspective, from an air quality perspective two groups are important: non-photochemically reactive in the lower atmosphere, or photochemically reactive in the lower atmosphere (HC, RHC, ROG, ROC, and VOC).

health effects are related to blood hemoglobin. At high concentrations, carbon monoxide reduces the amount of oxygen in the blood, causing heart difficulties in people with chronic diseases, reduced lung capacity and impaired mental abilities.

Nitrogen Dioxide. Nitrogen dioxide (NO<sub>2</sub>) is a by-product of fuel combustion, with the primary source being motor vehicles and industrial boilers and furnaces. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts rapidly to form NO<sub>2</sub>, creating the mixture of NO and NO<sub>2</sub> commonly called NO<sub>x</sub>. Nitrogen dioxide is an acute irritant. A relationship between NO<sub>2</sub> and chronic pulmonary fibrosis may exist and an increase in bronchitis in young children at concentrations below 0.3 parts per million (ppm) may occur. Nitrogen dioxide absorbs blue light and causes a reddish-brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of PM<sub>10</sub> and acid rain.

Suspended Particulates. PM<sub>10</sub> is particulate matter measuring no more than 10 microns in diameter, while PM<sub>2.5</sub> is fine particulate matter measuring no more than 2.5 microns in diameter. Suspended particulates are mostly dust particles, nitrates and sulfates. Both PM<sub>10</sub> and PM<sub>2.5</sub> are by-products of fuel combustion and wind erosion of soil and unpaved roads, and are directly emitted into the atmosphere through these processes. Suspended particulates are also created in the atmosphere through chemical reactions. The characteristics, sources, and potential health effects associated with the small particulates (those between 2.5 and 10 microns in diameter) and fine particulates (PM<sub>2.5</sub>) can be very different. The small particulates generally come from windblown dust and dust kicked up from mobile sources. The fine particulates are generally associated with combustion processes as well as being formed in the atmosphere as a secondary pollutant through chemical reactions. Fine particulate matter is more likely to penetrate deeply into the lungs and poses a health threat to all groups, but particularly to the elderly, children, and those with respiratory problems. More than half of the small and fine particulate matter that is inhaled into the lungs remains there. These materials can damage health by interfering with the body's mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance.

Toxic Air Contaminants/Diesel Particulate Matter. Hazardous air pollutants, also known as toxic air pollutants (TACs) or air toxics, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects. Examples of toxic air pollutants include:

- benzene, which is found in gasoline;
- perchloroethylene, which is emitted from some dry-cleaning facilities; and
- methylene chloride, which is used as a solvent.

Transportation related emissions are focused on particulate matter constituents within diesel exhaust and TAC constituents that comprise a portion of total organic gas (TOG) emissions from both diesel and gasoline fueled vehicles. Diesel engine emissions are comprised of exhaust particulate matter and TOGs which are collectively defined for the purpose of an Health Risk Assessment (HRA), as Diesel Particulate Matter (DPM). DPM and TOG emissions from both diesel and gasoline fueled vehicles is typically composed of carbon particles and carcinogenic



substances including polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene. Diesel exhaust also contains gaseous pollutants, including volatile organic compounds and oxides of nitrogen (NO<sub>x</sub>).

### Sensitive Receptors

A sensitive receptor is a person in the population who is particularly susceptible to health effects due to exposure to an air contaminant than is the population at large. Sensitive receptors (and the facilities that house them) in proximity to localized CO sources, toxic air contaminants or odors are of particular concern. Examples include:

- Single- and Multifamily residences
- Long-Term Health Care Facilities
- Rehabilitation Centers
- Convalescent Centers
- Retirement Homes
- Residences – such as medical patients in homes
- Schools, Playgrounds and Child Care Centers

Ambient air quality standards have been established to represent the levels of air quality considered sufficient, with an adequate margin of safety, to protect public health and welfare. They are designed to protect that segment of the public most susceptible to respiratory distress, such as children; the elderly; persons engaged in strenuous work or exercise and people with cardiovascular and chronic respiratory diseases. The nearest receptors are single-family residences located adjacent to and west, east and south of the site and Oak Crest Middle School located adjacent to and north of the site.

### Monitored Air Quality

The SDAPCD monitors air quality conditions at locations throughout the SDAB. For this analysis, data from the Kearney Villa Road monitoring station southeast of the site were used to characterize existing ozone, PM<sub>10</sub> and PM<sub>2.5</sub> conditions in the vicinity of the project site. This is the closest monitoring location generally proximal to the site with a current and comprehensive data set. A summary of the data recorded at the Kearney Villa Road monitoring station from 2017 through 2019 is presented in Table 3.

**Table 3**  
**Ambient Air Quality Data**

Pollutant	2017	2018	2019
Ozone, ppm - Worst 8-Hour Average	0.083	0.077	0.075
Number of days of Federal exceedances (>0.070 ppm) <sup>1</sup>	6	5	1
Particulate Matter <10 microns, µg/m <sup>3</sup> Worst 24 Hours*	46	38	No data
Number of samples of State exceedances (>50 µg/m <sup>3</sup> )	0	0	No data

**Table 3**  
**Ambient Air Quality Data**

Pollutant	2017	2018	2019
Number of samples of Federal exceedances (>150 µg/m <sup>3</sup> )	0	0	No data
Particulate Matter <2.5 microns, µg/m <sup>3</sup> Worst 24 Hours	27.5	32.2	16.2
Number of samples of Federal exceedances (>150 µg/m <sup>3</sup> )	0	0	0

<sup>1</sup> – Federal O3 standard reduced from 75 ppm to 70 ppm in October 2015

\*Insufficient data to determine number of exceedances

Data from the Kearney Villa Road Station located at 6125A Kearney Villa Road, San Diego, CA.

Source: California Air Resources Board, 2017, 2018, 2019 Air Quality Data Summaries available at:

<https://www.arb.ca.gov/adam/topfour/topfour2.php>

Accessed July 8, 2021.

## AIR QUALITY IMPACT ANALYSIS

### Methodology and Significance Thresholds

Air quality modeling was performed in general accordance with the methodologies outlined in the SDAPCD 2009 RAQS to identify both construction and operational emissions associated with the proposed project. All emissions were calculated using the California Emissions Estimator Model (CalEEMod) software version 2020.4.0 which incorporates current air emission data, planning methods and protocol approved by CARB.

