Appendix 6

Air Quality Assessment

6 Air Quality

6.1 Introduction

This document describes effects on air quality that would be caused by implementation of the proposed project. Information used to prepare this document came from the following resources:

- California Emissions Estimator Model (CalEEMod) projections (see **Attachment 6A**)
- California Air Resource Board (CARB)
- State Office of Environmental Health Hazard Assessment (OEHHA)
- California Environmental Quality Act (CEQA) Air Quality Guidelines
- Monterey Bay Air Resources District (MBARD), CEQA Air Quality Guidelines

6.2 Environmental Setting

6.2.1 Climate and Topography

The project site is located within the North Central Coast Air Basin (NCCAB), which includes Monterey County, San Benito County, and Santa Cruz County, composing an area of approximately 5,159 square miles along the central California coast. MBARD is responsible for local control and monitoring of criteria air pollutants throughout the NCCAB.

The climate of the Basin is determined largely by a high-pressure system that is almost always present over the eastern Pacific Ocean off the West Coast of North America. During winter, the Pacific high-pressure system shifts southward, allowing storms to pass through the region. Air descends in the Pacific High, forming a stable temperature inversion of hot air over a cool coastal layer of air. The onshore air currents pass over cool ocean waters to bring fog and relatively cool air into the coastal valleys. The warmer air aloft acts as a lid to inhibit vertical air movement.

Climatological conditions, an area's topography, and the quantity and type of pollutants released commonly determine ambient air quality. The project site is located in Monterey County.

Climate, or the average weather condition, affects air quality in several ways. Wind patterns can remove or add air pollutants emitted by stationary or mobile sources. Inversion, a condition where warm air traps cooler air underneath it, can hold pollutants near the ground by limiting upward mixing (dilution). Topography also affects the local climate, as valleys often trap emissions by limiting lateral dispersal.

6.2.2 Air Pollutants of Primary Concern

The State and federal Clean Air Acts mandate the control and reduction of certain air pollutants. Under these Acts, the U.S. Environmental Protection Agency (U.S. EPA) and CARB have established ambient air quality standards for certain "criteria" pollutants. Ambient air pollutant concentrations are affected by the rates and distributions of corresponding air pollutant emissions, as well as by the climactic and topographic influences discussed above. The primary determinant of concentrations of non-reactive pollutants (such as carbon monoxide [CO] and inhalable particulate matter [PM_{10}]) is proximity to major sources. Ambient CO levels in particular usually closely follow the spatial and temporal distributions of vehicular traffic. A discussion of primary criteria pollutants is provided below.

Ozone. Ozone (O_3) is a colorless gas with a pungent odor. Most ozone in the atmosphere is formed as a result of the interaction of ultraviolet light, reactive organic gases (ROG), and oxides of nitrogen (NO_X). ROG (the organic compound fraction relevant to ozone formation, and sufficiently equivalent for the purposes of this analysis to volatile organic compounds, or VOC[1]) comprises of non-methane hydrocarbons (with some specific exclusions), and NO_X consists of different chemical combinations of nitrogen and oxygen, mainly NO and NO_2. A highly reactive molecule, ozone readily combines with many different components of the atmosphere. Consequently, high levels of ozone tend to exist only while high ROG and NO_X levels are present to sustain the ozone formation process. Once the precursors have been depleted, ozone levels rapidly decline. Given these reactions occur on a regional rather than local scale, ozone is considered a regional pollutant.

Carbon Monoxide. CO is an odorless, colorless, gas. CO causes a number of health problems including fatigue, headache, confusion, and dizziness. The incomplete combustion of petroleum fuels in on-road vehicles and at power plants is a major cause of CO. CO is also produced by use of wood stoves and fireplaces, which are more frequently used in winter months. CO tends to dissipate rapidly into the atmosphere; consequently, violations of the State CO standard are generally associated with major roadway intersections during peak hour traffic conditions.

Localized CO "hotspots" can occur at intersections with heavy peak hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high such that the local CO concentration exceeds the National Ambient Air Quality Standards (NAAQS) of 35.0 parts per million (ppm) or the California Ambient Air Quality Standards (CAAQS) of 20.0 ppm.

Nitrogen Dioxide. Nitrogen dioxide (NO_2) 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_2, creating the mixture of NO and NO_2 commonly called NO_X. Nitrogen dioxide is an acute irritant. A relationship between NO_2 and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 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_{10} and acid rain.

Particulate Matter. Suspended particulate matter (PM) consists of airborne dust small enough to remain suspended in the air for long periods. Fine particulate matter includes particles small enough to be inhaled, pass through the respiratory system, and lodge in the lungs, with resultant health effects. Particulate matter can include materials such as sulfates and nitrates, which are particularly damaging to the lungs. Studies of the health effects resulted in revision of the Total Suspended Particulate (TSP) standard in 1987 to focus on particulates that are small enough to be considered "inhalable," i.e. 10 microns or less in size (PM_{10}). In July of 1997, a further revision of the federal standard added criteria for $PM_{2.5}$, reflecting recent studies that suggested that particulates less than 2.5 microns in diameter are of particular concern.

Sulfur Dioxide. Sulfur dioxide (SO_2) is produced by such stationary sources as coal and oil combustion, steel mills, refineries and pulp and paper mills. The major adverse health effects associated with SO_2 exposure pertain to the upper respiratory tract. SO_2 is a respiratory irritant with construction of the bronchioles occurring with inhalation of SO_2 at 5 ppm or more. On contact with the moist mucous

[1] ROG is equivalent to volatile organic compounds (VOC) per MBUAPCD Rule 101, 2.32

membranes, SO_2 produces sulfurous acid, which is a direct irritant. Concentration rather than duration of the exposure is an important determinant of respiratory effects.

Lead. Lead (Pb) is a metal found naturally in the environment, as well as in manufacturing products. The major sources of lead emissions historically have been mobile and industrial sources. As a result of the phase-out of leaded gasoline, as discussed below, metal processing currently is the primary source of lead emissions. The highest level of lead in the air is generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

Historically, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, U.S. EPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The U.S. EPA completed the ban prohibiting the use of leaded gasoline in highway vehicles in early 1996.[2] As a result of U.S. EPA's regulatory efforts to remove lead from gasoline, lead concentrations have declined substantially over the past several decades. The most dramatic reductions in lead emissions occurred prior to 1990 in the transportation sector due to the removal of lead from gasoline sold for most highway vehicles. Lead emissions were further reduced substantially between 1990 and 2008, with significant reductions occurring in the metals industries at least in part as a result of national emissions standards for hazardous air pollutants.[3]

U.S. EPA and CARB establish ambient air quality standards for major pollutants at thresholds intended to protect public health. Federal and State standards have been established for ozone, CO, NO_2, SO_2, lead, and PM_{10} and $PM_{2.5}$.

