



Victorville Fleet Service Center

AIR QUALITY IMPACT ANALYSIS

COUNTY OF SAN BERNARDINO

PREPARED BY:

Haseeb Qureshi
hqureshi@urbanxroads.com
(949) 336-5987

Jessica Wang
jwang@urbanxroads.com

APRIL 5, 2017

TABLE OF CONTENTS

TABLE OF CONTENTS	I
APPENDICES	II
LIST OF EXHIBITS	II
LIST OF TABLES	II
LIST OF ABBREVIATED TERMS	III
EXECUTIVE SUMMARY	1
1 INTRODUCTION	3
1.1 Site Location	3
1.2 Project Description	3
2 AIR QUALITY SETTING	5
2.1 Mojave Desert Air Basin	5
2.2 Regional Climate	5
2.3 Existing Air Quality	6
2.4 Regional Air Quality	9
2.5 Local Air Quality	9
2.6 Regulatory Background	14
2.7 Existing Project Site Air Quality Conditions	16
3 PROJECT AIR QUALITY IMPACT	17
3.1 Introduction	17
3.2 Standards of Significance	17
3.3 Project-Related Sources of Potential Impact	18
3.4 Construction Emissions	18
3.5 Operational Emissions	20
3.6 CO “Hot Spot” Analysis	22
3.7 Air Quality Management Planning	24
3.8 Potential Impacts to Sensitive Receptors	25
3.9 Odors	25
3.10 Cumulative Impacts	26
4 FINDINGS & CONCLUSIONS	29
4.1 Construction-Source Emissions	29
4.2 Operational-Source Emissions	29
5 REFERENCES	30
6 CERTIFICATION	33

APPENDICES

APPENDIX 3.1: STATE/FEDERAL ATTAINMENT STATUS OF CRITERIA POLLUTANTS

APPENDIX 3.2: CALEEMOD EMISSIONS MODEL OUTPUTS

LIST OF EXHIBITS

EXHIBIT 1-A: LOCATION MAP.....	4
---------------------------------------	----------

LIST OF TABLES

TABLE 2-1: AMBIENT AIR QUALITY STANDARDS (1 OF 2).....	7
TABLE 2-1: AMBIENT AIR QUALITY STANDARDS (2 OF 2).....	8
TABLE 2-2: ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE MOJAVE DESERT AIR BASIN	9
TABLE 2-3: PROJECT AREA AIR QUALITY MONITORING SUMMARY 2013-2015.....	10
TABLE 3-1: MAXIMUM DAILY EMISSIONS THRESHOLDS.....	18
TABLE 3-2: CONSTRUCTION DURATION.....	19
TABLE 3-3: CONSTRUCTION EQUIPMENT ASSUMPTIONS	19
TABLE 3-4: EMISSIONS SUMMARY OF CONSTRUCTION.....	20
TABLE 3-5: SUMMARY OF PEAK OPERATIONAL EMISSIONS	22
TABLE 3-6: CO MODEL RESULTS	23
TABLE 3-7: TRAFFIC VOLUMES	24

LIST OF ABBREVIATED TERMS

(1)	Reference
µg/m ³	Microgram per Cubic Meter
AADT	Annual Average Daily Trips
AQIA	Air Quality Impact Analysis
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
BACM	Best Available Control Measures
CAA	Federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
EPA	Environmental Protection Agency
LST	Localized Significance Threshold
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
NAAQS	National Ambient Air Quality Standards
NO ₂	Nitrogen Dioxide
NO _x	Oxides of Nitrogen
Pb	Lead
PM ₁₀	Particulate Matter 10 microns in diameter or less
PM _{2.5}	Particulate Matter 2.5 microns in diameter or less
PPM	Parts Per Million
Project	Victorville Fleet Service Center
ROG	Reactive Organic Gases
SIPs	State Implementation Plans
SRA	Source Receptor Area
SCAQMD	South Coast Air Quality Management District
TAC	Toxic Air Contaminant
TIA	Traffic Impact Analysis

TOG	Total Organic Gases
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds

EXECUTIVE SUMMARY

Short-Term Construction

For regional emissions, the Project would not exceed the numerical thresholds of significance established by the Mojave Desert Air Pollution Control District (MDAQMD). Thus a less than significant impact would occur for Project-related constructional-source emissions and no mitigation is required.

Project construction-source emissions would not conflict with the applicable Air Quality Management Plan (AQMP).

Established requirements addressing construction equipment operations, and construction material use, storage, and disposal requirements act to minimize odor impacts that may result from construction activities. Moreover, construction-source odor emissions would be temporary, short-term, and intermittent in nature and would not result in persistent impacts that would affect substantial numbers of people. Potential construction-source odor impacts are therefore considered less-than-significant.

Long-Term Operational

For regional emissions, the Project would not exceed the numerical thresholds of significance established by the MDAQMD. Thus a less than significant impact would occur for Project-related operational-source emissions and no mitigation is required.

The proposed Project would not result in a significant CO “hotspot” as a result of Project related traffic during ongoing operations, nor would the Project result in a significant adverse health impact as discussed in Section 3.6, thus a less than significant impact to sensitive receptors during operational activity is expected.

Project operational-source emissions would not conflict with the applicable AQMP.

Substantial odor-generating sources include land uses such as agricultural activities, feedlots, wastewater treatment facilities, landfills or various heavy industrial uses. The Project does not propose any such uses or activities that would result in potentially significant operational-source odor impacts. Potential sources of operational odors generated by the Project would include disposal of miscellaneous residential refuse. Moreover, MDAQMD Rule 402 acts to prevent occurrences of odor nuisances (1). Consistent with County requirements, all Project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with solid waste regulations. Potential operational-source odor impacts are therefore considered less-than-significant.

This page intentionally left blank

1 INTRODUCTION

This report presents the results of the air quality impact analysis (AQIA) prepared by Urban Crossroads, Inc., for the proposed Victorville Fleet Service Center (referred to as “Project”). The purpose of this AQIA is to evaluate the potential impacts to air quality associated with construction and operation of the proposed Project, and recommend measures to mitigate impacts considered potentially significant in comparison to established regulatory thresholds.

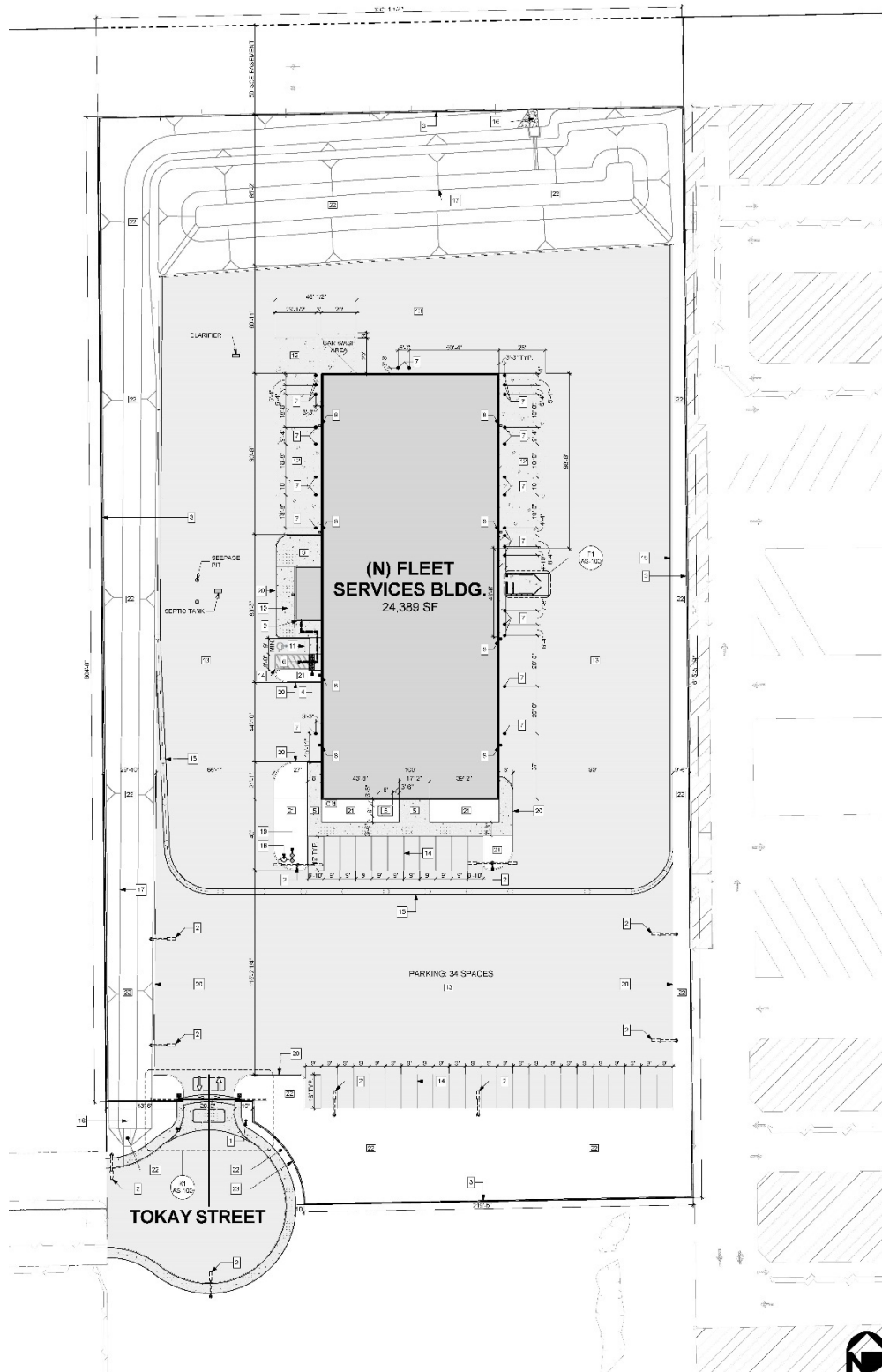
1.1 SITE LOCATION

The proposed Victorville Fleet Service Center site is located north of Tokay Street in an unincorporated city in the County of San Bernardino. The Interstate 15 Freeway (I-15) is located approximately 0.4 miles east of the Project site. The Project site is currently vacant, unoccupied, and not emitting any quantifiable emissions.

1.2 PROJECT DESCRIPTION

The County currently has fleet services activities at 17130 Mesa St., Hesperia 92345 and proposes to relocate to the Project site, which is to consist of a 23,643 square foot fleet services center building, as shown on Exhibit 1-A. For the purposes of this AQIA, it is assumed that the Project will be constructed and at full occupancy by 2017.

EXHIBIT 1-A: LOCATION MAP



2 AIR QUALITY SETTING

This section provides an overview of the existing air quality conditions in the Project area and region.

2.1 MOJAVE DESERT AIR BASIN

The Project site is located in an unincorporated city in the County of San Bernardino, California, which is part of the Mojave Desert Air Basin (MDAB) and is under the jurisdiction of the MDAQMD. The air quality assessment for the proposed Project includes estimating emissions associated with short-term construction and long-term operation of the proposed Project. A number of air quality modeling tools are available to assess the air quality impacts of projects. In addition, certain air districts, such as the MDAQMD, have created guidelines and requirements to conduct air quality analyses. The MDAQMD's current guidelines, included in its *California Environmental Quality Act and Federal Conformity Guidelines* (August 2011), were adhered to in the assessment of air quality impacts for the proposed Project.

2.2 REGIONAL CLIMATE

Air quality in the Project area is not only affected by various emissions sources (mobile, industry, etc.) but is also affected by atmospheric conditions such as wind speed, wind direction, temperature, and rainfall.

The MDAB is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains that dot the vast terrain rise from 1,000 to 4,000 ft above the valley floor. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada Mountains to the north; air masses pushed onshore in Southern California by differential heating are channeled through the MDAB. The MDAB is separated from the Southern California coastal and central California valley regions by mountains (highest elevation is approximately 10,000 ft), whose passes form the main channels for these air masses. The Mojave Desert is bordered on the southwest by the San Bernardino Mountains, separated from the San Gabriels by the Cajon Pass (4,200 ft). A lesser pass lies between the San Bernardino Mountains and the Little San Bernardino Mountains in the Morongo Valley. The Palo Verde Valley portion of the Mojave Desert lies in the low desert, at the eastern end of a series of valleys (notably the Coachella Valley), whose primary channel is the San Gorgonio Pass (2,300 ft) between the San Bernardino and San Jacinto Mountains.

During the summer, the MDAB is generally influenced by a Pacific subtropical high cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist, and unstable air masses from the south. The MDAB averages between three and seven inches of precipitation per year (from 16 to 30 days with at least 0.01

inch of precipitation). The MDAB is classified as a dry-hot desert climate, with portions classified as dry-very hot desert, to indicate that at least three months have maximum average temperatures over 100.4° F.

Snow is common above 5,000 ft in elevation, resulting in moderate snowpack and limited spring runoff. Below 5,000 ft, any precipitation normally occurs as rainfall. Pacific storm fronts normally move into the area from the west, driven by prevailing winds from the west and southwest. During late summer, moist high-pressure systems from the Pacific collide with rising heated air from desert areas, resulting in brief, high-intensity thunderstorms that can cause high winds and localized flash flooding.

2.3 EXISTING AIR QUALITY

Existing air quality is measured at established MDAQMD air quality monitoring stations. Monitored air quality is evaluated and in the context of ambient air quality standards. These standards are the levels of air quality that are considered safe, with an adequate margin of safety, to protect the public health and welfare. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) currently in effect are shown in Table 2-1 (2).