As referenced, construction activities would include demolition of existing buildings, grading, construction of the buildings/utilities and related improvements as well as paving parking areas. Construction activities would require the use of equipment that would generate criteria air pollutant emissions. For modeling purposes, it was assumed that all construction equipment used would be diesel-powered. Construction emissions associated with development of the proposed project were quantified by estimating the types of equipment, including the number of individual pieces of equipment, that would be used on-site during each of the construction phases as well as off-site haul trips to remove demolition debris. Construction emissions are analyzed using the regional thresholds established by the SDAPCD and published under Rule 20-2.

Operational emissions include mobile source emissions, energy emissions and area source emissions. Mobile source emissions are generated by motor vehicle trips associated with operation of the project. Emissions attributable to energy use include electricity and natural gas consumption for space and water heating. Area source emissions are generated by landscape maintenance equipment, use of consumer products and painting. To determine whether a regional air quality impact would occur, the increase in emissions would be compared with the SDAPCD recommended regional thresholds for operational emissions.

Thresholds of Significance. The following thresholds are derived from the Appendix G of the CEQA Guidelines. A project would have a significant air quality impact if it would:

- a) *Conflict with or obstruct implementation of the applicable air quality plan;*
- b) *Violate any air quality standard or contribute substantially to an existing or projected air quality violation;*
- c) *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);*
- d) *Expose sensitive receptors to substantial pollutant concentrations; or*
- e) *Create objectionable odors affecting a substantial number of people. or*

A significant adverse air quality impact may occur when a project individually or cumulatively interferes with progress toward the attainment of the ozone standard by generating emissions that equal or exceed the established long-term quantitative thresholds for pollutants, or exceed a state or federal ambient air quality standard for any criteria pollutant.

As part of its air quality permitting process, the SDAPCD has established thresholds in Rule 20.2 requiring the preparation of air quality impact assessments for permitted stationary sources. The SDAPCD sets forth quantitative emission thresholds below which a stationary source would not have a significant impact on ambient air quality. Project-related air quality impacts estimated in this environmental analysis would be considered significant if any of the applicable significance thresholds presented in Table 4 are exceeded.

**Table 4**  
**Daily Emission Thresholds**

Pollutant	Daily Emission Thresholds (lbs/day)
Carbon Monoxide (CO)	550
Nitrogen Oxides (NOx)	250
Particulate Matter 10 (PM <sub>10</sub> )	100
Particulate Matter 2.5 (PM <sub>2.5</sub> )	55
Sulfur Oxides (SOx)	250
Volatile Organic Compounds/Reactive Organic Gases	137*

\*- VOC threshold based on the significance thresholds recommended by the Monterey Bay Unified Air Pollution Control District for the North Central Coast Air Basin, which has similar federal and state attainment status as the SDAB for O<sub>3</sub>.

Regional construction emissions associated with implementing the proposed project were calculated using the California Emissions Estimator Model (CalEEMod) version 2020.4.0 (2021) software. Construction emission modeling for site preparation, grading, building construction, paving, and architectural coating application is based on the overall scope of the proposed development and construction phasing. In addition to SDAPCD Rules 52 and 54 requirements, emissions modeling also accounts for the use of low-VOC paint (150 g/L for non-flat coatings) as required by SDAPCD Rule 67. Further, emissions modeling assumed the painting phase would overlap with building construction and paving phases to reduce daily VOC emissions. Construction is expected to begin mid-2022 and continue through 2023.

## Construction Emissions

Project construction would generate temporary air pollutant emissions. These impacts are associated with fugitive dust (PM<sub>10</sub> and PM<sub>2.5</sub>) from soil disturbance and exhaust emissions (NO<sub>x</sub> and CO) from heavy construction vehicles. For the purpose of estimating emissions, it was assumed that the 6.67-acre site would be disturbed daily overall construction. The number of haul trips to remove demolition debris were estimated based on cubic yards. As noted, construction would generally consist of asphalt and building material removal, site preparation, grading, construction of the building and related improvements, paving new roadways and the application of architectural coating (painting).

Demolition, site preparation and grading would involve the greatest concentration of heavy equipment use and the highest potential for fugitive dust emissions. The project would be required to comply with SDAPCD Rules 52 and 54 which identify measures to reduce fugitive dust and is required to be implemented at all construction sites located within the SDAB. Therefore, the following conditions, which are required to reduce fugitive dust in compliance with SDAPCD Rules 52 and 54, were included in CalEEMod for site preparation and grading phases of construction.

- 1. Minimization of Disturbance.** Construction contractors should minimize the area disturbed by clearing, grading, earth moving, or excavation operations to prevent excessive amounts of dust.
- 2. Soil Treatment.** Construction contractors should treat all graded and excavated material, exposed soil areas and active portions of the construction site, including unpaved on-site roadways to minimize fugitive dust. Treatment shall include, but not necessarily be limited to, periodic watering, application of environmentally safe soil stabilization materials, and/or roll compaction as appropriate. Watering shall be done as often as necessary, and at least twice daily, preferably in the late morning and after work is done for the day. Note – it was assumed watering would occur twice daily for modeling purposes.
- 3. Soil Stabilization.** Construction contractors should monitor all graded and/or excavated inactive areas of the construction site at least weekly for dust stabilization. Soil stabilization methods, such as water and roll compaction, and environmentally safe dust control materials shall be applied to portions of the construction site that are inactive for over four days. If no further grading or excavation operations are planned for the area, the area shall be seeded and watered until landscape growth is evident, or periodically treated with environmentally safe dust suppressants, to prevent excessive fugitive dust.
- 4. No Grading During High Winds.** Construction contractors should stop all clearing, grading, earth moving, and excavation operations during periods of high winds (20 miles per hour or greater, as measured continuously over a one-hour period).



5. **Street Sweeping.** Construction contractors should sweep all on-site driveways and adjacent streets and roads at least once per day, preferably at the end of the day, if visible soil material is carried over to adjacent streets and roads.

Construction is assumed to begin in mid-2022 and be completed in mid-2023. In addition to SDAPCD Rules 52 and 54 requirements, emissions modeling also accounts for the use of low-VOC paint (100 g/L for non-flat coatings) as required by SDAPCD Rule 67. Table 4 summarizes the estimated maximum daily emissions of pollutants occurring during the construction period.