Criteria air pollutant NAAQS and CAAQS are provided in Table 6-1: Current National and State Ambient Air Quality Standards. California standards are more restrictive than federal standards for each of these pollutants, except for lead and the 8-hour average for CO.

[2] 40 CRF Part 80.

[3] U.S. EPA 2013. Policy Assessment for the Review of the Lead National Ambient Air Quality Standards – External Review Draft. EPA – 452/P-13-001.

Table 6-1: Current National and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standards	California Standard
Ozone (O_3)	1-Hour	---	0.09 ppm
	8-Hour	0.070 ppm	0.070 ppm
Carbon Monoxide (CO)	8-Hour	9.0 ppm	9.0 ppm
	1-Hour	35.0 ppm	20.0 ppm
Nitrogen Dioxide (NO_X)	Annual	0.053 ppm	0.030 ppm
	1-Hour	0.100 ppm	0.18 ppm
Sulfur Dioxide (SO_X)	Annual	---	---
	24-Hour	---	0.04 ppm
	1-Hour	0.075 ppm	0.25 ppm
Inhalable Particulates (PM_{10})	Annual	---	20 µg/m^3
	24-Hour	150 µg/m^3	50 µg/m^3
Fine Particulates ($PM_{2.5}$)	Annual	12 µg/m^3	12 µg/m^3
	24-Hour	35 µg/m^3	---
Lead (Pb)	30-Day Average	---	1.5 µg/m^3
	Rolling 3-Month Average	0.15 µg/m^3	---

ppm = parts per million;
µg/m^3 = micrograms per cubic meter
Source: CARB, California Ambient Air Quality Standards, https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards;

6.2.3 Ambient Air Quality

Local air districts and CARB monitor ambient air quality to assure that air quality standards are met, and if they are not met, to also develop strategies to meet the standards. Air quality monitoring stations measure pollutant ground-level concentrations (typically, ten feet aboveground level). Depending on whether the standards are met or exceeded, the local air basin is classified as in "attainment" or "non-attainment." Some areas are unclassified, which means no monitoring data are available. Unclassified areas are considered to be in attainment. Table 6-2: Attainment Status of the North Central Coast Air Basin summarizes the State and federal attainment status for criteria pollutants in the NCCAB.

Table 6-2: Attainment Status of the North Central Coast Air Basin

Pollutant	State Standard	Federal Standard
Ozone (O_3)	**Non-attainment - Transitional**	Attainment
Inhalable Particulates (PM_{10})	**Non-attainment**	Attainment
Fine Particulates ($PM_{2.5}$)	Attainment	Attainment
Carbon Monoxide (CO)	Attainment (Monterey County) Unclassified (San Benito County) Unclassified (Santa Cruz County)	Attainment
Nitrogen Dioxide (NO_X)	Attainment	Attainment
Sulfur Dioxide (SO_X)	Attainment	Attainment
Lead (Pb)	Attainment	Attainment

Non-attainment pollutants are highlighted in **Bold**.
Source: MBARD, AQMP 2017.

As shown in Table 6-2: Attainment Status of the North Central Coast Air Basin, although the NCCAB is in attainment or unclassifiable as to all NAAQS, it is designated as non-attainment with respect to the more stringent State PM_{10} standard and the State's 8-hour ozone standard.

Ambient air quality is monitored at seven MBARD-operated monitoring stations located in Salinas, Hollister, Carmel Valley, Santa Cruz, Scotts Valley, Watsonville, and Davenport. In addition, the National Park Service operates a station at the Pinnacles National Monument and an industry consortium operates a station in King City. Table 6-3: Ambient Air Quality Data summarizes the representative annual air quality data for the project vicinity over the past 3 years. The nearest representative monitoring station to the project site is the Carmel Valley-Ford Road monitoring station (approximately 11 miles southeast of the project site).

Table 6-3: Ambient Air Quality Data

Pollutant	2017	2018	2019
Ozone (ppm), Worst 1-Hour	**0.073**	**0.062**	**0.071**
Number of days of State exceedances (>0.09 ppm)	0	0	0
Ozone (ppm), 8-Hour Average	**0.067**	**0.055**	**0.064**
Number of days of State exceedances (>0.07 ppm)	0	0	0
Number of days of Federal exceedances (>0.07 ppm)	0	0	0
Carbon Monoxide (ppm), Highest 8-Hour Average	***NA***	***NA***	***NA***
Number of days of above State or Federal standard (>9.0 ppm)	*NA*	*NA*	*NA*
Particulate Matter <2.5 microns, µg/m3, Worst 24 Hours	**43.6**	**50.7**	**11.1**
Number of days above Federal standard (>65 µg/m3)	1	4	0

ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter
Measurements taken at the Carmel Valley-Ford Road Monitoring Station located at 34 Ford Road, Carmel Valley ARB#27550
Source: All pollutant measurements are from the CARB Aerometric Data Analysis and Management system database (arb.ca.gov/adam).

Given that the NCCAB is designated as non-attainment for State standards for ozone and PM_{10}, these are the primary pollutants of concern for the NCCAB.

6.2.4 Sensitive Receptors

Sensitive populations are more susceptible to the effects of air pollution than the general population. Sensitive receptors in proximity to localized sources of toxics are of particular concern. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

The project site is located in an urban area at the edge of Highway 1 in or adjacent to the cities of Marina, Seaside, and Sand City. The surrounding land uses are predominantly residential, guest lodging, commercial, and recreational areas. Table 6-4: Sensitive Receptors lists the distances and locations of nearby sensitive receptors within the project corridor, which primarily include single- and multi- family residences.

Table 6-4: Sensitive Receptors

Receptor Description	Distance and Direction from the Project Site	Nearest Project Segment
City of Marina		
Marina Child Development Center	175 feet west	Segment 2
Single Family Residential Community	200 feet west	Segment 2
Single Family Residential Community	200 feet east	Segment 2
Multi-family Residential Uses	325 feet east	Segment 2
Church of Christ in Marina	460 feet east	Segment 2
City of Seaside		
Seaside High School	230 feet east	Segment 3
Single Family Residential Uses	280 feet east	Segment 3
Single Family Residential Uses	340 feet east	Segment 3
City of Sand City		
Single Family Residential Uses	120 feet west	Segment 4
Single-Family Residential Uses	170 feet east	Segment 4
Single Family Residential Community	260 feet west	Segment 4
Single-Family Residential Uses	300 feet west	Segment 4
Unincorporated Monterey County		
Fort Ord Dunes State Park	Adjacent to the west	Segments 2 and 3

6.2.5 Hazardous Air Pollutants/Toxic Air Contaminants

Both the U.S. EPA and CARB regulate hazardous air pollutants (HAPs)/ toxic air contaminants (TACs). According to Section 39655 of the California Health and Safety Code, a TAC is “an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health.” In addition, 189 substances that have been listed as federal hazardous air pollutants (HAPs) pursuant to Section 7412 of Title 42 of the United States Code are TACs under the State’s air toxics program pursuant to Section 39657 (b) of the California Health and Safety Code.