The determination of whether a region's air quality is healthful or unhealthful is determined by comparing contaminant levels in ambient air samples to the state and federal standards presented in Table 2-1. The air quality in a region is considered to be in attainment by the state if the measured ambient air pollutant levels for O₃, CO (except 8-hour Lake Tahoe), SO₂, NO₂, PM₁₀, PM_{2.5}, and visible reducing particles are not to be exceeded at any time in any consecutive three-year period; all other values are not to be equaled or exceeded. The air quality in a region is considered to be in attainment by federal standards if the measured ambient air pollutant levels for O₃, PM₁₀, PM_{2.5}, and those based on annual averages or arithmetic mean are not exceeded more than once per year. The O₃ standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

TABLE 2-1: AMBIENT AIR QUALITY STANDARDS (1 OF 2)

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

See footnotes on next page ...

For more information please call ARB-PIO at (916) 322-2990

California Air Resources Board (5/4/16)

TABLE 2-1: AMBIENT AIR QUALITY STANDARDS (2 OF 2)

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above $150 \mu\text{g}/\text{m}^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.
8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from $15 \mu\text{g}/\text{m}^3$ to $12.0 \mu\text{g}/\text{m}^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at $35 \mu\text{g}/\text{m}^3$, as was the annual secondary standard of $15 \mu\text{g}/\text{m}^3$. The existing 24-hour PM10 standards (primary and secondary) of $150 \mu\text{g}/\text{m}^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
11. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard ($1.5 \mu\text{g}/\text{m}^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

For more information please call ARB-PIO at (916) 322-2990

California Air Resources Board (5/4/16)

2.4 REGIONAL AIR QUALITY

The MDAQMD monitors levels of various criteria pollutants at six monitoring stations (Barstow, Hesperia, Phelan, Trona, Twenty-nine Palms and Victorville) throughout the air district. In 2015, the ambient air quality standards (NAAQS and CAAQS) were exceeded on one or more days for ozone (federal and state), PM₁₀ (state), and PM_{2.5} (state) at most monitoring locations. No areas of the MDAB exceeded federal or state standards for NO₂, SO₂, CO, sulfates or lead. See Table 2-2 for attainment designations for the MDAB (3). Appendix 3.1 provides geographic representation of the state and federal attainment status for applicable criteria pollutants within the MDAB.

TABLE 2-2: ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE MOJAVE DESERT AIR BASIN

Criteria Pollutant	State Designation	Federal Designation
Ozone - 1hour standard	Nonattainment	No Standard
Ozone - 8 hour standard	Nonattainment	Nonattainment
PM ₁₀	Nonattainment	Nonattainment
PM _{2.5}	Nonattainment	Attainment
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Unclassified
Lead	Attainment	Attainment

Source: State/Federal designations were taken from <http://www.arb.ca.gov/design/adm/adm.htm>

Note: See Appendix 3.1 for a detailed map of State/National Area Designations within the Mojave Desert Air Basin

2.5 LOCAL AIR QUALITY

Relative to the Project site, the nearest long-term air quality monitoring site for Ozone (O₃), Carbon Monoxide (CO), Nitrogen Dioxide (NO₂), particulate matter ≤ 10 microns (PM₁₀), and particulate matter ≤ 2.5 microns (PM_{2.5}) is the Victorville-14306 Park Avenue Monitoring Station located approximately 2.84 miles northeast of the Project.

The most recent three (3) years of data available is shown on Table 2-3 and identifies the number of days ambient air quality standards were exceeded for the study area, which is was considered to be representative of the local air quality at the Project site (4). Additionally, data for SO₂ has been omitted as attainment is regularly met in the MDAB and few monitoring stations measure SO₂ concentrations.

TABLE 2-3: PROJECT AREA AIR QUALITY MONITORING SUMMARY 2013-2015

POLLUTANT	STANDARD	YEAR		
		2013	2014	2015
Ozone (O3)				
Maximum 1-Hour Concentration (ppm)		0.097	0.096	0.105
Maximum 8-Hour Concentration (ppm)		0.097	0.096	0.105
Number of Days Exceeding State 1-Hour Standard	> 0.09 ppm	0.120	0.122	0.132
Number of Days Exceeding State 8-Hour Standard	> 0.07 ppm	60	40	39
Number of Days Exceeding Federal 1-Hour Standard	> 0.12 ppm	0	0	1
Number of Days Exceeding Federal 8-Hour Standard	> 0.075 ppm	57	38	38
Number of Days Exceeding Health Advisory	≥ 0.15 ppm	0	0	0
Nitrogen Dioxide (NO2)				
Maximum 1-Hour Concentration (ppm)		0.065	0.067	0.118
Annual Arithmetic Mean Concentration (ppm)		0.014	0.013	0.010
Number of Days Exceeding State 1-Hour Standard	> 0.18 ppm	0	0	0
Particulate Matter ≤ 10 Microns (PM10)				
Maximum 24-Hour Concentration (µg/m3)		77.9	246.2	100.8
Number of Samples		--	--	--
Number of Samples Exceeding State Standard	> 50 µg/m3	0	0	2
Number of Samples Exceeding Federal Standard	> 150 µg/m3	0	0	0
Particulate Matter ≤ 2.5 Microns (PM2.5)				
Maximum 24-Hour Concentration (µg/m3)		13.1	24.1	50.2
Annual Arithmetic Mean (µg/m3)		--	--	--
Number of Samples Exceeding Federal 24-Hour Standard	> 35 µg/m3	0	0	1

-- = data not available from ARB

Criteria pollutants are pollutants that are regulated through the development of human health based and/or environmentally based criteria for setting permissible levels. Criteria pollutants, their typical sources, and effects are identified below (5):

- Carbon Monoxide (CO): Is a colorless, odorless gas produced by the incomplete combustion of carbon-containing fuels, such as gasoline or wood. CO concentrations tend to be the highest during the winter morning, when little to no wind and surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, unlike ozone, motor vehicles operating at slow speeds are the primary source of CO in the Basin. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections.
- Sulfur Dioxide (SO2): Is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of burning high sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When SO2 oxidizes in the atmosphere, it forms sulfates (SO4). Collectively, these pollutants are referred to as sulfur oxides (SOX).

- **Nitrogen Oxides (Oxides of Nitrogen, or NO_x):** Nitrogen oxides (NO_x) consist of nitric oxide (NO), nitrogen dioxide (NO₂) and nitrous oxide (N₂O) and are formed when nitrogen (N₂) combines with oxygen (O₂). Their lifespan in the atmosphere ranges from one to seven days for nitric oxide and nitrogen dioxide, to 170 years for nitrous oxide. Nitrogen oxides are typically created during combustion processes, and are major contributors to smog formation and acid deposition. NO₂ is a criteria air pollutant, and may result in numerous adverse health effects; it absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility. Of the seven types of nitrogen oxide compounds, NO₂ is the most abundant in the atmosphere. As ambient concentrations of NO₂ are related to traffic density, commuters in heavy traffic may be exposed to higher concentrations of NO₂ than those indicated by regional monitors.
- **Ozone (O₃):** Is a highly reactive and unstable gas that is formed when volatile organic compounds (VOCs) and nitrogen oxides (NO_x) undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.
- **PM₁₀ (Particulate Matter less than 10 microns):** A major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. The size of the particles (10 microns or smaller, about 0.0004 inches or less) allows them to easily enter the lungs where they may be deposited, resulting in adverse health effects. PM₁₀ also causes visibility reduction and is a criteria air pollutant.
- **PM_{2.5} (Particulate Matter less than 2.5 microns):** A similar air pollutant consisting of tiny solid or liquid particles which are 2.5 microns or smaller (which is often referred to as fine particles). These particles are formed in the atmosphere from primary gaseous emissions that include sulfates formed from SO₂ release from power plants and industrial facilities and nitrates that are formed from NO_x release from power plants, automobiles and other types of combustion sources. The chemical composition of fine particles highly depends on location, time of year, and weather conditions. PM_{2.5} is a criteria air pollutant.
- **Volatile Organic Compounds (VOC):** Volatile organic compounds are hydrocarbon compounds (any compound containing various combinations of hydrogen and carbon atoms) that exist in the ambient air. VOCs contribute to the formation of smog through atmospheric photochemical reactions and/or may be toxic. Compounds of carbon (also known as organic compounds) have different levels of reactivity; that is, they do not react at the same speed or do not form ozone to the same extent when exposed to photochemical processes. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints. Exceptions to the VOC designation include: carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate. VOCs are a precursor to O₃, which is a criteria pollutant. The MDAQMD uses the terms VOC and ROG (see below) interchangeably.
- **Reactive Organic Gases (ROG):** Similar to VOC, Reactive Organic Gases (ROG) are also precursors in forming ozone. Smog is formed when ROG and nitrogen oxides react in the presence of sunlight. The MDAQMD uses the terms ROG and VOC (see previous) interchangeably.
- **Lead (Pb):** Lead is a heavy metal that is highly persistent in the environment. In the past, the primary source of lead in the air was emissions from vehicles burning leaded gasoline. Currently, emissions of lead are largely limited to stationary sources such as lead smelters. It should be noted that the Project is not anticipated to generate a quantifiable amount of lead emissions. Lead is a criteria air pollutant.

Health Effects of Air Pollutants

Ozone

Individuals exercising outdoors, children, and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible subgroups for ozone effects. Short-term exposure (lasting for a few hours) to ozone at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. Elevated ozone levels are associated with increased school absences. In recent years, a correlation between elevated ambient ozone levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in communities with high ozone levels.

Ozone exposure under exercising conditions is known to increase the severity of the responses described above. Animal studies suggest that exposure to a combination of pollutants that includes ozone may be more toxic than exposure to ozone alone. Although lung volume and resistance changes observed after a single exposure diminish with repeated exposures, biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.

Carbon Monoxide

Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise, and electrocardiograph changes indicative of decreased oxygen supply to the heart. Inhaled CO has no direct toxic effect on the lungs, but exerts its effect on tissues by interfering with oxygen transport and competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin (COHb). Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include fetuses, patients with diseases involving heart and blood vessels, and patients with chronic hypoxemia (oxygen deficiency) as seen at high altitudes.

Reduction in birth weight and impaired neurobehavioral development have been observed in animals chronically exposed to CO, resulting in COHb levels similar to those observed in smokers. Recent studies have found increased risks for adverse birth outcomes with exposure to elevated CO levels; these include pre-term births and heart abnormalities.

Particulate Matter

A consistent correlation between elevated ambient fine particulate matter (PM₁₀ and PM_{2.5}) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. In recent years, some studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, reduction in life-span, and an increased mortality from lung cancer.

Daily fluctuations in PM_{2.5} concentration levels have also been related to hospital admissions for acute respiratory conditions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children, and to increased medication use in children and adults with asthma. Recent studies show lung function growth in children is reduced with long-term exposure to particulate matter.

The elderly, people with pre-existing respiratory or cardiovascular disease, and children appear to be more susceptible to the effects of high levels of PM₁₀ and PM_{2.5}.

Nitrogen Dioxide

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposure to NO₂ at levels found in homes with gas stoves, which are higher than ambient levels found in Southern California. Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO₂ in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups.

In animals, exposure to levels of NO₂ considerably higher than ambient concentrations results in increased susceptibility to infections, possibly due to the observed changes in cells involved in maintaining immune functions. The severity of lung tissue damage associated with high levels of ozone exposure increases when animals are exposed to a combination of ozone and NO₂.

Sulfur Dioxide

A few minutes of exposure to low levels of SO₂ can result in airway constriction in some asthmatics, all of whom are sensitive to its effects. In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, are observed after acute exposure to SO₂. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO₂.

Animal studies suggest that despite SO₂ being a respiratory irritant, it does not cause substantial lung injury at ambient concentrations. However, very high levels of exposure can cause lung edema (fluid accumulation), lung tissue damage, and sloughing off of cells lining the respiratory tract.

Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO₂ levels. In these studies, efforts to separate the effects of SO₂ from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.

Lead

Fetuses, infants, and children are more sensitive than others to the adverse effects of Pb exposure. Exposure to low levels of Pb can adversely affect the development and function of

the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased Pb levels are associated with increased blood pressure.

Pb poisoning can cause anemia, lethargy, seizures, and death; although it appears that there are no direct effects of Pb on the respiratory system. Pb can be stored in the bone from early age environmental exposure, and elevated blood Pb levels can occur due to breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland) and osteoporosis (breakdown of bony tissue). Fetuses and breast-fed babies can be exposed to higher levels of Pb because of previous environmental Pb exposure of their mothers.

Odors

The science of odor as a health concern is still new. Merely identifying the hundreds of VOCs that cause odors poses a big challenge. Offensive odors can potentially affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. Second, studies have shown that the VOCs that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects such as stress.

2.6 REGULATORY BACKGROUND

2.6.1 FEDERAL REGULATIONS

The U.S. EPA is responsible for setting and enforcing the NAAQS for O₃, CO, NO_x, SO₂, PM₁₀, PM_{2.5}, and lead (2). The U.S. EPA has jurisdiction over emissions sources that are under the authority of the federal government including aircraft, locomotives, and emissions sources outside state waters (Outer Continental Shelf). The U.S. EPA also establishes emission standards for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission requirements of the CARB.