As shown in Table 5, construction of the proposed project would not exceed the SDAPCD regional daily construction emission thresholds. Thus, the project construction would not conflict with the SIP, RAQS or AQMP, violate an air quality standard or contribute to an existing or projected violation, result in a cumulatively considerable increase in ozone or particulate matter emissions or expose receptors to substantial pollutant concentrations (thresholds a-d).

**Table 5  
 Estimated Maximum Daily Construction Emissions**

Construction Phase	Maximum Emissions (lbs/day)					
	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Emissions – 2022	3.3	38.1	21.3	0.05	11.2	6.2
Emissions - 2023	17.6	15.8	18.4	0.03	0.8	0.7
<i>SDAPCD Regional Thresholds</i>	<i>137</i>	<i>250</i>	<i>550</i>	<i>250</i>	<i>100</i>	<i>55</i>
<b>Threshold Exceeded 2022</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Threshold Exceeded 2023</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

*See Appendix for CalEEMod version. 2020.4.0 computer model output for site preparation and paving emissions. Summer emissions shown.*

#### Construction-Related Toxic Air Contaminant Impacts

The greatest potential for toxic air contaminant emissions would be related to diesel particulate emissions associated with heavy equipment operations during construction of the proposed project. According to South Coast Air Quality Management District (SCAQMD) methodology, health effects from carcinogenic air toxics are usually described in terms of “individual cancer risk”. The California Office of Environmental Health Hazard Assessment (OEHHA) health risk guidance states that a residential receptor should be evaluated based on a 30-year exposure period. “Individual Cancer Risk” is the likelihood that a person exposed to concentrations of toxic air contaminants over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. Given the short-term construction schedule, the proposed project would not result in a long-term (i.e., 30 or 70 year) exposure to a substantial source of toxic air contaminant emissions; and thus, would not be exposed to the related individual cancer risk. Therefore, no significant short-term toxic air contaminant impacts would occur during construction of the proposed project.

Construction-Related Odor Impacts

Potential sources of odor during construction activities include equipment exhaust and activities such as paving. The objectionable odors that may be produced during the construction process would occur periodically and end when construction is completed. No significant impact related to odors would occur during construction of the proposed project per threshold (e) referenced above.

**Operational Impacts**

Regional Pollutant Emissions

Operational emissions include emissions from electricity consumption (energy sources), vehicle trips (mobile sources), area sources, landscape equipment and evaporative emissions as the structures are repainted over the life of the project. The majority of operational emissions are associated with vehicle trips to and from the project site. As shown in Table 6, the net change in emissions would not exceed the SDAPCD thresholds for ROG, NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub> or PM<sub>2.5</sub> shown in Table 4. Therefore, the project’s regional air quality impacts (including impacts related to criteria pollutants, sensitive receptors and violations of air quality standards per threshold c-d) would be **less than significant**.

**Table 6  
 Estimated Operational Emissions**

	Estimated Emissions (lbs/day)					
	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<i>Proposed Project</i>						
Area Emissions	1.4	.02	2.5	0.01	0.01	0.01
Energy Emissions	0.01	0.1	0.07	0.01	0.01	0.01
Mobile Emissions	0.8	0.9	8.0	0.01	1.7	0.4
<b>Total</b>	<b>2.3</b>	<b>1.1</b>	<b>10.6</b>	<b>0.01</b>	<b>1.8</b>	<b>0.5</b>
<i>SCAQMD Thresholds</i>	<i>137</i>	<i>250</i>	<i>550</i>	<i>250</i>	<i>100</i>	<i>55</i>
<b>Threshold Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

*See Appendix for CalEEMod version. 2020.4.0 computer model output. Summer emissions shown.*

Objectionable Odors

The project would provide 31 new housing units. The project would not develop new uses that have the potential to generated odor. Operational emissions may be associated with periodic use of landscape equipment; however, these emissions would be short-term and not confined to one specific location. Odors would be **less than significant** per threshold (e).

## Local Carbon Monoxide Emissions

As previously discussed, carbon monoxide is a colorless, odorless, poisonous gas that may be found in high concentrations near areas of high traffic volumes. CO emissions are a function of vehicle idling time, meteorological conditions, and traffic flow. The SDAB is in attainment of state and federal CO standards. The 1110 Beardsley Street monitoring site is the closest station to the project site that provides CO data. The maximum 8-hour average CO level recorded in 2012 (the last year data were recorded) was 1.81 parts per million (ppm). Concentrations are below 9 ppm, the state and federal 8-hour standard.

Although CO is not a regional air quality concern in SDAB, elevated CO levels can occur at or near intersections that experience severe traffic congestion. A localized air quality impact is considered significant if the additional CO emissions resulting from the project create a “hot spot” where the California 1-hour standard of 20.0 ppm or the 8-hour standard of 9 ppm is exceeded. This can occur at severely congested intersections during cold winter temperatures. Screening for elevated CO levels is recommended for severely congested intersections experiencing levels of service E or F with project traffic where a significant project traffic impact may occur. The potential for CO hotspots is based on the University of California Davis CO Protocol defined in the Transportation Project-Level Carbon Monoxide Protocol Revised December 1997 UCD-ITS-RR-97. Section 4.7 of the protocol provides specific criteria for performing a screening level CO review for projects within a CO attainment area. Specifically, project-related traffic that would worsen the LOS at intersections operating at LOS E or F, would be subject to a detailed evaluation. If not, no further review is necessary.

The Traffic Impact Assessment prepared for the project (LOS Engineering, September 2021) determined that under existing conditions, the study intersections (i.e., Melba Road at Balour Drive, the project driveway and Crest Drive) operate at LOS C or better. Similarly, the intersections were determined to operate at LOS C or better with the project and under cumulative conditions. The project would have no adverse effects on the study intersections. Receptors would not be exposed to substantial pollutant concentrations (threshold d and f) related to CO hotspots. No further evaluation with respect to CO hotspots is required.

### AQMP Consistency

As noted, the RAQS relies on information from CARB and SANDAG, including projected growth in the County, mobile, area and all other source emissions to project future emissions and determine from that the strategies necessary for the reduction of stationary source emissions through regulatory controls. Projects that propose development that is consistent with the growth anticipated by the general plan is consistent with the SIP, AQMP and RAQS.