TACs can cause various cancers, depending on the particular chemicals, their type and duration of exposure. Additionally, some of the TACs may cause other health effects with short- or long-term exposure. The ten TACs posing the greatest health risk in California are acetaldehyde, benzene, 1-3 butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchlorethylene, and diesel particulate matter (DPM). Mobile sources of TACs include freeways and other roads with high traffic volumes, while stationary sources include distribution centers, rail yards, ports, refineries, dry cleaners, and large gas dispensing facilities. The project site is not located near any major sources of TACs. For cancer health effects, the risk is expressed as the number of chances in a population of a million people who might be expected to get cancer over a 70-year lifetime.

6.3 Regulatory Setting

This analysis has been prepared pursuant to California Environmental Quality Act of 1970 and associated Guidelines (Public Resources Code 21000 *et seq*. and California Code of Regulations, Title 14, Chapter 3 sections 15000 – 15387) and in accordance with local, State and federal laws, including those administered by MBARD, CARB, and the EPA. The principal air quality regulatory mechanisms include the following:

- Federal Clean Air Act (FCAA), in particular, the 1990 amendments;
- California Clean Air Act (CCAA);
- California Health and Safety Code (H&SC), in particular, Chapter 3.5 (Toxic Air Contaminants) (H&SC Section 39650 et. seq.) and Part 6 (Air Toxics "Hot Spots" Information and Assessment) (H&SC Section 44300 et. seq.).
- MBARD's Rules and Regulations and air quality planning documents:
    - Rule 400 (Visible Emissions), Rule 402 (Nuisance), Rule 425 (Use of Cutback Asphalt)
    - 2012 Triennial Plan Revision - Adopted April 2013 to update the 2008 Air Quality Management Plan
    - 2008 Air Quality Management Plan - Adopted August 2008 for achieving the 2006 California ozone standard
    - 2008 MBARD California Environmental Quality Act Air Quality Guidelines most recently revised February 2008.
    - 2007 Federal Maintenance Plan - Adopted May 2007 for maintaining the 1997 federal ozone standard
    - 2005 Particulate Matter Plan - Adopted December 2005 for particulate matter made in response to Senate Bill 656.

6.3.1 Federal and State

As discussed more fully below, the federal and State governments have been empowered by FCAA and CCAA, respectively, to regulate the emission of airborne pollutants and have established ambient air quality standards for the protection of public health. U.S. EPA is the federal agency designated to administer air quality regulation, while CARB is the State equivalent in California. Local control in air quality management is provided by CARB through county-level or regional (multi-county) air pollution

control districts (APCDs). CARB establishes air quality standards and is responsible for control of mobile emission sources, while the local APCDs are responsible for enforcing standards and regulating stationary sources. CARB has established 14 air basins statewide.

Federal Clean Air Act

U.S. EPA is charged with implementing national air quality programs. U.S. EPA's air quality mandates are drawn primarily from the FCAA). The FCAA was passed in 1963 by the U.S. Congress and has been amended several times. The 1970 FCAA amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including non-attainment requirements for areas not meeting NAAQS and the Prevention of Significant Deterioration program. The 1990 FCAA amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the U.S. The FCAA allows states to adopt more stringent standards or to include other pollution species.

National Ambient Air Quality Standards

The FCAA requires U.S. EPA to establish primary and secondary NAAQS for a number of criteria air pollutants. The air pollutants for which standards have been established are considered the most prevalent air pollutants that are known to be hazardous to human health. NAAQS have been established for the following pollutants: O_3, CO, SO_2, PM_{10}, $PM_{2.5}$, and Pb.

Title III of the Federal Clean Air Act

As discussed above, HAPs are the air contaminants identified by U.S. EPA as known or suspected to cause cancer, other serious illnesses, birth defects, or death. The FCAA requires U.S. EPA to set standards for these pollutants and reduce emissions of controlled chemicals. Specifically, Title III of the FCAA requires U.S. EPA to promulgate National Emissions Standards for Hazardous Air Pollutants (NESHAP) for certain categories of sources that emit one or more pollutants that are identified as HAPs. The FCAA also requires U.S. EPA to set standards to control emissions of HAPs through mobile source control programs. These include programs that reformulated gasoline, national low emissions vehicle standards, Tier 2 motor vehicle emission standards, gasoline sulfur control requirements, and heavy-duty engine standards.

HAPs tend to be localized and are found in relatively low concentrations in ambient air. However, they can result in adverse chronic health effects if exposure to low concentrations occurs for long periods. Many HAPs originate from human activities, such as fuel combustion and solvent use. Emission standards may differ between "major sources" and "area sources" of the HAPs/TACs. Under the FCAA, major sources are defined as stationary sources with the potential to emit more than 10 tons per year (tpy) of any one HAP or more than 25 tpy of any combination of HAPs; all other sources are considered area sources. Mobile source air toxics (MSATs) are a subset of the 188 HAPs. Of the 21 HAPs identified by U.S. EPA as MSATs, a priority list of six HAPs were identified that include: diesel exhaust, benzene, formaldehyde, acetaldehyde, acrolein, and 1, 3-butadiene. While vehicle miles traveled in the United States are expected to increase by 64 percent over the period 2000 to 2020, emissions of MSATs are anticipated to decrease substantially as a result of efforts to control mobile source emissions (by 57 percent to 67 percent depending on the contaminant).[4]

[4] Federal Highway Administration, 2006. Interim Guidance on Air Toxic Analysis in NEPA Documents.

California Clean Air Act

The CCAA, signed into law in 1988, requires all areas of the State to achieve and maintain the CAAQS by the earliest practical date. CARB is the State air pollution control agency and is a part of the California Environmental Protection Agency (Cal EPA). CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California, and for implementing the requirements of the CCAA. CARB overseas local district compliance with California and federal laws, approves local air quality plans, submits the State Implementation Plans (SIPs) to U.S. EPA, monitors air quality, determines and updates area designations and maps, and sets emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

California Ambient Air Quality Standards

The CCAA requires CARB to establish CAAQS. Similar to the NAAQS, CAAQS have been established for the following pollutants: O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, Pb, vinyl chloride, hydrogen sulfide, sulfates, and visibility-reducing particulates. In most cases, the CAAQS are more stringent than the NAAQS. The CCAA requires that all local air districts in the State endeavor to achieve and maintain the CAAQS by the earliest practical date. The CCAA specifies that local air districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources and provides districts with the authority to regulate indirect sources.

Tanner Air Toxics Act and Air Toxics Hot Spots Information and Assessment Act

TACs[5] in California primarily are regulated through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588) (Hot Spots Act). As discussed above, HAPs/TACs are a broad class of compounds known to cause morbidity or mortality (cancer risk). HAPs/TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g. dry cleaners). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State and federal level.

AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are necessary before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and adopted the U.S. EPA's list of HAPs as TACs. In 1998, DPM was added to CARB's list of TACs. Once a TAC is identified, CARB adopts an Airborne Toxic Control Measure for sources that emit that particular TAC. If a safe threshold exists at which no toxic effect occurs from a substance, the control measure must reduce exposure below that threshold. If no safe threshold exists, the measure must incorporate Best Available Control Technology (BACT) to minimize emissions.

The Hot Spots Act requires for existing facilities that emit toxic substances above a specified level to prepare a toxic emissions inventory and a risk assessment if the emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

Diesel Exhaust and Diesel Particulate Matter

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about two-thirds of the cancer risk from TACs (based on the statewide average). According to CARB, diesel exhaust is a complex

5 TACs are referred to as HAPs under the FCAA.

mixture of gases, vapors, and fine particles. This mixture makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by CARB, and are listed as carcinogens either under State Proposition 65 or under the Federal Hazardous Air Pollutants programs.

CARB reports that recent air pollution studies have shown an association between diesel exhaust and other cancer-causing toxic air contaminants emitted from vehicles and much of the overall cancer risk from TACs in California. DPM was found to compose much of that risk. CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium- and heavy-duty diesel trucks that generate the bulk of DPM emissions from California highways. These include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleet regulations, and the heavy-duty diesel truck and bus regulations. In 2011, CARB approved the latest regulation to reduce emissions of DPM and NO_X from existing on-road heavy-duty diesel fueled vehicles. The regulation requires affected vehicles to meet specific performance requirements between 2012 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or the equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle. With implementation of CARB's Risk Reduction Plan, DPM concentrations are expected to be reduced by 85 percent in 2020 from the estimated year-2000 level.[6] As emissions are reduced, risks associated with exposure to emissions also are expected to be reduced.

CARB Air Quality and Land Use Handbook

In April 2005, CARB released the final version of its *Air Quality and Land Use Handbook: A Community Health Perspective*. This guidance document is intended to encourage local land use agencies to consider the risks from air pollution before they approve the siting of sensitive land uses (e.g. residences) near sources of air pollution, particularly TACs (e.g. freeway and high traffic roads, commercial distribution centers, rail yards, ports, refineries, dry cleaners, gasoline stations and industrial facilities). These advisory recommendations include general setbacks or buffers from air pollution sources. However, unlike industrial or stationary sources of air pollution, the siting of new sensitive land use does not require air quality permits or approval by air districts, and as noted above, the CARB handbook provides guidance only rather than binding regulations.

CAPCOA Health Risk Assessments for Proposed Land Use Projects

The California Air Pollution Control Officer's Association (CAPCOA), which is a consortium of air district managers throughout California, provides guidance material to addressing air quality issues in the State. As a follow up to CARB's 2005 *Air Quality and Land Use Handbook*, CAPCOA prepared the *Health Risk Assessments for Proposed Land Use Projects*.[7] CAPCOA released this guidance document to ensure that the health risk of projects be identified, assessed, and avoid or mitigated, if feasible, through the CEQA process. The CAPCOA guidance document provides recommended methodologies for evaluating health risk impacts for development projects. CAPCOA updated their guidance and methodologies in 2015 with

[6] CARB. 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.
[7] CAPCOA. 2009. Health Risk Assessments for Proposed Land Use Projects.

the *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Risk Assessments* (February 2015).

CARB Innovative Clean Transit Regulation

The Innovative Clean Transit regulation was adopted in December 2018 to replace the Fleet Rule for Transit Agencies. The regulation requires all public transit agencies to gradually transition to a 100-percent zero-emission bus fleet and encourages them to provide innovative first and last-mile connectivity and improved mobility for transit riders. This regulation also provides various exemptions and compliance options to provide safeguards and flexibility for transit agencies through this transition. Through the deployment of zero-emission technologies, the ICT regulation aims to provide significant benefits across California, including saving energy and reducing dependency on petroleum and other fossil fuels, and increasing the first wave of zero-emission heavy-duty technologies into applications to further achieve emission reduction benefits. MST would be required to comply with this State regulation.

6.3.2 Regional

MBARD regulates air quality in the NCCAB, and is responsible for attainment planning related to criteria air pollutants and for district rule development and enforcement. It also reviews air quality analyses prepared for CEQA assessments, and has published the *CEQA Air Quality Guidelines* document (last revised February 2008) for use in evaluation of air quality impacts. The purpose of these Guidelines is to assist in the review and evaluation of air quality impacts from projects which are subject to CEQA. These Guidelines are an advisory document intended to provide lead agencies, consultants, and project applicants with uniform procedures for assessing potential air quality impacts and preparing the air quality section of environmental documents. These Guidelines are also intended to help these entities anticipate areas of concern from the MBARD in its role as a lead, commenting, and/or responsible agency for air quality.

Air Quality Management Plan

In accordance with the California Clean Air Act, MBARD has developed the *2017 Air Quality Management Plan for the Monterey Bay Region* (2017 AQMP). The 2012-2015 AQMP is a transitional plan shifting focus of MBARD's efforts from achieving the 1- hour component of the CAAQS for ozone to achieving the 8-hour requirement CAAQS for ozone. The plan includes an updated air quality trends analysis, which reflects both the 1- and 8-hour standards, as well as an updated emission inventory, which includes the latest information on stationary, area and mobile emission sources.

In April 2013, MBARD adopted the *2012 Triennial Plan Revision* (2012 AQMP Revision), which assesses and updates elements of the 2008 AQMP, including the air quality trends analysis, emission inventory, and mobile source programs. The 2012 AQMP Revision only addresses attainment of the State ozone standard. In 2012, U.S. EPA designated the NCCAB as in attainment of the current 8-hour NAAQS for ozone of 0.075 ppm.[8]

[8] On October 1, 2015, U.S. EPA adopted a new 8-hour ozone standard of 0.070 ppm. However, U.S. EPA has not yet reviewed recent NCCAB emissions to determine attainment with the current 0.070 ppm standard. Therefore, this attainment status is based upon U.S. EPA's prior 0.075 ppm standard.

The following MBARD rules would limit emissions of air pollutants from construction and operation of the proposed project:

- *Rule 400 (Visible Emissions)* – Discharge of visible air pollutant emissions into the atmosphere from any emission source for a period or periods aggregating more than 3 minutes in any 1 hour, as observed using an appropriate test method, is prohibited.
- *Rule 402 (Nuisances)* - No person shall discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or which endanger the comfort, repose, health, or safety of any such persons or the public; or which cause, or have a natural tendency to cause, injury or damage to business or property.
- *Rule 425 (Use of Cutback Asphalt)* – The use of cutback asphalt (asphalt cement that has been blended with petroleum solvents) is restricted.
- *Rule 426 (Architectural Coatings)* – This rule limits the emissions of ROGs from the use of architectural coatings.