The Federal Clean Air Act (CAA) was first enacted in 1955, and has been amended numerous times in subsequent years (1963, 1965, 1967, 1970, 1977, and 1990). The CAA establishes the federal air quality standards, the NAAQS, and specifies future dates for achieving compliance (6). The CAA also mandates that states submit and implement State Implementation Plans (SIPs) for local areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA that identify specific emission reduction goals for areas not meeting the NAAQS require a demonstration of reasonable further progress toward attainment and incorporate additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA most directly applicable to the development of the Project site include Title I (Non-Attainment Provisions) and Title II (Mobile Source Provisions). Title I provisions were established with the goal of attaining the NAAQS for the following criteria pollutants O₃, NO₂, SO₂, PM₁₀, CO, PM_{2.5}, and lead. The NAAQS were amended in July 1997 to include an

additional standard for O₃ and to adopt a NAAQS for PM_{2.5}. Table 2-1 (previously presented) provides the NAAQS within the basin.

Mobile source emissions are regulated in accordance with Title II provisions. These provisions require the use of cleaner burning gasoline and other cleaner burning fuels such as methanol and natural gas. Automobile manufacturers are also required to reduce tailpipe emissions of hydrocarbons and nitrogen oxides (NO_x). NO_x is a collective term that includes all forms of nitrogen oxides (NO, NO₂, NO₃) which are emitted as byproducts of the combustion process.

2.6.2 CALIFORNIA REGULATIONS

The CARB, which became part of the California EPA in 1991, is responsible for ensuring implementation of the California Clean Air Act (AB 2595), responding to the federal CAA, and for regulating emissions from consumer products and motor vehicles. The California CAA mandates achievement of the maximum degree of emissions reductions possible from vehicular and other mobile sources in order to attain the state ambient air quality standards by the earliest practical date. The CARB established the CAAQS for all pollutants for which the federal government has NAAQS and, in addition, establishes standards for sulfates, visibility, hydrogen sulfide, and vinyl chloride. However at this time, hydrogen sulfide and vinyl chloride are not measured at any monitoring stations in the MDAB because they are not considered to be a regional air quality problem. Generally, the CAAQS are more stringent than the NAAQS (7) (2).

Local air quality management districts, such as the MDAQMD, regulate air emissions from commercial and light industrial facilities. All Basins have been formally designated as attainment or non-attainment for each CAAQS.

Non-attainment areas are required to prepare air quality management plans that include specified emission reduction strategies in an effort to meet clean air goals. These plans are required to include:

- Application of Best Available Retrofit Control Technology to existing sources;
- Developing control programs for area sources (e.g., architectural coatings and solvents) and indirect sources (e.g. motor vehicle use generated by residential and commercial development);
- A District permitting system designed to allow no net increase in emissions from any new or modified permitted sources of emissions;
- Implementing reasonably available transportation control measures and assuring a substantial reduction in growth rate of vehicle trips and miles traveled;
- Significant use of low emissions vehicles by fleet operators;
- Sufficient control strategies to achieve a five percent or more annual reduction in emissions or 15 percent or more in a period of three years for ROG_s, NO_x, CO and PM₁₀. However, air basins may use alternative emission reduction strategy that achieves a reduction of less than five percent per year under certain circumstances.

2.6.3 AIR QUALITY MANAGEMENT PLANNING

Currently, the NAAQS and CAAQS are exceeded in most parts of the MDAB. In regards to the NAAQS, the Project region within the MDAB is in nonattainment for ozone (8-hour). For the CAAQS, the Project region within the MDAB is in nonattainment for ozone (1-hour and 8-hour), PM10, and PM2.5. In response, the MDAQMD has adopted a series of Air Quality Management Plans (AQMPs) to meet the state and federal ambient air quality standards. AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy. A detailed discussion on the AQMP and Project consistency with the AQMP is provided in Section 3.7.

2.7 EXISTING PROJECT SITE AIR QUALITY CONDITIONS

Existing air quality conditions at the Project site would generally reflect ambient monitored conditions as presented previously at Table 2-3.

3 PROJECT AIR QUALITY IMPACT

3.1 INTRODUCTION

The Project has been evaluated to determine if it will violate an air quality standard or contribute to an existing or projected air quality violation. Additionally, the Project has been evaluated to determine if it will result in a cumulatively considerable net increase of a criteria pollutant for which the MDAB is non-attainment under an applicable federal or state ambient air quality standard. The significance of these potential impacts is described in the following section.

3.2 STANDARDS OF SIGNIFICANCE

The criteria used to determine the significance of potential Project-related air quality impacts are taken from the Initial Study Checklist in Appendix G of the State CEQA Guidelines (14 California Code of Regulations §§15000, et seq.). Based on these thresholds, a project would result in a significant impact related to air quality if it would (8):

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

The MDAQMD has also developed regional significance thresholds for other regulated pollutants, as summarized at Table 3-1 (9). The MDAQMD's California Environmental Quality Act (CEQA) and Federal Conformity Guidelines (August 2011) indicate that any projects in the MDAB with daily emissions that exceed any of the indicated thresholds should be considered as having an individually and cumulatively significant air quality impact.

TABLE 3-1: MAXIMUM DAILY EMISSIONS THRESHOLDS

Pollutant	Annual Threshold (tons)	Daily Threshold (pounds)
CO	100 tons/year	548 lbs/day
NO _x	25 tons/year	137 lbs/day
VOC	25 tons/year	137 lbs/day
SO _x	25 tons/year	137 lbs/day
PM ₁₀	15 tons/year	82 lbs/day
PM _{2.5}	15 tons/year	82 lbs/day
H ₂ S	10 tons/year	54 lbs/day
Pb	0.6 tons/year	3 lbs/day

Note: lbs/day – pounds per day

3.3 PROJECT-RELATED SOURCES OF POTENTIAL IMPACT

Land uses such as the Project affect air quality through construction-source and operational-source emissions.

On October 14, 2016, the SCAQMD in conjunction with the California Air Pollution Control Officers Association (CAPCOA) and other California air districts, released the latest version of the California Emissions Estimator Model™ (CalEEMod™) v2016.3.1. The purpose of this model is to calculate construction-source and operational-source criteria pollutant (NO_x, VOC, PM₁₀, PM_{2.5}, SO_x, and CO) and greenhouse gas (GHG) emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation measures (10). Accordingly, the latest version of CalEEMod™ has been used for this Project to determine construction and operational air quality emissions. Output from the model runs for both construction and operational activity are provided in Appendix 3.2.

3.4 CONSTRUCTION EMISSIONS

Construction activities associated with the Project will result in emissions of CO, VOCs, NO_x, SO_x, PM₁₀, and PM_{2.5}. Construction related emissions are expected from the following construction activities:

- Site Preparation
- Grading
- Building Construction

Construction is expected to occur in one single phase, beginning in June 2017 and lasting through December 2017. Construction duration is shown on Table 3-2. The construction schedule utilized in the analysis represents a “worst-case” analysis scenario should construction occur any time after the respective dates since emission factors for construction decrease as the analysis year increases. The duration of construction activity is based on information

provided by the client. A detailed summary of construction equipment assumptions by phase is provided at Table 3-3. The associated construction equipment was based on model defaults and represents a reasonable approximation of the expected construction fleet as required per CEQA guidelines. Site specific construction fleet may vary due to specific project needs at the time of construction. Please refer to specific detailed modeling inputs/outputs contained in Appendix 3.2 of this analysis.

Dust is typically a major concern during rough grading activities. Because such emissions are not amenable to collection and discharge through a controlled source, they are called “fugitive emissions”. Fugitive dust emissions rates vary as a function of many parameters (soil silt, soil moisture, wind speed, area disturbed, number of vehicles, depth of disturbance or excavation, etc.). The CalEEMod model was utilized to calculate fugitive dust emissions resulting from this phase of activity. Based on information provided by the client, the Project would require 839 cubic yards of soil import.

Construction emissions for construction worker vehicles traveling to and from the Project site, as well as vendor trips (construction materials delivered to the Project site) were estimated based on information CalEEMod model defaults.

TABLE 3-2: CONSTRUCTION DURATION

Phase Name	Start Date	End Date	Days
Site Preparation	06/01/2017	06/14/2017	10
Grading	06/15/2017	06/28/2017	60
Building Construction	06/29/2017	11/29/2017	300

TABLE 3-3: CONSTRUCTION EQUIPMENT ASSUMPTIONS

Activity	Equipment	Number	Hours Per Day
Site Preparation	Rubber Tired Dozers	3	8
	Crawler Tractors	4	8
Grading	Excavators	1	8
	Graders	1	8
	Rubber Tired Dozers	1	8
	Tractors/Loaders/Backhoes	3	8
Building Construction	Cranes	1	8
	Forklifts	3	8
	Generator Sets	1	8
	Tractors/Loaders/Backhoes	3	8
	Welders	1	8

3.4.2 CONSTRUCTION EMISSIONS SUMMARY

The estimated maximum daily construction emissions are summarized on Table 3-4. Detailed construction model outputs are presented in Appendix 3.2. Project constructional-source emissions would not exceed applicable MDAQMD regional thresholds of significance. Therefore, a less than significant impact would occur and no mitigation is required.

It should be noted that Best Available Control Measures (BACMs) are not mitigation as they are standard regulatory requirements. Therefore, credit for MDAQMD Rule 403.2 has been taken (11).

TABLE 3-4: EMISSIONS SUMMARY OF CONSTRUCTION

Year	Emissions (pounds per day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
2017	5.07	69.16	24.69	0.12	10.07	6.56
Maximum Daily Emissions	5.07	69.16	24.69	0.12	10.07	6.56
MDAQMD Regional Threshold	137	137	548	137	82	82
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

3.5 OPERATIONAL EMISSIONS

Operational activities associated with the proposed Project will result in emissions of ROG, NO_x, CO, SO_x, PM₁₀, and PM_{2.5}. Operational emissions would be expected from the following primary sources:

- Area Source Emissions
- Energy Source Emissions
- Mobile Source Emissions

3.5.1 AREA SOURCE EMISSIONS

Architectural Coatings

Over a period of time the buildings that are part of this Project will be subject to emissions resulting from the evaporation of solvents contained in paints, varnishes, primers, and other surface coatings as part of Project maintenance. The emissions associated with architectural coatings were calculated using the CalEEMod model.

Consumer Products

Consumer products include, but are not limited to detergents, cleaning compounds, polishes, personal care products, and lawn and garden products. Many of these products contain organic compounds which when released in the atmosphere can react to form ozone and other photochemically reactive pollutants. The emissions associated with use of consumer products were calculated based on defaults provided within the CalEEMod model.

Landscape Maintenance Equipment

Landscape maintenance equipment would generate emissions from fuel combustion and evaporation of unburned fuel. Equipment in this category would include lawnmowers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers used to maintain the landscaping of the Project. The emissions associated with landscape maintenance equipment were calculated based on assumptions provided in the CalEEMod model.

3.5.2 ENERGY SOURCE EMISSIONS

Combustion Emissions Associated with Natural Gas and Electricity

Electricity and natural gas are used by almost every project. Criteria pollutant emissions are emitted through the generation of electricity and consumption of natural gas. However, because electrical generating facilities for the Project area are located either outside the region (state), criteria pollutant emissions from offsite generation of electricity is generally excluded from the evaluation of significance and only natural gas use is considered. The emissions associated with natural gas use were calculated using the CalEEMod model.

3.5.3 MOBILE SOURCE EMISSIONS

Vehicles

Project operational (vehicular) impacts are dependent mainly on the overall daily vehicle trip generation and the average trip length and purpose of each trip. The Project related operational air quality impacts derive primarily from vehicle trips generated by the Project. Trip generation characteristics are based on information provided by the client and CalEEMod defaults.

The Project will have 7 employees (including 5 mechanics) onsite daily on weekdays. In addition to these trips, there will be an estimated 25 fleet vehicle visits (one-way) to the site. The vehicle mix accessing the Project site is approximately 70% light duty vehicles and 30% heavy duty vehicles.

Fugitive Dust Related to Vehicular Travel

Vehicles traveling on paved roads would be a source of fugitive emissions due to the generation of road dust inclusive of tire wear particulates. The emissions estimates for travel on paved roads were calculated using the CalEEMod model.

3.5.4 OPERATIONAL EMISSIONS SUMMARY

Operational-source emissions without implementation of mitigation measures are summarized on Table 3-5. Project operational-source emissions would not exceed applicable MDAQMD regional thresholds of significance. Therefore, a less than significant impact would occur and no mitigation is required.

TABLE 3-5: SUMMARY OF PEAK OPERATIONAL EMISSIONS

Operational Activities – Summer Scenario	Emissions (pounds per day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area Source	0.68	6.00E-05	6.51E-03	0.00	2.00E-05	2.00E-05
Energy Source	0.02	0.20	0.17	1.21E-03	0.02	0.02
Mobile	0.18	3.65	1.11	6.42E-03	0.16	0.05
Total Maximum Daily Emissions	0.88	3.85	1.29	0.01	0.18	0.07
MDAQMD Regional Threshold	137	137	548	137	82	82
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

Operational Activities – Winter Scenario	Emissions (pounds per day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area Source	0.68	6.00E-05	6.51E-03	0.00	2.00E-05	2.00E-05
Energy Source	0.02	0.20	0.17	1.21E-03	0.02	0.02
Mobile	0.19	3.60	1.24	6.04E-03	0.16	0.05
Total Maximum Daily Emissions	0.89	3.80	1.42	0.01	0.18	0.07
MDAQMD Regional Threshold	137	137	548	137	82	82
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

3.6 CO “HOT SPOT” ANALYSIS

As discussed below, the Project would not result in potentially adverse CO concentrations or “hot spots.” Further, detailed modeling of Project-specific carbon monoxide (CO) “hot spots” is not needed to reach this conclusion.

It has long been recognized that adverse localized CO concentrations (“hot spots”) are caused by vehicular emissions, primarily when idling at congested intersections. In response, vehicle emissions standards have become increasingly stringent in the last twenty years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentrations in the Project vicinity have steadily declined, as indicated by historical emissions data presented previously at Table 2-3.