The City of Encinitas General Plan Land Use Map designates the site as R3 (Residential), and the existing zoning is R-3. These land use and zoning designations are intended to support residential uses. The R-3 zone allows a density of 3 dwelling units per net acre. The 6.67-acre site can be developed with 21 under the existing zoning. Assembly Bill (AB) 2345 allows a 50% density bonus provided that at least 15% of the total units are for “very low” income

households. The inclusion of 3 units for “very low” income households meet the 15% of total units required by AB 2345. With a 50% density bonus, the site can be developed with the proposed 31 units.

The project would not induce growth or otherwise add more units than allowed under current zoning with implementation of the affordable housing density bonus regulations. The project would be consistent with the SIP, AQMP and RAQS and significance threshold (a - air quality plans) referenced above. Impacts related to this threshold would be **less than significant**.

## REFERENCES

Association of Environmental Professionals. *California Environmental Quality Act (CEQA) Statute and Guidelines*. 2012

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South Coast Air Quality Management District (SCAQMD). *California Emissions Estimator Model User Guide Version 2020.4.0*, Prepared by BREEZE Software, A Division of Trinity Consultants. May 2021.

LOS Engineering, Inc., *Melba Road Traffic Impact Study*, February 2021.

## **Appendix A**

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CalEEMod Air Quality Emissions Model Results -  
Summer



Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**Melba Road Residential Subdivision Project**

**San Diego County, Summer**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	31.00	Dwelling Unit	6.67	55,800.00	89

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.6	<b>Precipitation Freq (Days)</b>	40
<b>Climate Zone</b>	13			<b>Operational Year</b>	2023
<b>Utility Company</b>	San Diego Gas & Electric				
<b>CO2 Intensity (lb/MWhr)</b>	539.98	<b>CH4 Intensity (lb/MWhr)</b>	0.033	<b>N2O Intensity (lb/MWhr)</b>	0.004

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use - Acreage adjusted to match site

Construction Phase - Arch. Coating phase adjusted to overlap with building phase.

Demolition -

Grading -

Architectural Coating - Revised to comply with SDAPCD Rule 67

Woodstoves - Assumes no wood stoves or use of wood fireplaces

Area Coating - Revised to 100 g/L per SDAPCD Rule 67

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Revised to 100 g/L to comply with SDAPCD Rule 67

Water Mitigation -

## Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	PhaseEndDate	9/25/2023	7/31/2023
tblConstructionPhase	PhaseStartDate	8/29/2023	5/31/2023
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberWood	10.85	0.00
tblGrading	MaterialImported	0.00	2,500.00
tblGrading	MaterialImported	0.00	2,500.00
tblLandUse	LotAcreage	10.06	6.67
tblTripsAndVMT	HaulingTripNumber	313.00	312.00
tblTripsAndVMT	HaulingTripNumber	313.00	312.00
tblWoodstoves	NumberCatalytic	1.55	0.00
tblWoodstoves	NumberNoncatalytic	1.55	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

**2.0 Emissions Summary**

Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.1 Overall Construction (Maximum Daily Emission)**

**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.3625	38.1849	21.3956	0.0590	20.3857	1.6622	22.0479	10.2966	1.5310	11.8276	0.0000	5,977.806 3	5,977.806 3	1.2998	0.3459	6,113.385 4
2023	17.6742	15.8385	18.4135	0.0315	0.1271	0.7719	0.8990	0.0342	0.7305	0.7647	0.0000	2,998.348 4	2,998.348 4	0.7170	0.0120	3,017.650 2
<b>Maximum</b>	<b>17.6742</b>	<b>38.1849</b>	<b>21.3956</b>	<b>0.0590</b>	<b>20.3857</b>	<b>1.6622</b>	<b>22.0479</b>	<b>10.2966</b>	<b>1.5310</b>	<b>11.8276</b>	<b>0.0000</b>	<b>5,977.806 3</b>	<b>5,977.806 3</b>	<b>1.2998</b>	<b>0.3459</b>	<b>6,113.385 4</b>

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.3625	38.1849	21.3956	0.0590	9.5550	1.6622	11.2172	4.7373	1.5310	6.2683	0.0000	5,977.806 3	5,977.806 3	1.2998	0.3459	6,113.385 4
2023	17.6742	15.8385	18.4135	0.0315	0.1271	0.7719	0.8990	0.0342	0.7305	0.7647	0.0000	2,998.348 4	2,998.348 4	0.7170	0.0120	3,017.650 2
<b>Maximum</b>	<b>17.6742</b>	<b>38.1849</b>	<b>21.3956</b>	<b>0.0590</b>	<b>9.5550</b>	<b>1.6622</b>	<b>11.2172</b>	<b>4.7373</b>	<b>1.5310</b>	<b>6.2683</b>	<b>0.0000</b>	<b>5,977.806 3</b>	<b>5,977.806 3</b>	<b>1.2998</b>	<b>0.3459</b>	<b>6,113.385 4</b>

## Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	52.80	0.00	47.20	53.81	0.00	44.15	0.00	0.00	0.00	0.00	0.00	0.00

Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.2 Overall Operational**

**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.4956	0.3123	2.6785	1.9400e-003		0.0370	0.0370		0.0370	0.0370	0.0000	365.6639	365.6639	0.0114	6.6200e-003	367.9203
Energy	0.0198	0.1689	0.0719	1.0800e-003		0.0137	0.0137		0.0137	0.0137		215.6408	215.6408	4.1300e-003	3.9500e-003	216.9222
Mobile	0.8887	0.9209	8.0203	0.0175	1.7776	0.0132	1.7909	0.4735	0.0123	0.4859		1,778.9129	1,778.9129	0.1186	0.0752	1,804.2708
<b>Total</b>	<b>2.4041</b>	<b>1.4021</b>	<b>10.7706</b>	<b>0.0205</b>	<b>1.7776</b>	<b>0.0639</b>	<b>1.8416</b>	<b>0.4735</b>	<b>0.0630</b>	<b>0.5366</b>	<b>0.0000</b>	<b>2,360.2176</b>	<b>2,360.2176</b>	<b>0.1340</b>	<b>0.0857</b>	<b>2,389.1133</b>