6.3.3 Local

City of Seaside Municipal Code

Section 17.30.080(E) of the Seaside Municipal Code requires that dust emissions from construction, grading, commercial gardening, and similar operations must be limited beyond the Plan Area boundary to the maximum extent feasible via the following methods:

- Grading shall be designed and grading activities shall be scheduled to ensure that repeat grading will not be required, and that completion of dust-generating activity (e.g., construction, paving, or plating) will occur as soon as possible.
- Clearing, earth-moving, excavation operations or grading activities shall cease when the wind speed exceeds 25 miles per hour averaged over one hour.
- The area disturbed by clearing, demolition, earth-moving, excavation operations, or grading shall be minimized at all times.
- Dust emissions shall be controlled by watering a minimum of two times each day, paving, or other treatment of permanent on-site roads and construction roads, the covering of trucks carrying loads with dust content, and/or other dust-preventive measures (e.g., hydroseeding).
- Graded areas shall be revegetated as soon as possible, but within no longer than 30 days, to minimize dust and erosion. Disturbed areas of the construction site that are to remain inactive longer than three months shall be seeded and watered until grass cover is grown and maintained.
- Appropriate facilities shall be constructed to contain dust within the site as required by the Zoning Administrator.

6.4 Environmental Impacts and Mitigation Measures

6.4.1 Significance Criteria

The following significance criteria for air quality were derived from MBARD's 2008 CEQA Air Quality Guidelines (MBARD, 2008) and are summarized in Table 6-5: MBARD Significance Thresholds for Construction and Operational Emissions.

Short-term construction emission thresholds, as stated in MBARD's 2008 *CEQA Air Quality Guidelines*, involve identifying the level of construction activity that could result in significant temporary impacts if not mitigated. Construction activities (e.g., excavation, grading, on-site vehicle movements) that directly exceed MBARD criterion for PM_{10} would have a significant impact on local air quality when they are located nearby and upwind of sensitive receptors (MBARD, 2008). Regarding ozone, construction projects using typical equipment that temporarily emits ozone precursors are accommodated in the emission inventories of State and federally required air quality management plans and would not have a significant impact on ozone concentrations (MBARD, 2008).

If construction-related activities exceed the PM_{10} threshold of 82 pounds per day, the project would be characterized as contributing substantially to existing violations of CAAQS for PM_{10}.

In addition to the tabulated thresholds, a project may also have significant adverse impacts on air quality if the project individually or cumulatively results in any of the following:

- Exceedance of a CAAQS or NAAQS for any criteria pollutant (as determined by modeling).
- Exposure of sensitive receptors to substantial pollutant concentrations of toxic air contaminants.
- Exposure of a substantial number of people to objectionable odors.
- Inconsistency with applicable MBARD air quality management plans, polices, or regulations.

Table 6-5: MBARD Significance Thresholds for Construction and Operational Emissions

Pollutant of Concern	Daily Threshold	Comments
Construction		
Fugitive Particulate Matter (PM_{10})	82 lbs.	Examples: 1) Construction site with minimal earthmoving exceeding 8.1 acres per day, 2) Construction site with earthmoving (grading, excavation) exceeding 2.2 acres per day.
Operational		
Ozone Precursors (NO_X as NO_2)	137 lbs./day (direct + indirect)	
Fugitive Particulate Matter (PM_{10}), Dust	82 lbs./day (on-site) AAQS exceeded along unpaved roads (off-site)	The District's 82 lb./day operational phase threshold of significance applies only to on-site emissions and project-related exceedances along unpaved roads. These impacts are generally less than significant. On large development projects, almost all travel is on paved roads (0%) unpaved), and entrained road dust from vehicular travel can exceed the significance threshold. District approved dispersion modeling can be used to refute (or validate) a determination of significance if modeling shows that emissions would not cause or substantially contribute to an exceedance of State and national AAQS.
CO	LOS at intersection/road segment degrades from D or better to E or F or V/C ratio at intersection/road segment at LOS E or F increases by 0.05 or more or delay at intersection at LOS E or F increases by 10 seconds or more or reserve capacity at unsignalized intersection at LOS E or F decreases by 50 or more.	Modeling should be undertaken to determine if the project would cause or substantially contribute (550 lbs./day) to exceedance of CO AAQS. If not, the project would not have a significant impact;
SO_X or SO_2	150 lbs./day (direct)	

Source: MBARD, 2008.

The criteria for assessing cumulative impacts on localized air quality (i.e. the cumulative impacts of CO and PM_{10}) are identical to those for individual project operation. The criteria for determine a project's cumulative impact on regional ozone levels depends on consistency with the applicable AQMP. Consistency with the AQMP does not mean that a project will not have a significant project-specific adverse air quality impact. However, inconsistency with the AQMP is considered a significant cumulative

adverse air quality impact. The Association of Monterey Bay Area Governments also provides consistency determinations for population-related projects.

MBARD guidelines state that odor impacts would be significant if the project would result in the emission of substantial concentrations of pollutants that produce objectionable odors, causing injury, nuisance, or annoyance to a considerable number of persons, or endangering the comfort, health, or safety of the public. If construction or operation of the project would emit pollutants associated with odors in substantial amounts, the analysis should assess the impact on existing or reasonably foreseeable sensitive receptors.

A project would conflict with or obstruct implementation of the 2017 MBARD AQMP and *2012 Triennial Plan Revision* (2012 AQMP Revision) if it is inconsistent with the plan's growth assumptions, in terms of population, employment, or regional growth in VMT. These population forecasts were developed, in part, using data obtained from local jurisdictions regarding projected land uses and population projections identified in community plans. Projects that result in an increase in population that is inconsistent with local community plans would be considered inconsistent with MBARD's AQMP.

Impact Assessment Methodology

The analysis of air quality impacts conforms to the methodologies recommended in the MBARD's *CEQA Air Quality Guidelines*. The handbook includes thresholds for emissions associated with both construction and operation of proposed projects.

Construction Emissions

The regional construction emissions associated with the proposed project were calculated using the most recent version of CalEEMod with default inputs for the type and size of proposed roadway project, including the types and number of pieces of equipment that would be used on-site during each construction phase and off-site vehicle trips that would result from construction activities on the project site. CalEEMod is a computer model developed by the South Coast Air Quality Management District to estimate air pollutant and greenhouse gas (GHG) emissions from land use development projects, and is based on parameters that include the duration of construction activity, area of disturbance, and anticipated equipment used during construction.

The construction activities associated with roadway development pursuant to the proposed project would generate diesel emissions and dust. Construction equipment that would generate criteria air pollutants includes excavators, graders, dump trucks, and loaders. It is assumed that this type of equipment would be used during both grading/demolition and paving. It is also assumed that all of the construction equipment used would be diesel-powered.

Complete results from CalEEMod and assumptions can be viewed in Attachment 6A: Air Quality and Greenhouse Gas CalEEMod outputs.

Operational Emissions

Operational emissions associated with the project were also estimated using CalEEMod. Operational emissions would comprise mobile source emissions, emissions associated with energy consumption, and area source emissions. Mobile source emissions are generated by the increase in motor vehicle trips to and from the project site associated with operation of a project. Emissions attributed to energy use

include electricity for lighting. Area source emissions are generated by, for example, landscape maintenance equipment, consumer products, and architectural coatings.

Toxic Air Contaminants

MBARD provides guidance for evaluating impacts from TACs in its *CEQA Air Quality Guidelines* document. As noted therein, construction equipment or processes could result in significant impacts if emissions at any sensitive receptor would exceed the threshold that is based on the best available data or may result in a cancer risk greater than one incident per 100,000 population. CARB recommends evaluating impacts to sensitive receptors within 1,000 feet of a project site (CARB, 2005). Operational equipment or processes would not result in significant air quality impacts if they would comply with MBARD Rule 1000, which applies to any source that requires a permit to construct or operate pursuant to District Regulation II and has the potential to emit carcinogenic or non-carcinogenic TACs. The rule also requires sources of carcinogenic TACs to install best available control technology and reduce cancer risk to less than one incident per 100,000 population.

Consistent with MBARD recommendations, human health risks from TACs are analyzed based on the presence of mobile equipment that would generate DPM during construction and operation of the proposed project, as well as on the proximity of the nearest sensitive receptors that could be exposed to such.

CO Hotspots

Based on MBARD *CEQA Air Quality Guidelines*, a significant CO hotspot impact may occur at:

- Intersections or road segments that operate at LOS D or better that would operate at LOS E or F with project-generated traffic, or
- Intersections that operate at LOS E or F where delay would increase by 10 seconds or more with project-generated traffic.

Where intersections may operate under conditions that could result in a CO hotspot, a significant impact would occur where existing or reasonably foreseeable sensitive receptors would be exposed to the CO hotspot.

6.4.2 Summary of No and/or Beneficial Impacts

Exposure to Toxic Air Contaminants (TACs)

The project is a bus expressway and therefore would not include sensitive receptors. No major existing stationary or area sources of TACs were identified in the project site vicinity. The proposed use is not considered a TAC source of potential concern. As a result, the proposed project would not result in increased exposure of sensitive land uses to localized concentrations of TACs that would exceed MBARD's recommended significance thresholds, and therefore there would be no impact.

Exposure to Odorous Emissions

The occurrence and severity of odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. While offensive odors rarely cause physical harm, they can still be unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory

agencies. Projects with the potential to frequently expose members of the public to objectionable odors would be deemed to violate the MBARD standards.

MBARD enforces permit and nuisance rules to control odorous emissions from stationary sources. For instance, MBARD Rule 402 (Nuisances) prohibits the discharge of air contaminants or other materials that cause injury, detriment, nuisance, or annoyance to any considerable numbers of persons. Given these regulations, and the fact that there are no odorous emissions existing or proposed on or near the project site, there would be no impact.

6.4.3 Impacts of the Proposed Project

Impact AQ-1: The project would not conflict with or obstruct with implementation of the applicable air quality plan. This is a less-than-significant impact.

The MBARD's 2008 *CEQA Air Quality Guidelines* provides criteria for determining cumulative impacts and consistency. The *CEQA Air Quality Guidelines* note that a project which is inconsistent with an Air Quality Plan would have a significant cumulative impact on regional air quality. The project is consistent with the Air Quality Management Plan for the Monterey Bay Region. The project does not include any changes to land use or zoning designations. The project site is a bus expressway and does not include new land uses or structures. In addition, the proposed project's construction and operation emissions would not exceed MBARD thresholds as noted below. The NCCAB is currently in non-attainment for State ozone and PM_{10} standards which represents an existing cumulatively significant impact within the NCCAB. Ozone precursors include reactive organic gases (ROG) and NO_X. The project would not exceed quantitative thresholds for either of these ozone precursors. Similarly, PM_{10} thresholds also would not be exceeded for construction or operation of the project. Therefore, the project would not make a considerable contribution to this existing, cumulatively significant impact. This is a **less-than-significant** impact**.**

Impact AQ-2: The project could result in a cumulatively considerable net increase of a criteria pollutant for which the project region is in non-attainment under an applicable federal or State ambient air quality standard. This is a less-than-significant impact with mitigation incorporated.

Construction Impacts

Emissions produced during grading and construction activities are "short-term" because they would cease following completion of the initial development. Construction emissions would include the generation of fugitive dust, onsite generation of construction equipment exhaust emissions, and the off-site generation of mobile source emissions related to construction traffic.

Demolition and site preparation for the proposed project would begin mid-2021 and last approximately 4 months. Grading and pavement construction would begin mid-2024 and last approximately 15 months. The project would require approximately 8,545 tons of demolition for the existing building, fencing, and pavement onsite. The proposed project would require grading of the entire project site over a period of approximately two months. Earthwork is estimated to require approximately 81,815 cubic yards (cy) of material export including vegetation and site preparation. CalEEMod estimates that the project would generate up to 15 daily worker trips for paving and 89 worker trips for architectural

coating. For grading, the model estimates approximately 625 hauling trips over 45 days which would result in approximately 14 daily hauling trips. During the Grading phase there would be approximately 20 daily worker trips. Therefore, a total of 34 daily hauling and worker trips would occur during the grading phase. For site preparation, the model estimates 9,602 hauling trips over 63 days which would result in approximately 152 daily hauling trips. Fugitive dust emissions are associated with land clearing, ground excavation, cut-and-fill operations, demolition, and truck travel on unpaved roadways. Dust emissions also vary substantially from day to day, depending on the level of activity, the specific operations, and weather conditions. Fugitive dust emissions may have a substantial, temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the project vicinity.

Fugitive dust from grading and construction is expected to be short-term and would cease following completion of the initial development. Additionally, most of this material is inert silicates and is less harmful to health than the complex organic particulates released from combustion sources. Dust (larger than ten microns) generated by such activities usually becomes more of a local nuisance than a serious health problem. Of particular health concern is the amount of PM_{10} generated as a part of fugitive dust emissions.

Particulate Matter

MBARD *CEQA Guidelines* state that construction activities (e.g. excavation, grading, on-site vehicles), which emit 82 pounds per day or more of PM_{10}, would have a significant impact on local air quality when they are located nearby and upwind of sensitive receptors. Based on this emission threshold, construction activity occurring on more than 2.2 acres per day may result in significant PM_{10} emissions. The Basin is currently in non-attainment of the State PM_{10} standard. The Basin designation of non-attainment is based on exceedances measured at the Davenport, Moss Landing, Salinas, and King City monitoring stations.

As shown in Table 6-6: Project Daily Construction Emissions, construction emissions associated with the project would not exceed the 82 lb./day threshold of significance for PM_{10} during the mass grading phase of construction activities.

Table 6-6: Project Daily Construction Emissions

Emissions Source	Pollutant (pounds/day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
2021	5.20	82.74	31.11	0.16	12.71	7.03
2024	3.36	34.96	28.94	0.07	5.45	2.88
2025	6.70	10.00	18.96	0.03	1.29	0.66
Threshold	---	---	---	---	**82**	---
Exceed Threshold	NA	NA	NA	NA	No	NA

Notes:
1. The reduction/credits for construction emission mitigations are based on mitigation included in CalEEMod and as typically required by the MBARD (Basic Control Measures). The mitigation includes the following: replace ground cover on disturbed areas quickly, water exposed surfaces twice daily, and proper loading/unloading of mobile and other construction equipment.

Source: CalEEMod v. 2016.3.2 and **Attachment 6A**

Given the proximity of sensitive receptors to the project site, implementation of the following standard conditions would further ensure impacts would be reduced to a less-than-significant level for all construction activities on the project site. Impacts would be **less-than-significant with standard conditions incorporated.**

Mitigation for Impact AQ-2

SC AQ-2.1 Reduce Fugitive Dust

The project applicant shall implement the following measures to minimize nuisance impacts and to significantly reduce fugitive dust emissions, and the project applicant shall require all of the following measures to be shown on grading and building plans:

- Limit grading to 8.1 acres per day, and grading and excavation to 2.2 acres per day.
- Water graded/excavated areas and active unpaved roadways, unpaved staging areas, and unpaved parking areas at least twice daily or apply non-toxic chemical soil stabilization materials per manufacturer's recommendations. Frequency should be based on the type of operations, soil and wind exposure.
- Prohibit all grading activities during periods of high wind (more than 15 mph).
- Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).
- Stabilize all disturbed soil areas not subject to using approved chemical soil binders, jute netting, or gravel for temporary roads and any other methods approved in advance by the APCD.
- Sow exposed ground areas that are planned to be reworked at dates greater than one month after initial grading with a fast germinating, non-invasive grass seed, and water until vegetation is established.

- Plant vegetative ground cover in disturbed areas as soon as possible.
- Use street sweepers, water trucks, or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Reclaimed (non-potable) water should be used whenever possible;
- Spray dirt stockpile areas daily as needed.
- Place gravel on all roadways and driveways as soon as possible after grading. In addition, construct busway lanes and bus boarding infrastructure as soon as possible after grading unless seeding, soil binders, or frequent water application are used.
- Not exceed a 15-mph vehicle speed for all construction vehicles on any unpaved surface at the construction site.
- Cover or maintain at least 2 feet of freeboard (minimum vertical distance between top of load and top of trailer) on all trucks hauling dirt, sand, soil, or other loose materials in accordance with California Vehicle Code Section 23114.
- Limit unpaved road travel to the extent possible, for example, by limiting the travel to and from unpaved areas, by coordinating movement between work areas rather than to central staging areas, and by busing workers where feasible.
- Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site, and inspect vehicle tires to ensure free of soil prior to carry-out to paved roadways.
- Sweep streets at the end of each day, or as needed, if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water shall be used where feasible.

SC AQ-2.2 Designate a Dust Compliance Monitor

The project applicant shall require the contractor(s) or builder(s) to designate a person or persons to monitor the fugitive dust emissions and enhance the implementation of the measures as necessary to minimize dust complaints, reduce visible emissions below 20 percent opacity, and to prevent transport of dust off-site. Their duties shall include monitoring during holidays and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the MBARD Compliance Division prior to the start of any grading, earthwork, or demolition. The project applicant shall provide and post a publicly visible sign that specifies the telephone number and name to contact regarding dust complaints. This person shall respond to complaints and take corrective action within 48 hours. The phone number of the MBARD shall also be visible to ensure compliance with Rule 402 (Nuisance).

Operational Impacts

Operational emissions for expressway and transit center projects are typically generated from mobile sources (burning of fossil fuels in cars); energy sources (cooling, heating, and cooking); and area sources (landscape equipment and household products). Table 6-7: Project Daily Operational Emissions, shows that the project's maximum emissions would not exceed MBARD operational thresholds.

Table 6-7: Project Daily Operational Emissions

Emission Source	Pollutants (pounds/day)				
	Reactive Organic Gases (ROG)	Nitrogen Oxides (NO_x)	Carbon Monoxide (CO)	Particulate Matter (<10 microns [PM_{10}])	Sulfur Dioxide (SO_x)
Area	0.51	0.0011	0.12	0.0004	0.00001
Mobile	0.35	1.43	3.99	1.14	0.01
Emissions Subtotal	**0.86**	**1.44**	**4.11**	**1.14**	**0.01**
MBARD Threshold	137	137	550[1]	82	150
Are Thresholds Exceeded?	No	No	No	No	No

Notes:
Area source emissions include natural gas fuel combustion, landscape fuel combustion, consumer products, and architectural coatings.
(1) Applies to Area Source (Direct) emissions of Carbon Monoxide only.

Source: CalEEMod v. 2013.2.2 and Kimley-Horn and Associates, 2021.

Area Source Emissions

Area source emissions would be generated due to an increased demand for consumer products, architectural coating, and landscaping.

Energy Source Emissions

Energy source emissions would be generated as a result of electricity associated with the project. The primary use of electricity by the project would be for lighting and gate control at the busway access points.

Mobile Sources

Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example, ROG, NO_X, PM_{10}, and $PM_{2.5}$ are all pollutants of regional concern (NO_X and ROG react with sunlight to form O_3 [photochemical smog], and wind currents readily transport PM_{10} and $PM_{2.5}$). However, CO tends to be a localized pollutant, dispersing rapidly at the source.

Project-generated vehicle emissions have been estimated using CalEEMod. The project would result in approximately 181 total daily vehicle trips to the Transit Center. The proposed bus fleet would consist of 100 percent zero emission vehicles to comply with the CARB ICT Rule, which would not generate emissions. Additionally, the BRT would result in a reduction of 544,582 vehicle trips per year, which would reduce air quality emissions.

Total Operational Emissions

As indicated in Table 6-7: Project Daily Operational Emissions, project operational emissions would not exceed MBARD thresholds. The federal ambient air quality standards establish the levels of air quality necessary, with an adequate margin of safety, to protect the public health. Therefore, the project would not violate any air quality standards or contribute substantially to an existing or projected air quality

violation and no criteria pollutant health impacts would occur. Project operational emissions would be less than significant.

Cumulative Short-Term Emissions

The Basin is currently in non-attainment for State ozone and PM_{10} standards which represents an existing cumulatively significant impact within the Basin. As discussed above, the Project's construction-related emissions by themselves would not have the potential to exceed the MBARD significance thresholds for criteria pollutants.

Since these thresholds indicate whether an individual project's emissions have the potential to affect cumulative regional air quality, it can be expected that the project-related construction emissions would not be cumulatively considerable. The project would implement SC AQ-1 to reduce PM_{10} emissions consistent with MBARD recommendations. With implementation of MBARD construction-related mitigation requirements, project emissions would be below thresholds and would not result in cumulative impacts at a Basin-wide level. As a result, construction emissions associated with the Project would not result in a cumulatively considerable contribution to significant cumulative air quality impacts.

Cumulative Long-Term Impacts

MBARD has not established separate significance thresholds for cumulative operational emissions. The nature of air emissions is largely a cumulative impact. As a result, no single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. MBARD developed the operational thresholds of significance based on the level above which a project's individual emissions would result in a cumulatively considerable contribution to the Basin's existing air quality conditions. Therefore, a project that exceeds MBARD operational thresholds would also be a cumulatively considerable contribution to a significant cumulative impact.

As shown in Table 6-7: Project Daily Operational Emissions, the project's operational emissions would not exceed MBARD thresholds. As a result, operational emissions associated with the project would not result in a cumulatively considerable contribution to significant cumulative air quality impacts.

Impact AQ-3: The project could expose sensitive receptors to substantial pollutant concentrations. This is a less-than-significant impact.

Under CEQA, residences, schools, daycare centers, and healthcare facilities, such as hospitals, or retirement and nursing homes, are considered sensitive receptors. Some portions of the bus expressway would be located approximately 120 feet from the nearest residential property line. The proposed project involves roadway improvements which would not result in stationary emissions. The project would include a transit center with approximately 181 parking spaces, however the nearest sensitive receptors to the proposed transit center are over 2,300 feet away. Therefore, the project would not result in a substantial increase in traffic-related pollutant concentrations that could affect sensitive receptors. Further, the dust and equipment exhaust emissions during construction would be minimal and would be controlled by compliance with MBARD Dust Construction Mitigation Measures.

Construction and Operation Period Toxic Air Contaminant Impacts

A toxic air contaminant (TAC) is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. The health risk associated with high concentrations of diesel exhaust from construction equipment has a carcinogenic and chronic effect, but no short-term acute effect is currently recognized. The project could potentially expose sensitive receptors to temporary health hazards associated with TACs due to the operation of construction equipment. However, concentrations of mobile source diesel particulate matter would only be present during temporary construction activities, and as previously shown in

Table 6-6, PM_{10} emissions associated with construction activities would be well below the 82 lbs/day threshold established by MBARD. Furthermore, the project would not generate significant operational emissions (see Table 6-7); therefore, no operational TAC impacts would occur. Compliance with MBARD recommended dust control measures would further reduce PM_{10} emissions. The health risk associated with construction emissions would be less than significant and no mitigation is required.

Carbon Monoxide Hotspots

Local air quality is a major concern along roadways. CO is a primary pollutant, and unlike ozone, is directly emitted from a variety of sources. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of its impacts upon the local air quality. Areas of vehicle congestion have the potential to create "pockets" of CO called "hot spots." These pockets have the potential to exceed the 1-hour CAAQS of 20 parts per million (ppm) and/or the 8-hour CAAQS of 9 ppm.

To identify CO hotspots, MBARD criterion recommends performing a CO hotspot analysis when

- Intersections or road segments that operate at LOS D or better that would operate at LOS E or F with the project's traffic,
- Intersections or road segments that operate at LOS E or F where the volume-to-capacity (V/C) ratio would increase 0.05 or more with the project's traffic,
- Intersections that operate at LOS E or F where delay would increase by 10 seconds or more with the project's traffic,
- Unsignalized intersections which operate at LOS E or F where the reserve capacity would decrease by 50 or more with the project's traffic. This criterion is based on the turning movement with the worst reserve capacity, or
- Project would generate substantial heavy duty truck traffic or generate substantial traffic along urban street canyons or near a major stationary source of CO.

According to the traffic analysis prepared for the proposed project, the project would generate approximately 181 daily trips. All study intersections would operate at acceptable levels of service under the Existing Plus Project Conditions during the weekday AM and PM peak hours. For the Cumulative Plus Project Condition, LOS would remain consistent under the Without Project scenario and delay would not increase more than 8 seconds on Del Monte Boulevard and La Salle Avenue (Cumulative Condition has LOS F for worst approach). The project would not modify lane geometry at any of the study intersections but would add BRT signal preemption to minimize transit delay and improve efficiency. Therefore, the proposed project would not increase traffic volumes at local intersections to cause the LOS of the intersection or roadway segment to deteriorate. The proposed project would not generate a significant number of vehicle trips on all study intersections and effects related to CO concentrations would be less than significant. As described in Chapter 15: Transportation and Circulation, implementation of the proposed project would not result in an intersection LOS change at one of the adjacent study intersections. Therefore, impacts related to carbon monoxide would be **less than significant**.

Impact AQ-4: The project could result in other emissions (such as those leading to odors adversely affecting a substantial number of people). This is a less-than-significant impact.

According to MBARD, land uses associated with odor complaints typically include wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants. The project does not include any uses identified by MBARD as being associated with odors.

Construction

Construction activities associated with the project may generate detectable odors from heavy duty equipment (i.e., diesel exhaust), as well as from architectural coatings and asphalt off-gassing. Odors generated from the referenced sources are common in the man-made environment and are not known to be substantially offensive to adjacent receptors. Any construction-related odors would be short-term in nature and cease upon project completion. As a result, impacts to existing adjacent land uses from construction-related odors would be short-term in duration and therefore would be **less than significant.**

Operations

Project operations involve a BRT project that would use zero emission buses. The project does not involve any land uses that would generate odors. Operation of the project involves zero emissions buses that would not generate odors. Impacts would be **less than significant.**

6.4.4 Cumulative Impact Analysis

The geographical area for cumulative air emission impacts is the North Central Coast Air Basin, which includes Monterey County.

Impact AQ-5: The project could contribute to cumulatively considerable air quality impacts. This is a less-than-significant impact.

MBARD updated the regional *Air Quality Management Plan* in 2008, with further amendments in the 2012 Triennial Plan Revision. The plan includes current air quality data, revises the emission inventory and emission forecasts, proves an analysis of emission reductions needed to meet and maintain State ozone standards, and includes adoption of five stationary source controls to achieve emission reductions. In developing the emission forecasts, the Plan accounts for population growth for cities and counties located within the Basin.

The roadway development pursuant to the proposed project, as well as past, present, and reasonably foreseeable future, projects would comply with MBARD rules and requirements, and implement all feasible mitigation measures. Adherence to MBARD rules and regulations would alleviate potential impacts related to cumulative conditions. Construction emissions associated with the project would not result in a cumulatively considerable contribution to significant cumulative air quality impacts

According to Table 6-7: Project Daily Operational Emissions, the project's operational emissions would not exceed MBARD thresholds. As a result, operational emissions associated with the project would not result in a cumulatively considerable contribution to significant cumulative air quality impacts.

With compliance with MBARD rules and requirements, the cumulative impacts of the proposed project would be **less than significant.**

6.5 References

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