A CO “hotspot” would occur if an exceedance of the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm were to occur. At the time of the 1993 Handbook, the South Coast Air Basin (SCAB) was designated nonattainment under the California AAQS and National AAQS for CO (12).

To identify CO hotspots, the AVAQMD follows the South Coast Air Quality Management District’s criterion. As identified within SCAQMD’s 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak carbon monoxide concentrations in the SCAB were a result of unusual meteorological and topographical conditions and not a result of

congestion at a particular intersection (12). To establish a more accurate record of baseline CO concentrations affecting the SCAB, a CO “hot spot” analysis was conducted in 2003 for four busy intersections in Los Angeles at the peak morning and afternoon time periods. These analyses did not predict a violation of CO standards, as shown on Table 3-6. Traffic volumes generating the CO concentrations for the analysis are shown on Table 3-7. The busiest intersection evaluated was that at Wilshire Blvd. and Veteran Ave., which has a daily traffic volume of approximately 100,000 vehicles per day. The 2003 AQMP estimated that the 1-hour concentration for this intersection was 4.6 ppm, which indicates that the most stringent 1-hour CO standard (20.0 ppm) would likely not be exceeded until the daily traffic at the intersection exceeded more than 400,000 vehicles per day.¹ The Los Angeles County Metropolitan Transportation Authority evaluated the LOS in the vicinity of the Wilshire Blvd./Veteran Ave. intersection² and found it to be Level E at peak morning traffic and Level F at peak afternoon traffic.³

It can therefore be reasonably concluded that projects (such as the proposed Victorville Fleet Service Center Project) that are not subject to the extremes in vehicle volumes and vehicle congestion that was evidenced in the 2003 Los Angeles hot spot analysis would similarly not create or result in CO hot spots.

Similar considerations are also employed by other Air Districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District (BAAQMD) concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (13). The proposed Project considered herein would not produce the volume of traffic required to generate a CO hotspot either in the context of the 2003 Los Angeles hot spot study, or based on representative BAAQMD CO threshold considerations. Therefore, CO hotspots are not an environmental impact of concern for the proposed Project. Localized air quality impacts related to mobile-source emissions would therefore be less than significant.

TABLE 3-6: CO MODEL RESULTS

Intersection Location	Morning 1-hour	Afternoon 1-hour	8-hour
Wilshire-Veteran	4.6	3.5	4.2
Sunset-Highland	4	4.5	3.9
La Cienega-Century	3.7	3.1	5.8
Long Beach-Imperial	3	3.1	9.3

Source: 2003 AQMP

Notes: ppm: parts per million. Federal 1-hour standard is 35 ppm and the deferral 8-hour standard is 9.0 ppm.

¹ Based on the ratio of the CO standard (20.0 ppm) and the modeled value (4.6 ppm).

² The Metropolitan Transportation Authority measured traffic volumes and calculated the LOS for the intersection of Wilshire Boulevard/Sepulveda Avenue, which is a block west along Wilshire Boulevard but still east of Interstate 405.

³ Metropolitan Transportation Authority. 2004. Congestion Management Program for Los Angeles County. Exhibit 2-6 and Appendix A. July 22.

TABLE 3-7: TRAFFIC VOLUMES

Intersection Location	Eastbound (AM/PM)	Westbound (AM/PM)	Southbound (AM/PM)	Northbound (AM/PM)	Total (AM/PM)
Wilshire-Veteran	4,954/2,069	1,830/3,317	721/1,400	560/933	8,062/7,719
Sunset-Highland	1,417/1,764	1,342/1,540	2,304/1,832	1,551/2,238	6,614/5,374
La Cienega-Century	2,540/2,243	1,890/2,728	1,384/2,029	821/1,674	6,634/8,674
Long Beach-Imperial	1,217/2,020	1,760/1,400	479/944	756/1,150	4,212/5,514

Source: 2003 AQMP

3.7 AIR QUALITY MANAGEMENT PLANNING

The Federal Particulate Matter Attainment Plan and Ozone Attainment Plan for the Mojave Desert set forth a comprehensive set of programs that will lead the Mojave Desert Air Basin into compliance with federal and state air quality standards. The control measures and related emission reduction estimates within the Federal Particulate Matter Attainment Plan and Ozone Attainment Plan are based upon emissions projections for a future development scenario derived from land use, population, and employment characteristics defined in consultation with local governments. Accordingly, conformance with these attainment plans for development projects is determined by demonstrating compliance with: 1) local land use plans and/or population projections, 2) all MDAQMD Rules and Regulations; and 3) demonstrating that the project will not increase the frequency or severity of a violation in the federal or state ambient air quality standards.

The Project proposes a relocation of an existing use and is anticipated to generate a net vehicle miles traveled (VMT) reduction compared to the existing use. Specifically, the County estimates the Project would generate a 0.5-mile reduction in average trip length over the existing use. Additionally, it should be noted that the proposed development would not exceed regional thresholds for operational emissions, and would therefore be considered to have a less than significant impact. As such, development proposed by the Project is consistent with the growth projections in the General Plan and is therefore considered to be consistent with the AQMP.

The Project complies with the second criterion because it will comply with all MDAQMD Rules and Regulations.

The Project complies with the third criterion because the Project would not result in a violation or increase in the severity of an existing violation of the ambient air quality standards.

AQMP Consistency Conclusion

The Project would not result in or cause NAAQS or CAAQS violations. The Project would not increase the development intensities reflected in the adopted General Plan; rather the Project would generate a net VMT reduction over the existing use. The Project is therefore considered to be consistent with the AQMP.

3.8 POTENTIAL IMPACTS TO SENSITIVE RECEPTORS

The potential impact of Project-generated air pollutant emissions at sensitive receptors has also been considered. Sensitive receptors can include uses such as long term health care facilities, rehabilitation centers, and retirement homes. Residences, schools, playgrounds, child care centers, and athletic facilities can also be considered as sensitive receptors.

Results of the regional analysis indicate that the Project will not exceed the MDAQMD significance thresholds during construction or operations. Therefore sensitive receptors would not be subject to a significant air quality impact during Project construction and operational activities.

The proposed Project would not result in a CO “hotspot” as a result of Project related traffic during ongoing operations, nor would the Project result in a significant adverse health impact as discussed in Section 3.6. Thus a less than significant impact to sensitive receptors during operational activity is expected.

3.9 ODORS

The potential for the Project to generate objectionable odors has also been considered. Land uses generally associated with odor complaints include:

- Agricultural uses (livestock and farming)
- Wastewater treatment plants
- Food processing plants
- Chemical plants
- Composting operations
- Refineries
- Landfills
- Dairies
- Fiberglass molding facilities

The Project does not contain land uses typically associated with emitting objectionable odors. Potential odor sources associated with the proposed Project may result from construction equipment exhaust and the application of asphalt and architectural coatings during construction activities and the temporary storage of typical solid waste (refuse) associated with the proposed Project’s (long-term operational) uses. Standard construction requirements would minimize odor impacts from construction. The construction odor emissions would be temporary, short-term, and intermittent in nature and would cease upon completion of the respective phase of construction and is thus considered less than significant. It is expected that Project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with the County’s solid waste regulations. The proposed Project would also be required to comply with MDAQMD’s Rule 402 to prevent occurrences of public

nuisances. Therefore, odors associated with the proposed Project construction and operations would be less than significant and no mitigation is required.

3.10 CUMULATIVE IMPACTS

The Project area is designated as an extreme non-attainment area for ozone, and a non-attainment area for PM₁₀ and PM_{2.5}.

The MDAQMD has recognized that there is typically insufficient information to quantitatively evaluate the cumulative contributions of multiple projects because each project applicant has no control over nearby projects.

Related projects could contribute to an existing or projected air quality exceedance because the Basin is currently nonattainment for ozone, PM₁₀, and PM_{2.5}.

The MDAQMD relies on the SCAQMD guidance for determining cumulative impacts. The SCAQMD has recognized that there is typically insufficient information to quantitatively evaluate the cumulative contributions of multiple projects because each project applicant has no control over nearby projects.

Related projects could contribute to an existing or projected air quality exceedance because the Basin is currently nonattainment for ozone, PM₁₀, and PM_{2.5}.

The SCAQMD published a report on how to address cumulative impacts from air pollution: *White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution* (14). In this report the AQMD clearly states (Page D-3):

"...the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR. The only case where the significance thresholds for project specific and cumulative impacts differ is the Hazard Index (HI) significance threshold for toxic air contaminant (TAC) emissions. The project specific (project increment) significance threshold is HI > 1.0 while the cumulative (facility-wide) is HI > 3.0. It should be noted that the HI is only one of three TAC emission significance thresholds considered (when applicable) in a CEQA analysis. The other two are the maximum individual cancer risk (MICR) and the cancer burden, both of which use the same significance thresholds (MICR of 10 in 1 million and cancer burden of 0.5) for project specific and cumulative impacts.

Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."

Therefore, this analysis assumes that individual projects that do not generate operational or construction emissions that exceed the MDAQMD's recommended daily thresholds for project-specific impacts would also not cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment, and, therefore, would not be considered to have a significant, adverse air quality impact. Alternatively, individual project-related construction and operational emissions that exceed MDAQMD thresholds for project-

specific impacts would be considered cumulatively considerable. As previously noted, the Project will not exceed the applicable MDAQMD regional threshold for construction and operational-source emissions. As such, the Project will not result in a cumulatively significant impact for construction or operational activity.

This page intentionally left blank

4 FINDINGS & CONCLUSIONS

4.1 CONSTRUCTION-SOURCE EMISSIONS

For regional emissions, the Project would not exceed the numerical thresholds of significance established by the MDAQMD. Thus a less than significant impact would occur for Project-related constructional-source emissions and no mitigation is required.

Project construction-source emissions would not conflict with the applicable AQMP.

Established requirements addressing construction equipment operations, and construction material use, storage, and disposal requirements act to minimize odor impacts that may result from construction activities. Moreover, construction-source odor emissions would be temporary, short-term, and intermittent in nature and would not result in persistent impacts that would affect substantial numbers of people. Potential construction-source odor impacts are therefore considered less-than-significant.

4.2 OPERATIONAL-SOURCE EMISSIONS

For regional emissions, the Project would not exceed the numerical thresholds of significance established by the MDAQMD. Thus a less than significant impact would occur for Project-related operational-source emissions and no mitigation is required.

The proposed Project would not result in a significant CO “hotspot” as a result of Project related traffic during ongoing operations, nor would the Project result in a significant adverse health impact as discussed in Section 3.6, thus a less than significant impact to sensitive receptors during operational activity is expected.

Project operational-source emissions would not conflict with the applicable AQMP.

Substantial odor-generating sources include land uses such as agricultural activities, feedlots, wastewater treatment facilities, landfills or various heavy industrial uses. The Project does not propose any such uses or activities that would result in potentially significant operational-source odor impacts. Potential sources of operational odors generated by the Project would include disposal of miscellaneous residential refuse. Moreover, MDAQMD Rule 402 acts to prevent occurrences of odor nuisances (1). Consistent with County requirements, all Project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with solid waste regulations. Potential operational-source odor impacts are therefore considered less-than-significant.

This page intentionally left blank

5 REFERENCES

1. **Antelope Valley Air Pollution Control District.** RULE 402 Nuisance. [Online]
<http://www.avaqmd.ca.gov/Modules/ShowDocument.aspx?documentid=866>.
2. **California Air Resources Board.** Ambient Air Quality Standards (AAQS). [Online] 2013. [Cited: April 6, 2015.] <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>.
3. **Air Resources Board.** Air Quality Standards and Area Designations. [Online] 2013. [Cited: September 17, 2014.] <http://www.arb.ca.gov/desig/desig.htm>.
4. **California Air Resources Board.** Air Quality Emissions. [Online] [Cited: April 22, 2015.]
<http://www.arb.ca.gov/adam/topfour/topfour1.php>.
5. **South Coast Air Quality Management District.** 2012 Air Quality Management Plan (AQMP). [Online] 2012. [Cited: September 17, 2014.] <http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan>.
6. **Environmental Protection Agency.** Air Pollution and the Clean Air Act. [Online] [Cited: September 17, 2014.] <http://www.epa.gov/air/caa/>.
7. **Air Resources Board.** California Ambient Air Quality Standards (CAAQS). [Online] 2009. [Cited: September 17, 2014.] <http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm>.
8. **California Environmental Quality Act.** Checklist. [Online] [Cited: September 17, 2014.]
http://ceres.ca.gov/ceqa/guidelines/Appendix_G.html.
9. **Antelope Valley Air Pollution Control District.** *California Environmental Quality Act (CEQA) and Federal Conformity Guidelines.* 2011.
10. **California Air Pollution Control Officers Association (CAPCOA).** California Emissions Estimator Model (CalEEMod). [Online] September 2016. www.caleemod.com.
11. **Mojave Desert Air Quality Management District.** Rule 403.2 Fugitive Dust. [Online] July 22, 1996.
<http://www.mdaqmd.ca.gov/Modules/ShowDocument.aspx?documentid=306>.
12. **South Coast Air Quality Management District.** 2003 Air Quality Management Plan. [Online] 2003.
<http://www.aqmd.gov/aqmp/aqmd03aqmp.htm>.
13. **Bay Area Air Quality Management District.** [Online] <http://www.baaqmd.gov/>.
14. **Goss, Tracy A and Kroeger, Amy.** White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution. [Online] South Coast Air Quality Management District, 2003.
http://www.aqmd.gov/rules/ciwg/final_white_paper.pdf.