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.4625	0.0295	2.5581	1.4000e-004		0.0142	0.0142		0.0142	0.0142	0.0000	4.6051	4.6051	4.4300e-003	0.0000	4.7158
Energy	0.0198	0.1689	0.0719	1.0800e-003		0.0137	0.0137		0.0137	0.0137		215.6408	215.6408	4.1300e-003	3.9500e-003	216.9222
Mobile	0.8887	0.9209	8.0203	0.0175	1.7776	0.0132	1.7909	0.4735	0.0123	0.4859		1,778.9129	1,778.9129	0.1186	0.0752	1,804.2708
<b>Total</b>	<b>2.3710</b>	<b>1.1193</b>	<b>10.6503</b>	<b>0.0187</b>	<b>1.7776</b>	<b>0.0411</b>	<b>1.8187</b>	<b>0.4735</b>	<b>0.0402</b>	<b>0.5137</b>	<b>0.0000</b>	<b>1,999.1588</b>	<b>1,999.1588</b>	<b>0.1271</b>	<b>0.0791</b>	<b>2,025.9088</b>

Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	1.38	20.17	1.12	8.78	0.00	35.78	1.24	0.00	36.28	4.26	0.00	15.30	15.30	5.16	7.72	15.20

**3.0 Construction Detail**

**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/5/2022	8/1/2022	5	20	
2	Site Preparation	Site Preparation	8/2/2022	8/15/2022	5	10	
3	Grading	Grading	8/16/2022	9/12/2022	5	20	
4	Building Construction	Building Construction	9/13/2022	7/31/2023	5	230	
5	Paving	Paving	8/1/2023	8/28/2023	5	20	
6	Architectural Coating	Architectural Coating	5/31/2023	7/31/2023	5	44	

**Acres of Grading (Site Preparation Phase): 15**

**Acres of Grading (Grading Phase): 20**

**Acres of Paving: 0**

**Residential Indoor: 112,995; Residential Outdoor: 37,665; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	1	8.00	158	0.38



Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	75.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	312.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	312.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	11.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Water Exposed Area

Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Demolition - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.8222	0.0000	0.8222	0.1245	0.0000	0.1245			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.781 2	3,746.781 2	1.0524		3,773.092 0
<b>Total</b>	<b>2.6392</b>	<b>25.7194</b>	<b>20.5941</b>	<b>0.0388</b>	<b>0.8222</b>	<b>1.2427</b>	<b>2.0649</b>	<b>0.1245</b>	<b>1.1553</b>	<b>1.2798</b>		<b>3,746.781 2</b>	<b>3,746.781 2</b>	<b>1.0524</b>		<b>3,773.092 0</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0168	0.6090	0.1480	2.3500e-003	0.0656	5.8700e-003	0.0715	0.0180	5.6100e-003	0.0236		259.0573	259.0573	0.0125	0.0412	271.6321
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0438	0.0285	0.3884	1.1200e-003	0.1232	7.0000e-004	0.1239	0.0327	6.4000e-004	0.0333		113.6562	113.6562	3.2800e-003	2.9500e-003	114.6171
<b>Total</b>	<b>0.0606</b>	<b>0.6375</b>	<b>0.5364</b>	<b>3.4700e-003</b>	<b>0.1888</b>	<b>6.5700e-003</b>	<b>0.1954</b>	<b>0.0507</b>	<b>6.2500e-003</b>	<b>0.0569</b>		<b>372.7135</b>	<b>372.7135</b>	<b>0.0157</b>	<b>0.0441</b>	<b>386.2492</b>

Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Demolition - 2022**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3700	0.0000	0.3700	0.0560	0.0000	0.0560			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553	0.0000	3,746.781 2	3,746.781 2	1.0524		3,773.092 0
<b>Total</b>	<b>2.6392</b>	<b>25.7194</b>	<b>20.5941</b>	<b>0.0388</b>	<b>0.3700</b>	<b>1.2427</b>	<b>1.6127</b>	<b>0.0560</b>	<b>1.1553</b>	<b>1.2113</b>	<b>0.0000</b>	<b>3,746.781 2</b>	<b>3,746.781 2</b>	<b>1.0524</b>		<b>3,773.092 0</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0168	0.6090	0.1480	2.3500e-003	0.0656	5.8700e-003	0.0715	0.0180	5.6100e-003	0.0236		259.0573	259.0573	0.0125	0.0412	271.6321
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0438	0.0285	0.3884	1.1200e-003	0.1232	7.0000e-004	0.1239	0.0327	6.4000e-004	0.0333		113.6562	113.6562	3.2800e-003	2.9500e-003	114.6171
<b>Total</b>	<b>0.0606</b>	<b>0.6375</b>	<b>0.5364</b>	<b>3.4700e-003</b>	<b>0.1888</b>	<b>6.5700e-003</b>	<b>0.1954</b>	<b>0.0507</b>	<b>6.2500e-003</b>	<b>0.0569</b>		<b>372.7135</b>	<b>372.7135</b>	<b>0.0157</b>	<b>0.0441</b>	<b>386.2492</b>

Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.3 Site Preparation - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6921	0.0000	19.6921	10.1078	0.0000	10.1078			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
<b>Total</b>	<b>3.1701</b>	<b>33.0835</b>	<b>19.6978</b>	<b>0.0380</b>	<b>19.6921</b>	<b>1.6126</b>	<b>21.3047</b>	<b>10.1078</b>	<b>1.4836</b>	<b>11.5913</b>		<b>3,686.0619</b>	<b>3,686.0619</b>	<b>1.1922</b>		<b>3,715.8655</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1398	5.0672	1.2317	0.0196	0.5457	0.0488	0.5945	0.1496	0.0467	0.1963		2,155.3570	2,155.3570	0.1037	0.3424	2,259.9793
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0525	0.0342	0.4661	1.3500e-003	0.1479	8.4000e-004	0.1487	0.0392	7.7000e-004	0.0400		136.3874	136.3874	3.9400e-003	3.5400e-003	137.5405
<b>Total</b>	<b>0.1924</b>	<b>5.1014</b>	<b>1.6978</b>	<b>0.0209</b>	<b>0.6936</b>	<b>0.0497</b>	<b>0.7432</b>	<b>0.1888</b>	<b>0.0475</b>	<b>0.2363</b>		<b>2,291.7444</b>	<b>2,291.7444</b>	<b>0.1076</b>	<b>0.3459</b>	<b>2,397.5199</b>

Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.3 Site Preparation - 2022**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.8615	0.0000	8.8615	4.5485	0.0000	4.5485			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
<b>Total</b>	<b>3.1701</b>	<b>33.0835</b>	<b>19.6978</b>	<b>0.0380</b>	<b>8.8615</b>	<b>1.6126</b>	<b>10.4740</b>	<b>4.5485</b>	<b>1.4836</b>	<b>6.0321</b>	<b>0.0000</b>	<b>3,686.0619</b>	<b>3,686.0619</b>	<b>1.1922</b>		<b>3,715.8655</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1398	5.0672	1.2317	0.0196	0.5457	0.0488	0.5945	0.1496	0.0467	0.1963		2,155.3570	2,155.3570	0.1037	0.3424	2,259.9793
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0525	0.0342	0.4661	1.3500e-003	0.1479	8.4000e-004	0.1487	0.0392	7.7000e-004	0.0400		136.3874	136.3874	3.9400e-003	3.5400e-003	137.5405
<b>Total</b>	<b>0.1924</b>	<b>5.1014</b>	<b>1.6978</b>	<b>0.0209</b>	<b>0.6936</b>	<b>0.0497</b>	<b>0.7432</b>	<b>0.1888</b>	<b>0.0475</b>	<b>0.2363</b>		<b>2,291.7444</b>	<b>2,291.7444</b>	<b>0.1076</b>	<b>0.3459</b>	<b>2,397.5199</b>

Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 Grading - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.1002	0.0000	7.1002	3.4274	0.0000	3.4274			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.046 4	2,872.046 4	0.9289		2,895.268 4
<b>Total</b>	<b>1.9486</b>	<b>20.8551</b>	<b>15.2727</b>	<b>0.0297</b>	<b>7.1002</b>	<b>0.9409</b>	<b>8.0410</b>	<b>3.4274</b>	<b>0.8656</b>	<b>4.2930</b>		<b>2,872.046 4</b>	<b>2,872.046 4</b>	<b>0.9289</b>		<b>2,895.268 4</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0699	2.5336	0.6159	9.7900e-003	0.2728	0.0244	0.2973	0.0748	0.0234	0.0981		1,077.678 5	1,077.678 5	0.0518	0.1712	1,129.989 7
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0438	0.0285	0.3884	1.1200e-003	0.1232	7.0000e-004	0.1239	0.0327	6.4000e-004	0.0333		113.6562	113.6562	3.2800e-003	2.9500e-003	114.6171
<b>Total</b>	<b>0.1137</b>	<b>2.5621</b>	<b>1.0043</b>	<b>0.0109</b>	<b>0.3961</b>	<b>0.0251</b>	<b>0.4212</b>	<b>0.1075</b>	<b>0.0240</b>	<b>0.1315</b>		<b>1,191.334 7</b>	<b>1,191.334 7</b>	<b>0.0551</b>	<b>0.1741</b>	<b>1,244.606 8</b>



Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 Grading - 2022**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1951	0.0000	3.1951	1.5423	0.0000	1.5423			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656	0.0000	2,872.046 4	2,872.046 4	0.9289		2,895.268 4
<b>Total</b>	<b>1.9486</b>	<b>20.8551</b>	<b>15.2727</b>	<b>0.0297</b>	<b>3.1951</b>	<b>0.9409</b>	<b>4.1359</b>	<b>1.5423</b>	<b>0.8656</b>	<b>2.4079</b>	<b>0.0000</b>	<b>2,872.046 4</b>	<b>2,872.046 4</b>	<b>0.9289</b>		<b>2,895.268 4</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0699	2.5336	0.6159	9.7900e-003	0.2728	0.0244	0.2973	0.0748	0.0234	0.0981		1,077.678 5	1,077.678 5	0.0518	0.1712	1,129.989 7
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0438	0.0285	0.3884	1.1200e-003	0.1232	7.0000e-004	0.1239	0.0327	6.4000e-004	0.0333		113.6562	113.6562	3.2800e-003	2.9500e-003	114.6171
<b>Total</b>	<b>0.1137</b>	<b>2.5621</b>	<b>1.0043</b>	<b>0.0109</b>	<b>0.3961</b>	<b>0.0251</b>	<b>0.4212</b>	<b>0.1075</b>	<b>0.0240</b>	<b>0.1315</b>		<b>1,191.334 7</b>	<b>1,191.334 7</b>	<b>0.0551</b>	<b>0.1741</b>	<b>1,244.606 8</b>

Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.5 Building Construction - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
<b>Total</b>	<b>1.7062</b>	<b>15.6156</b>	<b>16.3634</b>	<b>0.0269</b>		<b>0.8090</b>	<b>0.8090</b>		<b>0.7612</b>	<b>0.7612</b>		<b>2,554.3336</b>	<b>2,554.3336</b>	<b>0.6120</b>		<b>2,569.6322</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.6800e-003	0.1595	0.0534	6.4000e-004	0.0203	1.7300e-003	0.0221	5.8500e-003	1.6600e-003	7.5100e-003		68.9477	68.9477	2.1000e-003	0.0100	71.9824
Worker	0.0321	0.0209	0.2848	8.2000e-004	0.0904	5.1000e-004	0.0909	0.0240	4.7000e-004	0.0244		83.3479	83.3479	2.4100e-003	2.1600e-003	84.0525
<b>Total</b>	<b>0.0388</b>	<b>0.1804</b>	<b>0.3382</b>	<b>1.4600e-003</b>	<b>0.1107</b>	<b>2.2400e-003</b>	<b>0.1129</b>	<b>0.0298</b>	<b>2.1300e-003</b>	<b>0.0320</b>		<b>152.2956</b>	<b>152.2956</b>	<b>4.5100e-003</b>	<b>0.0122</b>	<b>156.0350</b>

Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.5 Building Construction - 2022**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
<b>Total</b>	<b>1.7062</b>	<b>15.6156</b>	<b>16.3634</b>	<b>0.0269</b>		<b>0.8090</b>	<b>0.8090</b>		<b>0.7612</b>	<b>0.7612</b>	<b>0.0000</b>	<b>2,554.3336</b>	<b>2,554.3336</b>	<b>0.6120</b>		<b>2,569.6322</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.6800e-003	0.1595	0.0534	6.4000e-004	0.0203	1.7300e-003	0.0221	5.8500e-003	1.6600e-003	7.5100e-003		68.9477	68.9477	2.1000e-003	0.0100	71.9824
Worker	0.0321	0.0209	0.2848	8.2000e-004	0.0904	5.1000e-004	0.0909	0.0240	4.7000e-004	0.0244		83.3479	83.3479	2.4100e-003	2.1600e-003	84.0525
<b>Total</b>	<b>0.0388</b>	<b>0.1804</b>	<b>0.3382</b>	<b>1.4600e-003</b>	<b>0.1107</b>	<b>2.2400e-003</b>	<b>0.1129</b>	<b>0.0298</b>	<b>2.1300e-003</b>	<b>0.0320</b>		<b>152.2956</b>	<b>152.2956</b>	<b>4.5100e-003</b>	<b>0.0122</b>	<b>156.0350</b>

Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.5 Building Construction - 2023**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
<b>Total</b>	<b>1.5728</b>	<b>14.3849</b>	<b>16.2440</b>	<b>0.0269</b>		<b>0.6997</b>	<b>0.6997</b>		<b>0.6584</b>	<b>0.6584</b>		<b>2,555.2099</b>	<b>2,555.2099</b>	<b>0.6079</b>		<b>2,570.4061</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5800e-003	0.1286	0.0463	6.1000e-004	0.0203	7.8000e-004	0.0211	5.8500e-003	7.5000e-004	6.6000e-003		66.3141	66.3141	2.0100e-003	9.6000e-003	69.2257
Worker	0.0301	0.0187	0.2640	8.0000e-004	0.0904	4.8000e-004	0.0909	0.0240	4.5000e-004	0.0244		80.7030	80.7030	2.1900e-003	2.0100e-003	81.3572
<b>Total</b>	<b>0.0336</b>	<b>0.1473</b>	<b>0.3103</b>	<b>1.4100e-003</b>	<b>0.1107</b>	<b>1.2600e-003</b>	<b>0.1120</b>	<b>0.0298</b>	<b>1.2000e-003</b>	<b>0.0310</b>		<b>147.0171</b>	<b>147.0171</b>	<b>4.2000e-003</b>	<b>0.0116</b>	<b>150.5829</b>

Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.5 Building Construction - 2023**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
<b>Total</b>	<b>1.5728</b>	<b>14.3849</b>	<b>16.2440</b>	<b>0.0269</b>		<b>0.6997</b>	<b>0.6997</b>		<b>0.6584</b>	<b>0.6584</b>	<b>0.0000</b>	<b>2,555.2099</b>	<b>2,555.2099</b>	<b>0.6079</b>		<b>2,570.4061</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5800e-003	0.1286	0.0463	6.1000e-004	0.0203	7.8000e-004	0.0211	5.8500e-003	7.5000e-004	6.6000e-003		66.3141	66.3141	2.0100e-003	9.6000e-003	69.2257
Worker	0.0301	0.0187	0.2640	8.0000e-004	0.0904	4.8000e-004	0.0909	0.0240	4.5000e-004	0.0244		80.7030	80.7030	2.1900e-003	2.0100e-003	81.3572
<b>Total</b>	<b>0.0336</b>	<b>0.1473</b>	<b>0.3103</b>	<b>1.4100e-003</b>	<b>0.1107</b>	<b>1.2600e-003</b>	<b>0.1120</b>	<b>0.0298</b>	<b>1.2000e-003</b>	<b>0.0310</b>		<b>147.0171</b>	<b>147.0171</b>	<b>4.2000e-003</b>	<b>0.0116</b>	<b>150.5829</b>

Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.6 Paving - 2023**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.0327</b>	<b>10.1917</b>	<b>14.5842</b>	<b>0.0228</b>		<b>0.5102</b>	<b>0.5102</b>		<b>0.4694</b>	<b>0.4694</b>		<b>2,207.5841</b>	<b>2,207.5841</b>	<b>0.7140</b>		<b>2,225.4336</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0410	0.0255	0.3600	1.0900e-003	0.1232	6.6000e-004	0.1239	0.0327	6.1000e-004	0.0333		110.0496	110.0496	2.9800e-003	2.7400e-003	110.9417
<b>Total</b>	<b>0.0410</b>	<b>0.0255</b>	<b>0.3600</b>	<b>1.0900e-003</b>	<b>0.1232</b>	<b>6.6000e-004</b>	<b>0.1239</b>	<b>0.0327</b>	<b>6.1000e-004</b>	<b>0.0333</b>		<b>110.0496</b>	<b>110.0496</b>	<b>2.9800e-003</b>	<b>2.7400e-003</b>	<b>110.9417</b>



Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.6 Paving - 2023**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.0327</b>	<b>10.1917</b>	<b>14.5842</b>	<b>0.0228</b>		<b>0.5102</b>	<b>0.5102</b>		<b>0.4694</b>	<b>0.4694</b>	<b>0.0000</b>	<b>2,207.5841</b>	<b>2,207.5841</b>	<b>0.7140</b>		<b>2,225.4336</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0410	0.0255	0.3600	1.0900e-003	0.1232	6.6000e-004	0.1239	0.0327	6.1000e-004	0.0333		110.0496	110.0496	2.9800e-003	2.7400e-003	110.9417
<b>Total</b>	<b>0.0410</b>	<b>0.0255</b>	<b>0.3600</b>	<b>1.0900e-003</b>	<b>0.1232</b>	<b>6.6000e-004</b>	<b>0.1239</b>	<b>0.0327</b>	<b>6.1000e-004</b>	<b>0.0333</b>		<b>110.0496</b>	<b>110.0496</b>	<b>2.9800e-003</b>	<b>2.7400e-003</b>	<b>110.9417</b>

Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.7 Architectural Coating - 2023**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8707					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
<b>Total</b>	<b>16.0623</b>	<b>1.3030</b>	<b>1.8111</b>	<b>2.9700e-003</b>		<b>0.0708</b>	<b>0.0708</b>		<b>0.0708</b>	<b>0.0708</b>		<b>281.4481</b>	<b>281.4481</b>	<b>0.0168</b>		<b>281.8690</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.4700e-003	3.3900e-003	0.0480	1.5000e-004	0.0164	9.0000e-005	0.0165	4.3600e-003	8.0000e-005	4.4400e-003		14.6733	14.6733	4.0000e-004	3.7000e-004	14.7922
<b>Total</b>	<b>5.4700e-003</b>	<b>3.3900e-003</b>	<b>0.0480</b>	<b>1.5000e-004</b>	<b>0.0164</b>	<b>9.0000e-005</b>	<b>0.0165</b>	<b>4.3600e-003</b>	<b>8.0000e-005</b>	<b>4.4400e-003</b>		<b>14.6733</b>	<b>14.6733</b>	<b>4.0000e-004</b>	<b>3.7000e-004</b>	<b>14.7922</b>

Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.7 Architectural Coating - 2023**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8707					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
<b>Total</b>	<b>16.0623</b>	<b>1.3030</b>	<b>1.8111</b>	<b>2.9700e-003</b>		<b>0.0708</b>	<b>0.0708</b>		<b>0.0708</b>	<b>0.0708</b>	<b>0.0000</b>	<b>281.4481</b>	<b>281.4481</b>	<b>0.0168</b>		<b>281.8690</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.4700e-003	3.3900e-003	0.0480	1.5000e-004	0.0164	9.0000e-005	0.0165	4.3600e-003	8.0000e-005	4.4400e-003		14.6733	14.6733	4.0000e-004	3.7000e-004	14.7922
<b>Total</b>	<b>5.4700e-003</b>	<b>3.3900e-003</b>	<b>0.0480</b>	<b>1.5000e-004</b>	<b>0.0164</b>	<b>9.0000e-005</b>	<b>0.0165</b>	<b>4.3600e-003</b>	<b>8.0000e-005</b>	<b>4.4400e-003</b>		<b>14.6733</b>	<b>14.6733</b>	<b>4.0000e-004</b>	<b>3.7000e-004</b>	<b>14.7922</b>

Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**4.0 Operational Detail - Mobile**

**4.1 Mitigation Measures Mobile**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.8887	0.9209	8.0203	0.0175	1.7776	0.0132	1.7909	0.4735	0.0123	0.4859		1,778.9129	1,778.9129	0.1186	0.0752	1,804.2708
Unmitigated	0.8887	0.9209	8.0203	0.0175	1.7776	0.0132	1.7909	0.4735	0.0123	0.4859		1,778.9129	1,778.9129	0.1186	0.0752	1,804.2708

**4.2 Trip Summary Information**

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	292.64	295.74	265.05	825,586	825,586
Total	292.64	295.74	265.05	825,586	825,586

**4.3 Trip Type Information**

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

**4.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.553514	0.062792	0.181046	0.120736	0.024419	0.006214	0.008493	0.006184	0.000715	0.000556	0.029185	0.000982	0.005164

Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0198	0.1689	0.0719	1.0800e-003		0.0137	0.0137		0.0137	0.0137		215.6408	215.6408	4.1300e-003	3.9500e-003	216.9222
NaturalGas Unmitigated	0.0198	0.1689	0.0719	1.0800e-003		0.0137	0.0137		0.0137	0.0137		215.6408	215.6408	4.1300e-003	3.9500e-003	216.9222

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	1832.95	0.0198	0.1689	0.0719	1.0800e-003		0.0137	0.0137		0.0137	0.0137		215.6408	215.6408	4.1300e-003	3.9500e-003	216.9222
<b>Total</b>		<b>0.0198</b>	<b>0.1689</b>	<b>0.0719</b>	<b>1.0800e-003</b>		<b>0.0137</b>	<b>0.0137</b>		<b>0.0137</b>	<b>0.0137</b>		<b>215.6408</b>	<b>215.6408</b>	<b>4.1300e-003</b>	<b>3.9500e-003</b>	<b>216.9222</b>

Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.2 Energy by Land Use - NaturalGas**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	1.83295	0.0198	0.1689	0.0719	1.0800e-003		0.0137	0.0137		0.0137	0.0137		215.6408	215.6408	4.1300e-003	3.9500e-003	216.9222
<b>Total</b>		<b>0.0198</b>	<b>0.1689</b>	<b>0.0719</b>	<b>1.0800e-003</b>		<b>0.0137</b>	<b>0.0137</b>		<b>0.0137</b>	<b>0.0137</b>		<b>215.6408</b>	<b>215.6408</b>	<b>4.1300e-003</b>	<b>3.9500e-003</b>	<b>216.9222</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

- Use Low VOC Paint - Residential Interior
- Use Low VOC Paint - Residential Exterior
- No Hearths Installed

Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.4625	0.0295	2.5581	1.4000e-004		0.0142	0.0142		0.0142	0.0142	0.0000	4.6051	4.6051	4.4300e-003	0.0000	4.7158
Unmitigated	1.4956	0.3123	2.6785	1.9400e-003		0.0370	0.0370		0.0370	0.0370	0.0000	365.6639	365.6639	0.0114	6.6200e-003	367.9203

**6.2 Area by SubCategory**

**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1913					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.1941					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0331	0.2828	0.1204	1.8100e-003		0.0229	0.0229		0.0229	0.0229	0.0000	361.0588	361.0588	6.9200e-003	6.6200e-003	363.2044
Landscaping	0.0771	0.0295	2.5581	1.4000e-004		0.0142	0.0142		0.0142	0.0142		4.6051	4.6051	4.4300e-003		4.7158
<b>Total</b>	<b>1.4956</b>	<b>0.3123</b>	<b>2.6785</b>	<b>1.9500e-003</b>		<b>0.0370</b>	<b>0.0370</b>		<b>0.0370</b>	<b>0.0370</b>	<b>0.0000</b>	<b>365.6639</b>	<b>365.6639</b>	<b>0.0114</b>	<b>6.6200e-003</b>	<b>367.9203</b>

Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**6.2 Area by SubCategory**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1913					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.1941					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0771	0.0295	2.5581	1.4000e-004		0.0142	0.0142		0.0142	0.0142		4.6051	4.6051	4.4300e-003		4.7158
<b>Total</b>	<b>1.4625</b>	<b>0.0295</b>	<b>2.5581</b>	<b>1.4000e-004</b>		<b>0.0142</b>	<b>0.0142</b>		<b>0.0142</b>	<b>0.0142</b>	<b>0.0000</b>	<b>4.6051</b>	<b>4.6051</b>	<b>4.4300e-003</b>	<b>0.0000</b>	<b>4.7158</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

Apply Water Conservation Strategy



Melba Road Residential Subdivision Project - San Diego County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

Institute Recycling and Composting Services

**9.0 Operational Offroad**

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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**10.0 Stationary Equipment**

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**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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**11.0 Vegetation**

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