AIR QUALITY & GREENHOUSE GAS IMPACT ANALYSIS

FOR

MONTEREY-SALINAS TRANSIT MONTEREY BAY OPERATIONS AND MAINTENANCE FACILITY RENOVATION AND EXPANSION PROJECT

MONTEREY, CA

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LIST OF COMMON TERMS & ACRONYMS

AAM	Annual Arithmetic Mean
AQAP	Air Quality Attainment Plan
CAAQS	California Ambient Air Quality Standards
ARB	California Air Resources Board
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
CEQA	California Environmental Quality Act
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DPM	Diesel-Exhaust Particulate Matter or Diesel-Exhaust PM
DRRP	Diesel Risk Reduction Plan
FCAA	Federal Clean Air Act
GHG	Greenhouse Gases
HAP	Hazardous Air Pollutant
IPCC	Intergovernmental Panel on Climate Change
MST	Monterey-Salinas Transit
MBUAPCD	Monterey Bay Unified Air Pollution Control District
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards or National AAQS
NCCAB	North Central Coast Air Basin
NESHAPs	National Emission Standards for HAPs
NO_x	Oxides of Nitrogen
OAP	Ozone Attainment Plan
O_3	Ozone
Pb	Lead
PM	Particulate Matter
PM_{10}	Particulate Matter (less than 10 µm)
$PM_{2.5}$	Particulate Matter (less than 2.5 µm)
ppb	Parts per Billion
ppm	Parts per Million
ROG	Reactive Organic Gases
SO_2	Sulfur Dioxide
TAC	Toxic Air Contaminant
TSCA	Toxic Substances Control Act
$\mu g/m^3$	Micrograms per cubic meter
U.S. EPA	United State Environmental Protection Agency

INTRODUCTION

This report provides a description of the existing environment in the project area and identifies potential impacts associated with the proposed project in relation to regional and local air quality; as well as, increased emissions of greenhouse gases (GHGs). Project impacts are evaluated relative to the applicable California Environmental Quality Act (CEQA) Guidelines, Appendix G, Environmental Checklist questions. Mitigation measures have been identified for significant and potentially significant impacts.

PROPOSED PROJECT SUMMARY

Monterey-Salinas Transit (MST) is proposing to relocate some of their existing bus fleet from the MST Salinas operations facility to MST's Monterey Bay Operations and Maintenance facility. A total of thirty buses would be relocated. These buses currently service the greater Monterey Peninsula. The relocation of these buses is estimated to result in a reduction of approximately 28 miles per day for each of the relocated buses. The proposed project would also result in a relocation of some MST staff to other area locations. However, any changes in overall employee commute trip distances are anticipated to be negligible.

AIR QUALITY

EXISTING SETTING

The proposed project is located in the North Central Coast Air Basin (NCCAB), which is under the jurisdiction of the Monterey Bay Unified Air Pollution Control District (MBUAPCD). Dispersion of air pollution in an area is determined by such natural factors as topography, meteorology, and climate, coupled with atmospheric stability. The factors affecting the dispersion of air pollution with respect to the NCCAB are discussed below.

TOPOGRAPHY, METEOROLOGY, AND POLLUTANT DISPERSION

Topography

The NCCAB encompasses Santa Cruz, San Benito, and Monterey counties. The NCCAB is generally bounded by the Diablo Range to the northeast, which together with the southern portion of the Santa Cruz Mountains forms the Santa Clara Valley which extends into the northeastern tip of the NCCAB. Farther south, the Santa Clara Valley transitions into the San Benito Valley, which runs northwest-southeast and has the Gabilan Range as its western boundary. To the west of the Gabilan Range is the Salinas Valley that extends from Salinas at the northwest end to King City at the southeast end. The northwest portion of the NCCAB is dominated by the Santa Cruz Mountains.

Meteorology and Climate

The climate of the NCCAB is dominated by a semi-permanent high pressure cell over the Pacific Ocean. In the summer, the dominant high pressure cell results in persistent west and northwest winds across the majority of coastal California. As air descends in the Pacific high pressure cell, a stable temperature inversion is formed. As temperatures increase, the warmer air aloft expands, forcing the coastal layer of air to move onshore producing a moderate sea breeze over the coastal plains and valleys. Temperature inversions inhibit vertical air movement and often result in increased transport of air pollutants to inland receptor areas.