This page intentionally left blank

6 CERTIFICATION

The contents of this air study report represent an accurate depiction of the environmental impacts associated with the proposed Victorville Fleet Service Center Project. The information contained in this air quality impact assessment report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 336-5987.

Haseeb Qureshi
Senior Associate
URBAN CROSSROADS, INC.
260 E. Baker St., Suite 200
Costa Mesa, CA 92626
(949) 336-5987
hqureshi@urbanxroads.com

EDUCATION

Master of Science in Environmental Studies
California State University, Fullerton • May, 2010

Bachelor of Arts in Environmental Analysis and Design
University of California, Irvine • June, 2006

PROFESSIONAL AFFILIATIONS

AEP – Association of Environmental Planners
AWMA – Air and Waste Management Association
ASTM – American Society for Testing and Materials

PROFESSIONAL CERTIFICATIONS

Planned Communities and Urban Infill – Urban Land Institute • June, 2011
Indoor Air Quality and Industrial Hygiene – EMSL Analytical • April, 2008
Principles of Ambient Air Monitoring – California Air Resources Board • August, 2007
AB2588 Regulatory Standards – Trinity Consultants • November, 2006
Air Dispersion Modeling – Lakes Environmental • June, 2006

This page intentionally left blank

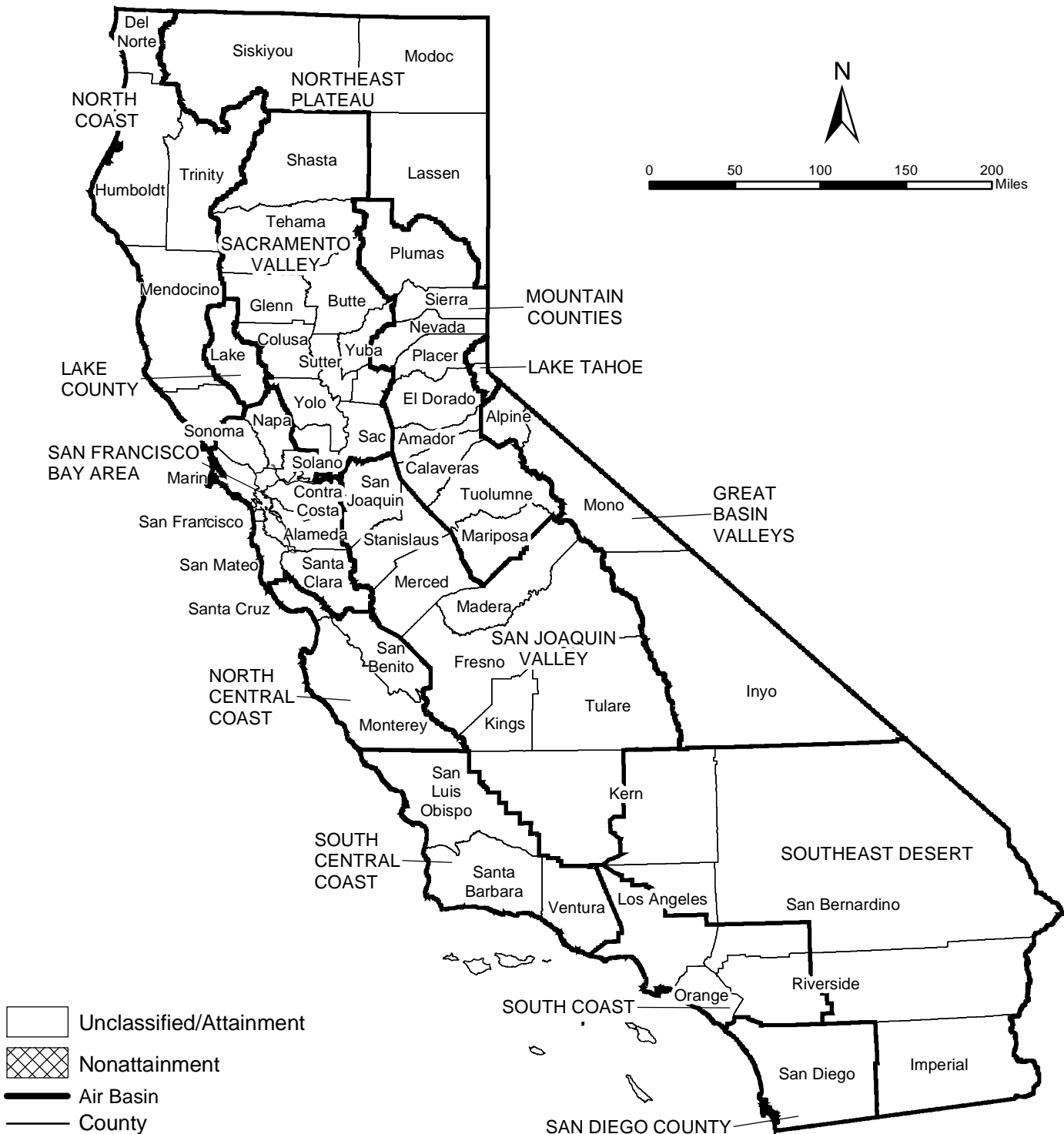
APPENDIX 3.1:

STATE/FEDERAL ATTAINMENT STATUS OF CRITERIA POLLUTANTS

This page intentionally left blank

Area Designations for National Ambient Air Quality Standards

CARBON MONOXIDE



Area Designations for National Ambient Air Quality Standards

LEAD

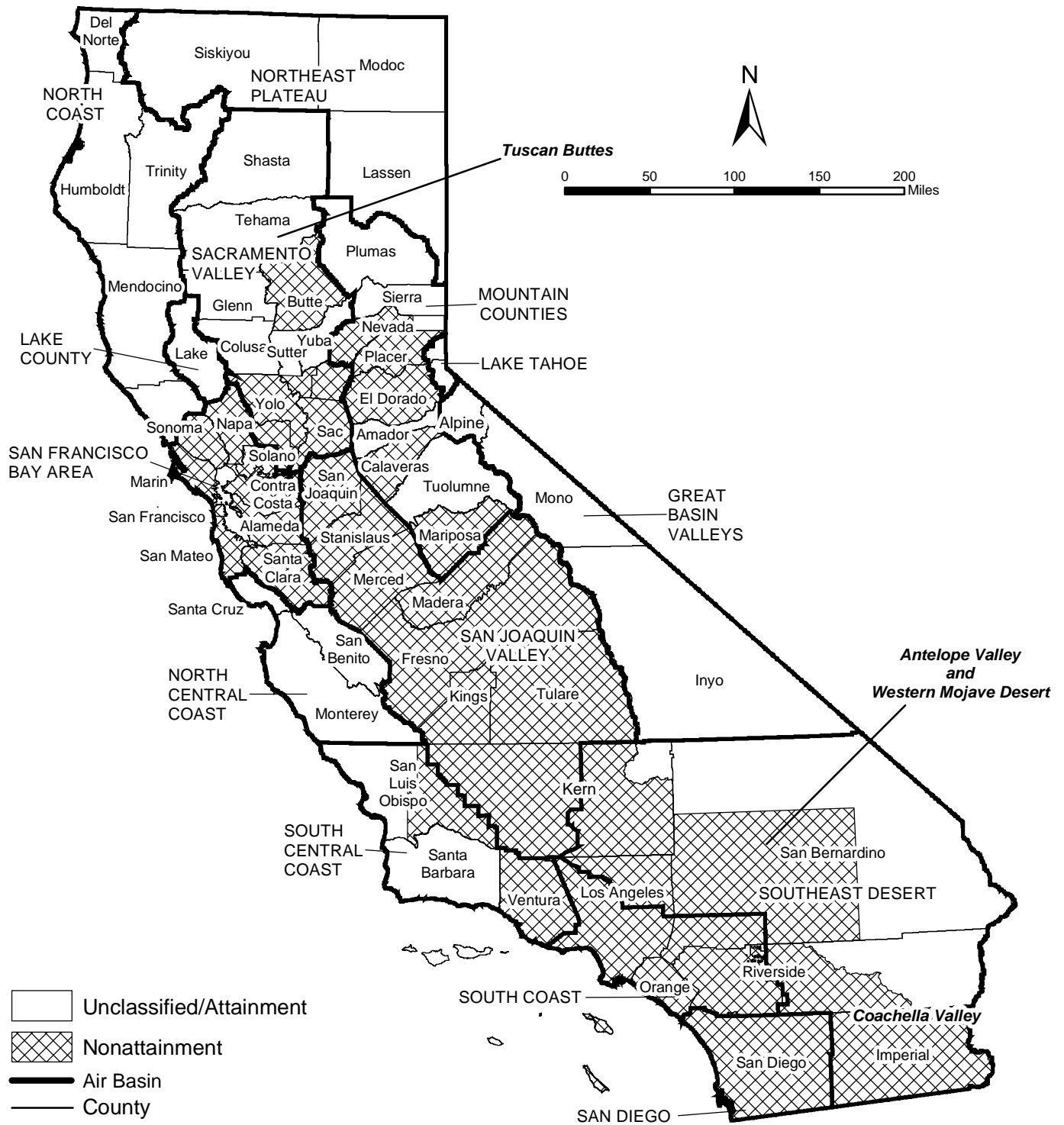


Area Designations for National Ambient Air Quality Standards

NITROGEN DIOXIDE

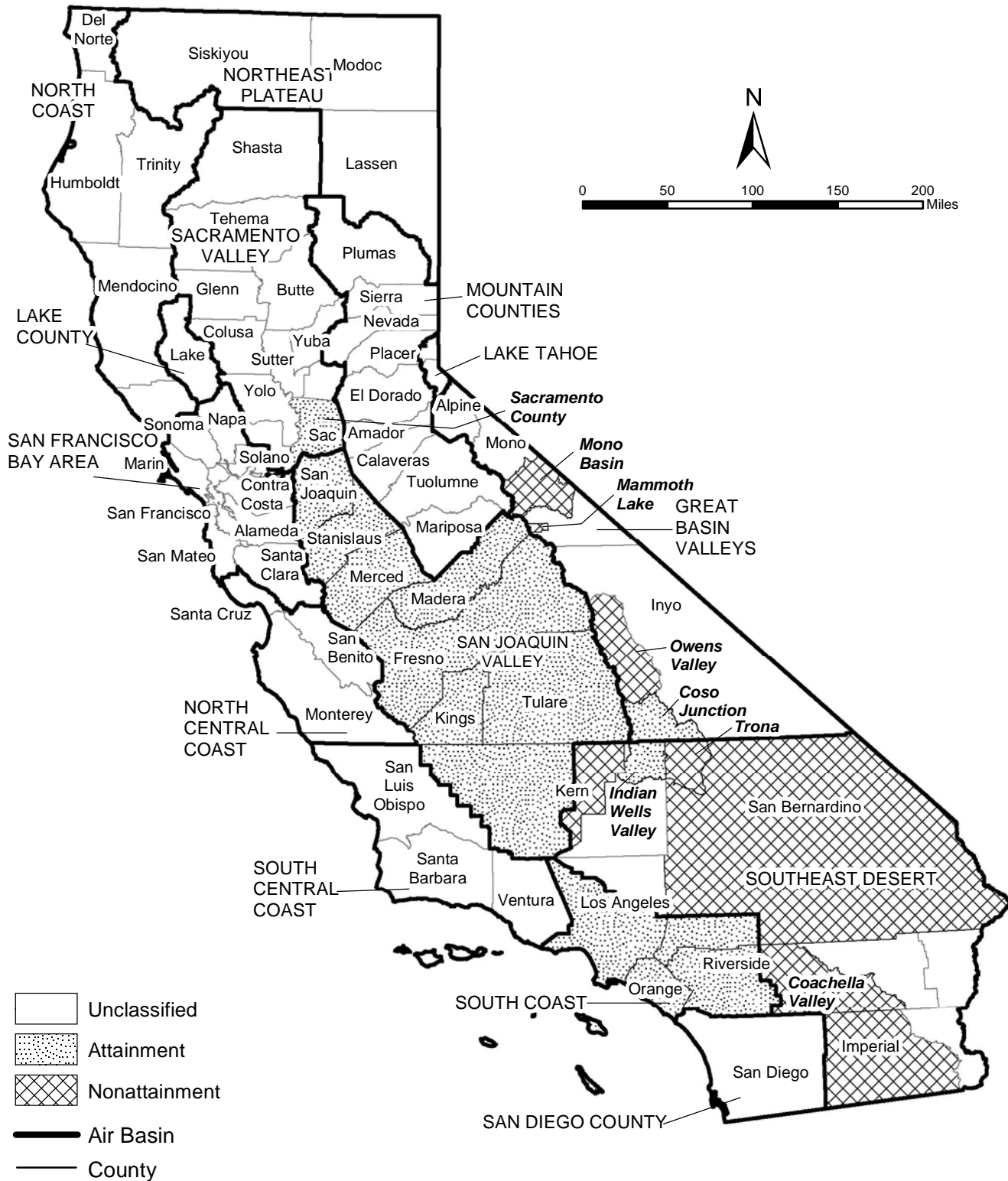


Area Designations for National Ambient Air Quality Standards 8-HOUR OZONE



Area Designations for National Ambient Air Quality Standards

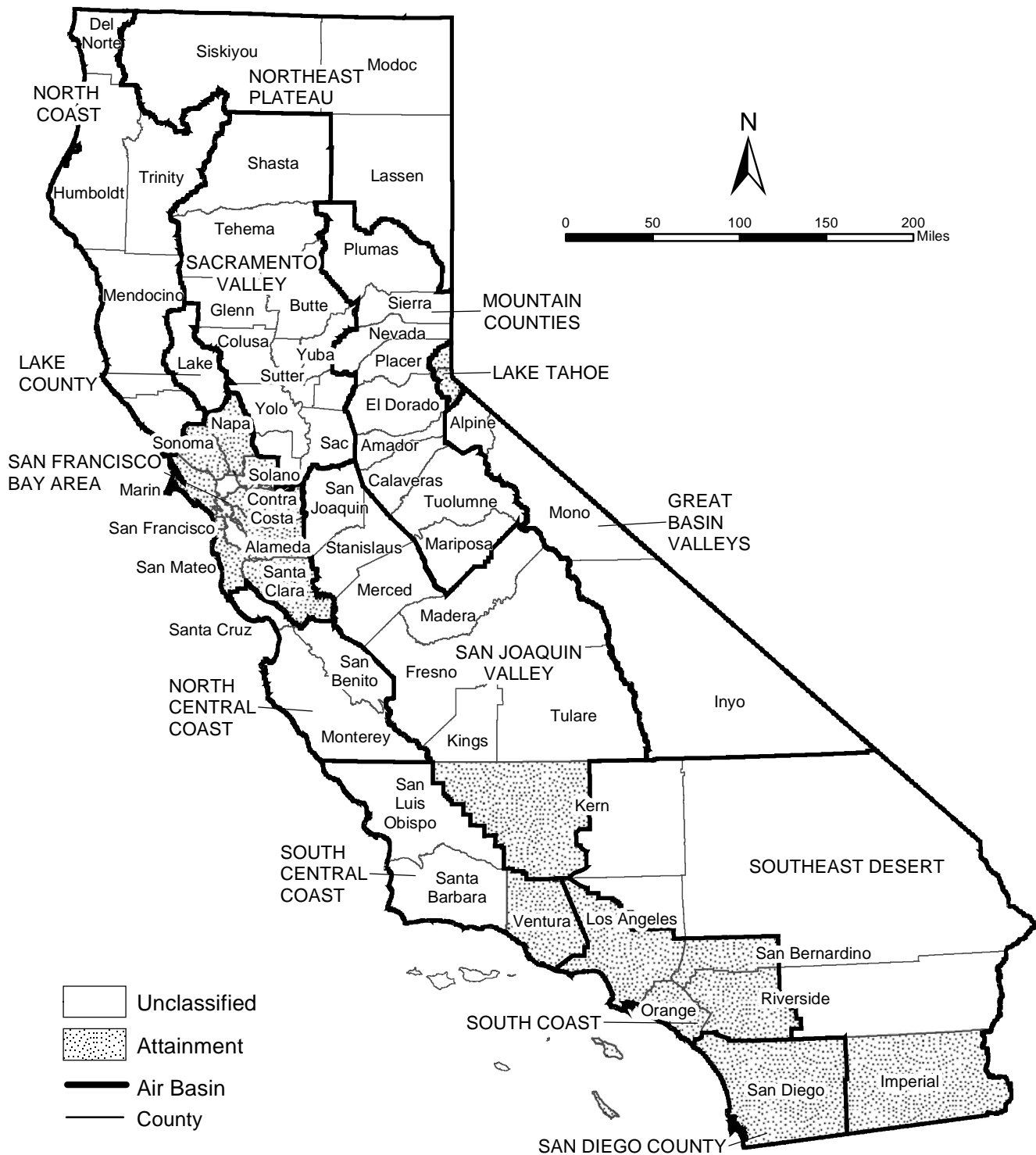
PM₁₀



Area Designations for National Ambient Air Quality Standards PM_{2.5}

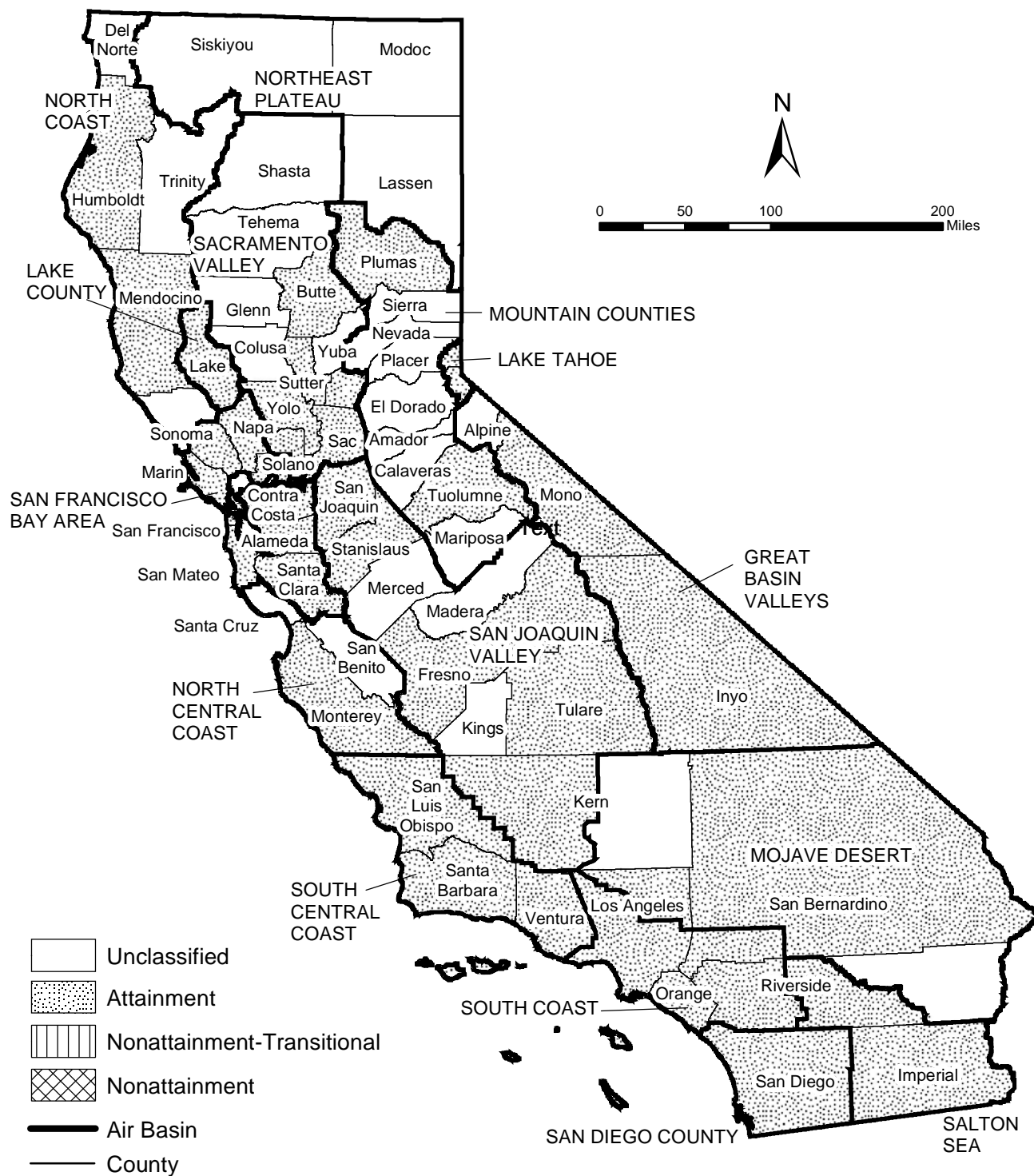


Area Designations for National Ambient Air Quality Standards SULFUR DIOXIDE



Area Designations for State Ambient Air Quality Standards

CARBON MONOXIDE



Area Designations for State Ambient Air Quality Standards

LEAD

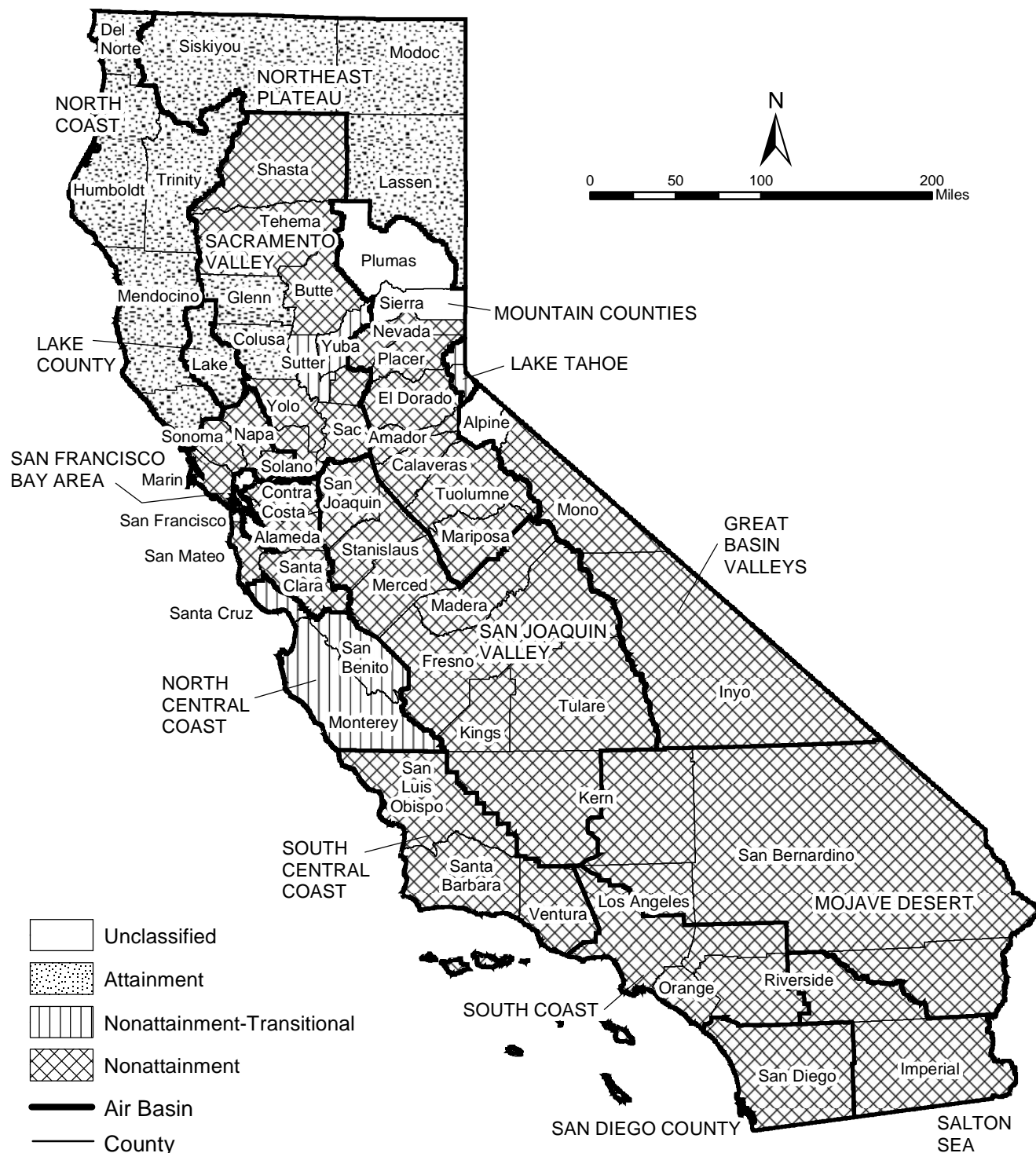


Area Designations for State Ambient Air Quality Standards

NITROGEN DIOXIDE



Area Designations for State Ambient Air Quality Standards OZONE



Area Designations for State Ambient Air Quality Standards PM₁₀



Area Designations for State Ambient Air Quality Standards PM_{2.5}



Area Designations for State Ambient Air Quality Standards SULFUR DIOXIDE



APPENDIX 3.2:

CALEEMOD EMISSIONS MODEL OUTPUTS

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Summer

Victorville Fleet Services Center
San Bernardino-Mojave Desert County, Summer

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Automobile Care Center	23.64	1000sqft	0.54	23,643.00	0
Parking Lot	35.00	Space	0.32	14,000.00	0
Other Asphalt Surfaces	3.94	Acre	3.94	171,626.40	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	32
Climate Zone	10			Operational Year	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	515.47	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Summer

Project Characteristics - CPUC GHG Calculator version 3c, worksheet tab "CO2 Allocations," cells AH/AQ 35-44.

Land Use - Based on Project Info dated 03/21/2017; Total lot acreage:4.8

Construction Phase - Based on information provided by the client

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Based on 8 hour workday

Grading -

Vehicle Trips - Based on information provided by the client

Fleet Mix - Based on information provided by the client

Area Coating - Based on Rule 1113

Energy Use - Title-24 Electricity Energy Intensity and Title-24 Natural Gas Energy Intensity were adjusted by 5% (nonresidential) to reflect 2016 Title 24 requirements. Source: 2016 Building Energy Efficiency Standards Adoption Hearing (CEC 2015)

Construction Off-road Equipment Mitigation -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Parking	250	100
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	230.00	110.00
tblConstructionPhase	NumDays	8.00	10.00
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	PhaseEndDate	5/7/2018	11/29/2017
tblConstructionPhase	PhaseEndDate	6/19/2017	6/28/2017

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Summer

tblConstructionPhase	PhaseEndDate	6/7/2017	6/14/2017
tblConstructionPhase	PhaseStartDate	6/20/2017	6/29/2017
tblConstructionPhase	PhaseStartDate	6/8/2017	6/15/2017
tblEnergyUse	T24E	2.31	2.19
tblEnergyUse	T24NG	15.43	14.66
tblFleetMix	HHD	0.06	0.30
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.18	0.00
tblFleetMix	LHD1	0.02	0.70
tblFleetMix	LHD2	6.1610e-003	0.00
tblFleetMix	MCY	6.5340e-003	0.00
tblFleetMix	MDV	0.14	0.00
tblFleetMix	MH	1.3510e-003	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	1.3020e-003	0.00
tblFleetMix	SBUS	8.3500e-004	0.00
tblFleetMix	UBUS	1.8460e-003	0.00
tblGrading	MaterialExported	0.00	9,144.00
tblGrading	MaterialImported	0.00	8,305.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	515.47
tblProjectCharacteristics	OperationalYear	2018	2017
tblVehicleTrips	ST_TR	23.72	2.71
tblVehicleTrips	SU_TR	11.88	2.71
tblVehicleTrips	WD_TR	23.72	2.71

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Summer

2.0 Emissions Summary**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	5.0677	68.8269	24.6883	0.1235	18.2141	2.8797	21.0938	9.9699	2.6493	12.6192	0.0000	12,972.2375	12,972.2375	1.4884	0.0000	13,009.4483
Maximum	5.0677	68.8269	24.6883	0.1235	18.2141	2.8797	21.0938	9.9699	2.6493	12.6192	0.0000	12,972.2375	12,972.2375	1.4884	0.0000	13,009.4483

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	5.0677	68.8269	24.6883	0.1235	7.1937	2.8797	10.0734	3.9122	2.6493	6.5615	0.0000	12,972.2375	12,972.2375	1.4884	0.0000	13,009.4483
Maximum	5.0677	68.8269	24.6883	0.1235	7.1937	2.8797	10.0734	3.9122	2.6493	6.5615	0.0000	12,972.2375	12,972.2375	1.4884	0.0000	13,009.4483

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	60.50	0.00	52.24	60.76	0.00	48.00	0.00	0.00	0.00	0.00	0.00	0.00

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Summer

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.6766	6.0000e-005	6.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0137	0.0137	4.0000e-005		0.0147
Energy	0.0222	0.2019	0.1696	1.2100e-003		0.0153	0.0153		0.0153	0.0153		242.2484	242.2484	4.6400e-003	4.4400e-003	243.6879
Mobile	0.1803	3.6490	1.1148	6.4200e-003	0.1505	0.0102	0.1607	0.0421	9.7800e-003	0.0518		671.6383	671.6383	0.0738		673.4836
Total	0.8791	3.8509	1.2909	7.6300e-003	0.1505	0.0256	0.1761	0.0421	0.0251	0.0672		913.9004	913.9004	0.0785	4.4400e-003	917.1862

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.6766	6.0000e-005	6.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0137	0.0137	4.0000e-005		0.0147
Energy	0.0222	0.2019	0.1696	1.2100e-003		0.0153	0.0153		0.0153	0.0153		242.2484	242.2484	4.6400e-003	4.4400e-003	243.6879
Mobile	0.1803	3.6490	1.1148	6.4200e-003	0.1505	0.0102	0.1607	0.0421	9.7800e-003	0.0518		671.6383	671.6383	0.0738		673.4836
Total	0.8791	3.8509	1.2909	7.6300e-003	0.1505	0.0256	0.1761	0.0421	0.0251	0.0672		913.9004	913.9004	0.0785	4.4400e-003	917.1862

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Summer

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2017	6/14/2017	5	10	
2	Grading	Grading	6/15/2017	6/28/2017	5	10	
3	Building Construction	Building Construction	6/29/2017	11/29/2017	5	110	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 5

Acres of Paving: 4.26

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Excavators	1	8.00	158	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	86.00	34.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	1,143.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Summer

3.2 Site Preparation - 2017**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.9608	52.2754	23.4554	0.0380		2.8786	2.8786		2.6483	2.6483		3,894.950 0	3,894.950 0	1.1934		3,924.785 2
Total	4.9608	52.2754	23.4554	0.0380	18.0663	2.8786	20.9448	9.9307	2.6483	12.5790		3,894.950 0	3,894.950 0	1.1934		3,924.785 2

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1069	0.0707	0.8807	1.6700e-003	0.1479	1.1000e-003	0.1490	0.0392	1.0200e-003	0.0402		165.4280	165.4280	6.8800e-003		165.6001
Total	0.1069	0.0707	0.8807	1.6700e-003	0.1479	1.1000e-003	0.1490	0.0392	1.0200e-003	0.0402		165.4280	165.4280	6.8800e-003		165.6001

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Summer

3.2 Site Preparation - 2017**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0458	0.0000	7.0458	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	4.9608	52.2754	23.4554	0.0380		2.8786	2.8786		2.6483	2.6483	0.0000	3,894.950 0	3,894.950 0	1.1934		3,924.785 2
Total	4.9608	52.2754	23.4554	0.0380	7.0458	2.8786	9.9244	3.8730	2.6483	6.5213	0.0000	3,894.950 0	3,894.950 0	1.1934		3,924.785 2

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1069	0.0707	0.8807	1.6700e-003	0.1479	1.1000e-003	0.1490	0.0392	1.0200e-003	0.0402		165.4280	165.4280	6.8800e-003		165.6001
Total	0.1069	0.0707	0.8807	1.6700e-003	0.1479	1.1000e-003	0.1490	0.0392	1.0200e-003	0.0402		165.4280	165.4280	6.8800e-003		165.6001

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Summer

3.3 Grading - 2017**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.7975	0.0000	6.7975	3.4046	0.0000	3.4046			0.0000			0.0000
Off-Road	3.0705	33.8868	17.1042	0.0297		1.7774	1.7774		1.6352	1.6352		3,037.910 7	3,037.910 7	0.9308		3,061.180 9
Total	3.0705	33.8868	17.1042	0.0297	6.7975	1.7774	8.5750	3.4046	1.6352	5.0399		3,037.910 7	3,037.910 7	0.9308		3,061.180 9

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9366	34.8811	5.0842	0.0925	2.0006	0.1731	2.1736	0.5485	0.1656	0.7141		9,796.470 1	9,796.470 1	0.5519		9,810.267 3
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0891	0.0589	0.7339	1.3900e-003	0.1232	9.2000e-004	0.1241	0.0327	8.5000e-004	0.0335		137.8567	137.8567	5.7400e-003		138.0001
Total	1.0257	34.9400	5.8181	0.0938	2.1238	0.1740	2.2978	0.5812	0.1664	0.7476		9,934.326 8	9,934.326 8	0.5576		9,948.267 4

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Summer

3.3 Grading - 2017**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.6510	0.0000	2.6510	1.3278	0.0000	1.3278			0.0000			0.0000
Off-Road	3.0705	33.8868	17.1042	0.0297		1.7774	1.7774		1.6352	1.6352	0.0000	3,037.910 7	3,037.910 7	0.9308		3,061.180 9
Total	3.0705	33.8868	17.1042	0.0297	2.6510	1.7774	4.4285	1.3278	1.6352	2.9630	0.0000	3,037.910 7	3,037.910 7	0.9308		3,061.180 9

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9366	34.8811	5.0842	0.0925	2.0006	0.1731	2.1736	0.5485	0.1656	0.7141		9,796.470 1	9,796.470 1	0.5519		9,810.267 3
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0891	0.0589	0.7339	1.3900e-003	0.1232	9.2000e-004	0.1241	0.0327	8.5000e-004	0.0335		137.8567	137.8567	5.7400e-003		138.0001
Total	1.0257	34.9400	5.8181	0.0938	2.1238	0.1740	2.2978	0.5812	0.1664	0.7476		9,934.326 8	9,934.326 8	0.5576		9,948.267 4

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Summer

3.4 Building Construction - 2017**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.3165	28.6789	19.4324	0.0288		1.9175	1.9175		1.7984	1.7984		2,844.080 2	2,844.080 2	0.7123		2,861.887 4
Total	3.3165	28.6789	19.4324	0.0288		1.9175	1.9175		1.7984	1.7984		2,844.080 2	2,844.080 2	0.7123		2,861.887 4

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1619	4.5477	1.0483	9.7900e-003	0.2304	0.0388	0.2691	0.0663	0.0371	0.1034		1,030.725 2	1,030.725 2	0.0720		1,032.526 3
Worker	0.5108	0.3378	4.2077	7.9600e-003	0.7065	5.2600e-003	0.7117	0.1874	4.8500e-003	0.1922		790.3784	790.3784	0.0329		791.2007
Total	0.6727	4.8855	5.2560	0.0178	0.9368	0.0440	0.9808	0.2537	0.0419	0.2956		1,821.103 6	1,821.103 6	0.1049		1,823.727 0

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Summer

3.4 Building Construction - 2017**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.3165	28.6789	19.4324	0.0288		1.9175	1.9175		1.7984	1.7984	0.0000	2,844.080 2	2,844.080 2	0.7123		2,861.887 4
Total	3.3165	28.6789	19.4324	0.0288		1.9175	1.9175		1.7984	1.7984	0.0000	2,844.080 2	2,844.080 2	0.7123		2,861.887 4

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1619	4.5477	1.0483	9.7900e-003	0.2304	0.0388	0.2691	0.0663	0.0371	0.1034		1,030.725 2	1,030.725 2	0.0720		1,032.526 3
Worker	0.5108	0.3378	4.2077	7.9600e-003	0.7065	5.2600e-003	0.7117	0.1874	4.8500e-003	0.1922		790.3784	790.3784	0.0329		791.2007
Total	0.6727	4.8855	5.2560	0.0178	0.9368	0.0440	0.9808	0.2537	0.0419	0.2956		1,821.103 6	1,821.103 6	0.1049		1,823.727 0

4.0 Operational Detail - Mobile

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Summer

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1803	3.6490	1.1148	6.4200e-003	0.1505	0.0102	0.1607	0.0421	9.7800e-003	0.0518		671.6383	671.6383	0.0738		673.4836
Unmitigated	0.1803	3.6490	1.1148	6.4200e-003	0.1505	0.0102	0.1607	0.0421	9.7800e-003	0.0518		671.6383	671.6383	0.0738		673.4836

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	64.07	64.07	64.07	63,828	63,828
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	64.07	64.07	64.07	63,828	63,828

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Automobile Care Center	9.50	7.30	7.30	33.00	48.00	19.00	21	51	28
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Summer

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Automobile Care Center	0.000000	0.000000	0.000000	0.000000	0.700000	0.000000	0.000000	0.300000	0.000000	0.000000	0.000000	0.000000	0.000000
Parking Lot	0.530593	0.041525	0.177860	0.135679	0.022741	0.006161	0.016208	0.057365	0.001302	0.001846	0.006534	0.000835	0.001351
Other Asphalt Surfaces	0.530593	0.041525	0.177860	0.135679	0.022741	0.006161	0.016208	0.057365	0.001302	0.001846	0.006534	0.000835	0.001351

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0222	0.2019	0.1696	1.2100e-003		0.0153	0.0153		0.0153	0.0153		242.2484	242.2484	4.6400e-003	4.4400e-003	243.6879
NaturalGas Unmitigated	0.0222	0.2019	0.1696	1.2100e-003		0.0153	0.0153		0.0153	0.0153		242.2484	242.2484	4.6400e-003	4.4400e-003	243.6879

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Summer

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Automobile Care Center	2059.11	0.0222	0.2019	0.1696	1.2100e-003		0.0153	0.0153		0.0153	0.0153		242.2484	242.2484	4.6400e-003	4.4400e-003	243.6879
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0222	0.2019	0.1696	1.2100e-003		0.0153	0.0153		0.0153	0.0153		242.2484	242.2484	4.6400e-003	4.4400e-003	243.6879

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Automobile Care Center	2.05911	0.0222	0.2019	0.1696	1.2100e-003		0.0153	0.0153		0.0153	0.0153		242.2484	242.2484	4.6400e-003	4.4400e-003	243.6879
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0222	0.2019	0.1696	1.2100e-003		0.0153	0.0153		0.0153	0.0153		242.2484	242.2484	4.6400e-003	4.4400e-003	243.6879

6.0 Area Detail

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Summer

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.6766	6.0000e-005	6.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0137	0.0137	4.0000e-005		0.0147
Unmitigated	0.6766	6.0000e-005	6.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0137	0.0137	4.0000e-005		0.0147

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1042					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5717					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.3000e-004	6.0000e-005	6.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0137	0.0137	4.0000e-005		0.0147
Total	0.6766	6.0000e-005	6.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0137	0.0137	4.0000e-005		0.0147

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Summer

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1042					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5717					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.3000e-004	6.0000e-005	6.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0137	0.0137	4.0000e-005		0.0147
Total	0.6766	6.0000e-005	6.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0137	0.0137	4.0000e-005		0.0147

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Summer

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Winter

Victorville Fleet Services Center
San Bernardino-Mojave Desert County, Winter

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Automobile Care Center	23.64	1000sqft	0.54	23,643.00	0
Parking Lot	35.00	Space	0.32	14,000.00	0
Other Asphalt Surfaces	3.94	Acre	3.94	171,626.40	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	32
Climate Zone	10			Operational Year	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	515.47	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Winter

Project Characteristics - CPUC GHG Calculator version 3c, worksheet tab "CO2 Allocations," cells AH/AQ 35-44.