Figure 1
Proposed Project Location

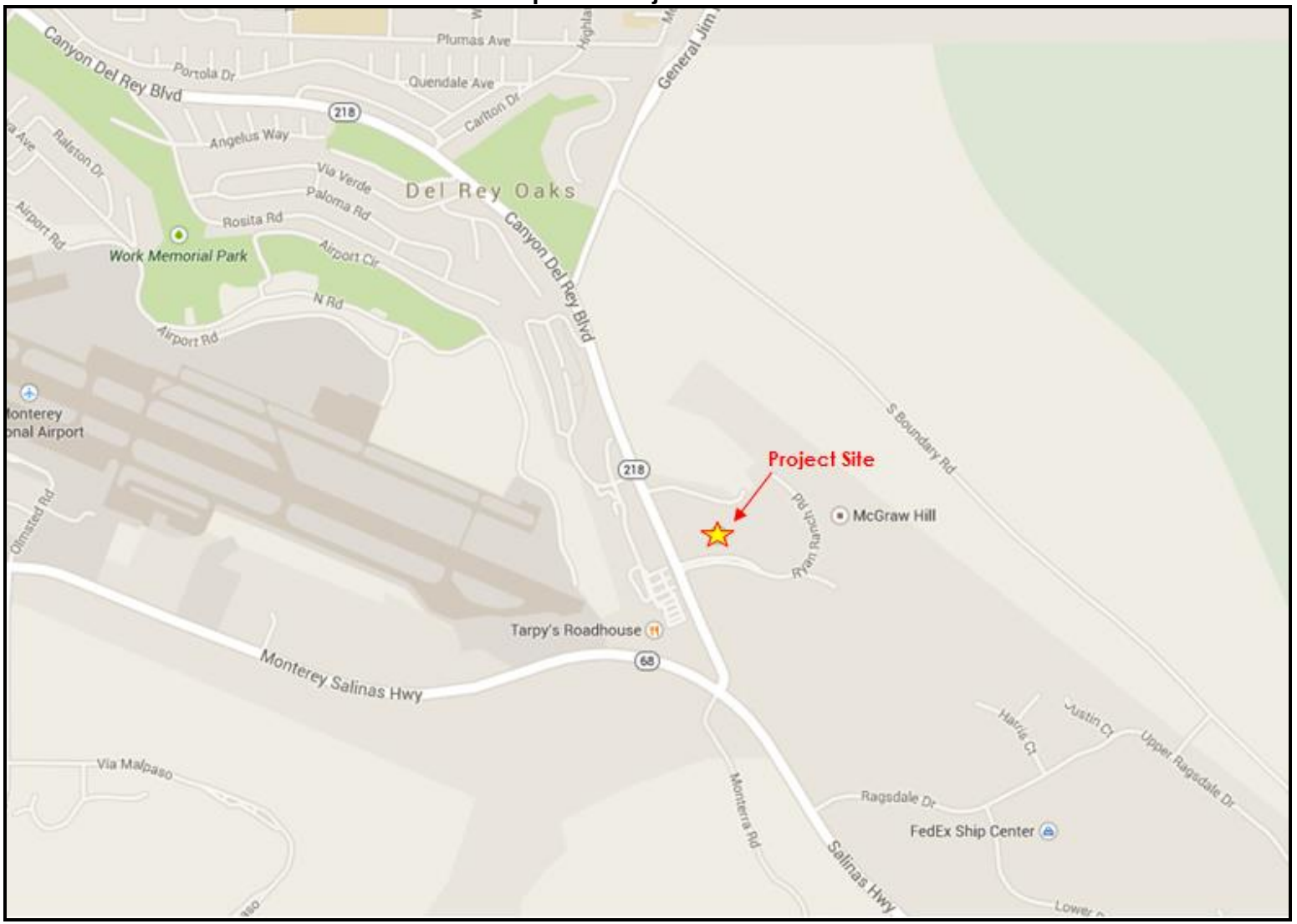
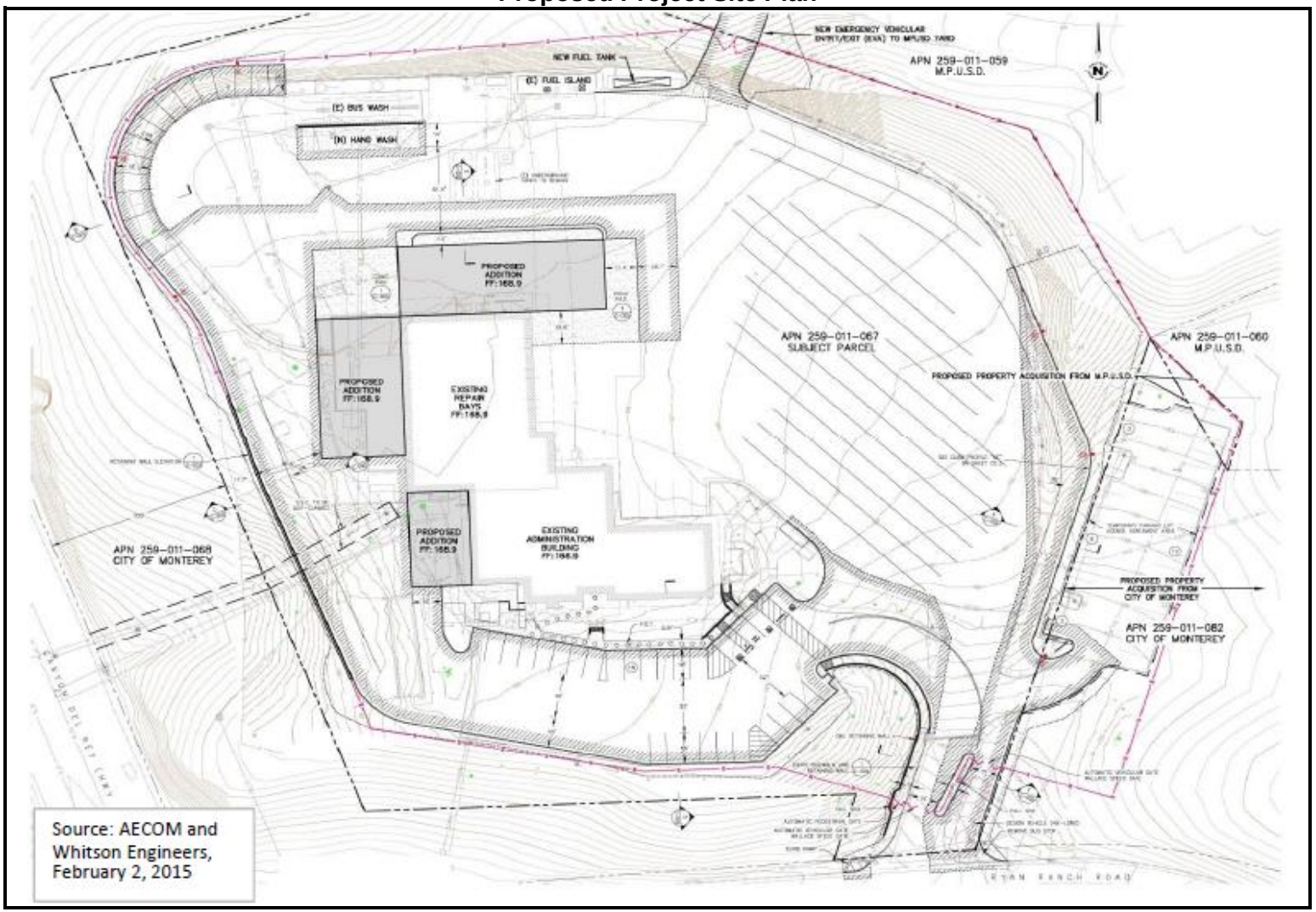


Image Source: Google Maps 2015

Figure 2
Proposed Project Site Plan



Source: Hatch Mott MacDonald 2015

In the winter, when the high pressure cell is weakest and farthest south, the inversion associated with the Pacific high pressure cell is typically absent in the NCCAB. Air frequently flows in a southeasterly direction out of the Salinas and San Benito valleys in the NCCAB. The predominant offshore flow during this time of year tends to aid in pollutant dispersal producing relatively healthful to moderate air quality throughout the majority of the region. Conditions during this time are often characterized by afternoon and evening land breezes and occasional rain storms. However, local inversions caused by the cooling of air close to the ground can form in some areas during the evening and early morning hours.

Winter daytime temperatures in the NCCAB typically average in the mid 50s during the day, with nighttime temperatures averaging in the low 40s. Summer daytime temperatures typically average in the 60s during the day, with nighttime temperatures averaging in the 50s. Precipitation varies within the region, but in general, annual rainfall is lowest in the coastal plain and inland valley, higher in the foothills, and highest in the mountains.

CRITERIA AIR POLLUTANTS

For the protection of public health and welfare, the Federal Clean Air Act (FCAA) required that the United States Environmental Protection Agency (U.S. EPA) establish National Ambient Air Quality Standards (NAAQS) for various pollutants. These pollutants are referred to as "criteria" pollutants because the U.S. EPA publishes criteria documents to justify the choice of standards. These standards define the maximum amount of an air pollutant that can be present in ambient air without harm to the public's health. An ambient air quality standard is generally specified as a concentration averaged over a specific time period, such as one hour, eight hours, 24 hours, or one year. The different averaging times and concentrations are meant to protect against different exposure effects. The FCAA allows states to adopt additional or more health-protective standards. The air quality regulatory framework and ambient air quality standards are discussed in greater detail later in this report.

Human Health & Welfare Effects

Common air pollutants and associated adverse health and welfare effects are summarized in **Table 1**. Within the NCCAB, the air pollutants of primary concern, with regard to human health, include ozone, particulate matter (PM) and carbon monoxide (CO). As depicted in **Table 1**, exposure to increased pollutant concentrations of ozone, PM and CO can result in various heart and lung ailments, cardiovascular and nervous system impairment, and death.

ODORS

Typically odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from the psychological (i.e. irritation, anger, or anxiety) to the physiological, including circulatory and respiratory effects, nausea, vomiting, and headache.

The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor and in fact an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Table 1
Common Pollutants & Adverse Effects

Pollutant	Human Health & Welfare Effects
Particulate Matter (PM_{10} & $PM_{2.5}$)	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Ozone (O_3)	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles and dyes.
Sulfur Dioxide (SO_2)	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel; damage crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Carbon Monoxide (CO)	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO_2)	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to global warming, and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Lead	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: CAPCOA 2010

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word strong to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

Neither the state nor the federal governments have adopted rules or regulations for the control of odor sources. The MBUAPCD does not have an individual rule or regulation that specifically addresses odors. Any actions related to odors would be based on citizen complaints to local governments and the MBUAPCD. The MBUAPCD recommends that odor impacts be addressed in a qualitative manner. Such an analysis shall determine if the Project results in excessive nuisance odors, as defined under the California Code of Regulations, Health & Safety Code Section 41700, air quality public nuisance.

TOXIC AIR CONTAMINANTS

Toxic air contaminants (TACs) are air pollutants that may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air, but due to their high toxicity, they may pose a threat to public health even at very low concentrations. Because there is no threshold level below which adverse health impacts are not expected to occur, TACs differ from criteria pollutants for which acceptable levels of exposure can be determined and for which state and federal governments have set ambient air quality standards. TACs, therefore, are not considered "criteria pollutants" under either the FCAA or the California Clean Air Act (CCAA), and are thus not subject to National or California ambient air quality standards (NAAQS and CAAQS, respectively).

TACs are not considered criteria pollutants in that the federal and California Clean Air Acts do not address them specifically through the setting of NAAQS or CAAQS. Instead, the U.S. EPA and the California Air Resources Board (ARB) regulate Hazardous Air Pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions. In conjunction with District rules, these federal and state statutes and regulations establish the regulatory framework for TACs. At the national levels, the U.S. EPA has established National Emission Standards for HAPs (NESHAPs), in accordance with the requirements of the FCAA and subsequent amendments. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

Within California, TACs are regulated primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

At the state level, the ARB has authority for the regulation of emissions from motor vehicles, fuels, and consumer products. Most recently, Diesel-exhaust particulate matter (DPM) was added to the ARB list of TACs. DPM is the primary TACs of concern for mobile sources. Of all controlled TACs, emissions of DPM are estimated to be responsible for about 70 percent of the total ambient TAC risk. The ARB has made the reduction of the public's exposure to DPM one of its highest priorities, with an aggressive plan to require cleaner diesel fuel and cleaner diesel engines and vehicles (ARB 2005).

At the local level, air districts have the authority over stationary or industrial sources. All projects that require air quality permits from the MBUAPCD are evaluated for TAC emissions. The MBUAPCD limits emissions and public exposure to TACs through a number of programs. The MBUAPCD prioritizes TAC-emitting stationary sources, based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. The MBUAPCD requires a comprehensive health risk assessment for facilities that are classified in the significant-risk category, pursuant to AB 2588. No major existing sources of TACs have been identified in the project area.

ASBESTOS

The term "asbestos" describes naturally occurring fibrous minerals found in certain types of rock formations. It is a mineral compound of silicon, oxygen, hydrogen, and various metal cations. When mined and processed, asbestos is typically separated into very thin fibers. When these fibers are present in the air, they are normally invisible to the naked eye. Once airborne, asbestos fibers can cause serious health problems. If inhaled, asbestos fibers can impair normal lung functions, and increase the risk of developing lung cancer, mesothelioma, or asbestosis.

Naturally-occurring asbestos, which was identified as a TAC in 1986 by ARB, is located in many parts of California and is commonly associated with ultramafic rock. The project site is not located in an area of known or suspected naturally-occurring asbestos. Refer to **Appendix A**.

SENSITIVE RECEPTORS

One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed "sensitive receptors." The term sensitive receptors refer to specific population groups, as well as the land uses where individuals would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses would include facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Residential dwellings, schools, parks, playgrounds, childcare centers, convalescent homes, and hospitals are examples of sensitive land uses.

No sensitive land uses are located in the general vicinity of the proposed project site. The nearest sensitive land uses include residential dwellings located in excess of 0.2 miles north of the project site.

REGULATORY FRAMEWORK

Air quality within the NCCAB is regulated by several jurisdictions including the U.S. EPA, ARB, and the MBUAPCD. Each of these jurisdictions develops rules, regulations, and policies to attain the goals or directives imposed upon them through legislation. Although U.S. EPA regulations may not be superseded, both state and local regulations may be more stringent.

FEDERAL

U.S. Environmental Protection Agency

At the federal level, the U.S. EPA has been charged with implementing national air quality programs. The U.S. EPA's air quality mandates are drawn primarily from the FCAA, which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990.

Federal Clean Air Act

The FCAA required the U.S. EPA to establish National Ambient Air Quality Standards (NAAQS), and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions. NAAQS are summarized in **Table 2**.

The FCAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The FCAA Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The U.S. EPA has responsibility to review all state SIPs to determine conformance with the mandates of the FCAA, and the amendments thereof, and determine if implementation will achieve air quality goals. If the U.S. EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures.

Toxic Substances Control Act

The Toxic Substances Control Act (TSCA) first authorized the U.S. EPA to regulate asbestos in schools and Public and Commercial buildings under Title II of the law, which is also known as the Asbestos Hazard Emergency Response Act (AHERA). AHERA requires Local Education Agencies (LEAs) to inspect their schools for ACBM and prepare management plans to reduce the asbestos hazard. The Act also established a program for the training and accreditation of individuals performing certain types of asbestos work.

National Emission Standards for Hazardous Air Pollutants

Pursuant to the FCAA of 1970, the U.S. EPA established the National Emission Standards for Hazardous Air Pollutants (NESHAP). These are technology-based source-specific regulations that limit allowable emissions of HAPs.

Table 2
Summary of Ambient Air Quality Standards & Attainment Designations

Pollutant	Averaging Time	California Standards*		National Standards*	
		Concentration*	Attainment Status	Primary	Attainment Status
Ozone (O_3)	1-hour	0.09 ppm	Non-Attainment	–	Attainment/ Unclassified
	8-hour	0.070 ppm		0.075 ppm	
Particulate Matter (PM_{10})	AAM	20 µg/m3	Non-Attainment	–	Attainment
	24-hour	50 µg/m3		150 µg/m3	
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 µg/m3	Attainment	12 µg/m3	Attainment/ Unclassified
	24-hour	No Standard		35 µg/m3	
Carbon Monoxide (CO)	1-hour	20 ppm	Attainment	35 ppm	Attainment/ Maintenance
	8-hour	9 ppm		9 ppm	
	8-hour (Lake Tahoe)	6 ppm		–	
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm	Attainment	0.053 ppm	Attainment/ Unclassified
	1-hour	0.18 ppm		0.100 ppb	
Sulfur Dioxide (SO_2)	AAM	–	Attainment	0.03 ppm	Attainment
	24-hour	0.04 ppm		0.14 ppm	
	3-hour	–		--	
	1-hour	0.25 ppm		75 ppb	
Lead	30-day Average	1.5 µg/m3	Attainment	–	Attainment/ Unclassified
	Calendar Quarter	–		1.5 µg/m3	
	Rolling 3-Month Average	–		0.15 µg/m3	
Sulfates	24-hour	25 µg/m3	Attainment	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m3)	Unclassified		
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m3)	Attainment		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/km-visibility of 10 miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70%.	Unclassified		

** For more information on standards visit :http//ww.arb.ca.gov.research/aaqs/aaqs2.pdf*
*** No federal 1-hour standard. Reclassified extreme nonattainment for the federal 8-hour standard May 5, 2010.*
****Secondary Standard*
Source: ARB 2015; MBUAPCD 2015

STATE

California Air Resources Board

The ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act of 1988. Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts, establishing California Ambient Air Quality Standards (CAAQS), which in many cases are more stringent than the NAAQS, and setting emissions standards for new motor vehicles. The CAAQS are summarized in **Table 2**. The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel and engine used.

California Clean Air Act

The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for Ozone, CO, SO_2, and NO_2 by the earliest practical date. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a five percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

California Assembly Bill 170

Assembly Bill 170, Reyes (AB 170), was adopted by state lawmakers in 2003 creating Government Code Section 65302.1 which requires cities and counties in the San Joaquin Valley to amend their general plans to include data and analysis, comprehensive goals, policies and feasible implementation strategies designed to improve air quality.

Assembly Bills 1807 & 2588 - Toxic Air Contaminants

Within California, TACs are regulated primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

MONTEREY BAY UNIFIED AIR POLLUTION CONTROL DISTRICT

The MBUAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained in the NCCAB, within which the proposed project is located. Responsibilities of the MBUAPCD include, but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the FCAA and the CCAA.

The MBUAPCD Rules and Regulations that are applicable to the proposed project include, but are not limited to, the following:

- *Rule 424. National Emission Standards for Hazardous Air Pollutants* (NESHAPS). Demolition of existing onsite facilities may be subject to the MBUAPCD's Asbestos NESHAP requirements. These requirements include survey and notification requirements prior to beginning a demolition and renovation project, as well as work practice standards and disposal requirements.

- *Rule 402. Nuisances*. The purpose of this Rule is to provide an explicit prohibition against sources creating public nuisances while operating within the jurisdiction of the MBUAPCD.

- *Rule 425. Use of Cutback Asphalt.* The purpose of this Rule is to limit the emissions of vapors of organic compounds from the use of cutback and emulsified asphalts.

- Rule 426. The purpose of this Rule is to limit the emissions of Volatile Organic Compounds (VOC) from the use of architectural coatings

REGULATORY ATTAINMENT DESIGNATIONS

Under the CCAA, the ARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data does not support either an attainment or nonattainment designation. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The U.S. EPA designates areas for ozone, CO, and NO_2 as "does not meet the primary standards," "cannot be classified," or "better than national standards." For SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the ARB terminology of attainment, nonattainment, and unclassified is more frequently used. The U.S. EPA uses the same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, U.S. EPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for PM_{10} based on the likelihood that they would violate national PM_{10} standards. All other areas are designated "unclassified."

The state and national attainment status designations pertaining to the NCCAB are summarized in **Table 2**. The NCCAB is currently designated as a nonattainment area with respect to the state ozone standards. The NCCAB is designated either attainment or unclassified for the remaining CAAQS and NAAQS (MBUAPCD 2014).

IMPACTS & MITIGATION MEASURES

METHODOLOGY

Short-term Construction-Generated Emissions

Short-term construction emissions associated with the proposed project were calculated using CalEEMod, version 2013.2.2. Emissions modeling was assumed to occur over an approximate one-year period. Demolition assumed a total of 14,000 square feet of floor area would be demolished. Haul truck trips required for the transport of demo material were based on model defaults. A total of 3,740 cubic yards of soil is estimated to be exported from the site. Exported soil was assumed to be hauled to the Kettleman City with a one-way haul distance of 155 miles, based on data provided for the project. All remaining modeling assumptions, including construction activity durations, equipment use, and vehicle trips, were based on the default assumptions contained in the model. Modeling assumptions and output files are included in **Appendix B** of this report.

Long-term Operational Emissions

Long-term operational emissions associated with the proposed project were calculated using CalEEMod, version 2013.2.2. Emissions were quantified for area sources and energy use. Emissions associated with the

relocation of the buses from the Salinas operations center to the Monterey Bay Operations and Maintenance Facility were quantified assuming an average reduction of 28 miles/day for each of the thirty relocated buses. No stationary sources of emissions are proposed. Modeling assumptions and output files are included in **Appendix B** of this report.

THRESHOLDS OF SIGNIFICANCE

In accordance with CEQA Guidelines Appendix G Initial Study Checklist, a project would be considered to have a significant impact if it would:

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

For the purpose of this analysis, the following applicable thresholds of significance from the MBUAPCD's CEQA Air Quality Guidelines (MBUAPCD 2004) are used to determine if the proposed project would result in a significant air quality impact:

- Short-term Increases in Regional Criteria Pollutants. Construction impacts would be significant if the proposed project would emit greater than 82 pounds per day (lbs/day) of PM_{10}, or will cause a violation of PM_{10} National or State AAQS at nearby receptors.
- Long-Term Increases in Regional Criteria Pollutants. Regional (operational) impacts would be significant if the project generates direct and indirect emissions of ROG or NOX that exceed 137 lbs/day. Emissions of PM_{10} would be significant if the project would exceed 82 lbs/day or if the project would contribute to local PM_{10} concentrations that exceed Ambient Air Quality Standards. Emissions of SO_X would be significant if the project generates direct emissions of greater than 150 lbs/day;
- Increases in Local Mobile-Source CO Concentrations. Local mobile-source impacts would be significant if the project generates direct emissions of greater than 550 lbs/day of CO or if the project would contribute to local CO concentrations that exceed the State Ambient Air Quality Standard of 9.0 ppm for 8 hours or 20 ppm for 1 hour. Detailed assessments should be conducted for projects for which the level of service (LOS) at intersection/road segment degrades from D or better to E or F, or the volume-to-capacity (V/C) ratio at intersection/road segment at LOS E or F increases by 0.05 or more, or delay at an intersection at LOS E or F increases by 10 seconds or more, or the reserve capacity at unsignalized intersection at LOS E or F decreases by 50 or more.
- Increases in Toxic Air Contaminants. TAC impacts would be significant if the project would expose the public to substantial levels of TACs so that the probability of contracting cancer for the Maximally Exposed Individual would exceed 10 in 1 million and/or so that ground-level concentrations of non-carcinogenic toxic air contaminants would result in a Hazard Index greater than 1 for the Maximally Exposed Individual.
- Increases in Odorous Emissions. Odor impacts would be significant if the project has the potential to frequently expose members of the public to objectionable odors.

PROJECT IMPACTS

Impact AQ-1: *Would the project conflict with or obstruct implementation of the applicable air quality plan?*

The MBUAPCD prepares air quality plans which address attainment of the CAAQS for ozone and maintenance of NAAQS. These plans accommodate growth by projecting growth in emissions based on different indicators. Consistency of indirect emissions associated with proposed projects is generally determined by comparing the estimated population in which the project is to be located with the applicable population forecast in the air quality management plan (AQMP). Population increases not accounted for in the AQMP would be considered to have a potentially significant impact. In addition, project's that generate greater than 137 lbs/day of ozone precursors (i.e., ROG or NO_X) would also be considered to potentially conflict with implementation of applicable air quality plans.

The proposed project includes the relocation of approximately 30 buses currently being housed at MST's Salinas operations facility to MST's Monterey Bay Operations and Maintenance Facility in Monterey. These buses currently service the greater Monterey Peninsula. The relocation of these buses from Salinas to Monterey would reduce their overall time traveling to and from their storage locations, which would reduce daily vehicle mile traveled by approximately 28 miles per bus. The project would also result in the relocation of some employees. However, any increases in VMT for employee commute travel are anticipated to be negligible.

Implementation of the proposed project would not result in an increase in employment or population within the basin. In addition, the relocation of buses currently stored at MST's Salinas operations site to MST's Monterey Bay Operations and Maintenance Facility would result in an overall reduction in operational emissions. For these reasons, this impact would be considered ***less than significant***. Refer to Impact AQ-2 for additional discussion of short-term and long-term emission impacts.

Impact AQ-2: *Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?*

Short-term Construction-Generated Emissions

Short-term increases in emissions would occur during the construction process. Construction-generated emissions are of temporary duration, lasting only as long as construction activities occur, but have the potential to represent a significant air quality impact. The construction of the proposed project would result in the temporary generation of emissions associated with site grading and excavation, motor vehicle exhaust associated with construction equipment and worker trips, the interior demolition and renovation of the existing structure, as well as the movement of construction equipment on unpaved surfaces.

Estimated construction-generated emissions are summarized in **Table 3**. It is important to note that construction-generated emissions of the ozone precursor pollutants ROG and NOX are already accounted for in the emissions inventory prepared for the AQMP. As a result, the MBUAPCD does not identify a recommended significance threshold for ROG or NO_X. However, for information purposes, emissions of ROG and NO_X, as well as emissions of CO and $PM_{2.5}$ have been included.

As indicated, construction of the proposed project would generate maximum uncontrolled daily emissions of approximately 33.78 lbs/day of ROG, 54.91 lbs/day of NO_X, 48.46 lbs/day of CO, 10.33 lbs/day of PM_{10}, and 5.72 lbs/day of $PM_{2.5}$. Estimated construction-generated emissions of PM_{10} would not exceed the MBUAPCD's significance thresholds of 82 lbs/day. This impact would be considered ***less than significant***.

Table 3
Short-term Construction-Generated Emissions of Criteria Air Pollutants

Construction Process	Emissions (lbs/day)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Demolition	3.33	34.72	26.38	3.15	2.00
Site Preparation	2.75	30.92	18.89	3.20	1.59
Grading	4.75	54.91	48.46	10.33	5.72
Building Construction	3.77	24.90	17.79	1.71	1.59
Paving	2.33	18.12	13.70	1.32	1.09
Architectural Coatings	33.78	2.38	1.98	0.21	0.20
Maximum Daily Emissions:	33.78	54.91	48.46	10.33	5.72
MBUAPCD Significance Thresholds:	*None*	*None*	*None*	*82*	*None*
Exceed MBUAPCD Thresholds?	*NA*	*NA*	*NA*	*No*	*NA*

Emissions were quantified using CalEEMod, version 2013.2.2. Refer to ***Appendix B*** *for modeling results and assumptions.Totals may not sum due to rounding.*

Long-term Operational Emissions

Long-term operational emissions associated with the proposed project are summarized in **Table 4**. As indicated, operation of the proposed project would result in a slight increase in emissions from area sources (e.g. maintenance activities, use of cleaning products, architectural coatings, etc.) and energy use. However, these slight increases would be more than offset of reductions in emissions due to the relocation of the buses from the Salinas operations facility to Monterey Bay Operations and Maintenance Facility. Approximately 30 buses would be relocated, which would result in an estimated reduction of approximately 28 miles/day for each of the buses relocated. In total, the proposed project would result in net reduction in emissions of -2.07 lbs/day of ROG, -17.74 lbs/day of NO_X, -24.28 lbs/day of CO, -0.03 lbs/day of SO_X, -1.70 lbs/day of PM_{10}, and -0.71 lbs/day of $PM_{2.5}$. Operational emissions would not exceed the MBUAPCD's significance thresholds. This impact would be considered ***less than significant***.

Impact AQ-3: *Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?*

As noted in Impact AQ-2, implementation of the proposed project would not result in the generation of short-term construction emissions that would exceed applicable thresholds. Implementation of the proposed project would result in overall net reductions in long-term operational emissions. This impact is considered ***less than significant***. Refer to Impact AQ-2 for additional discussion of short-term and long-term emission impacts.

Table 4
Long-term Operational Emissions of Criteria Air Pollutants

Source	Emissions (lbs/day					
	ROG	NO_X	CO)	SO_X	PM_{10}	$PM_{2.5}$
Area Source	0.40	0.00	0.00	0.00	0.00	0.00
Energy Use	0.01	0.10	0.08	0.00	0.01	0.01
Bus Relocation[(1)]	-2.48	-17.84	-24.37	-0.03	-1.70	-0.72
Total Net Reduction in Emissions:	-2.07	-17.74	-24.28	-0.03	-1.70	-0.71
MBUAPCD Significance Thresholds:	*137*	*137*	*550*	*150*	*82[(2)]*	None
Exceed MBUAPCD Thresholds?	*No*	*No*	*No*	*No*	*No*	*NA*

Emissions were quantified using CalEEMod, version 2013.2.2. Refer to ***Appendix B*** *for modeling results and assumptions. Totals may not sum due to rounding.*

1. Bus relocation emissions are based on a total of 30 buses that would be relocated from the Salinas operating facility to the Monterey Bay Operations and Maintenance Facility and reduced VMT of 28 miles/day for each bus.

2. Applies only to onsite emissions and project-related exceedances along unpaved roads.

Impact AQ-4: *Would the project expose sensitive receptors to substantial pollutant concentrations?*

Carbon Monoxide

Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. Under specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels. For this reason, modeling of CO concentrations is typically recommended for sensitive land uses located near signalized roadway intersections that are projected to operate at unacceptable levels of service (i.e., LOS E or F). Unsignalized intersections projected to operate at unacceptable levels of service do not typically have sufficient traffic volumes, such that projected unacceptable levels of service at these intersections would typically result in localized concentrations of CO that would exceed applicable standards.

Based on the traffic analysis prepared for this project, the intersections of Olmsted Road/Highway 68, Corral De Tierra Road/Highway 68, and Torero Drive/Highway 68 are projected to operate at unacceptable LOS E, or worse, during peak-hour operations. However, implementation of the proposed project would not contribute to a substantial increase in vehicle delay (i.e., 10 seconds, or more) at these intersections. As a result, the project's contribution to localized CO concentrations at these intersections would be considered ***less than significant***.

Toxic Air Contaminants

Implementation of the proposed project would not result in the long-term operation of any major onsite stationary sources of TACs. However, construction of the proposed project may result in temporary increases in emissions of diesel-exhaust particulate matter (DPM) associated with the use of off-road diesel equipment. Health-related risks associated with diesel-exhaust emissions are primarily associated with long-term exposure and associated risk of contracting cancer. As such, the calculation of cancer risk associated with exposure of to TACs are typically calculated based on a long-term (e.g., 70-year) period of exposure. The use of diesel-powered construction equipment, however, would be temporary and episodic and would occur over a relatively large area. Construction activities would occur over an approximate one year period, which would constitute roughly one percent of the typical 70-year exposure period. As a result,

exposure to construction-generated DPM would not be anticipated to exceed applicable thresholds (i.e., incremental increase in cancer risk of 10 in one million). Furthermore, no sensitive land uses have been identified in the vicinity of the proposed project site. The nearest sensitive land uses include residential dwellings located in excess of 0.2 miles north of the project site. For these reasons, this impact would be considered ***less than significant***.

Naturally Occurring Asbestos

Naturally-occurring asbestos, which was identified by ARB as a TAC in 1986, is located in many parts of California and is commonly associated with ultramafic rock. The project site is not located near areas that are likely to contain ultramafic rock (DOC 2000). As a result, risk of exposure to asbestos during the construction process would be considered ***less than significant***.

Asbestos in Renovation & Demolition

Demolition and renovation activities can have potential negative air quality impacts, including issues associated with the proper handling and disposal of asbestos containing material (ACM). ACMs could be encountered during demolition and renovation of existing buildings, particularly older structures constructed prior to 1970. Asbestos can also be found in various building products, including (but not limited to) utility pipes/pipelines (transite pipes or insulation on pipes). If a project will involve the disturbance or potential disturbance of ACM, various regulatory requirements may apply, including the requirements stipulated in MBUAPCD's *Rule 424*. This rule incorporates National Emission Standard for Hazardous Air Pollutants (40CFR61, Subpart M - asbestos NESHAP) requirements pertaining to the inspection, handling, and disposal of ACMs. With compliance with MBUAPCD *Rule 424* this impact would be considered ***less than significant***.

Impact AQ-5: *Would the project create objectionable odors affecting a substantial number of people?*

Implementation of the proposed project would not result in long-term emissions of odors. However, construction of the proposed project would involve the use of a variety of gasoline or diesel-powered equipment that would emit exhaust fumes. Exhaust fumes, particularly diesel-exhaust, may be considered objectionable by some people. However, no sensitive land uses have been identified in the general vicinity of the proposed project site. As previously noted, the nearest sensitive land uses include residential dwellings located in excess of 0.2 miles north of the project site. As a result, short-term construction activities would not expose a substantial number of people to frequent odorous emissions. This impact would be considered ***less than significant***.

GREENHOUSE GASES AND CLIMATE CHANGE

EXISTING SETTING

The earth's climate has been warming for the past century. It is believed that this warming trend is related to the release of certain gases into the atmosphere. Greenhouse gases (GHG) absorb infrared energy that would otherwise escape from the earth. As the infrared energy is absorbed, the air surrounding the earth is heated. An overall warming trend has been recorded since the late 19th century, with the most rapid warming occurring over the past two decades. The 10 warmest years of the last century all occurred within the last 15 years. It appears that the decade of the 1990s was the warmest in human history [NOAA 2010]. Human activities have been attributed to an increase in the atmospheric abundance of greenhouse gases. The following is a brief description of the most commonly recognized GHGs.

GREENHOUSE GASES

Commonly identified GHG emissions and sources include the following:

- *Carbon dioxide (CO_2)* is an odorless, colorless natural greenhouse gas. CO_2 is emitted from natural and anthropogenic sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic out gassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood.
- *Methane (CH_4)* is a flammable greenhouse gas. A natural source of methane is from the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain methane, which is extracted for fuel. Other sources are from landfills, fermentation of manure, and ruminants such as cattle.
- *Nitrous oxide (N_20)*, also known as laughing gas, is a colorless greenhouse gas. Nitrous oxide is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load.
- *Water vapor* is the most abundant, important, and variable greenhouse gas. It is not considered a pollutant; in the atmosphere, it maintains a climate necessary for life.
- *Ozone* is known as a photochemical pollutant and is a greenhouse gas; however, unlike other greenhouse gases, ozone in the troposphere is relatively short-lived and, therefore, is not global in nature. Ozone is not emitted directly into the atmosphere but is formed by a complex series of chemical reactions between volatile organic compounds, nitrogen oxides, and sunlight.
- *Aerosols* are suspensions of particulate matter in a gas emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light.
- *Hydrofluorocarbons (HFCs)* are synthetic chemicals that are used as a substitute for CFCs. Of all the greenhouse gases, HFCs are one of three groups (the other two are perfluorocarbons and sulfur hexafluoride) with the highest global warming potential. HFCs are human-made for applications such as air conditioners and refrigerants.
- *Chlorofluorocarbons (CFCs)* are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. CFCs destroy stratospheric ozone; therefore, their production was stopped as required by the Montreal Protocol in 1987.
- *Perfluorocarbons (PFCs)* have stable molecular structures and do not break down through the chemical processes in the lower atmosphere; therefore, PFCs have long atmospheric lifetimes, between 10,000 and 50,000 years. The two main sources of PFCs are primary aluminum production and semiconductor manufacture.

- *Sulfur hexafluoride (SF6)* is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It has the highest global warming potential of any gas evaluated. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

EFFECTS OF CLIMATE CHANGE

There are uncertainties as to exactly what the climate changes will be in various local areas of the earth, and what the effects of clouds will be in determining the rate at which the mean temperature will increase. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea level rise, spread of certain diseases out of their usual geographic range, the effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, air pollution episodes, and the consequence of these effects on the economy.

Emissions of GHGs contributing to global climate change are largely attributable to human activities associated with industrial/manufacturing, utility, transportation, residential, and agricultural sectors. About three-quarters of human emissions of CO_2 to the global atmosphere during the past 20 years are due to fossil fuel burning. Atmospheric concentrations of CO_2, CH_4, and N_2O have increased 31 percent, 151 percent, and 17 percent respectively since the year 1750 (CEC 2008). GHG emissions are typically expressed in carbon dioxide-equivalents (CO_2e), based on the GHG's Global Warming Potential (GWP). The GWP is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, one ton of CH_4 has the same contribution to the greenhouse effect as approximately 21 tons of CO_2. Therefore, CH_4 is a much more potent GHG than CO_2.

REGULATORY FRAMEWORK

FEDERAL

Although climate change and GHG reduction is a concern at the federal level; currently there are no regulations or legislation that have been enacted specifically addressing GHG emissions reductions and climate change at the project level. Neither the U.S. EPA nor the Federal Highway Administration (FHWA) has promulgated explicit guidance or methodology to conduct project-level GHG analysis. However, the FHWA recommends that climate change impacts and strategies to reduce GHG emissions should considered and integrated throughout the transportation decision-making process. Such strategies include implementation of improved transportation system efficiency, use of cleaner fuels and cleaner vehicles, and a reduction in the growth of vehicle hours travelled. Climate change and its associated effects are being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the "National Clean Car Program" and EO 13514 - Federal Leadership in Environmental, Energy and Economic Performance (Caltrans 2013).

Executive Order 13514

Executive Order 13514 is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also direct federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change (Caltrans 2013).

On April 2, 2007, in Massachusetts v. EPA, 549 U.S. 497 (2007), the Supreme Court found that greenhouse gases are air pollutants covered by the Clean Air Act and that the U.S. EPA has the authority to regulate GHG. The Court held that the U.S. EPA Administrator must determine whether or not emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision (Caltrans 2013).

On December 7, 2009, the U.S. EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act (Caltrans 2013):

- Endangerment Finding: The Administrator found that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The Administrator found that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the U.S. EPA's Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles, which was published on September 15, 2009. On May 7, 2010 the final Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards was published in the Federal Register.

U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations. These steps were outlined by President Obama in a Presidential Memorandum on May 21, 2010.

The final combined U.S. EPA and NHTSA standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards require these vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile, (the equivalent to 35.5 miles per gallon if the automobile industry were to meet this CO_2 level solely through fuel economy improvements). Together, these standards will cut GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016). On November 16, 2011, U.S. EPA and NHTSA issued their joint proposal to extend this national program of coordinated greenhouse gas and fuel economy standards to model years 2017 through 2025 passenger vehicles (Caltrans 2013).

STATE

Assembly Bill 1493

Assembly Bill (AB) 1493 (Pavley) of 2002 (Health and Safety Code Sections 42823 and 43018.5) requires the California Air Resources Board (ARB) to develop and adopt the nation's first GHG emission standards for automobiles. These standards are also known as Pavley I. The California Legislature declared in AB 1493 that global warming is a matter of increasing concern for public health and the environment. It cites several risks that California faces from climate change, including a reduction in the state's water supply, an increase in air pollution caused by higher temperatures, harm to agriculture, an increase in wildfires, damage to the coastline, and economic losses caused by higher food, water, energy, and insurance prices. The bill also states that technological solutions to reduce GHG emissions would stimulate California's economy and provide jobs. In 2004, the State of California submitted a request for a waiver from federal clean air regulations, as the State is authorized to do under the Clean Air Act, to allow the State to require reduced tailpipe emissions of CO_2. In late 2007, the USEPA denied California's waiver request and declined to promulgate adequate federal regulations limiting GHG emissions. In early 2008, the State brought suit against the USEPA related to this denial.

In January 2009, President Obama instructed the USEPA to reconsider the Bush Administration's denial of California's and 13 other states' requests to implement global warming pollution standards for cars and trucks. In June 2009, the USEPA granted California's waiver request, enabling the State to enforce its GHG emissions standards for new motor vehicles beginning with the current model year.

Also in 2009, President Obama announced a national policy aimed at both increasing fuel economy and reducing GHG pollution for all new cars and trucks sold in the US. The new standards would cover model years 2012 to 2016 and would raise passenger vehicle fuel economy to a fleet average of 35.5 miles per gallon by 2016. When the national program takes effect, California has committed to allowing automakers

who show compliance with the national program to also be deemed in compliance with state requirements. California is committed to further strengthening these standards beginning in 2017 to obtain a 45 percent GHG reduction from the 2020 model year vehicles.

Executive Order No. S-3-05

Executive Order No. S-3-05 was signed on June 1, 2005, by former Governor Arnold Schwarzenegger. The goal of this EO is to reduce California's GHG emissions to: 1) year 2000 levels by 2010, 2) year 1990 levels by the 2020, and 3) 80 percent below the year 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

Executive Order S-6-06

Executive Order S-6-06 (State of California), signed on April 25, 2006, established two primary goals related to the use of biofuels within California, including: (1) by 2010, 20 percent of its biofuels need to be produced within California; increasing to 40 percent by 2020 and 75 percent by 2050; and (2) by 2010, 20 percent of the renewable electricity should be generated from biomass resources within the state, maintaining this level through 2020.

Assembly Bill 32 - California Global Warming Solutions Act of 2006

AB 32 (Health and Safety Code Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599) requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. The gases that are regulated by AB 32 include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride. The reduction to 1990 levels will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires that ARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap, institute a schedule to meet the emissions cap, and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

Climate Change Scoping Plan

In October 2008, ARB published its Climate Change Proposed Scoping Plan, which is the State's plan to achieve GHG reductions in California required by AB 32. The Scoping Plan contains the main strategies California will implement to achieve reduction of 169 million metric tons (MMT) of CO_2e, or approximately 30 percent from the state's projected 2020 emissions level of 596 $MMTCO_2e$ under a business-as-usual scenario (this is a reduction of 42 $MMTCO_2e$, or almost 10 percent, from 2002–2004 average emissions). The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The largest proposed GHG reduction recommendations are from improving emissions standards for light-duty vehicles (estimated reductions of 31.7 $MMTCO_2e$), implementation of the Low Carbon Fuel Standard (15.0 $MMTCO_2e$) program, energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 $MMTCO_2e$), and a renewable portfolio standard for electricity production (21.3 $MMTCO_2e$). The Scoping Plan identifies the local equivalent of AB 32 targets as a 15 percent reduction below baseline GHG emissions level, with baseline interpreted as GHG emissions levels between 2003 and 2008.

A key component of the Scoping Plan is the Renewable Portfolio Standard, which is intended to increase the percentage of renewables in California's electricity mix to 33 percent by year 2020, resulting in a reduction of 21.3 $MMTCO_2e$. Sources of renewable energy include, but are not limited to, biomass, wind,

solar, geothermal, hydroelectric, and anaerobic digestion. Increasing the use of renewables will decrease California's reliance on fossil fuels, thus reducing GHG emissions.

The Scoping Plan states that land use planning and urban growth decisions will play important roles in the state's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions. (Meanwhile, ARB is also developing an additional protocol for community emissions.) ARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors. The Scoping Plan states that the ultimate GHG reduction assignment to local government operations is to be determined. With regard to land use planning, the Scoping Plan expects approximately 5.0 $MMTCO_2e$ will be achieved associated with implementation of Senate Bill 375, which is discussed further below. The Climate Change Proposed Scoping Plan was approved by ARB on December 11, 2008.

The First Update of the Scoping Plan was approved by the ARB on May 22, 2014, which looked past 2020 to set mid-term goals (2030-2035) on the road to reaching the 2050 goals. ARB's Key Action for the Waste Sector focused on eliminating organics from the landfill starting in 2016 and financing the in-state infrastructure development of composting and anaerobic digestion facilities. ARB's Key Action for Short-lived Climate Pollutants such as methane is to develop a comprehensive strategy by 2015 which will focus on methane generated at landfills from the disposal of organic wastes.

Senate Bill 97 - CEQA: Greenhouse Gas Emissions

Senate Bill 97, signed in August 2007, acknowledges that climate change is an important environmental issue that requires analysis under CEQA. This bill directs the Governor's Office of Planning and Research to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, by July 1, 2009. The Resources Agency is required to certify or adopt those guidelines by January 1, 2010. Amendments to the CEQA guidelines took effect March 18, 2010. The revisions include a new section (Sec. 15064.4) that specifically addresses the potential significance of GHG emissions. Section 15064.4 calls for a "good-faith effort" to "describe, calculate or estimate" GHG emissions; Section 15064.4 further states that the analysis of the significance of any GHG impacts should include consideration of the extent to which the project would increase or reduce GHG emissions; exceed a locally applicable threshold of significance; and comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions." The guidelines also state that a project may be found to have a less-than-significant impact on GHG emissions if it complies with an adopted plan that includes specific measures to sufficiently reduce GHG emissions (Sec. 15064(h)(3)). However, the guidelines do not require or recommend a specific analytical methodology or provide quantitative criteria for determining the significance of GHG emissions.

This bill also protected projects until January 1, 2010 that were funded by the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006, or the Disaster Preparedness and Flood Protection Bond Act of 2006 (Proposition 1B or 1E) from claims of inadequate analysis of GHG as a legitimate cause of action. Thus, this "protection" is highly limited to a handful of projects and for a short time period (CAPCOA 2008).

Senate Bill 1368

Senate Bill (SB) 1368 (codified at Public Utilities Code Chapter 3) is the companion bill of AB 32. SB 1368 required the California Public Utilities Commission (CPUC) to establish a greenhouse gas emissions performance standard for baseload generation from investor-owned utilities by February 1, 2007. The bill also required the California Energy Commission (CEC) to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the greenhouse gas emission rate from a baseload combined-cycle natural-gas-fired plant. The legislation further requires that all electricity provided to

California, including imported electricity, must be generated from plants that meet the standards set by the CPUC and the CEC.

Senate Bill 1078 and Governor's Order S-14-08 (California Renewables Portfolio Standards)

Senate Bill 1078 (Public Utilities Code Sections 387, 390.1, 399.25 and Article 16) addresses electricity supply and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide a minimum 20 percent of their supply from renewable sources by 2017. This Senate Bill will affect statewide GHG emissions associated with electricity generation. In 2008, Governor Schwarzenegger signed Executive Order S-14-08, which set the Renewables Portfolio Standard target to 33 percent by 2020. It directed state government agencies and retail sellers of electricity to take all appropriate actions to implement this target. The proposed project area would receive energy service from the investor-owned Pacific Gas and Electric Company.

Prior to the Executive Order, the CPUC and the CEC were responsible for implementing and overseeing the Renewables Portfolio Standard. The Executive Order shifted that responsibility to ARB, requiring it to adopt regulations by July 31, 2010. ARB is required by current law, AB 32 of 2006, to regulate sources of greenhouse gases to meet a state goal of reducing greenhouse gas emissions to 1990 levels by 2020 and an 80 percent reduction of 1990 levels by 2050. The CEC and CPUC are expected to serve in advisory roles to help ARB develop the regulations to administer the 33 percent by 2020 requirement. Additionally, the CEC and CPUC will continue their implementation and administration of the 20 percent requirement. The Executive Order also stipulates that ARB may delegate to the CPUC and CEC any policy development or program implementation responsibilities that would reduce duplication and improve consistency with other energy programs. ARB is also authorized to increase the target and accelerate and expand the time frame.

The general definition under the State Renewables Portfolio Standard for biomass is any organic material not derived from fossil fuels, including agricultural crops, agricultural wastes and residues, waste pallets, crates, dunnage, manufacturing, and construction wood wastes, landscape and right-of-way tree trimmings, mill residues that result from milling lumber, rangeland maintenance residues, sludge derived from organic matter, and wood and wood waste from timbering operations. Biomass feedstock from state and national forests is allowable under the definition.

Executive Order S-13-08: The Climate Adaptation and Sea Level Rise Planning Directive

On November 14, 2008, Governor Schwarzenegger issued Executive Order S-13-08 in order to reduce and assess California's vulnerability to climate change and sea level rise. The Executive Order initiated four major actions:

- Initiate California's first statewide climate change adaptation strategy that will assess the state's expected climate change impacts, identify where California is most vulnerable, and recommend climate adaptation policies by early 2009.
- Request the National Academy of Sciences establish an expert panel to report on sea level rise impacts in California to inform state planning and development efforts.
- Issue interim guidance to state agencies for how to plan for sea level rise in designated coastal and floodplain areas for new projects.
- Initiate a report on critical existing and planned infrastructure projects vulnerable to sea level rise. This report was released in 2009 as the California Adaptation Strategy (CNRA 2009).

Mandatory Reporting of Greenhouse Gas Emissions

Reporting of greenhouse gases by major sources is required by the California Global Warming Solutions Act (AB 32, 2006). Revisions to the existing ARB mandatory GHG reporting regulation were considered at the board hearing on December 16, 2010. The revised regulation was approved by the California Office of Administrative Law and became effective on January 1, 2012. The revised regulation affects industrial facilities, suppliers of transportation fuels, natural gas, natural gas liquids, liquefied petroleum gas, and carbon dioxide, operators of petroleum and natural gas systems, and electricity retail providers and marketers.

Cap-and-Trade Regulation

The cap-and-trade regulation is a key element in California's climate plan. It sets a statewide limit on sources responsible for 85 percent of California's greenhouse gas emissions, and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The cap-and-trade rules came into effect on January 1, 2013 and apply to large electric power plants and large industrial plants. In 2015, they will extend to fuel distributors (including distributors of heating and transportation fuels). At that stage, the program will encompass nearly 85 percent of the state's total greenhouse gas emissions.

GHG emissions addressed by the cap-and-trade regulation are subject to an industry-wide cap on overall GHG emissions. The cap-and-trade regulation sets a firm limit or cap on GHGs, which declines approximately 3 percent each year beginning in 2013. Any growth in emissions must be accounted for under the cap, such that a corresponding and equivalent reduction in emissions must occur to allow any increase. The cap-and-trade regulation will help California achieve its goal of reducing GHG emissions to 1990 levels by the year 2020, and ultimately achieving an 80% reduction from 1990 levels by 2050. As such, the ARB has determined that the cap-and-trade regulation meets the requirements of AB 32.

CITY OF MONTEREY

City of Monterey Climate Action Plan

The *City of Monterey Climate Action Plan* (CAP) includes GHG emissions reduction strategies for both the community (emissions within our City borders) and government operations (emission resulting from the activities associated with managing the City). The CAP establishes emission reduction targets for year 2020 totaling approximately 58,417 $MTCO_2$. The CAP emission reduction targets exceed the goals set by AB32 (City of Monterey 2015).

IMPACTS & MITIGATION MEASURES

METHODOLOGY

Short-term Construction-Generated Emissions

Short-term construction emissions associated with the proposed project were calculated using CalEEMod, version 2013.2.2. Emissions modeling was assumed to occur over an approximate one-year period. Demolition assumed a total of 14,000 square feet of floor area would be demolished. Haul truck trips required for the transport of demo material were based on model defaults. A total of 3,740 cubic yards of soil is estimated to be exported from the site. Exported soil was assumed to be hauled to the Kettleman City with a one-way haul distance of 155 miles, based on data provided for the proposed project. All remaining modeling assumptions, including construction activity durations, equipment use, and vehicle trips, were based on the default assumptions contained in the model. Modeling assumptions and output files are included in **Appendix B** of this report.

Long-term Operational Emissions

Long-term operational emissions associated with the proposed project were calculated using CalEEMod, version 2013.2.2. Emissions were quantified for area sources and energy use. Emissions associated with the relocation of the buses from the Salinas operations facility to the Monterey Bay Operations and Maintenance Facility were quantified assuming an average reduction of 28 miles/day for each of the thirty relocated buses. No stationary sources of emissions are proposed. Modeling assumptions and output files are included in **Appendix B** of this report.

THRESHOLDS OF SIGNIFICANCE

CEQA Guidelines Amendments became effective March 18, 2010. Included in the Amendments are revisions to the Appendix G Initial Study Checklist. In accordance with these Amendments, a project would be considered to have a significant impact to climate change if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or,
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

PROJECT IMPACTS

Impact GHG-1: *Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? and*

Would the project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

Short-term Construction-Generated Emissions

Estimated construction-generated emissions are summarized in **Table 5**. As indicated, construction of the proposed project would generate a total of approximately 327 metric tons of carbon dioxide equivalent ($MTCO_2e$) per year. A majority of the emissions would be associated with the use of off-road equipment, worker, and truck trips. When amortized over the approximate 30-year project life, amortized emissions would be less than 10.1 $MTCO_2e$/year.

Table 5
Short-term Construction-Generated GHG Emissions

Construction Activity	Emissions (MT CO_2e)[1]
Site Preparation	3.5
Grading	24.7
Demolition	40.5
Building Construction	247.9
Paving	9.1
Architectural Coating	1.3
Total:	327.1
Amortized[2]:	*10.9*

1. *Emissions were quantified using CalEEMod, version 2013.2.2. Refer to* ***Appendix B*** *for modeling results and assumptions. Totals may not sum due to rounding.*
2. *Amortized emissions were quantified based on an approximate 30-year project life.*

Long-term Operational Emissions

Estimated operational emissions are summarized in **Table 6**. As indicated, operation of the proposed project would result in slight increases in GHG emissions associated with energy use, water use, and waste generation. However, these slight increases would be more than offset of reductions in emissions due to the relocation of the buses form the Salinas operating facility to the Monterey Bay Operations and Maintenance Facility. Approximately 30 buses would be relocated, which would result in an estimated reduction of approximately 28 miles/day for each of the buses relocated. In total, the proposed project would result in an overall reduction of approximately 438.1 $MTCO_2e$/year. With the inclusion of amortized construction emissions, GHG emissions the project would result in a combined net reduction of 427.2 $MTCO_2e$/year.

Table 6
Long-Term Operational GHG Emissions

Source	Annual Emissions (MT CO_2e)[1]
Area Sources	0.00
Energy Use	63.4
Waste Generation	7.8
Water Use	7.6
Relocated Buses	-516.9
Total:	438.1
Construction Emissions (Amortized)[3]	10.9
Total Net Reduction:	-427.2

1. *Emissions were quantified using CalEEMod, version 2013.2.2.*
2. *Relocated bus emissions are based on a total of 30 buses and an average reduction of 28 miles/day for each bus.*
3. *Construction-generated emissions were amortized assuming a 30-year project life.*

Because the proposed project would result in an overall net reduction in GHG emissions, implementation of the proposed project would not have a significant impact on the environment. The reductions in GHG emissions would assist the County and local jurisdictions, such as the City of Monterey, in meeting projected future target reductions in GHG emissions. As a result, implementation of the proposed project would not conflict with any applicable plan, policy or regulation for reducing GHG emissions. This would be considered ***less than significant***.

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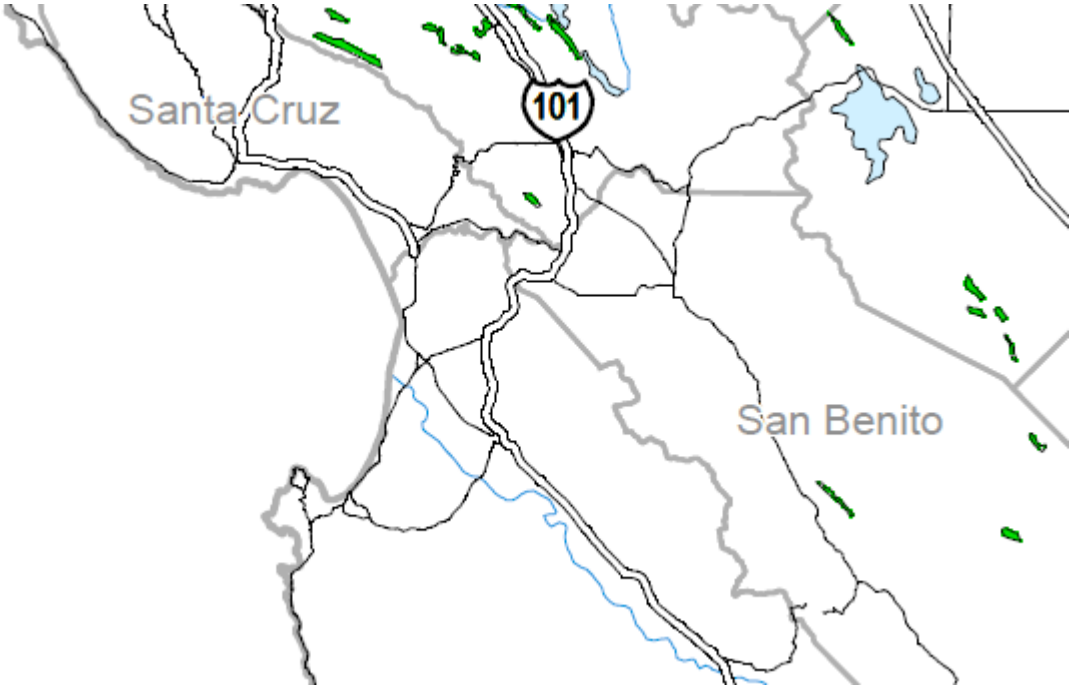
APPENDIX A

General Location of Areas More Likely to Contain Naturally Occurring Asbestos



EXPLANATION OF ULTRAMAFIC ROCK UNIT

Ultramafic rocks are dunite, peridotite, pyroxenite, and less common in California, hornblendite (IUGS classification of ultramafic rocks, in Philpotts, 1990*). These igneous rocks contain 90 percent or more of the dark colored iron-magnesium-silicate minerals olivine, augite, hypersthene, or less commonly hornblende. Ultramafic rocks form in high temperature environments well below the surface of the earth. By the time they are exposed at the surface by uplift and erosion, ultramafic rocks may be partially to completely altered to serpentinite, a type of metamorphic rock. Sometimes the metamorphic conditions are right for the formation of chrysotile asbestos or tremolite actinolite asbestos in bodies of ultramafic rock or along their boundaries.
Note--occurrences of non-ultramafic rock types, such as gabbro or diabase, may be included within some of the ultramafic rock areas shown on this map. Asbestos is much less likely to be associated with these non-ultramafic rock types.

Website: ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/ofr_2000-019.pdf

APPENDIX B

Emissions Modeling