Land Use - Based on Project Info dated 03/21/2017; Total lot acreage:4.8

Construction Phase - Based on information provided by the client

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Based on 8 hour workday

Grading -

Vehicle Trips - Based on information provided by the client

Fleet Mix - Based on information provided by the client

Area Coating - Based on Rule 1113

Energy Use - Title-24 Electricity Energy Intensity and Title-24 Natural Gas Energy Intensity were adjusted by 5% (nonresidential) to reflect 2016 Title 24 requirements. Source: 2016 Building Energy Efficiency Standards Adoption Hearing (CEC 2015)

Construction Off-road Equipment Mitigation -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Parking	250	100
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	230.00	110.00
tblConstructionPhase	NumDays	8.00	10.00
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	PhaseEndDate	5/7/2018	11/29/2017
tblConstructionPhase	PhaseEndDate	6/19/2017	6/28/2017

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Winter

tblConstructionPhase	PhaseEndDate	6/7/2017	6/14/2017
tblConstructionPhase	PhaseStartDate	6/20/2017	6/29/2017
tblConstructionPhase	PhaseStartDate	6/8/2017	6/15/2017
tblEnergyUse	T24E	2.31	2.19
tblEnergyUse	T24NG	15.43	14.66
tblFleetMix	HHD	0.06	0.30
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.18	0.00
tblFleetMix	LHD1	0.02	0.70
tblFleetMix	LHD2	6.1610e-003	0.00
tblFleetMix	MCY	6.5340e-003	0.00
tblFleetMix	MDV	0.14	0.00
tblFleetMix	MH	1.3510e-003	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	1.3020e-003	0.00
tblFleetMix	SBUS	8.3500e-004	0.00
tblFleetMix	UBUS	1.8460e-003	0.00
tblGrading	MaterialExported	0.00	9,144.00
tblGrading	MaterialImported	0.00	8,305.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	515.47
tblProjectCharacteristics	OperationalYear	2018	2017
tblVehicleTrips	ST_TR	23.72	2.71
tblVehicleTrips	SU_TR	11.88	2.71
tblVehicleTrips	WD_TR	23.72	2.71

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Winter

2.0 Emissions Summary**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	5.0651	69.1552	24.1948	0.1211	18.2141	2.8797	21.0938	9.9699	2.6493	12.6192	0.0000	12,715.76 56	12,715.76 56	1.5318	0.0000	12,754.05 97
Maximum	5.0651	69.1552	24.1948	0.1211	18.2141	2.8797	21.0938	9.9699	2.6493	12.6192	0.0000	12,715.76 56	12,715.76 56	1.5318	0.0000	12,754.05 97

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	5.0651	69.1552	24.1948	0.1211	7.1937	2.8797	10.0734	3.9122	2.6493	6.5615	0.0000	12,715.76 56	12,715.76 56	1.5318	0.0000	12,754.05 97
Maximum	5.0651	69.1552	24.1948	0.1211	7.1937	2.8797	10.0734	3.9122	2.6493	6.5615	0.0000	12,715.76 56	12,715.76 56	1.5318	0.0000	12,754.05 97

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	60.50	0.00	52.24	60.76	0.00	48.00	0.00	0.00	0.00	0.00	0.00	0.00

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Winter

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.6766	6.0000e-005	6.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0137	0.0137	4.0000e-005		0.0147
Energy	0.0222	0.2019	0.1696	1.2100e-003		0.0153	0.0153		0.0153	0.0153		242.2484	242.2484	4.6400e-003	4.4400e-003	243.6879
Mobile	0.1893	3.6016	1.2406	6.0400e-003	0.1505	0.0107	0.1612	0.0421	0.0102	0.0522		630.8761	630.8761	0.0812		632.9059
Total	0.8880	3.8036	1.4166	7.2500e-003	0.1505	0.0260	0.1765	0.0421	0.0255	0.0676		873.1381	873.1381	0.0859	4.4400e-003	876.6084

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.6766	6.0000e-005	6.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0137	0.0137	4.0000e-005		0.0147
Energy	0.0222	0.2019	0.1696	1.2100e-003		0.0153	0.0153		0.0153	0.0153		242.2484	242.2484	4.6400e-003	4.4400e-003	243.6879
Mobile	0.1893	3.6016	1.2406	6.0400e-003	0.1505	0.0107	0.1612	0.0421	0.0102	0.0522		630.8761	630.8761	0.0812		632.9059
Total	0.8880	3.8036	1.4166	7.2500e-003	0.1505	0.0260	0.1765	0.0421	0.0255	0.0676		873.1381	873.1381	0.0859	4.4400e-003	876.6084

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Winter

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2017	6/14/2017	5	10	
2	Grading	Grading	6/15/2017	6/28/2017	5	10	
3	Building Construction	Building Construction	6/29/2017	11/29/2017	5	110	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 5

Acres of Paving: 4.26

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Excavators	1	8.00	158	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	86.00	34.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	1,143.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Winter

3.2 Site Preparation - 2017**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.9608	52.2754	23.4554	0.0380		2.8786	2.8786		2.6483	2.6483		3,894.9500	3,894.9500	1.1934		3,924.7852
Total	4.9608	52.2754	23.4554	0.0380	18.0663	2.8786	20.9448	9.9307	2.6483	12.5790		3,894.9500	3,894.9500	1.1934		3,924.7852

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1044	0.0746	0.7394	1.4900e-003	0.1479	1.1000e-003	0.1490	0.0392	1.0200e-003	0.0402		148.5274	148.5274	6.1300e-003		148.6806
Total	0.1044	0.0746	0.7394	1.4900e-003	0.1479	1.1000e-003	0.1490	0.0392	1.0200e-003	0.0402		148.5274	148.5274	6.1300e-003		148.6806

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Winter

3.2 Site Preparation - 2017**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0458	0.0000	7.0458	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	4.9608	52.2754	23.4554	0.0380		2.8786	2.8786		2.6483	2.6483	0.0000	3,894.950 0	3,894.950 0	1.1934		3,924.785 2
Total	4.9608	52.2754	23.4554	0.0380	7.0458	2.8786	9.9244	3.8730	2.6483	6.5213	0.0000	3,894.950 0	3,894.950 0	1.1934		3,924.785 2

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1044	0.0746	0.7394	1.4900e-003	0.1479	1.1000e-003	0.1490	0.0392	1.0200e-003	0.0402		148.5274	148.5274	6.1300e-003		148.6806
Total	0.1044	0.0746	0.7394	1.4900e-003	0.1479	1.1000e-003	0.1490	0.0392	1.0200e-003	0.0402		148.5274	148.5274	6.1300e-003		148.6806

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Winter

3.3 Grading - 2017**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.7975	0.0000	6.7975	3.4046	0.0000	3.4046			0.0000			0.0000
Off-Road	3.0705	33.8868	17.1042	0.0297		1.7774	1.7774		1.6352	1.6352		3,037.910 7	3,037.910 7	0.9308		3,061.180 9
Total	3.0705	33.8868	17.1042	0.0297	6.7975	1.7774	8.5750	3.4046	1.6352	5.0399		3,037.910 7	3,037.910 7	0.9308		3,061.180 9

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9747	35.2062	5.7779	0.0902	2.0006	0.1755	2.1761	0.5485	0.1679	0.7164		9,554.082 1	9,554.082 1	0.5959		9,568.978 3
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0870	0.0622	0.6162	1.2500e-003	0.1232	9.2000e-004	0.1241	0.0327	8.5000e-004	0.0335		123.7729	123.7729	5.1000e-003		123.9005
Total	1.0616	35.2683	6.3941	0.0914	2.1238	0.1764	2.3002	0.5812	0.1688	0.7500		9,677.854 9	9,677.854 9	0.6010		9,692.878 8

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Winter

3.3 Grading - 2017**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.6510	0.0000	2.6510	1.3278	0.0000	1.3278			0.0000			0.0000
Off-Road	3.0705	33.8868	17.1042	0.0297		1.7774	1.7774		1.6352	1.6352	0.0000	3,037.910 7	3,037.910 7	0.9308		3,061.180 9
Total	3.0705	33.8868	17.1042	0.0297	2.6510	1.7774	4.4285	1.3278	1.6352	2.9630	0.0000	3,037.910 7	3,037.910 7	0.9308		3,061.180 9

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9747	35.2062	5.7779	0.0902	2.0006	0.1755	2.1761	0.5485	0.1679	0.7164		9,554.082 1	9,554.082 1	0.5959		9,568.978 3
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0870	0.0622	0.6162	1.2500e-003	0.1232	9.2000e-004	0.1241	0.0327	8.5000e-004	0.0335		123.7729	123.7729	5.1000e-003		123.9005
Total	1.0616	35.2683	6.3941	0.0914	2.1238	0.1764	2.3002	0.5812	0.1688	0.7500		9,677.854 9	9,677.854 9	0.6010		9,692.878 8

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Winter

3.4 Building Construction - 2017**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.3165	28.6789	19.4324	0.0288		1.9175	1.9175		1.7984	1.7984		2,844.080 2	2,844.080 2	0.7123		2,861.887 4
Total	3.3165	28.6789	19.4324	0.0288		1.9175	1.9175		1.7984	1.7984		2,844.080 2	2,844.080 2	0.7123		2,861.887 4

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1688	4.5418	1.1753	9.4400e-003	0.2304	0.0392	0.2696	0.0663	0.0375	0.1038		993.8624	993.8624	0.0787		995.8310
Worker	0.4986	0.3564	3.5329	7.1400e-003	0.7065	5.2600e-003	0.7117	0.1874	4.8500e-003	0.1922		709.6311	709.6311	0.0293		710.3627
Total	0.6673	4.8982	4.7082	0.0166	0.9368	0.0445	0.9813	0.2537	0.0424	0.2961		1,703.493 5	1,703.493 5	0.1080		1,706.193 7

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Winter

3.4 Building Construction - 2017**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.3165	28.6789	19.4324	0.0288		1.9175	1.9175		1.7984	1.7984	0.0000	2,844.080 2	2,844.080 2	0.7123		2,861.887 4
Total	3.3165	28.6789	19.4324	0.0288		1.9175	1.9175		1.7984	1.7984	0.0000	2,844.080 2	2,844.080 2	0.7123		2,861.887 4

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1688	4.5418	1.1753	9.4400e-003	0.2304	0.0392	0.2696	0.0663	0.0375	0.1038		993.8624	993.8624	0.0787		995.8310
Worker	0.4986	0.3564	3.5329	7.1400e-003	0.7065	5.2600e-003	0.7117	0.1874	4.8500e-003	0.1922		709.6311	709.6311	0.0293		710.3627
Total	0.6673	4.8982	4.7082	0.0166	0.9368	0.0445	0.9813	0.2537	0.0424	0.2961		1,703.493 5	1,703.493 5	0.1080		1,706.193 7

4.0 Operational Detail - Mobile

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Winter

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1893	3.6016	1.2406	6.0400e-003	0.1505	0.0107	0.1612	0.0421	0.0102	0.0522		630.8761	630.8761	0.0812		632.9059
Unmitigated	0.1893	3.6016	1.2406	6.0400e-003	0.1505	0.0107	0.1612	0.0421	0.0102	0.0522		630.8761	630.8761	0.0812		632.9059

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	64.07	64.07	64.07	63,828	63,828
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	64.07	64.07	64.07	63,828	63,828

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Automobile Care Center	9.50	7.30	7.30	33.00	48.00	19.00	21	51	28
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Winter

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Automobile Care Center	0.000000	0.000000	0.000000	0.000000	0.700000	0.000000	0.000000	0.300000	0.000000	0.000000	0.000000	0.000000	0.000000
Parking Lot	0.530593	0.041525	0.177860	0.135679	0.022741	0.006161	0.016208	0.057365	0.001302	0.001846	0.006534	0.000835	0.001351
Other Asphalt Surfaces	0.530593	0.041525	0.177860	0.135679	0.022741	0.006161	0.016208	0.057365	0.001302	0.001846	0.006534	0.000835	0.001351

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0222	0.2019	0.1696	1.2100e-003		0.0153	0.0153		0.0153	0.0153		242.2484	242.2484	4.6400e-003	4.4400e-003	243.6879
NaturalGas Unmitigated	0.0222	0.2019	0.1696	1.2100e-003		0.0153	0.0153		0.0153	0.0153		242.2484	242.2484	4.6400e-003	4.4400e-003	243.6879

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Winter

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Automobile Care Center	2059.11	0.0222	0.2019	0.1696	1.2100e-003		0.0153	0.0153		0.0153	0.0153		242.2484	242.2484	4.6400e-003	4.4400e-003	243.6879
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0222	0.2019	0.1696	1.2100e-003		0.0153	0.0153		0.0153	0.0153		242.2484	242.2484	4.6400e-003	4.4400e-003	243.6879

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Automobile Care Center	2.05911	0.0222	0.2019	0.1696	1.2100e-003		0.0153	0.0153		0.0153	0.0153		242.2484	242.2484	4.6400e-003	4.4400e-003	243.6879
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0222	0.2019	0.1696	1.2100e-003		0.0153	0.0153		0.0153	0.0153		242.2484	242.2484	4.6400e-003	4.4400e-003	243.6879

6.0 Area Detail

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Winter

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.6766	6.0000e-005	6.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0137	0.0137	4.0000e-005		0.0147
Unmitigated	0.6766	6.0000e-005	6.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0137	0.0137	4.0000e-005		0.0147

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1042					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5717					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.3000e-004	6.0000e-005	6.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0137	0.0137	4.0000e-005		0.0147
Total	0.6766	6.0000e-005	6.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0137	0.0137	4.0000e-005		0.0147

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Winter

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1042					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5717					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.3000e-004	6.0000e-005	6.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0137	0.0137	4.0000e-005		0.0147
Total	0.6766	6.0000e-005	6.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0137	0.0137	4.0000e-005		0.0147

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

Victorville Fleet Services Center - San Bernardino-Mojave Desert County, Winter

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation
