Mount Vernon Avenue Bridge Project

Air Quality Study Report

Prepared by the
California Department of Transportation

CITY OF SAN BERNARDINO, CALIFORNIA
08-SBd-0-Mount Vernon Avenue
BRLS-6507(003)
EA 965120

December 2017

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List of Abbreviated Terms

°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter
ADA	Americans with Disabilities Act
ADL	Aerially Deposited Lead
ARB	California Air Resources Board
BMPs	Best management practices
BNSF	Burlington Northern Santa Fe
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
California CAA	California Clean Air Act
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
Clean Air Plan	air quality attainment plan
CO	carbon monoxide
CO Protocol	Transportation Project-Level Carbon Monoxide Protocol
EBL	Eligible Bridge List
EPA	U.S. Environmental Protection Agency
FHWA	Federal Highway Administration
FO	Functionally Obsolete
FONSI	Finding of No Significant Impact
FTIP	Federal Transportation Improvement Program
HBP	Highway Bridge Program
LOS	levels of service
MPO	Metropolitan Planning Organization
MSAT	mobile source air toxic
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO_2	nitrogen dioxide
NOA	naturally occurring asbestos
NO_X	nitrogen oxides
O_3	Ozone
OEHHA	Office of Environmental Health Hazard Assessment
Pb	lead
PCI	paint condition index
PM_{10}	particulate matter 10 microns or less in diameter
$PM_{2.5}$	particulate matter 2.5 microns or less in diameter
Ppm	part per million
ROG	reactive organic gases

RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SBCTA	San Bernardino County Transportation Authority
SBTAM	San Bernardino Transportation Analysis Model
SCAB	South Coast Air Basin
SCAG	Southern California Association of
SCAQMD	South Coast Air Quality Management District
SD	Structurally Deficient
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_X	sulfur oxide
TAC	toxic air contaminant
USGS	U.S. Geological Survey
VMT	vehicle miles traveled

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Executive Summary

The San Bernardino County Transportation Authority (SBCTA), in cooperation with the California Department of Transportation (Caltrans), is proposing to replace the existing Mount Vernon Avenue Bridge (Bridge Number 54C-066) over the Burlington Northern Santa Fe (BNSF) rail yard in the City of San Bernardino, San Bernardino County, California.

The project involves a road/railroad grade separation and is statutorily exempt from the California Environmental Quality Act (CEQA). A National Environmental Policy Act (NEPA) Finding of No Significant Impact (FONSI) was adopted for the project in June 2011. Since the NEPA document was adopted, it has been noted that additional project improvements and refinements are needed that were not included in the adopted NEPA document.

Project construction is expected to begin in January 2021 and be completed in February 2023.

Following is a summary of report conclusions:

- During project construction, implementation of exhaust and fugitive dust emission control measures would avoid and/or minimize impacts on air quality.
- The project is included in the Southern California Association of Governments (SCAG) 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), and also included in the SCAG 2017 Federal Transportation Improvement Program (FTIP) Amendment 2[1], under project number SBD31905. The SCAG 2016–2040 RTP/SCS and SCAG 2017 FTIP Amendment 2 were found to conform to the State Implementation Plan (SIP) by the Federal Highway Administration (FHWA) on June 1, 2016, and February 21, 2017, respectively. The project is exempt from the requirement to demonstrate transportation conformity per 40 Code of Federal Regulations (CFR) 93.126, under project type "widening narrow pavements or reconstructing bridges (no additional travel lanes)."
- The project would replace an existing 4-lane bridge with a new 4-lane bridge. There would be no change in capacity and, therefore, no change in traffic volumes under the Build Alternative when compared to the No-Build Alternative. Thus, it is unlikely that the proposed project would generate new air quality violations, worsen existing conditions, or delay attainment of the National Ambient Air Quality Standards (NAAQS) for ozone, particulate matter 2.5 microns or less in diameter ($PM_{2.5}$), or particulate matter 10 microns or less in diameter (PM_{10}).
- The proposed project was found to have no potential for meaningful mobile-source air toxics (MSAT) emissions effects and is not linked with any special MSAT concern.
- Construction-related effects on air quality from most highway/bridge projects would be greatest during the site preparation phase because most heavy construction equipment emissions are associated with the excavation, handling, and transport of soils to and from a

[1] The project was added to the currently conforming 2017 FTIP via Amendment 2 as Project ID SBD31905. While FTIP Amendment 14 is the latest Amendment receiving FTA/FHWA approval, Amendment 14 does not include the proposed project (nor does FTIP Amendments 3 – 13); therefore, Amendment 2 is referenced within this report.

site. The greatest regional emissions would occur during the grading/excavation period of project construction.

- The proposed project does not include any uses identified by the California Air Resource Board as being associated with odors and, therefore, would not produce objectionable odors that would affect a substantial number of people.

Chapter 1 Proposed Project

1.1 Introduction

The San Bernardino County Transportation Authority (SBCTA), in cooperation with the California Department of Transportation (Caltrans), is proposing to replace the existing Mount Vernon Avenue Bridge (Bridge Number 54C-066) over the Burlington Northern Santa Fe (BNSF) rail yard in the City of San Bernardino, San Bernardino County, California. The project is not subject to the air quality provisions of the California Environmental Quality Act (CEQA). Figures 1-1 and 1-2 show the regional location and project vicinity, respectively.

A National Environmental Policy Act (NEPA) Finding of No Significant Impact (FONSI) was adopted for the project in June 2011. The project, which involves a road/railroad grade separation, is statutorily exempt from the California Environmental Quality Act (CEQA). A separate Air Quality Report (AQR) was not prepared with the 2011 NEPA document. Since the NEPA document was adopted, it has been noted that additional project improvements and refinements are needed that were not included in the adopted NEPA document.

This report evaluates the potential air quality impacts associated with the construction and operation of the replacement bridge and the modifications to the immediate local street network surrounding the bridge.

1.2 Project Purpose and Need

1.2.1 Project Purpose

The purpose of the proposed project is to provide a bridge that is structurally safe, meeting current seismic, design, and roadway standards.

1.2.2 Project Need

1.2.2.1 *Seismically Deficient*

The existing Mount Vernon Bridge was constructed in 1934 and incorporated steel girders salvaged from an earlier 1907 structure. As part of the Local Bridge Seismic Safety Retrofit Program, a seismic analysis and retrofit study were conducted in 1996. The Final Seismic Retrofit Strategy Report, issued in June 1997, determined that the bridge fell under Category 1, a category for bridges that could potentially collapse in a seismic event and threaten public safety.

1.2.2.2 *Sufficiency Rating*

Caltrans maintains the *National Bridge Inventory—Structure Inventory and Appraisal* for bridges both on and off the federal highway system in the state. The inventory includes a sufficiency rating for each bridge. The sufficiency rating is typically determined by three considerations: (1) structural adequacy and safety, (2) serviceability and functional obsolescence, and (3) essentiality for public use. A special reduction factor is considered to account for conditions related to detours, traffic safety features, and structure type. When a bridge has a deficient sufficiency rating, it is placed on the Federal Highway Administration (FHWA) Federal Eligible

Bridge List (EBL) to receive high priority for retrofit/rehabilitation or replacement under the Federal Highway Bridge Program (HBP). A deficient bridge is defined as having a sufficiency rating ≤ 80 and a status flag as Structurally Deficient (SD). Bridges with a sufficiency rating ≤ 80 and SD or Functionally Obsolete (FO) status are eligible for rehabilitation, while bridges with a sufficiency rating ≤ 50 and SD or FO status are eligible candidates for replacement. In 2002, the sufficiency rating for the Mount Vernon Avenue Bridge was 45.6 with flags for both SD and FO. The major bridge deficiencies in 2002 were identified as poor deck condition, nonstandard deck geometry, and nonstandard underclearance at West Third Street. With the results of the 2004 bridge inspections, the sufficiency rating for the bridge is the result of the following factors: low superstructure capacity, poor substructure condition, serious deck condition, inadequate deck geometry, and substandard vertical clearance at West Third Street. Additionally, the capacity of the existing bridge railing does not meet current standards.

1.2.2.3 *Structurally Deficient*

The bridge has a low superstructure capacity, poor substructure conditions, and deck deficiencies. The deck has moderate and severe transverse cracks and spalls at various locations. The steel bents have structural damage and heavy corrosion on almost all steel element connections. The girders receive a score of 0.0 for operating and inventory ratings due to several severe fatigue cracks on the girder-to-cap beam connections; however, the bridge remains open because of temporary supports that were installed in the early 2000s. Inventory and operating capacity is calculated at 20.8 and 35.4 metric tons, respectively.

1.2.2.4 *Functionally Obsolete (FO)*

The existing bridge is considered to be FO because of the nonstandard deck geometry, misaligned south approach, and nonstandard vertical clearance at West 3rd Street.

1.2.2.5 *Other Deficiencies*

In addition to the previously described deficiencies, other serious conditions exist, such as substandard vertical clearance over the railroad and substandard vertical clearance for 3rd Street. Additionally, the bridge was last painted in 1954. The paint condition index (PCI) dropped from 74.5 in 2000 to 38 in 2016. Bridges on the EBL with a PCI of 65.0 or less qualify as a stand-alone painting project under the federal HBP guidelines. Additionally, the existing bridge has nonstandard vertical and horizontal clearances at the BNSF railroad yard.

1.3 Project Description

The project is located in the City of San Bernardino, San Bernardino County, California (Figures 1-1 and 1-2), along the Mount Vernon Bridge 54C-066, Section 7, Township 1 South, and Range 4 West, on the San Bernardino South U.S. Geological Survey (USGS) 7.5-minute quadrangle map.

The Preferred Alternative (Alternative 3 – Bridge Replacement), identified in the adopted NEPA document, extended from just south of 5th Street to just north of King Street. Based on the identified project improvements/refinements, the project would now extend from just south of 5th Street to Rialto Avenue (refer to Figure 1-3). The proposed improvements/refinements to the project are listed below.

- A portion of the BNSF intermodal operations/parking area east of the bridge on the north side of the existing tracks would be removed and a new area between Kingman Street and West 4th Street and from Cabrera Avenue to Mount Vernon Avenue would be constructed (this will involve acquisition and removal of existing residences/businesses within these limits). A 12-foot-tall block wall and a 20-foot-wide landscape buffer would be constructed along Kingman Street and Cabrera Avenue to shield this area from surrounding uses.
- Just west of Mount Vernon Avenue, West 4th Street would form an intersection with Cabrera Avenue.
- The existing Eagle Building and four associated buildings would be relocated from the east side of Mount Vernon Avenue to the west side of Mount Vernon Avenue.
- The two existing crane repair pads would be relocated north of their current location (one on either side of Mount Vernon Avenue).
- Temporary Track 218 identified in the adopted NEPA document would now be a permanent rail track. A new permanent track (Track 219) would be a constructed.
- Tracks 216 and 217 would be realigned in the immediate vicinity of the new bridge.
- The structures located at the southwest end of the bridge bordered by Mount Vernon Avenue to the east, the alley behind the structures to the west, West 3rd Street to the north, and West 2nd Street to the south would be acquired and removed.
- The access associated with structures fronting Mount Vernon Avenue south of West 2nd Street and north of King Street would be reconstructed as needed to match the new road/sidewalk grade.

Consistent with the updated project layout the following would be incorporated.

- Utilities would be relocated as needed, to accommodate the proposed improvements.
- Best management practices (BMPs) for water quality treatment would be provided as part of the proposed project where feasible.
- Signage would be incorporated within the project's limits of disturbance, where necessary.
- Pedestrian facilities would be compliant with Americans with Disabilities Act (ADA) standards.
- Geotechnical borings would be conducted within the project's limits of disturbance as needed for the design of the project.
- Temporary advanced signage would be required during construction, which would involve portable changeable message signs or other temporary signage that would not require any ground disturbance.
- The proposed project is included in the Southern California Association of Governments (SCAG) 2017 Federal Transportation Improvement Program (FTIP) Amendment 2 under

project ID SBD31905[2]. The 2017 FTIP Amendment 2 was found to conform to the State Implementation Plan (SIP) by the FHWA on February 21, 2017. The proposed project is also in the SCAG 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) under project number SBD31905. The 2016–2040 RTP/SCS was found to conform to the SIP by FHWA on June 1, 2016.

- A construction period of approximately 26 months is anticipated.

[2] The project was added to the currently conforming 2017 FTIP via Amendment 2 as Project ID SBD31905. While FTIP Amendment 14 is the latest Amendment receiving FTA/FHWA approval, Amendment 14 does not include the proposed project (nor does FTIP Amendments 3 – 13); therefore, Amendment 2 is referenced within this report.

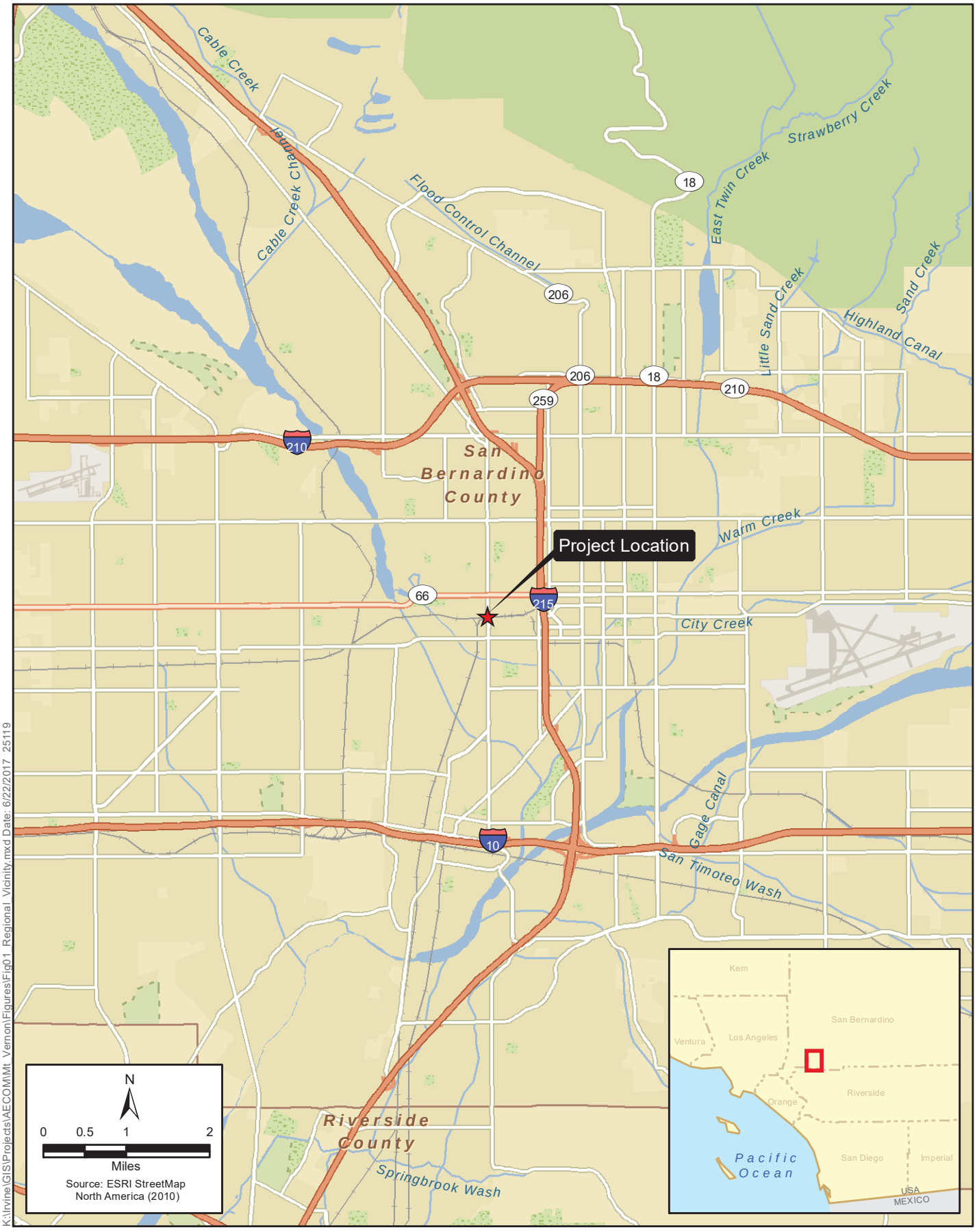

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Figure 1
Regional Vicinity Map
Mount Vernon Avenue Bridge Project

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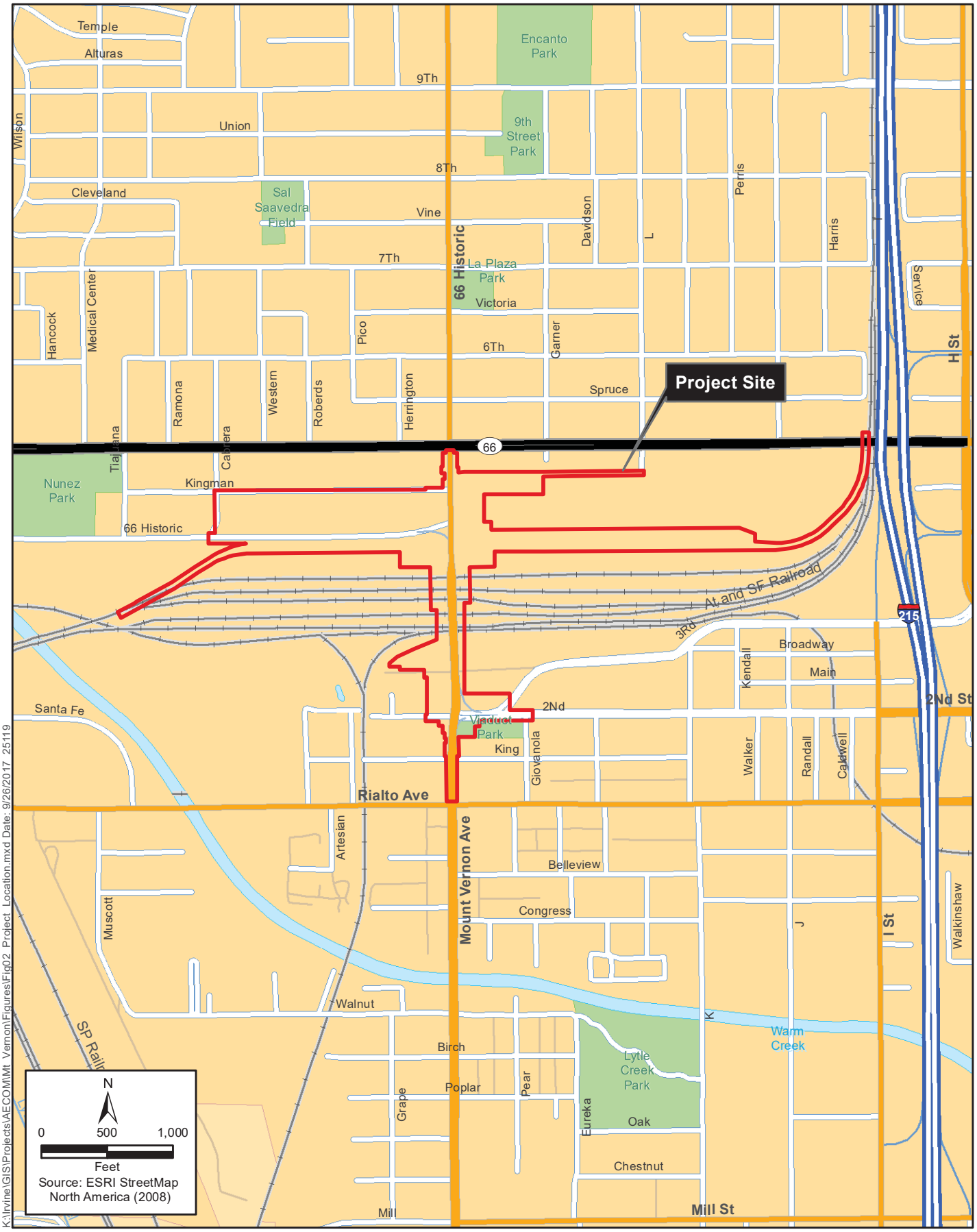

Figure 2
Project Location
Mount Vernon Avenue Bridge Project

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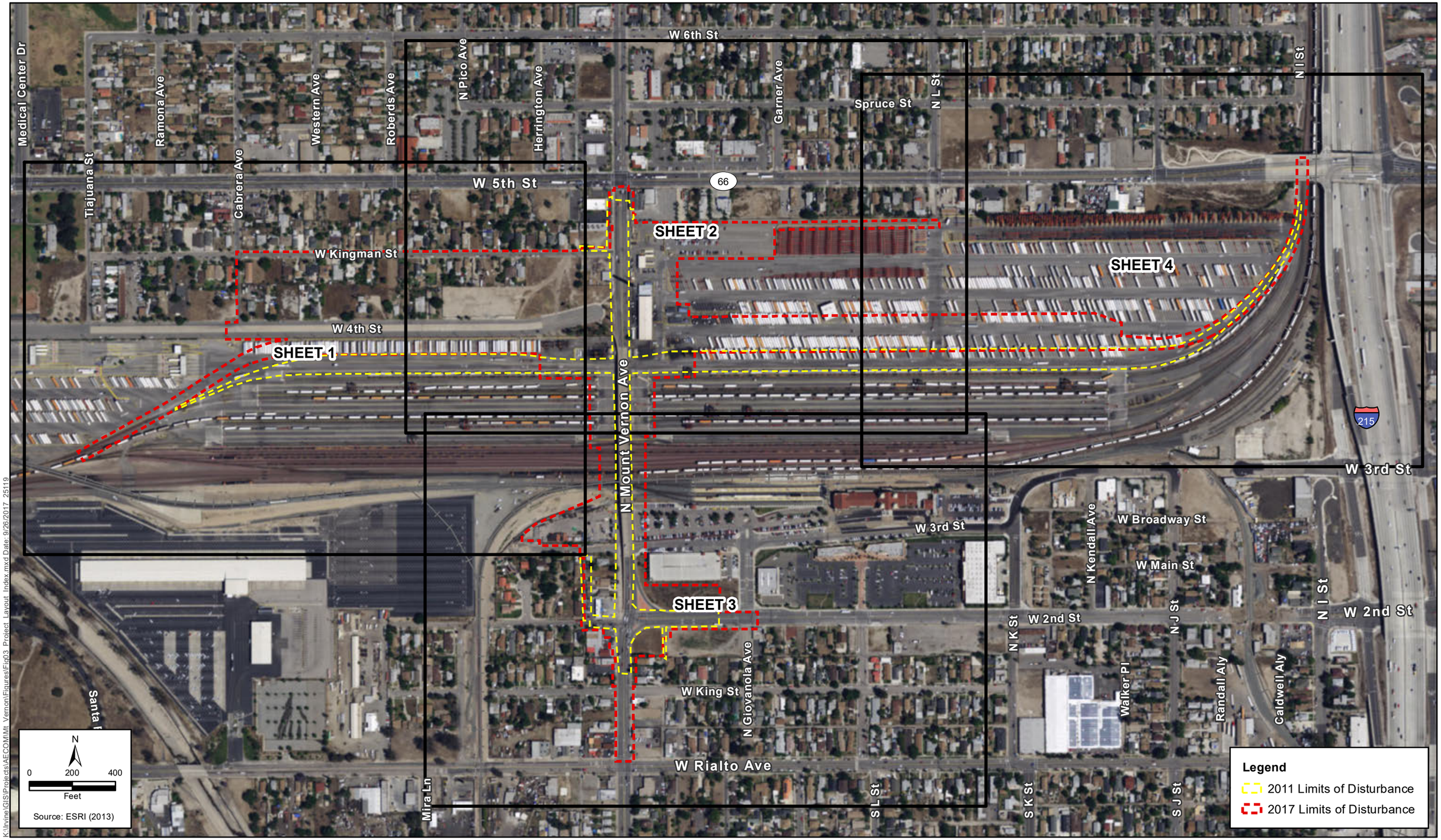

Figure 1-3
Project Layout Map Sheet Index
Mount Vernon Avenue Bridge Project

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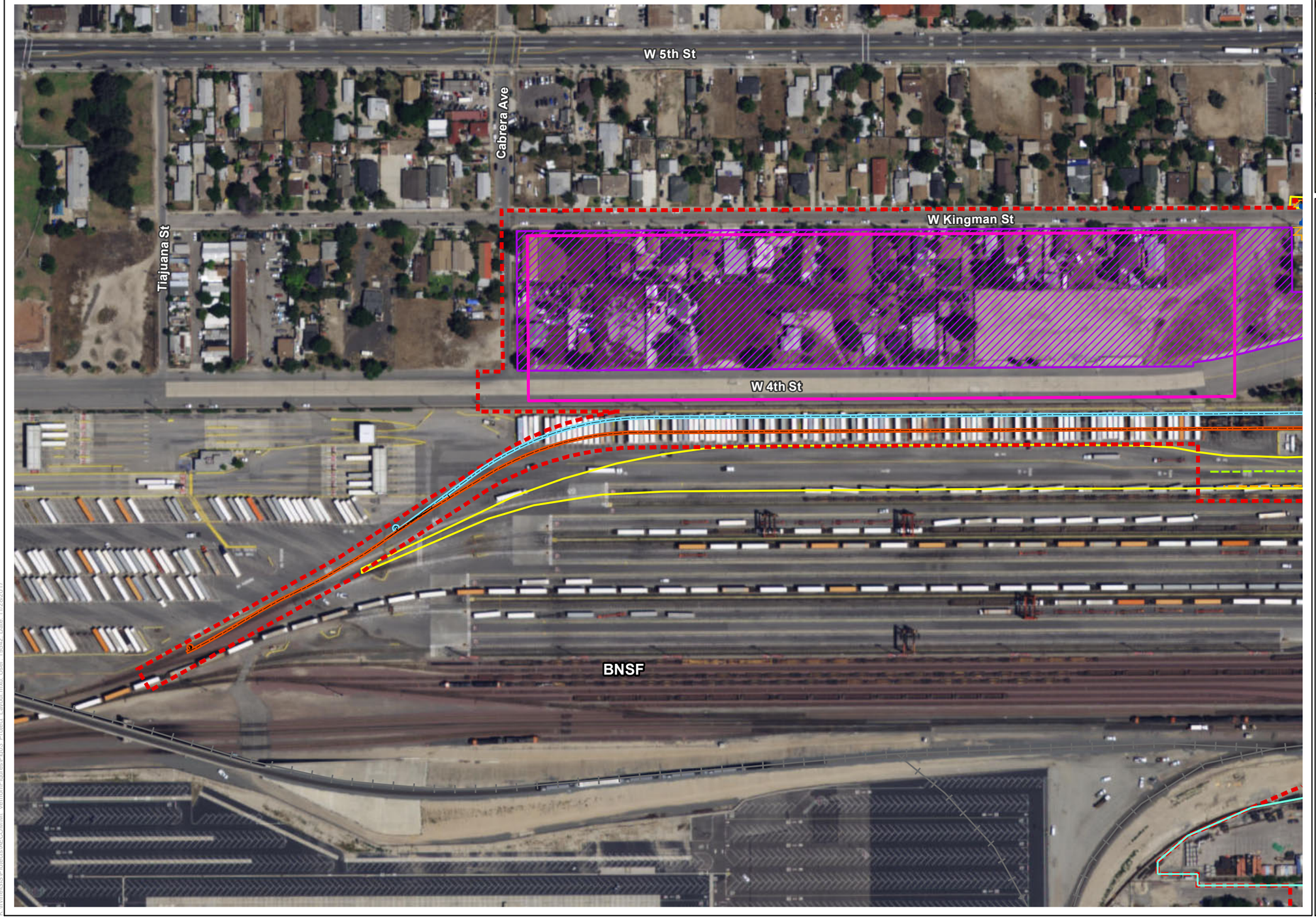

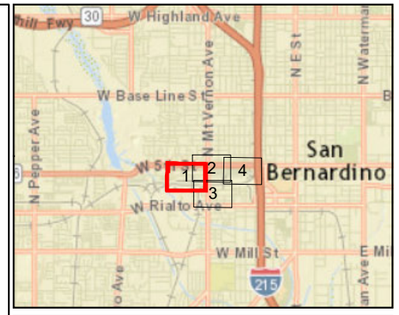

Legend

- Limits of Disturbance (2011)
- Limits of Disturbance (2017)
- Proposed Right-of-Way Acquisition
- Temporary Construction Easement
- Temporary Staging Area
- Realignment of Track 216
- Realignment of Track 217
- Future Track 218
- Future Track 219
- Proposed Drainage
- Proposed Striping
- Proposed Parking

Source: StreetMap North American (2013)

N

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Figure 1-3 - Sheet 1
Project Layout Map
Mount Vernon Avenue Bridge Project

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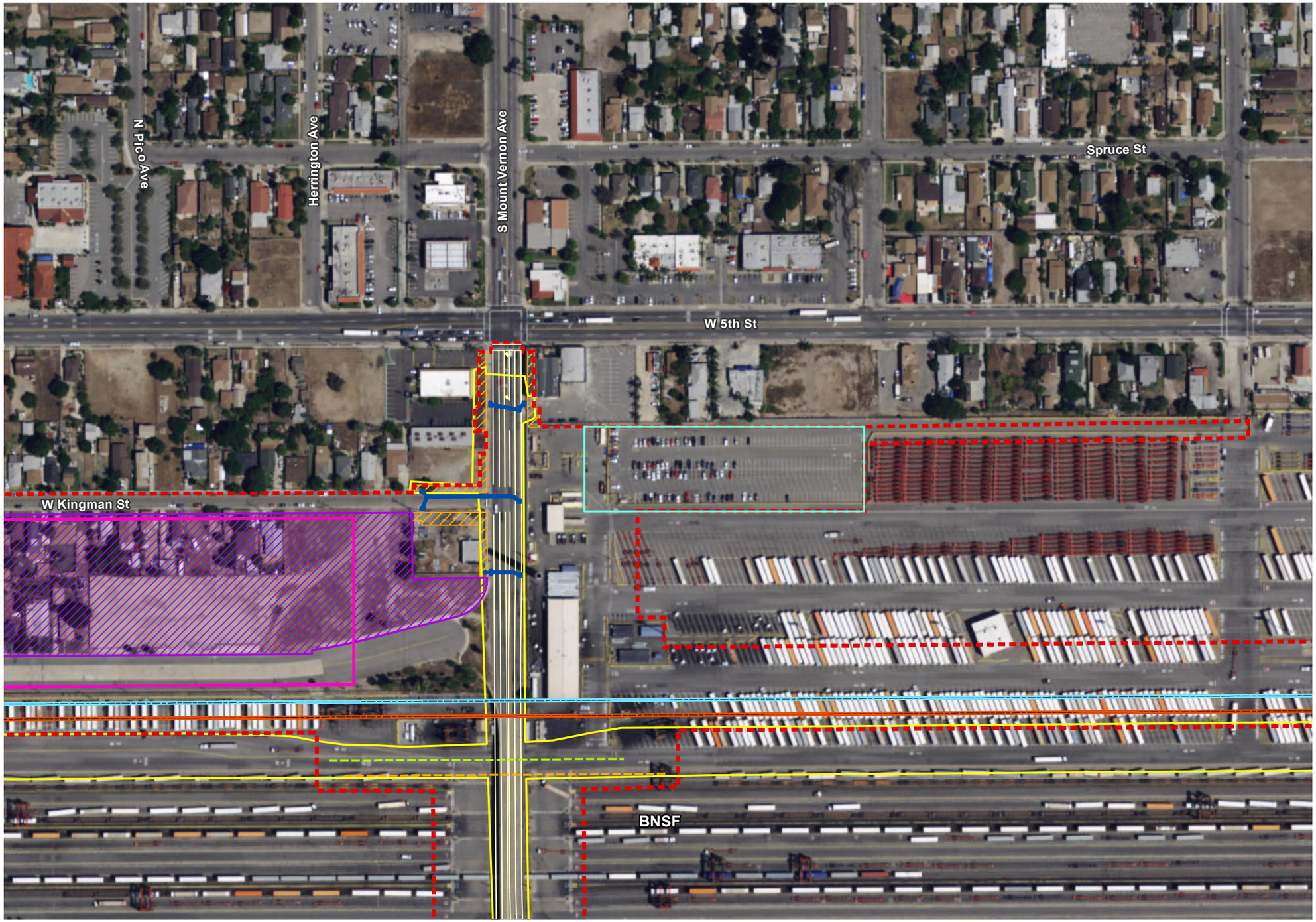

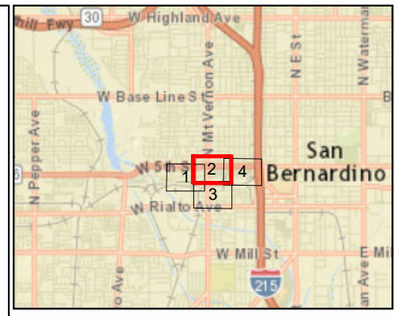

Legend

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- Future Track 219
- Proposed Drainage
- Proposed Striping
- Proposed Parking

Source: StreetMap North American (2013)

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Figure 1-3 - Sheet 2
Project Layout Map
Mount Vernon Avenue Bridge Project

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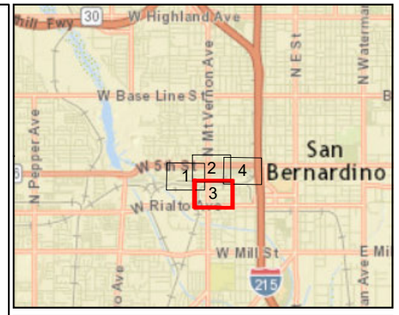

Legend

- Limits of Disturbance (2011)
- Limits of Disturbance (2017)
- Proposed Right-of-Way Acquisition
- Temporary Construction Easement
- Temporary Staging Area
- Realignment of Track 216
- Realignment of Track 217
- Future Track 218
- Future Track 219
- Proposed Drainage
- Proposed Striping
- Proposed Parking

Source: StreetMap North American (2013)

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Figure 1-3 - Sheet 3
Project Layout Map
Mount Vernon Avenue Bridge Project

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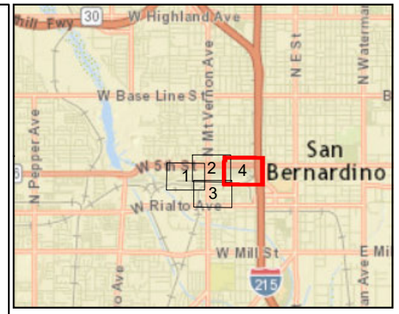

Legend

- Limits of Disturbance (2011)
- Limits of Disturbance (2017)
- Proposed Right-of-Way Acquisition
- Temporary Construction Easement
- Temporary Staging Area
- Realignment of Track 216
- Realignment of Track 217
- Future Track 218
- Future Track 219
- Proposed Drainage
- Proposed Striping
- Proposed Parking

Source: StreetMap North American (2013)

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0 100 200 Feet

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Figure 1-3 - Sheet 4
Project Layout Map
Mount Vernon Avenue Bridge Project

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Chapter 2 Regulatory Setting

The proposed project would be located in the South Coast Air Basin (SCAB). The SCAB encompasses over 6,700 square miles and includes the southwest portion of San Bernardino County, all of Orange County and the non-desert regions of Los Angeles County, and Riverside County, as defined in California Code of Regulations, Title 17, Section 60104. The South Coast Air Quality Management District (SCAQMD) has jurisdiction over air quality issues in the southwestern portion of San Bernardino County, the location of this project. It administers air quality regulations developed at the federal, state, and local levels.

2.1 Federal Clean Air Act

The federal Clean Air Act (CAA), enacted in 1963 and amended several times thereafter (including the CAA Amendments of 1990, which are the current governing regulations for air quality), establishes the framework for modern air pollution control. In addition, the federal U.S. Environmental Protection Agency (EPA) established the National Ambient Air Quality Standards (NAAQS) for criteria pollutants (see Figure 2-1), which include carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), ozone (O_3), particulate matter 10 microns or less in diameter (PM_{10}), particulate matter 2.5 microns or less in diameter ($PM_{2.5}$), and lead (Pb). Most standards have been set to protect public health. For some pollutants, standards have been based on values such as protection of crops, protection of materials, or avoidance of nuisance conditions.

If a pollutant concentration is lower than the state or federal standard, the area is classified as being in attainment for that pollutant. If a pollutant violates the standard, the area is considered a nonattainment area. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated as unclassified. The State of California has designated the southwestern portion of San Bernardino County, which includes the project area, as being a nonattainment area for O_3 (8- and 1-hour standards), $PM_{2.5}$, and PM_{10}. The federal EPA has designated the area as being a nonattainment area for O_3 (8-hour standard) and $PM_{2.5}$ (see Table 2-1).

2.1.1 Transportation Conformity

The conformity requirement is based on CAA Section 176(c), which prohibits the U.S. Department of Transportation and other federal agencies from funding, authorizing, or approving plans, programs, or projects that do not conform to the SIP for attaining the NAAQS. "Transportation Conformity" applies to highway and transit projects and takes place on two levels: the regional—or planning and programming—level and the project level. The proposed project must conform at both levels to be approved.

Conformity requirements apply only in nonattainment and "maintenance" (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. EPA regulations at 40 Code of Federal Regulations (CFR) 93 govern the conformity process. Conformity requirements do not apply in unclassifiable/attainment areas for NAAQS and do not apply at all for state standards regardless of the status of the area.

Figure 2-1. Ambient Air Quality Standards Applicable in California (pg. 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/m³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.070 ppm (137 µg/m³)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		—		
Fine Particulate Matter (PM2.5)[9]	24 Hour	—	—	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	12.0 µg/m³	15 µg/m³	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m³)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m³)		9 ppm (10 mg/m³)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		—	—	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m³)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)		0.053 ppm (100 µg/m³)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m³)	
	24 Hour	0.04 ppm (105 µg/m³)		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/m³	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m³ (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m³		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

See footnotes on next page ...

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

California Air Resources Board (5/4/16)

Figure 2-1. Ambient Air Quality Standards Applicable in California (pg. 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 $\mu g/m^3$ 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 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ 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 $\mu g/m^3$ 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)**

Table 2-1. Attainment Status of the South Coast Air Basin

Pollutants	Federal Classification	State Classification
Ozone (O_3) (1-hour standard)	Not Applicable (no Federal Standard)†	Nonattainment
Ozone (O_3) (8-hour standard)	Nonattainment, Extreme*	Nonattainment
Respirable Particulate Matter (PM_{10})	Attainment/Maintenance	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Nonattainment, Moderate	Nonattainment
Carbon Monoxide (CO)	Unclassified/Attainment	Attainment
Nitrogen Dioxide (NO_2)	Unclassified/Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Lead	Nonattainment for Los Angeles County portion only; all other areas have Unclassified/Attainment designation	Attainment

† The South Coast Air Basin was designated non-attainment-extreme for the 1-hour ozone NAAQS before the 8-hour standard replaced it, and has not yet attained the 1-hour standard. The 2012 South Coast Air Basin SIP (approved by EPA in 2014) includes an attainment demonstration for 1-hour ozone, and ozone emissions budgets consistent with both that and scheduled attainment of the 8-hour ozone NAAQS. Regional conformity analysis is based on those budgets for all versions of the ozone NAAQS.
· The attainment status is based on the attainment status under the 2008 standard. The attainment standard under the 2015 standard has not yet been designated but is expected to be nonattainment.
Sources: ARB 2017a

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS for CO, NO_2, O_3, PM_{10}, $PM_{2.5}$, and, in some areas (although not in California), SO_2. California has nonattainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO_2, and also has a nonattainment area for Pb; however, Pb is not currently required by the CAA to be covered in transportation conformity analyses. Regional conformity is based on emission analysis of RTPs and FTIPs that include all transportation projects planned for a region over a period of at least 20 years for the RTP and 4 years for the FTIP. RTP and FTIP conformity analyses use travel demand and emission models to determine whether the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the CAA and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), the FHWA, and the Federal Transit Administration make determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the CAA. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept, scope, and "open-to-traffic" schedule of a proposed transportation project are the same as described in the RTP and FTIP, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Conformity analysis at the project level includes verification that the project is included in the regional conformity analysis and a "hot-spot" analysis if an area is "nonattainment" or "maintenance" for CO and/or particulate matter (PM_{10} or $PM_{2.5}$). A region is "nonattainment" if one or more of the monitoring stations in the region measures a violation of the relevant standard and EPA officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the standard may be officially re-designated to attainment by EPA, and are then called "maintenance" areas. Hot-spot analysis is essentially the same, for technical purposes, as CO or particulate matter analysis performed for NEPA purposes. Conformity does include some specific procedural and documentation standards for projects that require a hot-spot analysis. In general, projects must not cause the hot-spot–related standard to be

violated, and must not cause any increase in the number and severity of violations in nonattainment areas. If a known CO or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

The project is included in the SCAG 2016–2040 RTP/SCS, and also included in the SCAG 2017 FTIP Amendment 2, under project number SBD31905. The SCAG 2016–2040 RTP/SCS and SCAG 2017 FTIP Amendment 2 were found to conform to the SIP by FHWA on June 1, 2016, and February 21, 2017, respectively. The project is exempt from the requirement to demonstrate transportation conformity per 40 CFR 93.126, under project type "widening narrow pavements or reconstructing bridges (no additional travel lanes)."

2.2 State Requirements

Responsibility for achieving the California Ambient Air Quality Standards (CAAQS), which, for certain pollutants and averaging periods, are more stringent than federal standards, is placed on the California Air Resources Board (ARB) and local air pollution control districts (see Figure 2-1). State standards are to be achieved through district-level air quality management plans that are incorporated into the SIP. Traditionally, ARB has established state air quality standards, maintained oversight authority in air quality planning, developed programs for reducing emissions from motor vehicles, developed air emissions inventories, collected air quality and meteorological data, and approved SIPs developed by the individual air districts. Responsibilities of air districts include overseeing stationary source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality–related sections of environmental documents required under CEQA.

2.2.1 California Clean Air Act

The California Clean Air Act (California CAA) of 1988 substantially added to the authority and responsibilities of air districts. The California CAA designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures.

The California CAA focuses on attainment of the state ambient air quality standards and requires designation of attainment and nonattainment areas with respect to these standards. The act also requires that local and regional air districts expeditiously adopt and prepare an air quality attainment plan (Clean Air Plan) if the district violates state air quality standards for O_3, CO, SO_2, or NO_2. These plans are specifically designed to attain state standards and must be designed to achieve an annual 5 percent reduction in district-wide emissions of each nonattainment pollutant or its precursors. No locally prepared attainment plans are required for areas that violate the state PM_{10} standards; ARB is responsible for developing plans and projects that achieve compliance with the state PM_{10} standards.

The California CAA requires the state air quality standards be met as expeditiously as practicable but, unlike the federal CAA, does not set precise attainment deadlines. Instead, the act establishes increasingly stringent requirements for areas that will require more time to achieve the standards.

The California CAA emphasizes the control of *indirect* and *area-wide sources* of air pollutant emissions. The act gives local air pollution control districts explicit authority to regulate indirect sources of air pollution and establish Transportation Control Measures. The California CAA does not define the terms *indirect sources* and *area-wide sources*. However, Section 110 of the federal CAA defines an indirect source as a facility, building, structure, installation, real property, road, or highway that attracts, or may attract, mobile sources of pollution. Such terms include parking lots, parking garages, and other facilities subject to any measure for management of parking supply. Transportation Control Measures are defined in the California CAA as "any strategy to reduce trips, vehicle use, vehicle miles traveled, vehicle idling, or traffic congestion for the purpose of reducing vehicle emissions."

According to ARB, *area-wide* source emissions include stationary and off-road sources and are divided into four types of emission sources. Aggregated point sources are many small point sources, or facilities, that are not inventoried individually but are estimated as a group and reported as a single source category. Examples include gas stations and dry cleaners. Area-wide sources include source categories associated with human activity, and emissions take place over a wide geographic area. Consumer products and unpaved road dust are examples of area-wide sources. Non-anthropogenic sources generally include source categories with naturally occurring emissions such as wildfires and geogenic sources. Off-road mobile sources include categories such as off-road equipment, like lawn and garden equipment, and recreational boats. Collectively, these types of sources are referred to as *area source categories*.

2.3 Local and Regional Requirements

The air quality management agencies of direct importance in the SCAB include EPA, ARB, and SCAQMD. EPA has established federal standards for which ARB and SCAQMD have primary implementation responsibility. ARB and SCAQMD are responsible for ensuring that state standards are met. SCAQMD is responsible for implementing strategies for air quality improvement and recommending mitigation measures for new growth and development. At the local level, air quality is managed through land use and development planning practices, which are implemented in the county through the general plan process.

SCAQMD is responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws. For example, SCAQMD Rule 403, Fugitive Dust, is intended to reduce the amount of particulate matter in the ambient air resulting from anthropogenic fugitive dust sources by requiring projects to prevent, reduce, or mitigate fugitive dust emissions.[3] All construction activity sources of fugitive dust are required to implement the best available control measures indicated in Rule 403.

[3] The SCAB is classified by EPA as an attainment/maintenance area for PM_{10} and a nonattainment area for $PM_{2.5}$ (see Table 2-1).

Chapter 3 Affected Environment

3.1 Meteorology

Air quality conditions are dependent upon climatological conditions, topography, and the types and amounts of pollutants emitted. The following provides an overview of conditions affecting pollutant ambient air concentrations in the SCAB.

3.1.1 Topography and Climate

The proposed project site is located within the SCAB, an approximately 6,750-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. The SCAB includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Gorgonio Pass area in Riverside County. The terrain and geographical location determine the distinctive climate for the SCAB, which is a coastal plain with connecting broad valleys and low hills.

The topography and climate of Southern California combine to make the SCAB an area of high air pollution potential. A warm air mass frequently descends over the cool, moist marine layer produced by the interaction between the ocean's surface and the lowest layer of the atmosphere. The warm upper layer forms a cap over the cooler surface layer, which traps the pollutants near the ground in an "inversion" layer. Light winds can further limit ventilation. Additionally, abundant sunlight triggers the photochemical reactions that produce ozone and the majority of the particulate matter. The region experiences more days of sunlight than any other major urban area in the nation except Phoenix, Arizona (SCAQMD 2017). The rate at which pollutants are converted to other pollutants—SO_2 gas to sulfate particles or nitrogen oxides (NO_X) and hydrocarbons to O_3—is determined by the availability of sunlight and the presence or absence of clouds (Malm 1999).

Data from the Western Regional Climate Center's San Bernardino climate monitoring station were used to characterize project vicinity climate conditions because it is nearest to the proposed project site (WRCC 2017). The average project area summer (August) high and low temperatures are 96.2 degrees Fahrenheit (°F) and 59.4°F, respectively, while the average winter (January) high and low temperatures are 66.2°F and 38.5°F, respectively. Precipitation in the project area tends to be low, with annual averages of 16.1 inches, most of which occurs from December to March.

The wind monitoring station located nearest to the proposed project site is the Chino Airport Station. Data from this wind monitoring station was used to characterize study wind conditions. Wind patterns in the project vicinity are westerly year round, with an average annual speed of 5.2 miles per hour (WRCC 2017).

3.2 Description of Pollutants

The following is a general description of the pollutants for which there are standards (criteria pollutants) and ambient measurements. A description of toxic air contaminants (TACs) and

naturally occurring asbestos (NOA), for which there are no standards, is also included. Ozone and its precursors, reactive organic gases (ROG) and NO_X, sulfates, visibility reducing particles, NO_2, PM_{10}, and $PM_{2.5}$ are considered to be regional pollutants because they or their precursors affect air quality on a regional scale. NO_2 reacts photochemically with ROG to form O_3, while PM_{10} and $PM_{2.5}$ can form from the chemical reaction of atmospheric chemicals, including NO_X, sulfates, nitrates, and ammonia. These processes can occur at some distance downwind of the source of pollutants. Pollutants such as CO, SO_2, Pb, and particulate matter are considered to be local pollutants because they tend to disperse rapidly with distance from the source. Although PM_{10} and $PM_{2.5}$ are considered to be regional pollutants, they can also be localized pollutants because direct emissions of particulate matter from automobile exhaust can accumulate in the air locally near the emission source.

Figure 2-1, presented earlier, provides the state and federal ambient air quality standards. Table 2-1, also presented earlier, provides a summary of the SCAB attainment status for all criteria pollutants. Shown therein, the State of California has designated the southwest San Bernardino county portion of the SCAB as being a nonattainment area for O_3 (both 1-hour and 8-hour standards), $PM_{2.5}$, and PM_{10}. The area is designated as attainment for CO, NO_2, SO_2, and Pb.

EPA has designated this area as being a nonattainment area for O_3 (8-hour standard only), and $PM_{2.5}$; an attainment/maintenance area for PM_{10}; unclassified/attainment areas for NO_2, CO, and Pb; and an attainment area for SO_2.

3.2.1 Ozone

O_3 is a respiratory irritant that increases susceptibility to respiratory infections. It is also an oxidant that can cause substantial damage to vegetation and other materials. O_3, which is a regional pollutant, is generally not emitted directly into the air but is formed by a photochemical reaction in the atmosphere. O_3 precursors, which include ROG and NO_X, react in the atmosphere in the presence of sunlight to form O_3. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, O_3 is primarily a summer air pollution problem. In addition, photochemical reactions take time to occur, so high O_3 levels often occur downwind of the emission source.

On April 15, 2004, EPA released its list of 8-hour O_3 nonattainment areas, together with the deadline for each nonattainment area to attain the standard. Areas with the highest 8-hour concentrations and the greatest number of days exceeding the new standard were given the longest time to reach attainment.

EPA revoked the federal 1-hour O_3 standard on June 15, 2005; however, the new federal 8-hour O_3 standard was promulgated effective from that same date. A state standard for O_3 has been established for the 1-hour and 8-hour averaging times. The state 1-hour and 8-hour O_3 standards are 0.09 part per million (ppm) and 0.070 ppm, respectively, not to be exceeded. On October 1, 2015, EPA revised the 2008 O_3 NAAQS 8-hour standard 0.075 ppm by strengthening ground-level O_3 to 0.070 ppm. This Final Rule for O_3 was published in 80 *Federal Register* 65291 and is effective from December 28, 2015.

The SCAB is designated as nonattainment, extreme, for the 8-hour O_3 standard. The final designations of attainment status for the 2015 8-hour O_3 standard are scheduled to occur in late 2017.

3.2.2 Carbon Monoxide

CO is a public health concern because it combines readily with hemoglobin and reduces the amount of oxygen transported in the bloodstream. CO can cause health problems such as fatigue, headache, confusion, dizziness, and even death.

Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when a period of light winds combines with the formation of ground-level temperature inversions, typically from the evening through early morning. These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

State and federal CO standards have been set for 1-hour and 8-hour averaging times. The state 1-hour standard is 20 ppm by volume, whereas the federal 1-hour standard is 35 ppm. Both the state and federal standard for the 8-hour averaging period is 9 ppm.

The SCAB is designated as an unclassified/attainment area for the federal CO standard and as an attainment area for the state CO standard.

3.2.3 Nitrogen Dioxide

Nitrogen oxides are a family of highly reactive gases, including NO_2, which are primary precursors to the formation of ground-level O_3, reacting in the atmosphere to form acid rain. NO_X is emitted from combustion processes in which fuel is burned at high temperatures, principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. A brownish gas, NO_2 is a strong oxidizing agent that reacts in the air to form corrosive nitric acid, as well as toxic organic nitrates.

NO_X can irritate and damage the lungs and lower resistance to respiratory infections such as influenza. The effects of short-term exposure are still unclear, but continued or frequent exposure to concentrations that are typically much higher than those normally found in the ambient air may cause increased incidence of acute respiratory illness in children. Health effects associated with NO_X are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may lead to eye and mucous membrane aggravation along with pulmonary dysfunction. NO_X can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals as a result of production of particulate nitrates. Airborne NO_X also can impair visibility. NO_X is a major component of acid deposition in California. NO_X may affect both terrestrial and aquatic ecosystems. NO_X in the air is a potentially significant contributor to a number of environmental effects such as acid rain and eutrophication in coastal waters. Eutrophication occurs when a body of water suffers an increase in nutrients that reduces the amount of oxygen in the water, producing an environment that is destructive to fish and other animal life.

The state NO_2 standards are 0.18 ppm as a 1-hour average and 0.030 ppm as an annual arithmetic mean. The federal NO_2 standards are 0.100 ppm as a 1-hour average and 0.053 ppm as an annual arithmetic mean.

The SCAB is designated as unclassified/attainment for the federal standard and as attainment for the state standard.

3.2.4 Sulfur Oxides

Sulfur oxide (SO_X) gases are a family of colorless, pungent gases, including SO_2, that are formed primarily by combustion of sulfur-containing fossil fuels (mainly coal and oil), metal smelting, and other industrial processes. SO_X can react to form sulfates, which significantly reduce visibility. SO_X is a precursor to particulate matter formation, which is in nonattainment in the project area. The major health concerns associated with exposure to high concentrations of SO_X include effects related to breathing, respiratory illness, alterations in pulmonary defenses, and aggravation of existing cardiovascular disease. Major subgroups of the population that are most sensitive to SO_X are individuals with cardiovascular disease or chronic lung disease (such as bronchitis or emphysema), children, and the elderly. Emissions of SO_X also can damage the foliage of trees and agricultural crops. Together, SO_X and NO_X are the major precursors to acid rain, which is associated with the acidification of lakes and streams and accelerated corrosion of buildings and monuments.

The state standards are 0.25 ppm for the 1-hour averaging period and 0.04 ppm for the 24-hour averaging period. The federal standards are 0.075 ppm for the 1-hour averaging period and 0.5 ppm for the 3-hour averaging period (75 FR 35520).

The SCAB is designated as an unclassifiable/attainment area for both the state and federal standards.

3.2.5 Inhalable Particulate Matter

Particulates can damage human health and retard plant growth. Health concerns associated with suspended particulate matter focus on those particles small enough to reach the lungs when inhaled. Particulates also reduce visibility and corrode materials.

The federal and state ambient air quality standards for particulate matter apply to two classes of particulates: $PM_{2.5}$ and PM_{10}. The state PM_{10} standards are 50 micrograms per cubic meter ($\mu g/m^3$) as a 24-hour average and 20 $\mu g/m^3$ as an annual arithmetic mean. The federal PM_{10} standard is 150 $\mu g/m^3$ as a 24-hour average. For $PM_{2.5}$, the state has adopted a standard of 12 $\mu g/m^3$ for the annual arithmetic mean. The federal $PM_{2.5}$ standards are 35 $\mu g/m^3$ for the 24-hour average and 12.0 $\mu g/m^3$ for the annual arithmetic mean.

The SCAB is designated as a nonattainment area for both the state 24-hour and arithmetic mean PM_{10} standards and as a nonattainment/moderate area for the federal 24-hour PM_{10} standard. In addition, the SCAB is designated as a nonattainment area for the state annual arithmetic mean $PM_{2.5}$ standard and as a nonattainment area (moderate) for both the federal 24-hour and annual arithmetic $PM_{2.5}$ standards.

3.2.6 Lead

Pb is a natural constituent of air, water, and the biosphere. Pb is neither created nor destroyed in the environment, so it essentially persists forever. Automobiles were once a major source of airborne Pb because, prior to being phased out, Pb was used as a gasoline additive to increase the octane rating. However, in recent years, ambient concentrations of Pb have dropped dramatically.

Short-term exposure to high levels of Pb can cause vomiting, diarrhea, convulsions, coma, or even death. However, even small amounts of Pb can be harmful, especially to infants, young children, and pregnant women. Symptoms of long-term exposure to lower levels of Pb may be less noticeable but still serious. Anemia is common, and damage to the nervous system may cause impaired mental function. Other symptoms are appetite loss, abdominal pain, constipation, fatigue, sleeplessness, irritability, and headache. Continued excessive exposure, as in an industrial setting, can affect the kidneys.

Pb exposure is most serious for young children because they absorb Pb more easily than adults and are more susceptible to its harmful effects. Even low-level exposure may harm the intellectual development, behavior, size, and hearing of infants. During pregnancy, and especially in the last trimester, Pb can cross the placenta and affect the fetus. Female workers exposed to high Pb levels have more miscarriages and stillbirths.

The state Pb standard is 1.5 $\mu g/m^3$ over a 30-day average; the federal Pb standards are 1.5 $\mu g/m^3$ averaged over a calendar quarter and 0.15 $\mu g/m^3$ as a rolling 3-month average. The SCAB is designated as an attainment area for the state standard; however, the Los Angeles County portion of the SCAB is a designated nonattainment area for the federal standard. This is due primarily to two lead-acid battery recyclers, one of which was shut down in 2015–2016. The non-Los Angeles County portion of the SCAB (that includes the project vicinity) is designated as an attainment area for the federal standard.

3.2.7 Mobile-source Air Toxics/Toxic Air Contaminants

TACs are pollutants that may result in increased mortality or serious illness or pose a present or potential hazard to human health. Health effects of TACs include cancer, birth defects, neurological damage, damage to the body's natural defense system, and diseases that lead to death. In 1998, following a 10-year scientific assessment process, ARB identified particulate matter from diesel-fueled engines as a TAC. Compared with other air toxics ARB has identified and controlled, diesel particulate matter emissions are estimated to be responsible for about 70 percent of the total ambient air toxics risk (ARB 2005).

Through the CAA Amendments of 1990, Congress mandated EPA to regulate 188 air toxics, which are also known as hazardous air pollutants. In EPA's latest final rule (2007) on the control of hazardous air pollutants from mobile sources (72 *Federal Register* 8430), the agency identified 93 compounds that are emitted from mobile sources, which are listed in EPA's Integrated Risk Information System. From this list of 93 compounds, EPA has identified nine as priority mobile source air toxics (MSATs). The high regulation priority of these nine MSATs was based on EPA's 2011 National Air Toxics Assessment (Federal Highway Administration 2016a).

The nine priority MSATs include the following: acetaldehyde, acrolein, benzene, 1,3-butadiene, diesel particulate matter/diesel exhaust organic gases, ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter.

The 2007 rule requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOVES2014a model, even if vehicle activity (i.e., vehicle miles traveled) increases by 45 percent, as assumed from 2010 to 2050, a combined reduction of 91 percent in the total annual emission rate for the priority MSATs is projected for the same time period (Federal Highway Administration 2016a).

3.2.8 Naturally Occurring Asbestos

NOA is a fibrous material found in certain types of rock formations. It results from natural geologic processes and is commonly found near earthquake faults in California. Some rock types known to produce asbestos fibers are varieties of chrysotile, crocidolite, amosite, anthophyllite, tremolite, and actinolite.

Asbestos is harmless when it is left undisturbed under the soil, but if it becomes airborne, it can cause serious health problems. Human disturbance, or natural weathering, can break down asbestos into microscopic fibers that are easily inhaled. Inhalation of asbestos fibers can cause lung cancer, mesothelioma (a rare form of cancer found in the lining of internal organs), and asbestosis (a progressive, non-cancer disease of the lungs involving a buildup of scar tissue, which inhibits breathing) (EPA 2008a, 2008b).

Both EPA and ARB have issued guidance for reducing exposure to NOA. EPA's suggested measures include leaving NOA material undisturbed, covering or capping NOA material, limiting dust-generating activities, or excavating and disposing of NOA material (EPA 2008c). ARB has adopted Airborne Toxic Control Measures, which are required for road construction and maintenance projects, unless vehicle traffic, reducing vehicle speeds, wetting or chemically stabilizing unpaved surfaces subject to vehicle traffic, reducing vehicle speeds, wetting or chemically stabilizing storage piles, and eliminating track-out material and equipment (ARB 2008).

3.3 Existing Air Quality Conditions

The project site is located in the City of San Bernardino. The air monitoring station closest to the project site is the San Bernardino-East 4th Street Monitoring Station (ARB Station No. 36203, EPA AQS Site ID: 060719004), over 2 miles east of the project site. The station monitors major criteria pollutants including O_3, CO, NO_2, PM_{10} and $PM_{2.5}$. The existing air quality conditions in the proposed project area can be characterized by monitoring data collected at these stations. Table 3-1 presents air monitoring data from the monitoring stations. As shown in Table 3-1, monitoring data shows pollutant concentrations have exceeded state and federal air quality standards multiple times during the previous three year period.

Table 3-1. Monitoring Data Collected from the San Bernardino-E. 4th Street Monitoring Station (ARB Station No. 36203, EPA AQS Site ID: 060719004)

Pollutant Standards	2014	2015	2016
Ozone (O_3)			
Maximum 1-hour concentration (ppm)	0.121	0.134	0.158
Maximum 8-hour concentration (ppm)	0.099	0.117	0.118
Number of Days Standard Exceeded			
CAAQS 1-hour (> 0.09 ppm)	38	52	70
NAAQS 8-hour (> 0.070 ppm)	75	78	106
Carbon Monoxide (CO)			
Maximum 8-hour concentration (ppm)	2.4	1.8	1.7
Number of Days Standard Exceeded			
NAAQS/CAAQS 8-hour (> 9.0 ppm)	0	0	0
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration (ppm)	0.0726	0.0714	0.0601
Annual average concentration (ppm); CAAQS = 0.030 ppm	0.018	0.015	0.017
Number of Days Standard Exceeded			
NAAQS 1-hour (> 0.100 ppm)	0	0	0
Particulate Matter (PM_{10})			
National maximum 24-hour concentration ($\mu g/m^3$)	157.2	187.0	277.0
National second-highest 24-hour concentration ($\mu g/m^3$)	141.0	78.0	91.0
State maximum 24-hour concentration ($\mu g/m^3$)	131.0	180.0	N/A
State second-highest 24-hour concentration ($\mu g/m^3$)	61.0	75.0	N/A
National annual average concentration ($\mu g/m^3$)	35.8	33.0	36.7
State annual average concentration ($\mu g/m^3$)	32.7	31.7	N/A
Number of Days Standard Exceeded			
CAAQS 24-hour (> 50 $\mu g/m^3$)	12	19	N/A
NAAQS 24-hour (> 150 $\mu g/m^3$) (estimated days)	1	7	N/A
Particulate Matter ($PM_{2.5}$)			
National maximum 24-hour concentration ($\mu g/m^3$)	32.2	53.5	53.5
National second-highest 24-hour concentration ($\mu g/m^3$)	28.1	35.8	32.5
National third-highest 24-hour concentration ($\mu g/m^3$)	25.7	33.6	32.5
National fourth-highest 24-hour concentration ($\mu g/m^3$)	25.2	32.3	27.1
National annual average concentration ($\mu g/m^3$)	N/A	10.7	11.1
State annual average concentration ($\mu g/m^3$)	N/A	N/A	11.1
Number of Days Standard Exceeded			
NAAQS 24-hour (> 35 $\mu g/m^3$)	N/A	7	3

Notes:
N/A = Insufficient data available to determine value/data not available.
Sources: ARB 2017; EPA 2016; compiled by ICF.

3.4 Sensitive Receptors

Some locations are considered more susceptible to adverse impacts from air pollution than others. These locations are commonly referred to as *sensitive receptors* and include schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, hospitals, retirement homes, and residences. The vicinity of the project is 500 feet or 150 meters from the edge of the nearest traveled lane (Caltrans 2017a).

As shown in Figure 3-1, there are several residences located within 150 meters of the project disturbance limits, the closest of which were residences north of West 4th Street and south of West Kingman Street and a small area of residences west of North Mount Vernon Avenue and north of West 2nd Street. Both of these areas are in fact within the project's limits of disturbance.

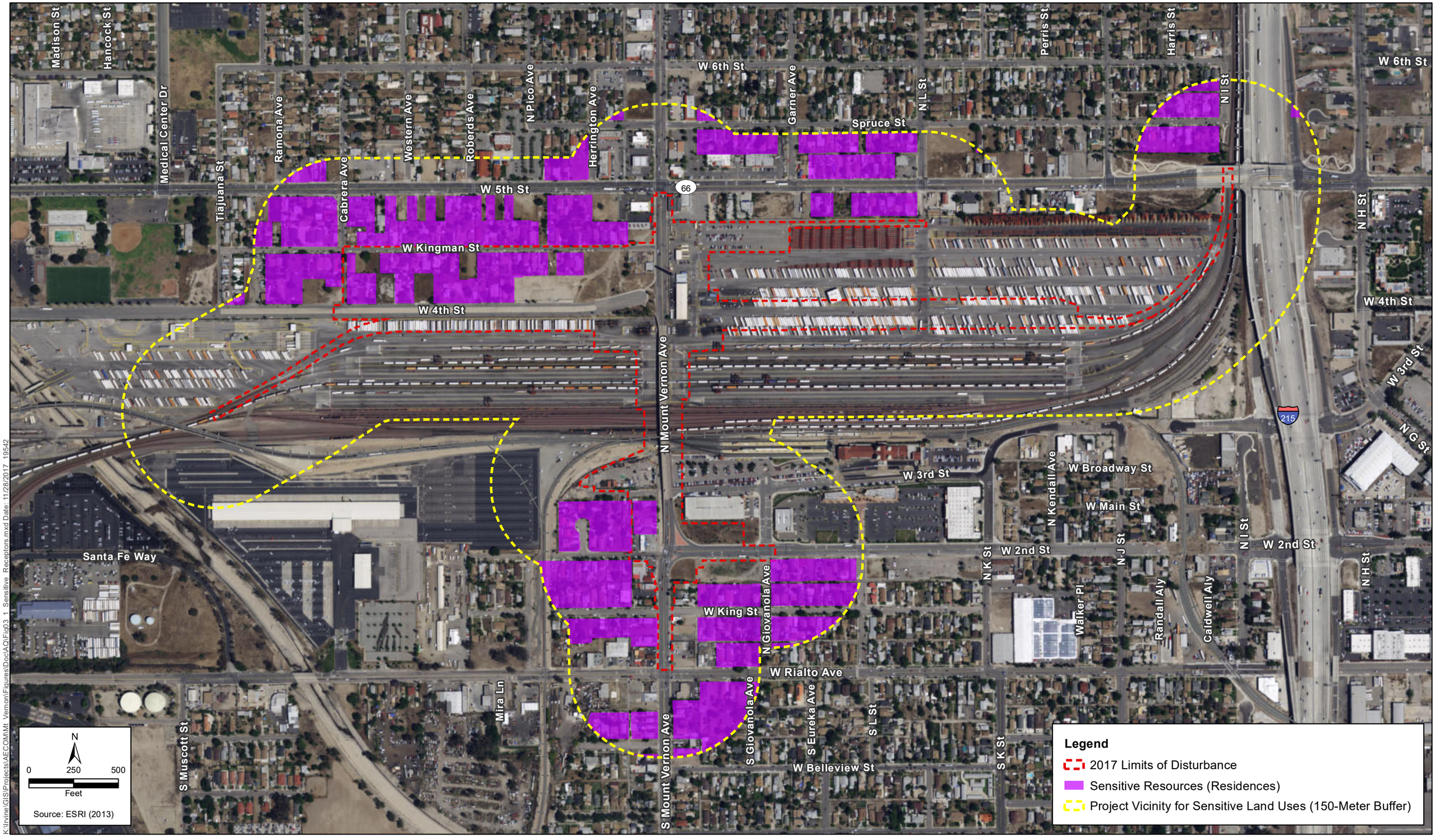

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Figure 3-1
Sensitive Land Use Receptors
Mount Vernon Avenue Bridge Project

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Chapter 4 Environmental Consequences

4.1 Assessment Methodology

4.1.1 Construction Period Impact Assessment Methodology

Construction activities are a source of fugitive dust and exhaust emissions that can have substantial impacts on air quality. Emissions would result from earthmoving and use of heavy equipment, as well as land clearing, ground excavation, cut-and-fill operations, and the construction of connecting roadways and bridge structural supports. Emissions can vary substantially from day to day, depending on the level of activity, the specific operations, and prevailing weather.

Construction-period emission estimates have been included in this report for regional emissions and localized emissions. Mass daily combustion exhaust and fugitive dust (PM_{10} and $PM_{2.5}$) emissions were estimated using the Road Construction Emissions Model (Version 8.1.0), which was developed by the Sacramento Metropolitan Air Quality Management District and is recognized as a tool for quantification of air quality impacts during roadway construction activities. Fugitive PM_{10} and $PM_{2.5}$ emissions estimates take into account compliance with SCAQMD Rule 403. Experience has shown that several feasible control measures can be implemented to reduce exhaust and fugitive PM_{10} and $PM_{2.5}$ emissions during construction. A 26-month construction duration was assumed, per estimates from the project design team.

4.1.1.1 *Naturally Occurring Asbestos*

Although NOA is common in certain counties of California, it is not likely to be found in the immediate project vicinity (California Department of Conservation 2000). The proposed project, well within an established urban area, is not near any known major sources of NOA. Because neither construction nor operation of the proposed project would disturb any major asbestos sites in the region, impacts related to NOA would not occur and no additional analysis is warranted.

4.1.1.2 *Odors*

Odors are addressed in a qualitative manner, identifying elements of the proposed project with the potential to result in the release of objectionable odors in the project vicinity.

4.1.2 Operational Period Impact Assessment Methodology

The replacement of the Mount Vernon Bridge would feature a new facility built to the latest engineering standards. Functionally, the bridge would not increase capacity over current conditions, as no additional lanes would be provided. Data from the project's draft Traffic/Circulation Study (AECOM 2017) show virtually no difference in the peak hour intersection volumes and levels of service (LOS) between the Build and No-Build conditions for both opening (2022) and design year (2040). Based on the negligible changes in traffic operations that would result from project implementation, quantification of operational emissions was not undertaken, as there would be no meaningful difference in emissions between the with- and without-project conditions. A qualitative discussion of operational emissions is provided, which is supported by information contained within the Traffic/Circulation Study.

4.1.2.1 *Carbon Monoxide Evaluation*

A screening procedure, pursuant to the Caltrans *Transportation Project-Level Carbon Monoxide Protocol* (CO Protocol) (Garza et al. 1997), was undertaken to determine the potential for localized impacts related to project CO emissions.

4.1.2.2 *PM_{10} and $PM_{2.5}$ Evaluation*

In November 2015, EPA updated a guidance document titled *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas* (FHWA and EPA 2015). This guidance details a step-by-step screening procedure for determining whether project-related particulate emissions have the potential to generate new air quality violations, worsen existing violations, or delay attainment of the NAAQS for $PM_{2.5}$ or PM_{10}.

4.1.2.3 *Mobile-Source Air Toxics/Toxic Air Contaminants Evaluation*

The evaluation of MSATs and TACs is consistent with FHWA and EPA's 2016 memorandum titled *Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents*. The proposed project is in keeping with the definition for projects with low potential MSAT effects. However, it warrants a qualitative analysis of potential MSAT/TAC impacts. Prototype language from the FHWA and EPA guidance is included in the MSAT/TAC discussion below.

4.1.2.4 *Re-entrained Road Dust Emissions*

Fugitive dust emissions from vehicle travel on paved roads (i.e., re-entrained dust) can be calculated using the emissions factor equation provided in the Fifth Edition of EPA's AP-42 emissions factor compilation document (EPA 2011). The specific equation can be found in Section 13.2.1 of the AP-42 document. The emissions factor equation requires the input of several site-specific variables such as particle size multiplier, roadway silt loading factor, average vehicle weight, and rainfall correlation factor. With regard to the proposed project, there would be no change in traffic volumes or vehicle miles traveled (VMT) occurring under the Build Alternative when compared to the No-Build Alternative at project opening year or project design year. As such, there would be no change in re-entrained road dust occurring under the Build Alternative when compared to the No-Build Alternative. For this reason, re-entrained road dust emissions are not evaluated for this project.

4.2 Project Effects

4.2.1 Construction Period Emissions

4.2.1.1 *Criteria Pollutant Emissions*

Construction for this project is anticipated to begin in 2021 and would last approximately 26 months. Temporary construction emissions would result from onsite activities such as grubbing/land clearing, grading/excavation, and drainage/subgrade and bridge construction and paving, as well as offsite activities such as haul truck and construction worker commute trips. Pollutant emissions would vary daily, depending on the level of activity, specific operations, and prevailing weather.

During construction, short-term degradation of air quality may occur because of the release of particulate emissions (fugitive dust) generated by excavation, grading, hauling, and other activities related to construction. Emissions from construction equipment also are anticipated and would include CO, NO_X, ROG, directly emitted particulate matter (PM_{10} and $PM_{2.5}$), and TACs (also known as MSATs), such as diesel exhaust particulate matter.

Site preparation and bridge construction would involve clearing, site-work activities, cut-and-fill activities, grading, removing or improving portions of existing roadways, and paving roadway surfaces. Construction-related effects on air quality from most highway/bridge projects would be greatest during the site preparation phase because most heavy construction equipment emissions are associated with the excavation, handling, and transport of soils to and from the site.

An estimate of project construction regional emissions is presented in Table 4-1. The greatest regional emissions would occur during the grading/excavation period, resulting in 5 pounds per day of ROG, 91 pounds per day of CO, 19 pounds per day of NO_X, 27 pounds per day of PM_{10}, and 6 pounds per day of $PM_{2.5}$.

Table 4-1. Estimate of Criteria Pollutant Emissions during Construction (pounds per day)

Construction Phase	ROG	CO	NO_X	PM_{10}	$PM_{2.5}$
Grubbing and Clearing	1	13	4	27	6
Grading/Excavation	5	91	19	27	6
Drainage/Utilities/Sub-Grade	3	61	11	27	6
Paving	1	15	3	1	1
Daily Maximum Regional Mass Emissions*	**5**	**91**	**19**	**27**	**6**
SCAQMD Regional Emissions Threshold	75	550	100	150	55
SCAQMD Local Emissions Threshold	N/A	2,978	303	50	12

* None of the identified construction phases are predicted to occur concurrently or overlap.
Estimates by ICF 2017 (see Appendix C).
N/A = not applicable

Modeling assumptions assume compliance with SCAQMD Rule 403 (Fugitive Dust), which are detailed in Appendix F.

4.2.1.2 *Toxic Air Contaminant Emissions*

During the construction period, which is scheduled to last approximately 26 months, short-term generation of pollutants from construction vehicles and equipment would occur. However, the construction period is much shorter than the assumed 30-year exposure period used to estimate lifetime cancer risks, as recommended by the California Office of Environmental Health Hazard Assessment (OEHHA). Furthermore, given the linear nature of the proposed project, sensitive receptors would be exposed to pollutants for a small portion of the total construction period because equipment would not be operated at a particular location along the alignment for an extended period of time. The diesel particulate matter generated from construction equipment would be sporadic, transitory, and short term in nature. Therefore, the project would not expose receptors to acute and/or chronically hazardous TAC pollutants.

It is also important to note that there is considerable uncertainty in trying to evaluate the cancer risk from projects that will only last a small fraction of a lifetime, as cancer potency factors are based on animal lifetime studies where there is long-term exposure.

4.2.1.3 *Odors*

The proposed project does not include any uses identified by ARB as being associated with odors and therefore would not produce objectionable odors that would affect a substantial number of people. Construction activities usually do not emit offensive odors. Potential odor emitters during construction include asphalt paving. However, SCAQMD Rule 1103 limits emissions of volatile organic compounds from cutback asphalt, which are known to be a source of odors. Given mandatory compliance with SCAQMD rules, no construction activities or materials are proposed that would create substantial objectionable odors.

4.2.1.4 *Aerially Deposited Lead*

Aerially Deposited Lead (ADL) refers to lead deposited on highway shoulders from past leaded fuel vehicle emissions. Although leaded fuel has been prohibited in California since the 1980s, ADL may still be present in soils adjacent to highways in use prior to that time. It is Caltrans' policy to evaluate and investigate these unpaved areas when they will be impacted by a project, to ensure that workers are properly protected from lead exposure through training and appropriate work practices, and to manage ADL-containing soils in compliance with all applicable laws and regulations while minimizing costs to the project and future state liability.

With respect to the proposed project, an Initial Site Assessment that was approved for the proposed project has determined ADL may be present in the soil at the project site. The ADL may be related to the presence of adjacent roadways, including State Route 66, and the BNSF railroad facility to the south and east prior to 1992, when leaded gasoline was used. Additional site investigations (soil sampling) and ADL surveys will be needed prior to project demolition (Caltrans 2017b).

4.2.1.5 *Naturally Occurring Asbestos*

Both EPA and ARB have issued guidance for reducing exposure to NOA. EPA's suggested measures include leaving NOA material undisturbed, covering or capping NOA material, limiting dust-generating activities, or excavating and disposing of NOA material. ARB has adopted Airborne Toxic Control Measures, which are required for road construction and maintenance projects, unless the project is found to be exempt. These measures include stabilizing unpaved surfaces subject to vehicle traffic, reducing vehicle speeds, wetting or chemically stabilizing storage piles, and eliminating track-out material from equipment (California Air Resources Board 2008).

Although NOA is common in certain counties of California, it is not likely to be found in the project vicinity of San Bernardino County (California Department of Conservation 2000).

4.2.1.6 *Avoidance and Minimization Measures*

The implementation of the exhaust and fugitive dust emission control measures identified below and those contained within SCAQMD Rule 403 would avoid and/or minimize any impacts on air quality. Measure **AQ-1** included in the June 2011 Environmental Assessment is still applicable

for the proposed project. Measure AQ-2 below would replace Measure **AQ-2** included in the June 2011 Environmental Assessment.

Particulate Emissions

AQ-2 The proposed project shall comply with SCAQMD Rule 403 (Fugitive Dust). The text of Rule 403 is provided in Appendix F. Per Rule 403 definitions (see Section (c), Definitions, in Appendix F), the proposed project would not be considered a "large operation." As such, the "large operations" control measures identified in Rule 403 would not apply.

Exhaust Emissions

AQ-3 The project would conform to Caltrans construction requirements, as specified in Caltrans' 2015 Standard Specifications, Section 14-9.02 (Air Pollution Control) and Section 14-11.04 (Dust Control), for asphalt concrete emissions and all earthwork, clearing and grubbing, and roadbed activities involving heavy construction equipment. The contractor would comply with all air pollution control ordinances and statutes that apply to any work performed pursuant to the contract, including any air pollution control rules, regulations, ordinances, and statutes, specified in Section 11017 of the Government Code. Exhaust emissions control measures may include, but are not limited to, the following:

1. General contractors shall maintain and operate construction equipment so as to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues would have their engines turned off when not in use to reduce vehicle emissions. Construction emissions should be phased and scheduled to avoid emission peaks and discontinued during second-stage smog alerts.
2. All equipment shall be properly tuned and maintained in accordance with manufacturers' specifications.
3. All on-road and off-road equipment shall comply with ARB commercial vehicle idle regulations.
4. Use electricity from power poles, rather than temporary diesel- or gasoline-powered generators if or where feasible.
5. Use on-site mobile equipment powered by alternative fuel sources (i.e., methanol, natural gas, propane, or butane) as feasible.
6. Use solar-powered signal boards.
7. Develop a construction traffic management plan that includes, but is not limited to: (1) consolidating truck deliveries; (2) providing a rideshare or shuttle service for construction workers; and (3) providing dedicated turn lanes for movement of construction trucks and equipment on and off site.

4.2.2 Operational Period Effects

4.2.2.1 *Regional Criteria Pollutant Emissions*

Based on a review of traffic conditions, it was determined that for both the opening year (2022) and design year (2040), there would be no difference in peak-hour intersection vehicle volumes and LOS between the Build and No-Build conditions at key intersections in the project area (see Tables 4-2 and 4-3).

Because there would be no difference in traffic operations between the No-Build and Build conditions during the peak hours, it is reasonable to assume that there would be no difference in traffic operations during the off-peak hours as well. Therefore, no quantification of operational emissions was undertaken, as there would be no meaningful difference in operational emissions resulting from vehicle use in the project vicinity occurring under the Build Alternative when compared to the No-Build Alternative at project opening year (2022) or project horizon year (2040).

Traffic counts reflecting existing conditions at three nearby intersections were gathered as part of the Traffic/Circulation Study prepared for the proposed project:

- Mount Vernon Avenue/5th Street
- Mount Vernon Avenue/2nd Street
- Mount Vernon Avenue/Rialto Avenue

Traffic volume forecasts for design year 2040 for the Build and No-Build scenarios were developed through a post-processing method (AECOM 2017). These forecasts were developed, in part, through the use of the San Bernardino Transportation Analysis Model (SBTAM) and existing (2017) AM and PM peak hours and daily traffic counts. For each study area link in the travel model, modeled 2012 volumes were subtracted from modeled 2040 volumes. This represents 28 years of growth on each link. For design year (2040) volumes, changes in peak hour volumes represent the growth that would be expected in the 23-year span between existing counts (2017) and the design year (2040). The 28 years of growth sum was multiplied by 0.82 (23/28) to develop 23 years of growth. The 23 years of growth sum was then added to the 2017 link volumes (existing counts) to obtain 2040 link volumes. Year 2022 intersection volumes were developed by interpolating between existing volumes and post-processed 2040 volumes.

Once the project is completed, the project is not anticipated to alter traffic patterns within the study area along Mount Vernon Avenue, and the reconstruction of the bridge itself is not anticipated to increase traffic demand along Mount Vernon Avenue or any study area location. Therefore, the intersection volumes with the project would remain the same as without the project.

Table 4-2. AM and PM Peak Hour Intersection Vehicle Volumes—Opening Year (2022)

Intersection	No-Build				Build			
	AM	LOS	PM	LOS	AM	LOS	PM	LOS
Mount Vernon Ave. and 5th St.	2,162	D	2,797	D	2,162	D	2,797	D
Mount Vernon Ave. and 2nd St.	1,233	C	1,814	C	1,233	B	1,814	C
Mount Vernon Ave. and Rialto Ave.	1,658	B	2,323	B	1,658	B	2,323	B
Source: AECOM May 2017								

Table 4-3. AM and PM Peak Hour Intersection Vehicle Volumes—Design Year (2040)

Intersection	No-Build				Build			
	AM	LOS	PM	LOS	AM	LOS	PM	LOS
Mount Vernon Ave. and 5th St.	2,261	D	2,993	D	2,261	D	2,993	D
Mount Vernon Ave. and 2nd St.	1,536	C	2,251	C	1,536	B	2,251	C
Mount Vernon Ave. and Rialto Ave.	2,003	B	2,841	B	2,003	B	2,841	B
Source: AECOM May 2017								

4.2.2.2 *Regional and Project-Level Conformity*

As discussed in Chapter 2, *Regulatory Setting,* the proposed project is not subject to the regional or project-level conformity determination requirement under CAA Section 176(c), as reconstructing bridge projects with no additional travel lanes (such as this project) are exempt from the requirement to determine conformity pursuant to 40 CFR 93.126. However, the project as described in the SCAG 2017 FTIP must be consistent with the project as currently proposed.

4.2.2.3 *Regional Conformity*

The proposed project is identified under project number SBD31905 in the currently conforming SCAG 2017 FTIP and described as follows:

> MT. VERNON AVENUE BRIDGE (OVERHEAD) AT BNSF REPLACE GRADE SEPARATION, REPLACE 4 LANE BRIDGE WITH 4 LANE BRIDGE FROM 2ND TO 5TH STREETS (0.2 MILES SOUTH OF RTE. 66) (BRIDGE NO 54C0066)

The proposed project is consistent with the FTIP description. The SCAG 2017 FTIP, Amendment 2, was found to be in conformity with the SIP on February 21, 2017, and the SCAG 2016–2040 RTP/SCS was found to be in conformity with the SIP on June 1, 2016. The project's FTIP and RTP/SCS documentation is provided in Appendix A.

4.2.2.4 *Project-level Conformity*

CO Hot-spots

The CO Protocol includes two flowcharts that illustrate when a detailed CO analysis needs to be prepared. The first flowchart, Figure 1 of the CO Protocol (provided in Appendix D), is used to ascertain the CO modeling requirements for new projects. The following question (shown in the first flowchart) is relevant to the project. The answer to that question is as follows:

3.1.1: Is the project exempt from all emissions analyses?

Response: Yes. The project type "widening narrow pavements or reconstructing bridges (no additional travel lanes)" is exempt from the requirement to demonstrate transportation conformity per 40 CFR 93.126. As such, project-level CO conformity requirements have been satisfied.

As shown previously in Table 4-2 and Table 4-3, there would be no change in traffic volumes under the Build Alternative when compared to the No-Build Alternative at project opening year (2022) or project horizon year (2040). Therefore, there would be no change in intersection CO emissions or related CO concentrations.

Particulate Matter Hot-spots

Although most projects generate construction-related particulate emissions, construction activities that last fewer than five years are considered temporary impacts under the EPA transportation conformity rule and are not required to undergo hot-spot review. It is expected that construction of the proposed project would be completed in approximately 26 months. As such, hot-spot review is limited to project operation. The proposed project is not subject to project-level conformity requirements because it is exempt pursuant to 40 CFR 93.126; however, the same process is used as the basis for fulfilling the requirements of NEPA.

EPA updated its guidance document titled *Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas* in November 2015. A project-level $PM_{2.5}$ and PM_{10} conformity review, based on this most recent EPA guidance, is provided below.

EPA specifies in 40 CFR 93.123(b)(1) that only "projects of air quality concern" are required to undergo a $PM_{2.5}$ and PM_{10} hot-spot analysis. EPA defines projects of air quality concern as certain highway and transit projects that involve significant levels of diesel traffic or any other project that is identified by the $PM_{2.5}$ SIP as a localized air quality concern. A comparison of the proposed project to projects of air quality concern, as defined by 40 CFR 93.123(b)(1), is provided below:

1. **New or expanded highway projects that have a significant number of or significant increase in diesel vehicles.** The proposed project would replace the existing bridge over the BNSF railyard along Mount Vernon Avenue. Although the project would connect vehicles to and from points on either side of the railyard, project implementation would not involve any new points of origin or destination of truck trips and would not result in additional roadway capacity. Furthermore, the Traffic/Circulation Study prepared for the proposed project indicates that there will be no change in traffic volumes under the Build Alternative when compared to the No-Build Alternative. Therefore, no increase in the number of diesel vehicles is anticipated to occur as a result of project implementation. Given that the proposed project would not result in new origin and destination points and would not create any new access routes to undeveloped land, significant growth in truck traffic volumes would not occur.

2. **Projects affecting intersections that are at LOS D, E, or F with a significant number of diesel vehicles or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project.**

   As shown previously in Table 4-2 and Table 4-3, there would be no change in traffic volumes under the Build Alternative when compared to the No-Build Alternative, and no deterioration of LOS at project opening year or project horizon year.

3. **New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location.** The proposed project has no bus or rail terminal component, nor would it alter travel patterns to or from any existing or new bus or rail terminal.

4. **Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location.** The proposed project would not expand any bus terminal, rail terminal, or related transfer point that would increase the number of diesel vehicles congregating at any single location.

5. **Projects in or affecting locations, areas, or categories of sites that are identified in the $PM_{2.5}$- or PM_{10}-applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.** The project site is not in or affecting locations, areas, or categories of sites that are identified in a PM_{10} or $PM_{2.5}$ implementation plan. The immediate project area is not considered to be a site of violation or possible violation.

The discussion provided above indicates that the proposed project would not be considered a project of air quality concern, as defined by 40 CFR 93.123(b)(1). Therefore, quantitative $PM_{2.5}$ and PM_{10} hot-spot evaluations are not required. It is unlikely that the proposed project would generate new air quality violations for $PM_{2.5}$ or PM_{10}.

4.2.2.5 *Mobile-source Air Toxics Emissions*

The purpose of this project is to replace an existing bridge that is structurally deficient and functionally obsolete with a new bridge that is structurally safe, meeting current seismic, design, and roadway standards. There would be no change in capacity. This project has been determined to generate minimal air quality impacts for CAA criteria pollutants and has not been linked with any special MSAT concerns. As such, this project would not result in measurable changes in traffic volumes, vehicle mix, basic project location, or any factor that would cause a meaningful increase in MSAT impacts of the project from that of the without-project condition.

Moreover, EPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's MOVES2014a model forecasts a combined reduction of over 90 percent in the total annual emissions rate for the priority MSAT from 2010 to 2050 while VMTs are expected to increase by 45 percent. This will both reduce the background level of MSATs as well as the possibility of even minor MSATs from this project (Federal Highway Administration 2016a).

4.3 Cumulative Impacts

Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. The study area for cumulative effects on air quality is the SCAB. The SCAB experiences chronic exceedances of state and federal ambient air quality standards as a consequence of past and present projects, and it is subject to continued nonattainment status by reasonably foreseeable future projects. These nonattainment conditions within the region are considered cumulatively significant. The SCAQMD has prepared and periodically updates the SCAB's regional AQMP, which sets forth a comprehensive and integrated program that will lead the SCAB into compliance with the federal and state air quality standards.

A project would be consistent with the AQMP, which is intended to bring the SCAB into attainment for all criteria pollutants, if it is included within the AQMP emissions inventory.[4] For transportation projects, this means being included in the currently conforming SCAG 2016–2040 RTP/SCS Amendment 2. This is because RTP/SCS emissions are accounted for within the AQMP. As discussed above, the project is included in the currently conforming SCAG 2016–2040 RTP/SCS Amendment 2 under project number SBD31905.

Furthermore, as discussed above under Construction Period Effects, the proposed project would comply with SCAQMD Rule 403 (Fugitive Dust Control) during construction, as well as all other adopted AQMP emissions control measures to minimize impacts on nearby sensitive receptors. In addition, the project would comply with all laws and regulations that are imposed on engine manufacturers and fuel providers on the federal, state, and local levels. Per SCAQMD rules and mandates, as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements (i.e., Rule 403 compliance; compliance with adopted AQMP emissions control measures; and, if needed, implementation of all feasible mitigation measures) would also be imposed on all projects SCAB-wide.

For the reasons identified above, the project would not result in a cumulatively considerable impact.

[4] State CEQA Guidelines Section 15064(h)(3) states "A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program (including, but not limited to, water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plan, plans or regulations for the reduction of greenhouse gas emissions) that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. When relying on a plan, regulation or program, the lead agency should explain how implementing the particular requirements in the plan, regulation or program ensure that the project's incremental contribution to the cumulative effect is not cumulatively considerable. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding that the project complies with the specified plan or mitigation program addressing the cumulative problem, an EIR must be prepared for the project."

Chapter 5 References

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Chapter 6 List of Preparers and Experience

Keith Cooper	ICF, Senior Technical Analyst Experience: 19 years of experience preparing air quality impact assessments for CEQA and NEPA environmental review requirements. Education: M.A. Urban Planning, University of California, Los Angeles; B.S. Business Administration, California State University, Dominguez Hills.
Rusty Whisman	ICF, Senior Associate Experience: 5 years of experience preparing impact assessments to satisfy project CEQA and NEPA environmental review requirements. Education: M.A. Urban Planning, University of California, Los Angeles; B.A. Social Ecology, University of California, Irvine.
Nick Roach	ICF, Senior Project Manager Experience: 5 years of experience preparing air quality impact analyses for CEQA and NEPA environmental review requirements. Education: M.P.A. Public Administration, California State University, Long Beach; B.A. Political Science, University of California, Berkeley.

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Appendix A SCAG 2016–2040 RTP/SCS and SCAG 2017 FTIP Amendment 2 Pages Referencing Project

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U.S. Department of Transportation
Federal Highway Administration

California Division

650 Capitol Mall, Suite 4-100
Sacramento, CA 95814
(916) 498-5001
(916) 498-5008 (FAX)

June 1, 2016

In Reply Refer To:
HDA-CA

Mr. Hasan Ikhrata,
Executive Director
Southern California Association of Governments
818 West 7th Street, 12th Floor
Los Angeles, CA 90017

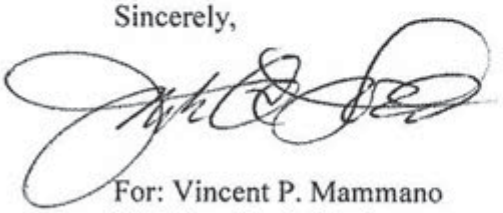
SUBJECT: CONFORMITY DETERMINATION FOR SCAG 2016 RTP/SCS

Dear Mr. Ikhrata:

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have completed our review of the conformity determination for the Southern California Association of Governments' (SCAG) 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) – *A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life*. A FTA/FHWA air quality conformity determination is required for the new 2016 RTP/SCS pursuant to the Environmental Protection Agency's (EPA) *Transportation Conformity Rule*, 40 Code of Regulations (CFR) Parts 51 and 93, and the United States Department of Transportation's *Final Rule on Statewide and Metropolitan Planning*, 23 CFR Part 450.

On April 7, 2016 SCAG adopted the 2016 RTP/SCS via Resolution 16-578-2. The conformity analysis given by SCAG indicates all air quality conformity requirements have been met. Based on our review, and after consultation with the EPA Region 9 office, we find that SCAG's 2016 RTP/SCS conforms to the applicable State Implementation Plan (SIP) in accordance with the provisions of 40 CFR Parts 51 and 93. This conformity determination will remain in effect for four (4) years from the date of this letter and replaces the previous determination made on June 4, 2012. In accordance with the December 15, 2014, *Memorandum of Understanding (MOU) between the Federal Highway Administration, California Division, and the Federal Transit Administration, Region IX*, the FTA has agreed with this conformity determination, and a single signature constitutes FHWA and FTA's joint air quality conformity determination for SCAG's 2016 RTP/SCS. If you have questions on this conformity finding, please contact Michael Morris of the FHWA California Division's Cal-South office at (213) 894-4014, or by email at michael.morris@dot.gov..

Sincerely,



For: Vincent P. Mammano
Division Administrator

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TABLE 2 Financially-Constrained RTP/SCS Projects - Continued

System	Lead Agency	RTP ID	Route #	Route Name	From	To	Description	Completion Year	Project Cost ($1,000's)
County: San Bernardino									
LOCAL HIGHWAY	SAN BERNARDINO, CITY OF	40M0701-201184	0				STERLING AVE FROM 3RD STREET TO 5TH STREET - WIDEN FROM 2-4 LANES (0.13 MILES)FORMERLY PART OF PROJECT ID 200852	2017	$400
LOCAL HIGHWAY	SAN BERNARDINO, CITY OF	SBD31903	0				FOOTHILL BOULEVARD (STATE ROUTE 66) AT FOURTH MODIFY SIGNALS, CHANNELIZE TRAFFIC SIGNAL, INTERSECTION IMPROVEMENTS/REALIGN INTERSECTION (0.11 MILE)	2016	$1,137
LOCAL HIGHWAY	SAN BERNARDINO, CITY OF	SBD31905	0				MT. VERNON AVENUE BRIDGE (OVERHEAD) AT BNSF REPLACE GRADE SEPARATION, REPLACE 4 LANE BRIDGE WITH 4 LANE BRIDGE FROM 2ND TO 5TH STREETS (0.2 MILES SOUTH OF RTE. 66)(BRIDGE NO 54C0066)	2018	$72,235
LOCAL HIGHWAY	SAN BERNARDINO, CITY OF	SBD41316	0				MT. VIEW AVE. RAILWAY GRADE CROSSING, 1500 FT. NORTH OF I-10 WIDEN RAILWAY GRADE CROSSING FROM 1 LANE NORTH & SOUTH TO 2 LANES NORTH & SOUTH & UPGRADE GATES (0.75 MILES)	2015	$1,589
LOCAL HIGHWAY	SAN BERNARDINO, CITY OF	SBD41317	0				MT. VIEW AVE. BRIDGE AT MISSION CREEK CHANNEL WIDEN ROADWAY & SHOULDER WORK AND EXISTING BRIDGE AT MT. VIEW -1 LN. NO. & SO. TO 2 LNS N/S & LFT_TURNS TO MAKE A TOTAL OF 4 LANES (2 IN EACH DIRECTION)	2015	$1,655
LOCAL HIGHWAY	SAN BERNARDINO, CITY OF	SBD59019	0				40TH ST. FROM JOHNSON LANE TO ELECTRIC AVENUE; ACQUIRE ROW AND WIDEN ROAD FROM 2TO 4 LANES (1,200 FT.)	2018	$684
LOCAL HIGHWAY	SAN BERNARDINO, CITY OF	SBD59021	0				STATE STREET FROM HANFORD ST TO FOOTHILL BLVD.; EXTEND AND CONSTRUCT (4) LANES OF ROADWAY (1.5 MILES) TO CONNECT STATE STREET TO RANCHO AVENUE (NEW ROAD)4 PHASES TOTAL IN PROJECT	2020	$17,628
LOCAL HIGHWAY	SAN BERNARDINO, CITY OF	SBD59023	0				CAMPUS PKWY-PEPPER/LINDEN DRIVE EXTENSION FROM KENDALL TO I-215 FWY - CONSTRUCT (4) LANE ROADWAY - BETWEEN KENDALL DRIVE AND I-215, PARTIAL DIAMOND INTERCHANGE FOR N/B (2,000 FT)	2023	$22,000

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U.S. Department of Transportation
Federal Highway Administration

California Division

650 Capitol Mall, Suite 4-100
Sacramento, CA 95814
(916) 498-5001
(916) 498-5001
(916) 498-5008

February 21, 2017

In Reply Refer To:
HDA-CA

Mr. Bruce de Terra
Division Chief Transportation Programming Federal Resources Office, M.S. 82
California Department of Transportation
1120 N Street
Sacramento, CA 95814

SUBJECT: SCAG 2017 FTIP AMENDMENT NO. 17-02 AND CONFORMITY DETERMINATION

Dear Mr. de Terra:

The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) have completed our reviews of Amendment No. 17-02 to the Southern California Association of Governments' (SCAG) 2016/17 – 2019/20 Federal Transportation Improvement Program (FTIP), which was submitted by your letter dated January 18, 2017. As detailed in your letter's enclosure this amendment requests to add two-hundred-ninety-eight (298) new individual and nine (9) grouped project listings to SCAG's FTIP, and to modify seventy-two (72) individual and fourteen (14) grouped project listings with removal of twenty-one (21) individual and one (1) grouped project listings previously approved for California Federal Statewide Transportation Improvement Program (FSTIP) inclusion.

We have determined all project listings from this amendment are from SCAG's adopted 2016/2040 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS), and the additions and modifications requested rely on a previous regional emissions analysis. Acceptance of this amendment and the air quality conformity determination have been coordinated with Region IX of the Environmental Protection Agency (EPA) in accordance with the procedures outlined in the *National Memorandum of Understanding (MOU) between the Department of Transportation (DOT) and EPA on Transportation Conformity*, dated April 25, 2000. Accordingly, we find that SCAG's FTIP – including Amendment No. 17-02 – conforms to the applicable State Implementation Plan (SIP) for air quality.

Pursuant the December 15, 2014 *MOU, between the FHWA – California Division and FTA – Region IX*, and based on our review of information submitted with the State's proposed 2016/17 – 2019/20 FSTIP, which includes revenues, proposed project funding information to demonstrate financial constraint, and statewide and metropolitan planning process documentation, we accept

this FSTIP modification proposed for the SCAG region in accordance with the Final Rule on Statewide and Metropolitan Transportation Planning that was published in the May 27, 2016 Federal Register. We have determined the amended SCAG FTIP, including Amendment No. 17-02, is financially constrained as required by the Federal surface transportation programs authorizing legislation and statewide planning, metropolitan planning, and programming regulations. SCAG's FTIP was developed through a continuing, cooperative, and comprehensive transportation planning process in accordance with the metropolitan transportation planning provisions of 23 United States Code (U.S.C.) § 134 and 49 U.S.C. Chapter 53.

Approval is provided with understanding that eligibility determination of individual projects for funding must be met, and the applicant must ensure satisfaction of all administrative and statutory requirements. If you would have questions or need additional information concerning our FSTIP approval for this amendment, please contact Michael Morris of the FHWA California Division's Cal-South office at (213) 894-4014, or by email at michael.morris@dot.gov; or Ted Matley of the FTA Region IX office at (415) 734-9468, or by email at ted.matley@dot.gov.

Sincerely,

/s/ Leslie T. Rogers

Leslie T. Rogers
Regional Administrator
Federal Transit Administration

For: Vincent P. Mammano
Division Administrator
Federal Highway Administration

(In $000`s)

ACTIVE TRANSPORTATION PROGRAM	863	627	3,226	4,716		1,974	2,742					4,716
20151504 Total	863	627	3,490	4,980		2,238	2,742					4,980

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	Signage	System	Conformity Category	Amendment
20170101	San Bernardino	MDAB		REG0704	LUM06					L	EXEMPT - 93.126	1
Description:							PTC	876		Agency	VARIOUS AGENCIES	

Grouped Projects for Purchase of office, shop, and operating equipment for existingfacilities funded by the Recreational Trails Program: Projects are consistent with 40 CFR Part 93.126Exempt Tables 2 and Table 3 categories - Purchase of office, shop, and operating equipment for existing facilities (Both motorized and non-motorized)

Fund	ENG	R/W	CON	Total	Prior	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	Total
RECREATIONAL TRAILS			771	771		771						771
AGENCY			105	105		105						105
20170101 Total			876	876		876						876

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	Signage	System	Conformity Category	Amendment
SBD31905	San Bernardino	SCAB		SBD31905	NCR36					L	EXEMPT - 93.126	2
Description:							PTC	88,065		Agency	VARIOUS AGENCIES	

MT. VERNON AVENUE BRIDGE (OVERHEAD) AT BNSF REPLACE GRADE SEPARATION, REPLACE 4 LANE BRIDGE WITH 4 LANE BRIDGE FROM 2ND TO 5TH STREETS (0.2 MILES SOUTH OF RTE. 66)(BRIDGE NO 54C0066)

Fund	ENG	R/W	CON	Total	Prior	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	Total
CITY FUNDS	417	256	8,980	9,653		417	9,683			-447		9,653
LOCAL ADVANCE CONSTRUCTION							72,764			-72,764		
BRIDGE - LOCAL	3,222	1,979	72,764	77,965		3,222	1,979			72,764		77,965
LOCAL BRIDGE SEISMIC RETROFIT ACCOUNT			447	447						447		447
SBD31905 Total	3,639	2,235	82,191	88,065		3,639	84,426					88,065

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	Signage	System	Conformity Category	Amendment
SBDLS08	San Bernardino	SCAB		SBDLS08	NCR36					L	EXEMPT - 93.126	10
Description:							PTC	182,538		Agency	VARIOUS AGENCIES	

GROUPED PROJECTS FOR BRIDGE REHABILITATION AND RECONSTRUCTION - HBP PROGRAM -PROJECTS ARE CONSISTENT WITH 40 CFR PART 93.126, 127, 128 EXEMPT TABLES 2 & 3

Fund	ENG	R/W	CON	Total	Prior	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	Total
AGENCY			19,643	19,643	2,452	1,628	1,252	407	709	13,195		19,643
LOCAL ADVANCE CONSTRUCTION												
BRIDGE - LOCAL			162,322	162,322	24,087	12,566	9,663	3,139	5,472	107,395		162,322
LOCAL BRIDGE SEISMIC RETROFIT ACCOUNT			573	573						573		573
SBDLS08 Total			182,538	182,538	26,539	14,194	10,915	3,546	6,181	121,163		182,538

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Appendix B Climate and Air Quality Monitoring Data

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SAN BERNARDINO F S 226, CALIFORNIA (047723)

Period of Record Monthly Climate Summary

Period of Record : 01/01/1893 to 09/24/2004

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	66.2	68.1	70.4	75.6	80.4	88.6	96.2	96.2	92.1	83.2	74.6	67.7	79.9
Average Min. Temperature (F)	38.5	40.9	43.0	46.3	50.6	54.3	59.1	59.4	55.9	49.7	42.4	38.6	48.2
Average Total Precipitation (in.)	3.22	3.25	2.86	1.29	0.47	0.09	0.04	0.15	0.33	0.71	1.32	2.38	16.12
Average Total SnowFall (in.)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record.
Max. Temp.: 98% Min. Temp.: 97.9% Precipitation: 98.1% Snowfall: 98.1% Snow Depth: 98.1%
Check Station Metadata or Metadata graphics for more detail about data completeness.

Western Regional Climate Center, wrcc@dri.edu

Average Monthly Wind Speed (MPH)

Based on daily average wind speed from reporting ASOS locations. Data is preliminary and may contain errors.

Source: National Climatic Data Center

ALASKA

STATION	Years	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
ANCHORAGE-LAKE HOOD SEAPLANE (PALH)	2001-2011	4.5	4.6	5.9	5.0	5.9	5.7	5.2	4.2	4.4	4.8	5.0	4.3	5.0
ANCHORAGE-MERRILL FIELD AP (PAMR)	2001-2011	3.0	3.3	4.4	4.3	5.0	5.0	4.5	3.5	3.3	3.3	3.4	2.8	3.8
ANCHORAGE-TED STEVENS INT AP (PANC)	2001-2011	5.6	5.8	6.9	6.6	7.9	7.5	6.9	5.7	5.9	5.8	6.3	5.5	6.4
ANNETTE ISLAND AIRPORT (PANT)	2001-2011	8.6	7.4	8.7	7.4	6.7	6.4	5.8	5.8	6.8	7.8	8.3	8.8	7.4
BARROW-WILL ROGERS MEM AP (PABR)	2001-2011	11.8	13.2	11.4	11.6	11.7	12.6	12.2	11.4	12.4	14.3	13.4	12.3	12.4
BETHEL AIRPORT (PABE)	2001-2011	13.4	12.9	12.4	11.7	10.0	9.6	9.5	9.2	9.5	10.2	11.3	11.8	10.9
BETTLES AIRPORT (PABT)	2001-2011	3.8	4.5	5.0	5.6	5.4	4.6	4.6	4.0	4.2	4.7	4.0	3.8	4.5
COLD BAY AIRPORT (PACD)	2001-2011	15.9	16.5	16.3	16.6	15.1	14.5	13.3	14.4	14.9	15.7	16.8	15.9	15.5
CORDOVA-M.K. SMITH AP (PACV)	2001-2011	4.0	4.4	4.9	4.7	4.3	3.3	2.9	2.9	3.9	4.4	4.3	4.5	4.1
DEADHORSE AIRPORT (PASC)	2001-2011	12.0	13.3	11.7	11.8	12.3	13.5	11.7	10.2	11.1	12.3	12.5	11.5	12.0
DEERING AIRPORT (PADE)	1998-2010	11.5	12.0	10.0	10.8	9.5	8.8	9.0	9.8	9.5	9.9	10.1	11.3	10.2
DEERING AIRPORT (PADE)	2001-2011	11.6	13.0	11.5	11.7	9.9	9.0	9.1	9.5	9.9	9.9	10.4	11.3	10.6
DELTA JCT/FT GREELY AF (PABI)	2001-2011	12.4	12.1	9.6	8.7	8.1	7.6	7.2	6.4	7.6	9.2	10.1	11.9	9.3
EAGLE AIRPORT (PAEG)	2001-2011	3.9	4.3	2.8	3.6	3.8	3.4	2.9	2.5	3.0	3.0	3.3	3.8	3.4
FAIRBANKS INTERNATIONAL AP (PAFA)	2001-2011	1.8	2.4	4.5	4.6	5.5	4.8	4.5	4.0	3.8	3.2	2.1	1.5	3.6
GULKANA AIRPORT (PAGK)	2001-2011	2.9	4.0	5.5	7.0	7.2	6.9	7.3	6.1	6.0	4.9	3.6	3.0	5.4
HAINES (PAHN)	2001-2011	11.0	10.7	10.7	8.8	8.0	7.0	7.1	7.2	8.2	9.2	11.2	11.3	9.2
HOMER AIRPORT (PAHO)	2001-2011	6.1	6.2	6.6	6.6	6.5	6.3	5.6	5.1	5.3	5.7	6.2	6.4	6.1
ILIAMNA AIRPORT (PAIL)	2001-2011	11.4	10.9	9.1	9.3	8.5	8.3	8.3	7.7	8.8	10.4	11.4	11.7	9.7
JUNEAU INTERNATIONAL AIRPORT (PAJN)	2001-2011	6.7	6.5	7.6	7.0	6.9	6.1	5.9	5.9	7.3	7.8	7.3	7.0	6.8
KALTAG AIRPORT (PAKV)	2001-2011	4.9	4.9	6.3	5.0	4.8	4.7	4.5	3.8	4.0	4.2	4.2	4.3	4.6
KENAI MUNICIPAL AIRPORT (PAEN)	2001-2011	7.4	7.7	8.6	7.9	8.5	8.3	7.8	6.5	7.1	7.1	7.3	7.6	7.7
KETCHIKAN INTL AIRPORT (PAKT)	2001-2011	7.9	7.7	8.4	7.9	7.4	7.3	7.3	6.9	7.4	7.6	7.6	7.6	7.6
KING SALMON AIRPORT (PAKN)	2001-2011	9.1	9.8	9.6	9.9	9.2	8.2	8.2	7.5	8.2	8.7	9.0	8.6	8.8
KIVALINA AIRPORT (PAVL)	2001-2011	12.8	13.6	12.5	12.0	10.4	9.6	10.5	11.6	12.1	12.9	13.8	14.6	12.2
KLAWOCK AIRPORT (PAKW)	2001-2011	5.3	4.2	4.9	4.1	4.2	4.0	3.9	3.5	3.9	4.3	4.8	5.0	4.3
KODIAK AIRPORT (PADQ)	2001-2011	11.3	10.7	11.9	10.6	9.7	8.6	7.6	7.4	8.6	9.7	11.0	11.8	9.9
KOTZEBUE-RALPH WIEN MEM AP (PAOT)	2001-2011	10.7	12.4	10.4	10.6	9.5	9.8	10.7	10.8	11.3	11.8	12.0	11.6	10.9
MC GRATH AIRPORT (PAMC)	2001-2011	1.7	2.9	4.5	5.0	5.2	4.5	4.4	3.6	3.9	3.5	2.6	1.5	3.6
NENANA MUNICIPAL AIRPORT (PANN)	2001-2011	5.3	5.6	6.0	5.5	5.4	4.7	4.4	3.9	4.8	5.1	4.8	4.6	5.0
NOME AIRPORT (PAOM)	2001-2011	9.2	10.3	8.6	8.7	8.3	8.6	8.9	8.5	9.6	8.9	9.4	9.6	9.0
NORTHWAY AIRPORT (PAOR)	2001-2011	1.0	1.7	2.9	3.9	4.6	4.5	3.9	3.3	3.1	2.6	1.6	1.1	2.8
NUIQSUT AIRPORT (PAQT)	2001-2011	9.6	10.8	9.6	9.9	10.8	11.7	10.5	9.0	9.7	10.4	9.6	9.3	10.1
PALMER MUNICIPAL AIRPORT (PAAQ)	2001-2011	6.6	7.1	8.1	7.9	7.8	6.2	5.8	4.8	5.9	6.0	6.1	6.6	6.6
PORTAGE GLACIER (PATO)	2001-2011	9.4	10.2	7.6	9.1	8.2	7.7	8.1	7.3	7.8	8.9	8.4	9.3	8.5
SELDOVIA AIRPORT (PASO)	2001-2011	3.2	3.8	4.3	3.5	4.0	4.1	4.1	3.4	3.2	3.3	4.2	3.7	3.7
SEWARD AIRPORT (PAWD)	2001-2011	11.1	9.8	10.7	7.8	6.9	6.0	5.3	5.7	6.7	8.0	11.6	11.2	8.4
SITKA ROCKY GUTIERREZ ARPT (PASI)	2001-2011	8.8	7.5	8.8	7.1	6.6	6.0	5.4	5.3	6.8	8.3	9.2	9.3	7.4
SKAGWAY AIRPORT (PAGY)	2001-2011	13.8	11.9	12.2	9.2	9.6	10.4	9.9	8.3	8.4	9.4	10.5	12.1	10.5
ST. GEORGE AIRPORT (PAPB)	1996-2010	20.0	19.8	17.6	17.4	15.1	12.4	11.2	11.9	15.2	17.1	19.0	19.1	16.3
ST. GEORGE AIRPORT (PAPB)	2001-2011	21.4	20.3	17.6	18.2	15.5	12.3	11.2	11.7	15.3	17.0	19.1	19.8	16.6
ST PAUL ISLAND AIRPORT (PASN)	2001-2011	18.8	17.5	15.5	16.3	13.9	12.0	11.1	11.4	14.5	16.1	17.8	18.2	15.3
TALKEETNA AIRPORT (PATK)	2001-2011	4.7	4.3	5.0	3.6	3.8	3.7	3.2	2.4	2.4	2.9	3.9	4.2	3.7
TANANA-RALPH M CALHOUN ARPT (PATA)	2001-2011	4.5	5.4	5.7	5.3	5.3	4.7	4.6	4.0	4.5	4.9	4.2	4.0	4.7
WAINWRIGHT AIRPORT (PAWI)	2001-2011	10.8	12.3	11.3	11.7	12.6	12.3	11.9	11.1	11.6	12.9	12.2	11.4	11.9
YAKUTAT AIRPORT (PAYA)	2001-2011	5.0	4.4	5.5	4.4	4.5	4.0	3.9	3.7	4.5	4.9	5.3	5.2	4.6

ARIZONA

STATION	Years	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
BISBEE DOUGLAS INTL ARPT (KDUG)	2001-2011	6.9	7.9	8.9	10.1	9.4	8.8	7.7	6.3	7.0	7.2	6.9	6.7	7.8
FLAGSTAFF PULLIAM AIRPORT (KFLG)	2001-2011	6.5	7.2	7.6	9.4	8.2	7.8	5.3	4.7	5.5	6.2	6.7	6.4	6.8
FORT HUACHUACA-PIONEER AF (KALK)	2008-2011	8.0	10.2	11.4	12.9	11.2	10.9	8.6	7.6	7.6	9.2	9.4	9.9	9.7
GRAND CANYON NATL PARK APT (KGCN)	2001-2011	5.8	6.4	6.5	8.2	7.1	7.2	5.1	4.8	5.5	5.7	5.8	5.6	6.2
KINGMAN AIRPORT (KIGM)	2001-2011	7.8	8.6	9.4	11.2	10.8	11.5	10.3	9.9	9.0	8.3	7.7	7.5	9.3
NOGALES INTERNATIONAL ARPT (KOLS)	2001-2011	5.0	5.9	6.4	7.4	6.9	6.9	5.2	4.4	5.2	5.4	5.1	5.1	5.7
PAGE MUNICIPAL AIRPORT (KPGA)	2001-2011	3.0	3.9	5.2	6.6	6.1	5.9	5.3	5.0	4.8	4.1	3.2	2.9	4.7
PHOENIX DEER VALLEY ARPT (KDVT)	2001-2011	4.5	5.0	5.8	6.8	6.5	6.4	6.8	6.0	5.9	5.3	4.7	4.2	5.7
PHOENIX SKY HARBOR INTL AP (KPHX)	2001-2011	5.0	5.5	6.8	7.5	7.3	7.3	7.7	7.0	6.5	5.8	5.1	4.8	6.4
PRESCOTT-ERNEST A. LOVE AP (KPRC)	2001-2011	5.8	6.6	7.7	8.8	8.3	8.5	6.8	6.4	6.6	6.5	6.0	5.8	7.0
SAFFORD REGIONAL AIRPORT (KSAD)	2001-2011	6.9	7.8	8.5	9.5	9.2	9.6	9.3	7.9	7.5	7.4	7.4	7.1	8.2
SCOTTSDALE AIRPORT (KSDL)	2001-2011	2.7	3.1	3.8	4.7	4.5	4.4	4.9	4.3	3.9	3.2	2.7	2.4	3.7
SIERRA VISTA-LIBBY AAF AP (KFHU)	2006-2011	6.5	8.6	9.5	10.4	10.0	9.5	7.7	6.3	6.7	7.5	6.9	7.1	8.1
ST JOHNS INDUS AIRPK ARPT (KSJN)	2001-2011	5.7	7.4	8.8	10.7	9.6	9.1	7.7	6.5	6.5	6.4	6.2	5.9	7.5
TUCSON INTERNATIONAL AIRPORT (KTUS)	2001-2011	6.5	6.8	7.4	7.9	7.7	7.6	7.5	6.8	7.3	7.0	6.9	6.3	7.1
WINDOW ROCK AIRPORT (KRQE)	2001-2011	4.1	5.4	6.5	8.6	7.4	7.0	5.0	4.4	4.6	4.8	4.6	4.3	5.6
WINSLOW-LINDBERGH REGIONAL P (KINW)	2001-2011	5.8	7.3	8.9	11.0	9.9	9.8	8.4	7.5	7.3	7.1	6.4	6.1	8.0
YUMA MCAS (KNYL)	2006-2011	7.1	6.2	6.4	7.6	7.5	6.8	8.7	7.8	6.0	5.8	5.6	6.4	6.8

CALIFORNIA

STATION	Years	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
ALTURAS MUNICIPAL AIRPORT (KAAT)	2001-2011	4.2	4.9	6.2	6.6	6.5	6.2	5.5	5.2	4.3	4.2	4.2	4.9	5.2
ARCATA AIRPORT (KACV)	2001-2011	5.4	6.0	6.6	6.6	6.5	6.5	5.3	4.8	4.3	4.4	4.9	6.2	5.6
AVALON-CATALINA AIRPORT (KAVX)	2001-2011	7.8	8.5	8.4	8.4	6.9	5.4	4.9	5.3	6.1	6.7	7.1	7.9	6.9
BAKERSFIELD-MEADOWS FIELD AP (KBFL)	2001-2011	4.3	5.1	5.6	6.7	7.0	7.2	6.8	6.3	5.8	4.9	4.2	4.4	5.7
BARSTOW-DAGGETT AIRPORT (KDAG)	2001-2011	7.5	9.2	11.7	14.6	14.3	13.9	11.4	10.6	10.1	9.4	8.3	7.6	10.7
BISHOP AIRPORT (KBIH)	2001-2011	7.1	7.8	9.0	9.9	8.8	8.3	7.6	7.7	7.4	7.4	6.9	6.5	7.9
BLUE CANYON - NYACK ARPT (KBLU)	2001-2011	6.0	6.4	6.4	5.9	5.6	5.0	4.6	4.9	5.2	5.4	5.8	6.8	5.7
BLYTHE AIRPORT (KBLH)	2001-2011	6.5	6.6	7.1	9.0	8.7	9.1	9.6	8.5	6.8	6.4	6.0	6.0	7.5
BURBANK-GLENDALE-PASA ARPT (KBUR)	2001-2011	4.5	4.7	5.2	5.9	6.1	6.1	6.3	5.6	4.9	4.3	3.9	4.1	5.1

STATION	Years	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
CAMARILLO AIRPORT (KCMA)	2001-2011	7.2	6.9	6.2	6.4	5.6	5.1	5.0	4.6	4.5	5.0	6.0	6.4	5.7
CAMPO (KCZZ)	2001-2011	9.1	8.8	8.5	8.5	8.0	7.7	7.3	7.0	7.3	7.6	8.3	8.6	8.0
CAMP PENDLETON-MCAS (KNFG)	2006-2011	3.7	3.1	3.7	4.1	4.4	4.4	4.3	4.1	4.0	3.6	2.9	3.0	3.8
CARLSBAD-MCCLELLAN-PLMR AP (KCRQ)	2001-2011	4.0	4.7	4.6	5.2	5.1	4.9	4.4	4.2	3.9	3.7	3.6	3.9	4.3
CHINA LAKE (KNID)	2007-2011	4.7	7.3	8.4	9.6	9.6	8.1	7.7	8.0	6.7	7.1	5.3	5.7	7.3
CHINO AIRPORT (KCNO)	2001-2011	4.5	4.5	5.1	6.0	6.6	6.6	6.3	5.7	4.9	4.4	3.9	3.5	5.2
CONCORD-BUCHANAN FIELD (KCCR)	2001-2011	4.6	5.5	6.8	8.1	9.2	10.4	10.5	9.3	7.3	5.7	4.6	5.0	7.2
CRESCENT CITY-MCNAMARA AP (KCEC)	2001-2011	8.7	8.7	9.6	9.1	8.5	8.4	6.8	6.4	6.5	7.2	8.0	10.0	8.2
EL CENTRO-NAF (KNJK)	2006-2011	6.2	7.9	8.8	10.7	10.2	9.5	7.1	6.7	6.6	7.7	5.9	6.0	7.8
EUREKA-WOODLEY ISLAND (KEKA)	2001-2008	####	####	####	####	####	####	####	####	####	####	####	####	####
FRESNO YOSEMITE INTL AP (KFAT)	2001-2011	3.7	4.4	5.6	7.0	8.0	8.6	7.5	6.8	5.7	4.4	3.5	4.0	5.8
FULLERTON MUNICIPAL ARPT (KFUL)	2001-2011	3.3	3.9	4.0	4.5	4.4	4.4	4.1	3.6	3.3	3.0	2.8	2.9	3.7
HANFORD MUNICIPAL AIRPORT (KHJO)	2001-2011	3.1	3.8	5.0	6.4	7.5	7.7	6.6	6.1	5.1	4.0	3.0	3.3	5.1
HAWTHORNE AP(KHHR)	2001-2011	3.2	4.3	5.0	5.9	5.8	5.7	5.7	5.4	4.9	4.0	3.1	3.0	4.7
HAYWARD EXECUTIVE AIRPORT (KHWD)	2001-2011	5.3	6.2	7.2	8.5	8.6	8.6	8.1	7.6	6.6	5.6	4.9	5.7	6.9
IMPERIAL BEACH-NAVAL AUX (KNRS)	2007-2011	6.3	6.8	6.3	7.3	7.1	6.6	6.3	6.1	5.8	5.5	5.8	6.4	6.4
IMPERIAL COUNTY AIRPORT (KIPL)	2001-2011	5.2	6.6	7.9	9.6	8.7	8.4	7.8	6.9	6.4	6.3	5.5	5.0	7.0
LANCASTER-FOX FIELD (KWJF)	2001-2011	7.0	9.0	11.6	14.1	14.6	15.0	12.9	11.5	9.5	9.1	8.0	7.7	10.8
LEMOORE NAVAL AIR STATION (KNLC)	2006-2011	5.2	6.2	7.9	9.1	9.7	9.2	8.4	7.6	7.3	6.8	5.8	5.6	7.4
LIVERMORE MUNICIPAL ARPT (KLVK)	2001-2011	4.7	4.9	5.5	6.8	7.8	8.5	8.7	7.9	6.3	5.1	4.2	4.8	6.3
LONG BEACH-DAUGHERTY FLD (KLGB)	2001-2011	3.8	4.6	5.2	5.8	5.6	5.5	5.5	5.3	4.9	4.2	3.7	3.7	4.8
LOS ANGELES INTL AP (KLAX)	2001-2011	6.1	7.2	7.7	8.6	8.1	7.7	7.8	7.5	7.0	6.4	5.9	6.0	7.2
LOS ANGELES-USC CAMPUS (KCQT)	2001-2011	1.6	2.0	2.3	2.6	2.5	2.4	2.3	2.1	1.9	1.5	1.3	1.4	2.0
MADERA MUNICIPAL AIRPORT (KMAE)	2001-2011	4.4	5.3	5.9	7.0	8.0	8.3	7.3	6.7	5.7	4.8	4.2	5.0	6.0
MARYSVILLE-YUBA COUNTRY AP (KMYV)	2001-2011	5.6	7.0	7.5	7.5	7.6	7.6	6.8	6.4	5.8	5.7	5.6	6.7	6.7
MERCED MUNI/MACREADY FLD APT (KMCE)	2001-2011	4.4	5.1	5.8	6.8	7.8	8.0	7.5	6.8	5.7	5.2	4.4	5.2	6.0
MIRAMAR-MCAS (KNKX)	2007-2011	5.5	5.7	5.3	5.7	5.4	4.7	4.5	4.7	4.8	5.0	5.1	5.5	5.2
MODESTO CTY-CO H SHAM FD APT (KMOD)	2001-2011	4.5	5.3	6.5	7.4	8.7	8.9	8.2	7.6	6.4	5.4	4.5	5.1	6.5
MONTAGUE-SISKIYOU COUNTY AP (KSIY)	2001-2011	4.9	5.8	6.9	6.9	6.9	7.4	6.5	6.2	5.4	5.2	4.6	5.8	6.0
MONTEREY AIRPORT (KMRY)	2001-2011	4.9	5.5	6.2	6.9	6.8	7.0	6.2	5.9	4.9	4.8	4.6	5.1	5.7
MOUNTAIN VIEW-MOFFETT FIELD (KNUQ)	2001-2011	4.1	5.0	5.6	6.2	7.1	7.5	7.4	6.9	5.5	4.5	3.8	4.5	5.7
MOUNT SHASTA (KMHS)	2001-2011	2.9	3.1	3.7	3.8	3.7	3.7	2.3	2.3	2.6	2.9	3.0	3.1	3.1
NAPA COUNTY AIRPORT (KAPC)	2001-2011	6.6	6.3	7.0	8.2	8.9	9.9	9.9	9.0	7.2	5.8	5.3	6.5	7.6
NEEDLES AIRPORT (KEED)	2001-2011	8.2	7.7	8.1	9.1	8.9	8.7	8.0	7.6	7.4	7.6	7.6	7.4	8.0
NORTH AUX AF EDWARDS AFB (K9L2)	2007-2011	5.1	7.5	10.5	12.1	12.2	12.0	10.7	9.6	7.2	7.7	5.3	7.2	8.9
OAKLAND INTL AIRPORT (KOAK)	2001-2011	6.1	7.5	8.7	10.2	10.2	9.9	9.8	9.2	8.0	6.8	5.9	6.8	8.2
OCEANSIDE MUNICIPAL ARPT (KOKB)	2001-2011	3.6	4.0	4.0	4.4	4.4	4.4	4.2	4.0	3.8	3.4	3.2	3.4	3.9
ONTARIO INTERNATIONAL ARPT (KONT)	2001-2011	5.3	5.3	5.9	6.6	7.0	6.9	6.8	6.3	5.6	5.2	4.6	4.4	5.8
OROVILLE MUNICIPAL AIRPORT (KOVE)	2001-2011	5.2	6.6	7.0	7.0	6.8	6.5	5.9	5.6	5.1	5.0	5.0	6.3	6.0
OXNARD AIRPORT (KOXR)	2001-2011	7.1	7.4	7.3	7.7	6.9	6.5	6.5	6.3	5.9	5.8	6.3	6.9	6.7
PALMDALE AIRPORT (KPMD)	2001-2011	6.9	8.4	10.1	12.0	12.2	12.2	10.9	9.9	8.5	8.3	7.3	7.3	9.5
PALM SPRINGS INTL AIRPORT (KPSP)	2001-2011	5.1	5.1	6.4	8.1	8.5	8.2	7.1	6.3	6.4	5.9	5.3	4.6	6.4
PASO ROBLES MUNICIPAL ARPT (KPRB)	2001-2011	4.5	4.9	5.6	6.9	8.1	8.9	7.7	6.9	5.8	4.9	4.1	4.3	6.0
POINT MUGU (KNTD)	2006-2011	8.3	6.8	6.7	7.4	6.9	6.2	5.7	5.4	5.3	6.2	6.3	6.7	6.5
RAMONA AIRPORT (KRNM)	2001-2011	4.8	4.9	4.8	5.0	4.9	5.0	5.1	4.8	4.5	4.4	4.5	4.3	4.7
RED BLUFF MUNICIPAL ARPT (KRBL)	2001-2011	7.0	8.4	8.8	8.3	8.5	8.3	6.6	6.7	6.7	7.3	7.1	8.1	7.6
REDDING MUNICIPAL AIRPORT (KRDD)	2001-2011	4.9	6.2	6.5	6.3	6.4	6.5	5.4	5.3	5.0	5.4	4.6	5.7	5.7
RIVERSIDE MUNICIPAL ARPT (KRAL)	2001-2011	5.2	4.7	4.8	5.0	5.3	5.5	5.3	4.8	4.3	4.0	4.4	4.4	4.8
SACRAMENTO DOWNTOWN (KSACC)	2001-2010	####	####	####	####	####	####	####	####	####	####	####	####	####
SACRAMENTO EXECUTIVE AIRPORT (KSAC)	2001-2011	4.6	5.6	6.2	6.8	7.2	7.4	7.0	6.6	5.5	4.9	4.3	5.3	5.9
SACRAMENTO INTL AIRPORT (KSMF)	2001-2011	6.3	7.6	7.9	8.3	8.8	9.0	8.8	8.3	7.3	6.7	6.2	7.3	7.7
SALINAS MUNICIPAL AIRPORT (KSNS)	2001-2011	6.9	7.5	7.3	7.9	8.7	9.3	8.5	7.8	7.1	6.5	6.3	7.5	7.6
SANDBERG (KSDB)	2001-2011	14.2	14.0	14.3	14.4	14.6	14.3	11.8	11.6	11.4	12.5	13.8	14.3	13.4
SAN DIEGO-BROWN FLD MUNI AP (KSDM)	2001-2011	5.6	6.0	5.4	5.8	5.5	5.1	4.7	4.5	4.2	4.5	5.0	5.5	5.1
SAN DIEGO-LINDBERGH FIELD(KSAN)	2001-2011	4.5	5.6	6.1	6.9	6.7	6.7	6.3	6.3	6.0	5.1	4.4	4.4	5.8
SAN DIEGO-MONTGOMERY FLD AP (KMYF)	2001-2011	4.4	5.0	5.3	6.0	5.8	5.7	5.3	5.3	5.2	4.6	4.1	4.2	5.1
SAN DIEGO-NORTH ISLAND NAS (KNZY)	2007-2011	4.9	6.1	6.1	6.9	6.8	6.5	6.2	6.4	6.3	5.4	4.8	5.4	6.0
SAN FRANCISCO DOWNTOWN (KSFOC)	2001-2008	####	####	####	####	####	####	####	####	####	####	####	####	####
SAN FRANCISCO INTL AP (KSFO)	2001-2011	6.1	7.8	10.2	12.3	13.4	13.7	12.6	12.0	10.6	8.7	6.8	7.0	10.1
SAN JOSE INTL APT (KSJC)	2001-2011	5.0	6.1	6.7	7.6	7.8	7.9	7.3	7.1	6.1	5.5	4.8	5.8	6.5
SAN LUIS OBISPO REGIONAL AP (KSBP)	2001-2011	5.1	5.6	7.0	8.1	8.4	7.9	6.8	6.9	6.5	5.9	5.2	5.0	6.5
SAN NICOLAS ISLAND NAS (KNSI)	2007-2010	10.5	11.5	13.7	17.6	14.3	13.7	11.8	10.4	11.5	12.5	11.0	11.4	12.5
SAN SIMEON-PT PIEDRAS BLANCAS(K87Q)	2001-2005	8.7	9.4	11.3	12.5	13.6	13.6	10.8	11.2	10.2	8.8	7.8	9.8	10.7
SANTA ANA-J. WAYNE APT (KSNA)	2001-2011	4.0	4.5	5.0	5.6	6.0	6.1	5.9	5.3	4.7	4.1	3.5	3.6	4.9
SANTA BARBARA MUNICIPAL AP (KSBA)	2001-2011	3.8	4.9	5.6	6.2	6.0	5.5	5.5	5.1	4.8	4.2	3.7	3.9	4.9
SANTA MARIA AIRPORT(KSMX)	2001-2011	5.6	6.0	7.4	7.9	8.0	7.4	6.1	5.7	5.4	5.5	5.6	5.5	6.3
SANTA MONICA MUNI AIRPORT (KSMO)	2001-2011	4.5	4.8	5.0	5.4	5.2	5.1	5.0	4.6	4.3	4.0	4.0	4.2	4.7
SANTA ROSA-SONOMA COUNTY AP (KSTS)	2001-2011	3.3	4.3	5.0	5.3	5.5	5.6	5.3	4.9	4.3	3.8	3.3	3.7	4.5
SOUTH LAKE TAHOE AIRPORT (KTVL)	2001-2011	4.6	5.3	6.1	6.6	5.9	5.5	4.9	5.0	4.7	4.7	5.2	5.8	5.4
STOCKTON METROPOLITAN AP (KSCK)	2001-2011	5.6	6.5	7.4	8.4	9.4	9.7	8.3	7.9	7.0	6.0	5.2	6.6	7.3
THERMAL-DESERT RESORTS AP (KTRM)	2001-2011	4.8	5.4	7.1	9.0	9.2	8.6	7.1	6.4	6.5	6.0	4.9	4.3	6.6
UKIAH MUNICIPAL AIRPORT (KUKI)	2001-2011	2.2	3.1	3.8	4.5	4.6	5.2	4.4	4.0	3.2	2.6	2.1	2.8	3.6
VACAVILLE-NUT TREE AIRPORT (KVCB)	2001-2011	4.1	5.2	6.0	6.5	7.0	7.2	6.8	6.5	5.4	5.0	4.2	4.6	5.7
VAN NUYS AIRPORT (KVNY)	2001-2011	6.6	5.3	5.4	5.6	5.5	5.3	5.1	4.6	4.1	4.3	5.0	5.4	5.2
WATSONVILLE MUNICIPAL ARPT (KWVI)	2001-2011	3.2	3.8	4.1	4.7	4.8	4.8	4.6	4.3	3.9	3.5	2.9	3.2	4.0

COLORADO

STATION	Years	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
AKRON REGIONAL AP (KAKO)	2001-2011	11.8	12.0	13.0	14.1	12.6	11.8	11.0	11.1	11.4	11.9	11.9	11.8	12.0
ALAMOSA-SAN LUIS VALLEY AP (KALS)	2001-2011	5.3	6.6	8.4	10.7	9.8	8.8	6.5	6.3	6.6	6.6	6.1	5.4	7.3
ASPEN-PITKIN COUNTY ARPT (KASE)	2001-2011	4.6	5.1	5.9	6.8	6.9	6.9	6.5	6.4	6.4	5.7	4.9	4.5	5.9
BURLINGTON-KIT CARSON AP (KITR)	2001-2011	11.3	11.9	12.8	14.0	13.2	12.3	11.2	10.9	11.6	11.7	11.7	11.4	12.0
COLORADO SPRINGS MUNI AP (KCOS)	2001-2011	8.4	9.3	10.2	12.2	10.8	10.1	8.9	8.7	9.1	9.5	8.8	8.7	9.6
CORTEZ MUNICIPAL AIRPORT (KCEZ)	2001-2011	5.6	6.1	7.4	8.7	8.0	7.7	6.3	5.9	6.2	6.4	6.0	5.7	6.7
CRAIG-MOFFAT AIRPORT (KCAG)	2001-2011	3.3	4.2	5.6	7.7	6.6	6.3	5.5	5.4	5.2	5.0	4.4	3.7	5.2
DENVER-CENTENNIAL AIRPORT (KAPA)	2001-2011	7.7	7.9	8.7	10.1	8.7	8.6	8.0	7.9	7.8	7.6	7.6	7.7	8.2
DENVER INTERNATIONAL AIRPORT (KDEN)	2001-2011	9.7	9.7	10.7	11.8	10.5	10.1	9.5	9.6	9.4	9.6	9.6	9.6	10.0
DURANGO-LA PLATA CO AIRPORT (KDRO)	2001-2011	4.4	5.3	6.5	7.9	7.3	6.8	6.0	5.6	5.4	5.4	4.8	4.5	5.8
ELLICOTT-BULLSEYE USAF (KABH)	2007-2011	7.5	10.2	10.2	12.9	13.0	10.8	9.0	8.8	9.5	9.2	8.1	8.2	9.8
GRAND JUNCTION-WALKER FIELD (KGJT)	2001-2011	4.8	6.0	7.4	9.2	8.8	9.2	9.0	8.5	8.3	7.1	5.6	4.9	7.4
LA JUNTA MUNICIPAL AIRPORT (KLHX)	2001-2011	8.8	9.5	10.9	12.8	11.4	10.9	9.4	9.4	9.3	9.5	9.3	9.2	10.0
LAMAR MUNICIPAL AIRPORT (KLAA)	2001-2011	8.0	8.8	10.0	12.0	11.2	10.6	9.8	9.5	9.3	8.8	8.3	8.0	9.5
LEADVILLE/LAKE COUNTY APT (KLXV)	2001-2011	7.7	7.6	7.6	8.0	7.7	7.2	5.8	5.7	6.2	7.2	7.1	7.5	7.1
LIMON MUNICIPAL AIRPORT (KLIC)	2001-2011	8.0	9.1	10.4	12.1	10.7	9.6	8.6	8.6	8.5	9.1	8.4	8.2	9.3
MEEKER AIRPORT (KEEO)	2001-2011	3.1	4.1	5.5	7.2	6.6	6.7	5.8	5.7	5.7	5.0	4.4	3.5	5.3
MONTROSE REGIONAL AIRPORT (KMTJ)	2001-2011	5.3	5.9	7.3	8.9	8.2	8.3	7.4	6.9	7.1	6.5	5.9	5.1	6.9
PUEBLO MEMORIAL AIRPORT (KPUB)	2001-2011	6.6	7.1	8.6	10.2	9.0	8.6	8.0	7.4	7.2	7.4	6.7	6.7	7.8

Prevailing Wind Direction

Prevailing wind direction is based on the hourly data from 1992-2002 and is defined as the direction with the highest percent of frequency. Many of these locations have very close secondary maximum which can lead to noticeable differences month to month.

All directions are where the wind blows FROM.

For more information click here on Western States, Alaska or Hawaii and Pacific Islands

Arizona California Colorado Hawaii Idaho Montana Nevada New Mexico Oregon Utah Washington Wyoming

ALASKA

PREVAILING WIND DIRECTION

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
AMBLER AIRPORT, AK. (PAFM)	NNE	NNE	NNE	NNE	NNE	W	NNE	NNE	NNE	NNE	NNE	NNE	NNE
ANAKTUVUK PASS AP, AK (PAKP)	NE	S	NNE	NE	NE	NE	NE	NE	NE	NE	S	NE	NE
ANCHORAGE INT'L AP, AK (PANC)	N	N	N	S	S	S	S	S	S	N	N	N	N
ANIAK, AK. (PANI)	N	ESE	N	ESE	W	SE	SE	SE	ESE	ESE	ESE	N	ESE
ANNETTE AP, AK (PANT). WIND	ESE	ESE	ESE	SE	SE	SE	SE	SE	SE	ESE	ESE	ESE	ESE
ANVIK AP, AK (PANV). WIND R	NE	NE	NNE	NNE	W	W	W	W	W	NNE	NE	NE	NE
ARCTIC VILLAGE AP, AK (PARC)	NE	E	ENE	E	E	NE	WSW	WSW	NE	E	E	E	E
BARROW, AK. (PABR)	ENE	E	E	E	E	E	E	E	E	E	E	ENE	E
BARTER ISLAND, AK. (PABA)	W	E	W	E	E	E	E	E	E	E	E	W	E
BETHEL AIRPORT, AK. (PABE)	NNE	NE	NNE	N	S	S	S	S	S	N	NNE	NNE	NNE
BETTLES AP, AK. (PABT)	N	NNW	N	N	N	SW	S	S	N	N	N	N	N
BIRCHWOOD, AK. (PABV)	S	S	SSW	W	W	W	W	W	SSW	SSW	S	S	SSW
BUCKLAND AP, AK. (PABL)	WNW	E	E	W	WNW	WNW	SE	W	SE	SE	SE	E	SE
CANTWELL AP, AK (PATW). WIN	Incomplete Data												
CAPE LISBURNE AP, AK (PALU).	E	E	E	E	E	E	SSW	SSW	E	ENE	E	E	E
CAPE NEWENHAM, AK (PAEH). W	ESE	ESE	ESE	N	S	S	S	S	N	N	ESE	N	N
CAPE ROMANZOF, AK. (PACZ)	NE	NNE	NE	NNE	S	NNE	SSW	N	N	NNE	NE	N	NNE
CHIGNIK AP, AK (PAJC). WIND	W	W	W	W	W	W	W	W	W	W	W	W	W
COLD BAY, AK. (PACD)	SE	SE	SE	SE	SE	SE	SE	W	W	N	SE	N	SE
CORDOVA, AK. (PACV)	E	E	E	E	E	E	ENE	ENE	E	E	E	E	E
DEADHORSE AP, AK (PASC). WI	WSW	ENE	ENE	E	E	E	ENE	E	E	E	E	WSW	E
DEERING AIRPORT, AK. (PADE)	W	E	W	W	W	W	W	SSW	SW	SW	E	W	W
DELTA JCT/FT GREELEY,(PABI)	ESE	ESE	E	S	W	W	W	W	E	E	ESE	ESE	ESE
DILLINGHAM AIRPORT, AK. (PADL	N	N	N	N	N	S	S	S	N	N	N	N	N
EAGLE AP, AK (PAEG). WIND R	ESE	ESE	SE	SE	NE	N	W	ESE	SE	ESE	ESE	ESE	ESE
EGEGIK AP, AK (PAII). WIND	N	ESE	ESE	ESE	W	ESE	SE	W	W	N	N	N	ESE
EIELSON AFB-FAIRBANKS,AK-PAEI	S	S	NNW	W	W	W	W	W	S	S	S	S	S
ELMENDORF AFB-ANCH, AK-PAED	NE	N	N	N	W	W	W	W	N	N	NNE	NE	N
EMMONAK, AK (PAEM). WIND RO	ENE	ENE	ENE	N	N	N	S	S	N	N	ESE	N	N
EUREKA-SKELTON AP, AK (PAZK)	NE	NE	NE	W	W	WSW	WSW	W	W	NE	NE	NE	W
FAIRBANKS AP, AK. (PAFA)	NNE	NE	NNE	N	N	W	W	N	N	N	N	NE	N
FAIRBANKS-WAINWRIGHT AP,(PAFB	E	E	ENE	ENE	W	W	WSW	E	E	ENE	E	E	E
GALENA AIRPORT, AK. (PAGA)	N	E	N	N	N	WSW	SW	SW	E	N	E	E	N
GAMBELL, AK. (PAGM)	NNE	NNE	NNE	NNE	NNE	NNE	SSW	SSW	N	N	N	NE	NNE
GOLOVIN AP, AK. (PAGL)	NW	E	NW	NW	NW	S	S	S	NNW	N	N	NW	NW
GULKANA AIRPORT, AK. (PAGK)	N	N	N	S	S	S	S	S	S	N	N	N	S
GUSTAVUS AP, AK. (PAGS)	SE	SE	SE	SE	SE	SW	SW	SE	SE	SE	SE	SE	SE
HAINES AIRPORT, AK. (PAHN)	WNW	WNW	WNW	E	E	E	E	E	E	E	WNW	WNW	WNW
HEALY RIVER AP, AK (PAHV).	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE
HOMER AP, AK. (PAHO)	NE	NE	ENE	WSW	WSW	WSW	WSW	WSW	NE	NE	NE	NE	NE
HOONAH SEAPLANE, AK (PAOH)	Incomplete Data												
HOOPER BAY AP, AK. (PAHP)	E	E	E	N	N	N	N	W	N	E	E	E	E
HUSLIA AP, AK (PAHS). WIND	E	E	E	ENE	ENE	WNW	W	W	ENE	ENE	E	E	E
HYDABURG SEAPLANE, AK (PAHY)	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE
ILIAMNA AP, AK (PAIL). WIND	N	E	E	E	E	E	E	E	E	N	N	N	E
JUNEAU INT'L AP, AK (PAJN).	E	E	E	ESE	ESE	E	E	E	E	E	E	E	E
KAKE AIRPORT, AK. (PAFE)	ESE	ESE	ESE	ESE	ESE	W	ESE	ESE	ESE	ESE	E	ESE	ESE
KALTAG AP, AK (PAKV). WIND	NE	NE	NE	NE	SW	SW	SW	SW	SW	NE	NE	NE	NE
KENAI AP, AK (PAEN). WIND R	NNE	NNE	NNE	N	SSW	SSW	SSW	S	NNE	NNE	NNE	NNE	NNE
KETCHIKAN AP, AK (PAKT). WI	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SSE	SE	SE
KING SALMON AP, AK (PAKN).	N	E	E	E	S	S	S	S	N	N	N	N	N
KIVALINA AP, AK (PAVL). WIN	NNE	NNE	NNE	N	N	W	W	N	N	NNE	NNE	NNE	NNE
KLAWOCK AP, AK (PAKW). WIND	NE	NE	NE	S	SW	SW	SW	SW	SSW	S	NE	NE	SW
KODIAK AP, AK (PADQ). WIND	NW	NW	NW	NW	NW	E	E	NW	WNW	NW	NW	NW	NW
KOTZEBUE AP, AK (PAOT). WIN	E	E	E	E	W	W	W	W	E	E	E	E	E
KOYUK AP, AK (PAKK). WIND R	N	N	N	N	N	SSW	SSW	SW	N	N	N	N	N
LAKE HOOD SEAPLANE BASE, ANC	N	N	N	S	S	S	S	S	S	N	N	N	N
MCGRATH AP, AK (PAMC). WIND	W	WNW	N	N	W	W	S	S	W	N	N	N	N
MCKINLEY PARK AP, AK (PAIN).	N	S	N	S	N	N	S	N	N	N	N	N	N
MEKORYUK AP, AK (PAMY). WIN	NE	ESE	ESE	W	NNW	WNW	W	W	NNW	N	SE	N	N
MERRILL FIELD, ANCHORAGE,PAMR	NNE	N	N	N	W	WNW	WNW	WNW	N	N	NNE	NNE	N
METLAKATLA SEAPLANE BASE, AK	E	E	E	E	SSE	WSW	S	S	S	SSE	E	E	SSE
MIDDLETON ISLAND AP, AK (PAMD	ESE	ESE	E	E	E	W	E	W	E	E	E	E	E
MINCHUMINA AP, AK (PAMH). W	ENE	ENE	ENE	E	WSW	WSW	WSW	WSW	WSW	ENE	ENE	ENE	ENE
NABESNA-DEVILS MTN LODGE(PABN	Incomplete Data												
NENANA AP, AK (PANN). WIND	E	E	ENE	E	E	W	SW	E	E	ENE	ENE	ENE	E
NOATAK AP, AK (PAWN). WIND	N	NNE	NNE	NNE	N	S	S	N	N	N	N	NNE	N
NOME AP, AK (PAOM). WIND RO	E	E	E	E	E	WSW	WSW	WSW	N	N	E	N	E
NORTHWAY AP, AK (PAOR). WIN	WNW	E	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW
NUIQSUT AP, AK (PAQT). WIND	W	ENE	ENE	ENE	E	E	ENE	W	ENE	E	ENE	NE	ENE
PALMER MUNICIPAL AP, AK.(PAAQ	N	N	N	SE	SE	SE	SE	N	N	N	N	N	N
PETERSBURG AP, AK (PAPG). W	WSW	ESE	WSW	E	E	ENE	ENE	E	E	ESE	WSW	WSW	E
POINT HOPE AP, AK (PAPO). W	N	N	N	N	N	N	S	N	N	E	NNE	N	N
PORTAGE AP, AK (PATO). WIND	WNW	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SE	SE	WNW	ESE
RED DOG AP, AK (PARD). WIND	Incomplete Data												
SAND POINT AP, AK (PASD). W	N	SSE	N	N	N	S	S	S	N	N	NNW	N	N
SAVOONGA AP, AK (PASA). WIN	E	E	E	E	E	E	W	W	N	N	E	NE	E

SELAWIK AP, AK (PASK). WIND	ENE	ENE	ENE	W	W	W	W	W	ENE	ENE	ENE	ENE	ENE
SELDOVIA AP, AK (PASO). WIN	N	N	N	S	S	S	S	S	S	S	S	S	S
SEWARD AP, AK (PAWD). WIND	N	N	N	N	S	S	S	N	N	N	N	N	N
SHISHMAREF AP, AK (PASH). W	N	N	E	E	NNW	W	N	N	N	E	E	E	N
SITKA AP, AK (PASI). WIND R	ESE	ESE	ESE	ESE	ESE	SW	SW	ESE	E	ESE	ESE	E	ESE
SKAGWAY AIRPORT, AK. (PAGY)	NE	NE	NNE	SSW	SSW	SSW	SSW	SSW	SSW	SSW	NNE	NE	SSW
SLANA, AK (PADT). WIND ROSE	Incomplete Data												
SLEETMUTE AP, AK (PASL). WI	NW	NW	NW	ESE	W	SE	ESE	ESE	ESE	WNW	WNW	NW	NW
SOLDOTNA AP, AK (PASX). WIN	E	E	E	E	W	W	W	W	E	E	E	E	E
ST. GEORGE ISLAND, AK. (PAPB)	NNE	E	E	NNE	E	NE	W	S	W	NNW	NNW	E	NE
ST. MARY'S AP, AK (PASM). W	E	E	E	E	N	S	S	S	E	E	E	E	E
ST. PAUL ISLAND, AK. (PASN)	N	N	E	N	N	N	W	SSW	WSW	N	N	N	N
TALKEETNA AP, AK (PATK). WI	NNE	N	NNE	N	N	S	S	S	N	N	N	N	N
TANANA AP, AK (PATA). WIND	E	E	E	E	ESE	WSW	W	W	E	E	E	E	E
TIN CITY AP, AK (PATC). WIN	N	N	NNE	NNE	NNE	NNE	SSW	NNE	NNE	NNE	NNE	NNE	NNE
TOGIAK AP, AK (PATG). WIND	N	N	N	N	N	SSW	S	S	N	N	N	N	N
UNALAKLEET AP, AK (PAUN). W	E	E	E	E	E	NNW	W	E	E	E	E	E	E
UNALASKA AP, AK (PADU). WIN	SE	SE	SE	N	SE	E	E	E	SSW	NNW	NNW	SE	SE
UTOPIA CREEK, AK (PAIM)	ENE	ENE	ENE	E	E	NW	NW	W	ENE	ENE	ENE	ENE	ENE
VALDEZ AP, AK (PAVD). WIND	E	E	E	W	W	W	E	E	E	E	E	E	E
VALDEZ WSO, AK (PAVW). WIND	ENE	ENE	ENE	ENE	WSW	WSW	WSW	WSW	WSW	ENE	ENE	ENE	ENE
WAINWRIGHT AP, AK (PAWI). W	E	E	E	E	E	E	W	E	E	E	E	E	E
WASILLA AP, AK (PAWS). WIN	ENE	ENE	ENE	E	E	S	ENE	ENE	ENE	ENE	ENE	ENE	ENE
WHITTIER AP, AK (PAWR). WIN	ENE	S	S	S	S	S	S	S	ENE	SSW	S	SSW	S
WRANGELL AP, AK (PAWG). WIN	E	ESE	E	SE	SE	W	W	SE	ESE	ESE	E	E	E
YAKUTAT AP, AK (PAYA). WIND	E	E	E	E	SE	E	E	E	E	E	E	E	E

ARIZONA

PREVAILING WIND DIRECTION

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
CASA GRANDE AP, AZ (KCGZ).	N	W	W	W	W	W	W	E	E	ENE	N	N	W
DOUGLAS AIRPORT, AZ (KDUG).	E	N	N	W	WSW	W	S	E	E	E	E	N	N
FLAGSTAFF AP, AZ (KFLG). WI	SW	SW	SW	SW	SW	SSW	SW	SSW	SW	SW	ENE	ENE	SW
FORT HUACHUCA-SIERRA VISTA A	W	W	W	W	W	W	W	W	W	W	W	W	W
GILA BEND AP, AZ (KGBN). WI	N	W	W	W	W	W	W	W	W	W	N	N	W
GLENDALE-LUKE AFB, AZ (KLUF)	N	N	N	SW	SW	SW	SW	SW	N	N	N	N	N
GRAND CANYON AP, AZ (KGCN).	NE	NE	SSW	SSW	SSW	SSW	SSW	SSW	SSW	NE	NE	NE	SSW
KINGMAN AIRPORT, AZ (KIGM).	E	N	SW	SW	SW	SW	SW	SW	S	N	N	E	SW
NOGALES AIRPORT, AZ (KOLS).	SSE	S	E	E	E	E	SE	SE	ENE	S	E	SE	S
PAGE AIRPORT, AZ (KPGA). WI	W	W	W	W	W	W	W	S	N	W	W	W	W
PHOENIX SKY HARBOR AP, AZ (K	E	E	E	E	W	W	W	E	E	E	E	E	E
PHOENIX-DEER VALLEY AP, AZ (	E	E	SW	SW	SW	SW	SW	SW	E	E	NE	NE	SW
PRESCOTT AIRPORT, AZ (KPRC).	S	S	S	S	S	S	S	S	S	S	S	S	S
SAFFORD AIRPORT, AZ (KSAD).	E	E	WNW	WNW	WNW	WNW	W	E	E	E	E	E	E
SCOTTSDALE AP, AZ (KSDL). W	N	SW	SW	SW	WSW	WSW	SW	WSW	S	S	WSW	N	SW
ST. JOHNS AP, AZ (KSJN). WI	S	S	WSW	WSW	WSW	WSW	S	S	S	S	S	S	S
TUCSON INT'L AP, AZ (KTUS).	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE
TUCSON-DAVIS MONTHAN AP, AZ	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE
WINDOW ROCK AP, AZ (KRQE).	WSW	SW	SW	SW	SW	WSW	S	S	S	S	SW	SSW	SW
WINSLOW AIRPORT, AZ (KINW).	ESE	SW	SW	SW	SW	SW	SW	ESE	SW	ESE	SE	SE	SW
YUMA MCAS, AZ (KNYL). WIND	N	N	W	W	W	S	SSE	SSE	S	N	N	N	S

CALIFORNIA

PREVAILING WIND DIRECTION

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
ALAMEDA NAS, CA (KNGZ). WIN	NNW	W	W	W	W	W	W	W	W	W	W	SE	W
ALTURAS AP, CA (KAAT). WIND	S	S	W	W	W	W	W	W	W	W	S	S	W
ARCATA AP, CA (KACV). WIND	E	E	E	E	NW	NW	NW	NW	NW	E	E	E	E
AVALON-CATALINA AP, CA (KAVX	W	W	W	W	WSW	WSW	WSW	WSW	WSW	W	W	W	W
BAKERSFIELD AP, CA (KBFL).	E	E	N	NW	NW	NW	WNW	WNW	WNW	NW	E	E	NW
BEALE AFB, CA (KBAB). WIND	SSE	SSE	S	SSE	S	S	S	S	S	NNW	NNW	SSE	S
BISHOP AP, CA (KBIH). WIND	N	N	N	N	N	N	SSE	SSE	N	N	N	N	N
BLUE CANYON, CA (KBLU). WIN	ENE	S	ENE	ENE	SSW	SSW	SSW	SSW	ENE	ENE	ENE	ENE	ENE
BLYTHE AP, CA (KBLH). WIND	N	N	S	S	S	S	S	S	S	N	N	N	S
BURBANK AIRPORT, CA (KBUR).	ESE	S	S	S	S	S	S	S	S	S	S	S	S
CAMARILLO AP, CA (KCMA). WI	ENE	ENE	ENE	WSW	SW	SW	WSW	WSW	WSW	WSW	ENE	ENE	WSW
CAMP PENDLETON MCAS, CA (KNF	N	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	N	N	SSW
CAMPO AIRPORT, CA (KCZZ). W	NE	NE	SW	SW	SW	SW	NE	NE	NE	NE	NE	NE	NE
CARLSBAD AP, CA (KCRQ). WIN	W	W	W	W	WSW	WSW	WSW	WSW	W	W	W	E	W
CHINA LAKE-ARMITAGE FIELD, C	SW	SSW	SSW	SW	S	SSW	S	S	SSW	SSW	SW	SW	SSW
CHINO AP, CA (KCNO). WIND R	W	W	W	W	W	W	W	W	W	W	W	W	W
CONCORD-BUCHANON FIELD, CA (	S	S	S	W	S	S	S	SSW	W	S	S	S	S
CRESCENT CITY AP, CA (KCEC).	SSE	S	S	S	N	NNW	S	S	S	N	SSE	SSE	S
DAGGETT-BARSTOW AP, CA (KDAG	W	W	W	W	W	W	W	W	W	W	W	W	W
EDWARDS AFB, CA (KEDW). WIN	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	W	SW	SW
EL CENTRO NAF, CA (KNJK). W	W	W	W	W	W	W	W	SE	W	W	W	W	W
EL TORO MCAS, CA (KNZJ). WI	E	E	E	W	W	W	W	W	W	W	E	E	W
FRESNO AIR TERMINAL, CA (KFA	ESE	E	NW	NW	NW	NW	NW	NW	NW	NW	NW	E	NW
FULLERTON AP, CA (KFUL). WI	E	E	S	S	S	S	S	S	S	S	E	E	S
HANFORD MUNI AP, CA (KHJO).	E	ESE	NW	NW	NW	NW	NW	NW	NW	NW	NW	ESE	NW
HAWTHORNE AP, CA (KHHR). WI	W	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	W	WSW
HAYWARD AIRPORT, CA (KHWD).	W	W	W	W	W	W	W	W	W	W	W	ENE	W
IMPERIAL AIRPORT, CA (KIPL).	W	W	W	W	W	W	W	ESE	W	W	W	W	W
IMPERIAL BEACH NOLF, CA (KNR	E	WNW	W	W	W	W	W	W	WNW	W	WNW	E	W
LANCASTER AIRPORT, CA (KWJF)	W	W	W	W	W	SW	SW	SW	SW	W	W	W	W
LEMOORE NAS, CA (KNLC). WIN	SE	NNW	NNW	NNW	NNW	NNW	NNW	NW	NNW	N	NNW	NNW	NNW
LIVERMORE AP, CA (KLVK). WI	ENE	W	W	W	W	W	W	W	W	W	ENE	ENE	W
LOMPOC AP, CA (KLPC). WIND	E	E	W	W	W	W	W	W	W	W	E	E	W
LONG BEACH AP, CA (KLGB). W	WNW	W	S	W	S	S	S	WNW	WNW	WNW	WNW	WNW	WNW
LOS ANGELES INT'L AP, CA (KL	E	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	E	WSW
LOS ANGELES-DOWNTOWN, CA (KC	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	W	W	WSW
MADERA MUNI AP, CA (KMAE).	ESE	E	NW	NW	WNW	WNW	WNW	WNW	WNW	WNW	E	E	WNW

MARYSVILLE AIRPORT, CA (KMYV	SSE	SSE	SSE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE
MCCLELLAN AFB, CA (KMCC). W	SSE	SSE	SSE	SSE	SSE	S	SSE	SSE	SSE	SE	SSE	SSE	SSE
MERCED MUNI AP, CA (KMCE).	SE	SE	NNW	NNW	NW	NW	NW	NW	NW	NW	NW	ESE	NW
MIRAMAR NAS, CA (KNKX). WIN	E	E	E	WNW	W	WNW	WNW	NW	NW	E	E	E	E
MODESTO AIRPORT, CA (KMOD).	SE	SE	NW	NW	NW	NW	NNW	NNW	NW	NW	NW	SE	NW
MOFFETT FIELD NAS, CA (KNUQ)	SE	SE	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	SE	NNW
MONTEREY AIRPORT, CA (KMRY).	ESE	ESE	W	WNW	W	W	W	W	W	W	ESE	ESE	W
MOUNT SHASTA CITY, CA (KMHS)	SE	SE	SE	NW	N	N	N	NE	NE	N	NE	SE	N
NAPA COUNTY AP, CA (KAPC).	E	E	W	W	W	SSW	SSW	SSW	SSW	SSW	E	E	SSW
OAKLAND INT'L AP, CA (KOAK).	SE	W	W	W	W	W	W	W	W	W	W	SE	W
OCEANSIDE MUNI AP, CA (KOKB)	W	NE	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	NNE	WSW
ONTARIO INT'L AP, CA (KONT).	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	W	W	W
OROVILLE MUNI AP, CA (KOVE).	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	E	E	SSE	SSE	SSE
OXNARD AIRPORT, CA (KOXR).	W	W	W	W	W	W	W	W	W	W	W	NE	W
PALM SPRINGS AP, CA (KPSP).	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW
PALMDALE AP, CA (KPMD). WIN	W	W	SW	W	SW	SW	SW	SW	SW	SW	W	W	SW
PALO ALTO AP, CA (KPAO). WI	N	N	N	NNW	N	N	N	N	N	NNW	N	N	N
PASO ROBLES AP, CA (KPRB).	E	E	NW	NW	NW	NW	SSW	WNW	NW	NW	E	E	NW
POINT MUGU NAS, CA (KNTD).	NE	W	W	W	W	W	W	W	W	W	NE	NE	W
POINT PIEDRAS BLANCAS, CA (K	N	N	NNW	NNW	N	N	N	NW	NNW	N	N	N	N
PORTERVILLE MUNI AP, CA (KPT	E	E	ESE	NW	NW	NW	NW	S	S	ESE	E	E	NW
RAMONA AIRPORT, CA (KRNM).	W	W	W	W	W	W	W	W	W	W	WNW	E	W
RED BLUFF AP, CA (KRBL). WI	NNW	SSE	N	NNW	SSE	N	S	S	NNW	NNW	NNW	NNW	NNW
REDDING AIRPORT, CA (KRDD).	N	N	N	N	N	N	S	S	N	N	N	N	N
RIVERSIDE MUNI AP, CA (KRAL)	WNW	WNW	WNW	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	N	WNW
RIVERSIDE-MARCH AFB, CA (KRI	NW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	WNW
SACRAMENTO EXECUTIVE AP, CA	SE	SSE	S	SSW	S	S	S	S	S	S	SSE	SSE	S
SACRAMENTO INT'L AP, CA (KSM	SSE	SSE	S	S	S	S	S	S	S	S	NW	SSE	S
SACRAMENTO-MATHER AP, CA (KM	SE	SE	SE	S	S	S	S	S	S	SE	SE	SE	S
SALINAS MUNI AP, CA (KSNS).	SE	SE	W	W	W	W	WNW	WNW	WNW	WNW	SE	SE	W
SAN CARLOS AP, CA (KSQL). W	N	W	W	W	W	W	W	W	N	N	N	N	W
SAN DIEGO-BROWN FIELD, CA (K	W	W	W	W	W	W	W	W	W	W	W	SE	W
SAN DIEGO-GILLESPIE FIELD, C	W	W	W	W	W	W	W	W	W	W	W	W	W
SAN DIEGO-LINDBERGH FIELD, C	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW
SAN DIEGO-MONTGOMERY FIELD,	W	W	W	W	WSW	WSW	WSW	WSW	WNW	W	W	W	W
SAN DIEGO-NORTH ISLAND NAS,	NW	W	W	W	W	W	W	NW	NW	NW	NW	NW	W
SAN FRANCISCO INT'L AP, CA (	W	W	W	W	W	W	W	W	W	W	W	W	W
SAN JOSE INT'L AP, CA (KSJC)	SSE	SSE	NNW	NNW	NNW	NNW	NW	NNW	NW	NW	NW	SE	NNW
SAN JOSE-REID HILLVIEW AP, C	SE	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW
SAN LUIS OBISPO AP, CA (KSBP	NW	NW	NW	NW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	WNW
SAN NICHOLAS ISLAND NOLF, CA	WNW	WNW	WNW	WNW	WNW	NW	WNW	NW	WNW	WNW	NW	NW	WNW
SANDBURG, CA (KSDB). WIND R	NE	S	NW	NW	NW	NW	NW	NW	NW	NW	NE	NE	NW
SANTA ANA-JOHN WAYNE AP, CA	S	S	S	S	S	SSW	SSW	SSW	SW	SW	SW	S	SSW
SANTA BARBARA AP, CA (KSBA).	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW
SANTA MARIA AP, CA (KSMX).	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW
SANTA MONICA AIRPORT, CA (KS	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	N	SW
SANTA ROSA AIRPORT, CA (KSTS	S	SE	S	S	S	S	S	S	S	S	S	SE	S
SISKIYOU COUNTY AP-MONTAGUE,	S	S	N	N	N	N	N	N	N	N	S	S	N
SOUTH LAKE TAHOE AP, CA (KTV	S	S	S	S	S	SSW	S	S	S	S	S	S	S
STOCKTON AIRPORT, CA (KSCK).	SE	SE	W	W	W	W	W	W	W	W	W	SE	W
THERMAL AIRPORT, CA (KTRM).	N	N	NNW	NNW	NW	NW	NW	NW	NNW	NNW	NW	NW	NW
TORRANCE AIRPORT, CA (KTOA).	W	W	W	W	W	W	WNW	WNW	W	W	W	W	W
TRAVIS AFB-FAIRFIELD, CA (KS	N	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	N	N	WSW
TRUCKEE AIRPORT, CA (KTRK).	S	S	S	SSW	SW	SSW	SW	SSW	SSW	N	S	S	S
TUSTIN MCAS, CA (KNTK). WIN	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	WSW
TWENTYNINE PALMS EAF, CA (KN	W	W	WNW	WNW	WNW	NW	W	W	W	W	WNW	NW	WNW
UKIAH AIRPORT, CA (KUKI). W	S	SSE	WNW	WNW	N	N	N	N	N	W	SSE	SSE	N
VACAVILLE AIRPORT, CA (KVCB)	NNW	S	SSW	SSW	SSW	SSW	S	SSW	SSW	SSW	SSW	NNW	SSW
VAN NUYS AP, CA (KVNY). WIN	N	N	SE	SE	ESE	ESE	ESE	ESE	ESE	ESE	N	N	ESE
VISALIA AIRPORT, CA (KVIS).	SE	SE	NW	NW	NW	NW	NW	WNW	NW	NW	ESE	ESE	NW
WATSONVILLE MUNI AP, CA (KWV	N	NNW	W	W	W	SW	W	SW	WSW	W	NNW	NNW	W

COLORADO

PREVAILING WIND DIRECTION

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
AKRON AP, CO (KAKO). WIND R	W	W	N	N	N	S	S	S	S	S	W	W	W
ALAMOSA AP, CO (KALS). WIND	S	S	S	S	S	S	S	S	S	S	S	S	S
ASPEN-PITKIN COUNTY AP, CO (	S	S	S	S	S	SSW	SSW	SSW	S	SSW	S	S	S
BOULDER-JEFFERSON CTY AP, CO	W	W	W	N	N	N	N	NNW	N	N	W	W	W
BUCKLEY AFB, CO (KBFK). WIN	S	S	S	S	S	S	S	S	S	S	S	S	S
BURLINGTON AP, CO (KITR). W	W	S	N	N	S	S	S	S	S	S	W	N	S
COLORADO SPRINGS AP, CO (KCO	N	N	N	N	N	N	N	N	N	N	N	N	N
CORTEZ AP, CO (KCEZ). WIND	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE
CRAIG AP, CO (KCAG). WIND R	W	W	W	W	W	W	E	E	W	W	W	W	W
DENVER AIRPORT, CO (KDEN).	S	S	S	N	S	S	S	S	S	S	S	S	S
DENVER-CENTENNIAL AP, CO (KA	S	S	S	N	S	S	S	S	S	S	S	S	S
DURANGO AIRPORT, CO (KDRO).	N	N	N	WSW	W	N	N	N	N	N	N	N	N
EAGLE AIRPORT, CO (KEGE). W	E	E	E	W	W	WSW	E	E	E	E	E	E	E
FORT CARSON-BUTTS AFB, CO (K	N	N	N	N	N	N	N	N	N	N	N	N	N
FORT COLLINS-LOVELAND AP, CO	N	N	N	N	N	N	N	N	N	N	N	N	N
GRAND JUNCTION AP, CO (KGJT)	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	E	E	ESE
GREELEY AIRPORT, CO (KGXY).	N	N	N	N	E	E	E	E	E	N	N	N	N
GUNNISON AIRPORT, CO (KGUC).	N	N	N	W	N	N	N	N	N	N	N	N	N
HAYDEN AIRPORT, CO (KHDN).	ESE	ESE	ESE	W	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE
LA JUNTA AIRPORT, CO (KLHX).	W	W	W	W	E	E	E	E	W	W	W	W	W
LAMAR AIRPORT, CO (KLAA). W	W	W	E	N	S	S	S	S	S	E	W	W	W
LA VETA PASS, CO (KVTP). WI	WSW	WSW	WSW	WSW	SW	SW	N	S	WSW	SW	WSW	WSW	WSW
LEADVILLE AIRPORT, CO (KLXV)	N	N	N	N	N	W	N	N	N	N	N	N	N
LIMON MUNI AP, CO (KLIC). W	N	N	N	N	N	S	S	S	N	N	N	N	N
MEEKER AIRPORT, CO (KEEO).	NE	NE	NE	NE	NE	NE	NE	ENE	ENE	NE	NE	NE	NE
MONTROSE AP, CO (KMTJ). WIN	SE	SSE	SE	SE	SE	SE	SE	SE	SE	SE	SSE	SSE	SE
MONARCH PASS, CO (KMYP). WI	WSW	WSW	WSW	WSW	WSW	WSW	NE	WSW	WSW	WSW	WSW	WSW	WSW
MONUMENT PASS, CO (KMNH). WI	SSW	S	S	S	S	S	S	S	S	S	S	SW	S
PUEBLO AIRPORT, CO (KPUB).	W	W	E	E	E	E	E	E	E	E	W	W	E
RED CLIFF PASS, CO (KCCU).	W	WNW	W	W	WSW	S	S	W	W	W	W	W	W
RIFLE AIRPORT, CO (KRIL). W	S	S	W	W	W	W	W	W	W	W	S	S	W

California Environmental Protection Agency
Air Resources Board

Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages

at San Bernardino-4th Street

	2014		2015		2016	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National 2015 Std (0.070 ppm):						
First High:	Aug 30	0.099	Jun 20	0.117	Aug 30	0.118
Second High:	Jul 13	0.097	May 30	0.107	Jul 29	0.116
Third High:	Jul 30	0.095	Jun 19	0.106	Jun 29	0.115
Fourth High:	Jul 31	0.095	Jun 18	0.105	Jun 2	0.114
National 2008 Std (0.075 ppm):						
First High:	Aug 30	0.099	Jun 20	0.117	Aug 30	0.118
Second High:	Jul 13	0.097	May 30	0.107	Jul 29	0.116
Third High:	Jul 30	0.095	Jun 19	0.106	Jun 29	0.115
Fourth High:	Jul 31	0.095	Jun 18	0.105	Jun 2	0.114
National 2015 Std (0.070 ppm):						
# Days Above the Standard:		75		78		106
Nat'l Standard Design Value:		0.097		0.099		0.104
National Year Coverage:		97		93		98
National 2008 Std (0.075 ppm):						
# Days Above the Standard:		51		57		76
Nat'l Standard Design Value:		0.097		0.099		0.104
National Year Coverage:		97		92		97

Notes:

Eight-hour ozone averages and related statistics are available at San Bernardino-4th Street between 1986 and 2016. Some years in this range may not be represented.

All averages expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard exclude those 8-hour averages that have first hours between midnight and 6:00 am, Pacific Standard Time.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard include only those 8-hour averages from days that have sufficient data for the day to be considered valid.

Daily maximum 8-hour averages associated with the National 0.075 ppm and 0.08 ppm standards may come from days that don't have sufficient data for the day to be considered valid, provided the daily maximum 8-hour average itself includes sufficient data to be considered valid.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means

that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

California Environmental Protection Agency
Air Resources Board

Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements

at San Bernardino-4th Street

	2014		2015		2016	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Jul 24	0.121	Jun 20	*0.134*	Jul 22	*0.158*
Second High:	Jul 13	0.119	Sep 24	*0.132*	Jul 29	*0.146*
Third High:	Aug 30	0.117	Jun 19	*0.129*	Aug 30	*0.143*
Fourth High:	May 17	0.116	Sep 26	*0.126*	Jun 28	*0.138*
California:						
# Days Above the Standard:		38		52		70
California Designation Value:		0.12		0.13		0.14
Expected Peak Day Concentration:		0.123		0.128		0.136
National:						
# Days Above the Standard:		*0*		*6*		*10*
3-Year Estimated Expected Number of Exceedance Days:		*0.7*		*2.8*		*5.5*
1-Year Estimated Expected Number of Exceedance Days:		*0.0*		*6.3*		*10.2*
Nat'l Standard Design Value:		*0.122*		*0.129*		*0.138*
Year Coverage:		98		93		95

Notes:

Hourly ozone measurements and related statistics are available at San Bernardino-4th Street between 1986 and 2016. Some years in this range may not be represented.

All concentrations expressed in parts per million.

The national 1-hour ozone standard was revoked in June 2005. Statistics related to the national 1-hour ozone standard are shown in or .

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Monitor Values Report

Geographic Area: San Bernardino County, CA
Pollutant: CO
Year: 2014
Exceptional Events: Excluded (if any)

Obs	First Max 8hr	Second Max 8hr	Days 8hr Max >STD	First Max 1hr	Second Max 1hr	Days 1hr Max >STD	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
7524	2.6	2.6	0	3.1	2.7	0	None	1	060710001	200 E. Buena Vista, Barstow	Barstow	San Bernardino	CA	09
7952	1.1	1.1	0	3.9	3.6	0	None	1	060710306	14306 Park Ave., Victorville, Ca	Victorville	San Bernardino	CA	09
7640	1.2	1.1	0	2.9	2.6	0	None	1	060711004	1350 San Bernardino Rd., Upland	Upland	San Bernardino	CA	09
7300	1.3	1.2	0	2.6	2.2	0	None	1	060712002	14360 Arrow Blvd., Fontana	Fontana	San Bernardino	CA	09
7756	2.4	1.5	0	4.1	2.9	0	None	1	060719004	24302 4th St., San Bernardino, Ca.	San Bernardino	San Bernardino	CA	09

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated by state, local, and tribal organizations who own and submit the data.

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <https://www.epa.gov/air-data>
Generated: July 28, 2017

Monitor Values Report

Geographic Area: San Bernardino County, CA
Pollutant: CO
Year: 2015
Exceptional Events: Excluded (if any)

Obs	First Max 8hr	Second Max 8hr	Days 8hr Max >STD	First Max 1hr	Second Max 1hr	Days 1hr Max >STD	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
6205	0.6	0.6	0	2.2	0.8	0	None	1	060710001	200 E. Buena Vista, Barstow	Barstow	San Bernardino	CA	09
8572	2.6	2.5	0	2.7	2.7	0	None	1	060710026	Nw Corner Interstate 10 & Etiwanda Ave	Ontario	San Bernardino	CA	09
7837	5.1	4.4	0	17.5	15.5	0	None	1	060710306	14306 Park Ave., Victorville, Ca	Victorville	San Bernardino	CA	09
8061	1.3	1.2	0	2.1	2	0	None	1	060711004	1350 San Bernardino Rd., Upland	Upland	San Bernardino	CA	09
7823	1.2	1.1	0	2.8	2.2	0	None	1	060712002	14360 Arrow Blvd., Fontana	Fontana	San Bernardino	CA	09
8050	1.8	1.8	0	2.3	2.1	0	None	1	060719004	24302 4th St., San Bernardino, Ca.	San Bernardino	San Bernardino	CA	09

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Source: U.S. EPA AirData <https://www.epa.gov/air-data>
Generated: July 28, 2017

Monitor Values Report

Geographic Area: San Bernardino County, CA
Pollutant: CO
Year: 2016
Exceptional Events: Excluded (if any)

Obs	First Max 8hr	Second Max 8hr	Days 8hr Max >STD	First Max 1hr	Second Max 1hr	Days 1hr Max >STD	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
8250	1.2	1	0	3.8	3.8	0	None	1	060710001	200 E. Buena Vista, Barstow	Barstow	San Bernardino	CA	09
8661	1.3	1.2	0	1.7	1.6	0	None	1	060710026	Nw Corner Interstate 10 & Etiwanda Ave	Ontario	San Bernardino	CA	09
7981	2.6	1.5	0	11.6	6.5	0	None	1	060710306	14306 Park Ave., Victorville, Ca	Victorville	San Bernardino	CA	09
8290	1.3	1.2	0	1.7	1.7	0	None	1	060711004	1350 San Bernardino Rd., Upland	Upland	San Bernardino	CA	09
8075	1	0.9	0	1.7	1.5	0	None	1	060712002	14360 Arrow Blvd., Fontana	Fontana	San Bernardino	CA	09
8241	1.7	1.6	0	2.2	2.1	0	None	1	060719004	24302 4th St., San Bernardino, Ca.	San Bernardino	San Bernardino	CA	09

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated by state, local, and tribal organizations who own and submit the data.

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <https://www.epa.gov/air-data>
Generated: July 28, 2017

California Environmental Protection Agency
Air Resources Board

Top 4 Summary: Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

at San Bernardino-4th Street

	2014		2015		2016	
	Date	Measurement	Date	Measurement	Date	Measurement
National:						
First High:	Feb 14	72.6	Feb 5	71.4	Oct 27	60.1
Second High:	Nov 7	60.7	Feb 4	70.7	Nov 15	59.0
Third High:	Feb 15	60.5	Feb 3	61.7	Feb 12	54.9
Fourth High:	Feb 12	60.1	Jan 20	58.1	Feb 25	54.4
California:						
First High:	Feb 14	72	Feb 5	71	Oct 27	60
Second High:	Feb 12	60	Feb 4	70	Nov 15	59
Third High:	Feb 15	60	Feb 3	61	Feb 12	54
Fourth High:	Nov 7	60	Jan 20	58	Feb 25	54
National:						
1-Hour Standard Design Value:		*		54		53
1-Hour Standard 98th Percentile:		56.1		52.7		51.4
# Days Above the Standard:		0		0		0
Annual Standard Design Value:		18		15		17
California:						
1-Hour Std Designation Value:		70		70		70
Expected Peak Day Concentration:		70		69		66
# Days Above the Standard:		0		0		0
Annual Std Designation Value:		18		18		18
Annual Average:		18		15		16
Year Coverage:		95		98		92

Notes:

Hourly nitrogen dioxide measurements and related statistics are available at San Bernardino-4th Street between 1986 and 2016. Some years in this range may not be represented.

All concentrations expressed in parts per billion.

An exceedance of a standard is not necessarily related to a violation of the standard.

California Environmental Protection Agency
Air Resources Board

Top 4 Summary: Highest 4 Daily 24-Hour PM10 Averages

at San Bernardino-4th Street

	2014		2015		2016	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Nov 16	157.2	Dec 26	187.0	Jul 30	277.0
Second High:	Apr 30	141.0	Sep 9	78.0	Jul 5	91.0
Third High:	Apr 29	135.2	Feb 17	57.0	Jul 23	65.0
Fourth High:	Aug 18	104.3	Aug 28	51.0	Sep 27	60.0
California:						
First High:	Apr 29	131.0	Dec 26	180.0		*
Second High:	Mar 24	61.0	Sep 9	75.0		*
Third High:	Jan 29	50.0	Feb 17	55.0		*
Fourth High:	Apr 17	50.0	Aug 28	49.0		*
National:						
Estimated # Days > 24-Hour Std:		1.0		7.1		*
Measured # Days > 24-Hour Std:		1		1		1
3-Yr Avg Est # Days > 24-Hr Std:		1.0		2.0		*
Annual Average:		*35.8*		*33.0*		*36.7*
3-Year Average:		*34*		*33*		*35*
California:						
Estimated # Days > 24-Hour Std:		12.0		19.2		*
Measured # Days > 24-Hour Std:		2		3		*
Annual Average:		32.7		31.7		*
3-Year Maximum Annual Average:		33		33		*
Year Coverage:		0		96		92

Notes:

Daily PM10 averages and related statistics are available at San Bernardino-4th Street between 1989 and 2016. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

The national annual average PM10 standard was revoked in December 2006 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics* .

An exceedance of a standard is not necessarily related to a violation of the standard.

California Environmental Protection Agency
Air Resources Board

Top 4 Summary: Highest 4 Daily 24-Hour PM2.5 Averages

at San Bernardino-4th Street

	2014		2015		2016	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Feb 19	32.2	Feb 14	53.5	Jul 5	53.5
Second High:	Mar 24	28.1	Jan 3	35.8	Jan 1	32.5
Third High:	Jan 20	25.7	Feb 20	33.6	Dec 11	32.5
Fourth High:	Jan 11	25.2	Feb 17	32.3	Oct 27	27.1
California:						
First High:	Feb 19	32.2	Feb 14	53.5	Jul 5	53.5
Second High:	Mar 24	28.1	Jan 3	35.8	Jan 1	32.5
Third High:	Jan 20	25.7	Feb 20	33.6	Dec 11	32.5
Fourth High:	Jan 11	25.2	Feb 17	32.3	Oct 27	27.1
National:						
Estimated # Days > 24-Hour Std:		*		6.9		3.0
Measured # Days > 24-Hour Std:		0		2		1
24-Hour Standard Design Value:		*		*		*
24-Hour Standard 98th Percentile:		*		33.6		32.5
2006 Annual Std Design Value:		*		*		*
2013 Annual Std Design Value:		*		*		*
Annual Average:		*		10.7		11.1
California:						
Annual Std Designation Value:		*		*		11
Annual Average:		*		*		11.1
Year Coverage:		42		89		92

Notes:

Daily PM2.5 averages and related statistics are available at San Bernardino-4th Street between 1999 and 2016. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

An exceedance of a standard is not necessarily related to a violation of the standard.

State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

All values listed above represent midnight-to-midnight 24-hour averages and may be related to an exceptional event.

State and national statistics may differ for the following reasons:

- State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.
- State statistics for 1998 and later are based on local conditions (except for sites in the South Coast Air Basin, where State statistics for 2002 and later are based on local conditions). National statistics are based on standard conditions.
- State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard; Estimated days mathematically estimates how many days concentrations would have been greater than the level of the standard had each day been monitored.

3-Year statistics represent the listed year and the 2 years before the listed year.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Appendix C Construction Emissions Modeling Outputs

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Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Mt Vernon Bridge Replacement

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.69	13.39	3.95	26.73	0.18	26.55	5.63	0.11	5.52	0.03	3,277.24	0.59	0.06	3,309.97
Grading/Excavation	4.98	90.74	19.10	27.45	0.90	26.55	6.13	0.61	5.52	0.20	19,700.36	4.65	0.29	19,903.40
Drainage/Utilities/Sub-Grade	3.25	61.10	10.67	27.14	0.59	26.55	5.98	0.46	5.52	0.12	11,687.97	2.70	0.13	11,795.56
Paving	0.66	14.61	2.83	0.18	0.18	0.00	0.10	0.10	0.00	0.03	3,239.72	0.56	0.06	3,271.39
Maximum (pounds/day)	4.98	90.74	19.10	27.45	0.90	26.55	6.13	0.61	5.52	0.20	19,700.36	4.65	0.29	19,903.40
Total (tons/construction project)	0.97	17.93	3.61	6.63	0.18	6.45	1.47	0.13	1.34	0.04	3,770.98	0.87	0.05	3,808.63

Notes:

Project Start Year ->	2021
Project Length (months) ->	26
Total Project Area (acres) ->	53
Maximum Area Disturbed/Day (acres) ->	3
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	160	0	300	0	360	40
Grading/Excavation	640	0	1,200	0	1,280	40
Drainage/Utilities/Sub-Grade	160	0	300	0	880	40
Paving	0	160	0	300	480	40

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Mt Vernon Bridge Replacement

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.02	0.38	0.11	0.76	0.01	0.76	0.16	0.00	0.16	0.00	93.73	0.02	0.00	85.88
Grading/Excavation	0.64	11.68	2.46	3.53	0.12	3.42	0.79	0.08	0.71	0.03	2,535.44	0.60	0.04	2,323.84
Drainage/Utilities/Sub-Grade	0.28	5.24	0.92	2.33	0.05	2.28	0.51	0.04	0.47	0.01	1,002.83	0.23	0.01	918.13
Paving	0.03	0.63	0.12	0.01	0.01	0.00	0.00	0.00	0.00	0.00	138.98	0.02	0.00	127.32
Maximum (tons/phase)	0.64	11.68	2.46	3.53	0.12	3.42	0.79	0.08	0.71	0.03	2535.44	0.60	0.04	2,323.84
Total (tons/construction project)	0.97	17.93	3.61	6.63	0.18	6.45	1.47	0.13	1.34	0.04	3770.98	0.87	0.05	3,455.17

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model
Data Entry Worksheet

Version 8.1.0

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Mt Vernon Bridge Replacement	
Construction Start Year	2021	Enter a Year between 2014 and 2025 (inclusive)
Project Type	3	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	26.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	1.87	miles
Total Project Area	53.10	acres
Maximum Area Disturbed/Day	2.66	acres
Water Trucks Used?	1	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing	16.00		160.00
	Grading/Excavation	16.00	320.00	320.00
	Drainage/Utilities/Sub-Grade	16.00		160.00
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving	16.00	160.00	

Mitigation Options

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	Tier 4 Equipment	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/ceqa/mitigation.shtml).
Will all off-road equipment be tier 4?	All Tier 4 Equipment	Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		2.60		1/1/2021
Grading/Excavation		11.70		3/22/2021
Drainage/Utilities/Sub-Grade		7.80		3/13/2022
Paving		3.90		11/6/2022
Totals (Months)		26		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		10	300.00
Miles/round trip: Grading/Excavation		30.00		40	1200.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		10	300.00
Miles/round trip: Paving		30.00		0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92
Grading/Excavation (grams/mile)	0.10	0.43	3.56	0.11	0.05	0.02	1,610.89	0.00	0.05	1,627.28
Draining/Utilities/Sub-Grade (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86
Paving (grams/mile)	0.08	0.40	2.20	0.11	0.04	0.01	1,567.27	0.00	0.05	1,583.21
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.07	0.29	2.41	0.08	0.03	0.01	1,067.81	0.00	0.04	1,078.67
Tons per const. Period - Grubbing/Land Clearing	0.00	0.01	0.07	0.00	0.00	0.00	30.54	0.00	0.00	30.85
Pounds per day - Grading/Excavation	0.27	1.14	9.42	0.30	0.14	0.04	4,261.68	0.01	0.14	4,305.04
Tons per const. Period - Grading/Excavation	0.03	0.15	1.21	0.04	0.02	0.01	548.48	0.00	0.02	554.06
Pounds per day - Drainage/Utilities/Sub-Grade	0.06	0.28	2.14	0.07	0.03	0.01	1,055.98	0.00	0.04	1,066.72
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.01	0.02	0.18	0.01	0.00	0.00	90.60	0.00	0.00	91.52
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.04	0.18	1.47	0.05	0.02	0.01	669.62	0.00	0.02	676.43

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		10	300.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92
Grading/Excavation (grams/mile)	0.10	0.43	3.56	0.11	0.05	0.02	1,610.89	0.00	0.05	1,627.28
Draining/Utilities/Sub-Grade (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86
Paving (grams/mile)	0.08	0.40	2.20	0.11	0.04	0.01	1,567.27	0.00	0.05	1,583.21
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.05	0.26	1.46	0.07	0.03	0.01	1,036.57	0.00	0.04	1,047.11
Tons per const. Period - Paving	0.00	0.01	0.06	0.00	0.00	0.00	44.47	0.00	0.00	44.92
Total tons per construction project	0.00	0.01	0.06	0.00	0.00	0.00	44.47	0.00	0.00	44.92

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions User Input	User Override of Worker Commute Default Values	Default Values	Calculated Daily Trips	Calculated Daily VMT
Miles/ one-way trip		20		
One-way trips/day		2		
No. of employees: Grubbing/Land Clearing		9	18	360.00
No. of employees: Grading/Excavation		32	64	1,280.00
No. of employees: Drainage/Utilities/Sub-Grade		22	44	880.00
No. of employees: Paving		12	24	480.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48
Grading/Excavation (grams/mile)	0.02	0.98	0.10	0.05	0.02	0.00	357.66	0.01	0.00	359.08
Draining/Utilities/Sub-Grade (grams/mile)	0.02	0.92	0.09	0.05	0.02	0.00	348.29	0.01	0.00	349.59
Paving (grams/mile)	0.02	0.88	0.09	0.05	0.02	0.00	341.84	0.01	0.00	343.08
Grubbing/Land Clearing (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35
Grading/Excavation (grams/trip)	0.92	2.24	0.17	0.00	0.00	0.00	81.42	0.01	0.01	83.83
Draining/Utilities/Sub-Grade (grams/trip)	0.87	2.06	0.16	0.00	0.00	0.00	79.59	0.01	0.01	81.77
Paving (grams/trip)	0.84	1.95	0.15	0.00	0.00	0.00	78.31	0.01	0.01	80.35
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.05	0.88	0.09	0.04	0.02	0.00	288.99	0.01	0.00	290.24
Tons per const. Period - Grubbing/Land Clearing	0.00	0.03	0.00	0.00	0.00	0.00	8.27	0.00	0.00	8.30
Pounds per day - Grading/Excavation	0.18	3.07	0.31	0.13	0.06	0.01	1,020.77	0.02	0.01	1,025.12
Tons per const. Period - Grading/Excavation	0.02	0.39	0.04	0.02	0.01	0.00	131.37	0.00	0.00	131.93
Pounds per day - Drainage/Utilities/Sub-Grade	0.12	1.98	0.19	0.09	0.04	0.01	683.42	0.01	0.01	686.17
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.01	0.17	0.02	0.01	0.00	0.00	58.64	0.00	0.00	58.87
Pounds per day - Paving	0.06	1.04	0.10	0.05	0.02	0.00	365.89	0.01	0.00	367.31
Tons per const. Period - Paving	0.00	0.04	0.00	0.00	0.00	0.00	15.70	0.00	0.00	15.76
Total tons per construction project	0.04	0.63	0.06	0.03	0.01	0.00	213.97	0.00	0.00	214.87

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions User Input	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Vehicle/Day	Default Values Miles Traveled/Vehicle/Day	Calculated Daily VMT
Grubbing/Land Clearing - Exhaust		1		40.00	40.00
Grading/Excavation - Exhaust		1		40.00	40.00
Drainage/Utilities/Subgrade		1		40.00	40.00
Paving		1		40.00	40.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92
Grading/Excavation (grams/mile)	0.10	0.43	3.56	0.11	0.05	0.02	1,610.89	0.00	0.05	1,627.28
Draining/Utilities/Sub-Grade (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86
Paving (grams/mile)	0.08	0.40	2.20	0.11	0.04	0.01	1,567.27	0.00	0.05	1,583.21
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.01	0.04	0.32	0.01	0.00	0.00	142.37	0.00	0.00	143.82
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	4.07	0.00	0.00	4.11
Pounds per day - Grading/Excavation	0.01	0.04	0.31	0.01	0.00	0.00	142.06	0.00	0.00	143.50
Tons per const. Period - Grading/Excavation	0.00	0.00	0.04	0.00	0.00	0.00	18.28	0.00	0.00	18.47
Pounds per day - Drainage/Utilities/Sub-Grade	0.01	0.04	0.29	0.01	0.00	0.00	140.80	0.00	0.00	142.23
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.02	0.00	0.00	0.00	12.08	0.00	0.00	12.20
Pounds per day - Paving	0.01	0.04	0.19	0.01	0.00	0.00	138.21	0.00	0.00	139.62
Tons per const. Period - Paving	0.00	0.00	0.01	0.00	0.00	0.00	5.93	0.00	0.00	5.99
Total tons per construction project	0.00	0.01	0.08	0.00	0.00	0.00	40.36	0.00	0.00	40.77

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		2.66	26.55	0.76	5.52	0.16
Fugitive Dust - Grading/Excavation		2.66	26.55	3.42	5.52	0.71
Fugitive Dust - Drainage/Utilities/Subgrade		2.66	26.55	2.28	5.52	0.47

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Crawler Tractors	0.24	4.10	0.47	0.02	0.02	0.01	746.02	0.24	0.01	754.06
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Tier 4	Excavators	0.33	8.08	0.66	0.03	0.03	0.01	1,032.04	0.33	0.01	1,043.17
			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	4		Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment

If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing	pounds per day	0.56	12.19	1.13	0.06	0.05	0.02	1,778.06	0.58	0.02	1,797.23
Grubbing/Land Clearing	tons per phase	0.02	0.35	0.03	0.00	0.00	0.00	50.85	0.02	0.00	51.40

Grading/Excavation Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Cranes	0.17	3.01	0.35	0.02	0.02	0.01	546.66	0.18	0.00	552.55
	2		Tier 4	Crawler Tractors	0.47	8.20	0.95	0.05	0.04	0.02	1,491.51	0.48	0.01	1,507.59
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4		Tier 4	Excavators	0.65	16.17	1.31	0.07	0.06	0.02	2,063.94	0.67	0.02	2,086.19
			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Tier 4	Graders	0.38	6.58	0.76	0.04	0.03	0.01	1,211.13	0.39	0.01	1,224.15
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3		Tier 4	Rollers	0.24	6.03	0.49	0.02	0.02	0.01	771.80	0.25	0.01	780.12
			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3		Tier 4	Rubber Tired Loaders	0.57	9.90	1.14	0.06	0.05	0.02	1,789.11	0.58	0.02	1,808.43
	4		Tier 4	Scrapers	1.84	31.87	3.68	0.18	0.17	0.06	5,793.55	1.87	0.05	5,856.01
0.00	4		Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Tier 4	Tractors/Loaders/Backhoes	0.19	4.73	0.38	0.02	0.02	0.01	608.14	0.20	0.01	614.69
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grading/Excavation	pounds per day	4.52	86.49	9.06	0.45	0.42	0.15	14,275.85	4.62	0.13	14,429.74
Grading/Excavation	tons per phase	0.58	11.13	1.17	0.06	0.05	0.02	1,837.30	0.59	0.02	1,857.11

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Air Compressors	0.10	2.44	0.20	0.01	0.01	0.00	375.26	0.02	0.00	376.72
			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Generator Sets	0.16	4.06	0.33	0.02	0.02	0.01	623.04	0.03	0.00	625.17
	2		Tier 4	Graders	0.38	6.58	0.76	0.04	0.03	0.01	1,211.21	0.39	0.01	1,224.23
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Plate Compactors	0.02	0.36	0.32	0.02	0.02	0.00	34.48	0.00	0.00	34.65
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Pumps	0.16	4.06	0.33	0.02	0.02	0.01	623.04	0.03	0.00	625.23
			Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Rough Terrain Forklifts	0.11	2.61	0.21	0.01	0.01	0.00	333.75	0.11	0.00	337.35
			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4		Tier 4	Scrapers	1.84	31.87	3.68	0.18	0.17	0.06	5,801.06	1.88	0.05	5,863.59
4.00	4		Tier 4	Signal Boards	0.10	2.08	1.85	0.10	0.10	0.00	197.25	0.02	0.00	198.26
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Tier 4	Tractors/Loaders/Backhoes	0.19	4.73	0.38	0.02	0.02	0.01	608.69	0.20	0.01	615.24
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment

If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Drainage/Utilities/Sub-Grade	pounds per day	3.06	58.80	8.06	0.42	0.38	0.10	9,807.78	2.68	0.09	9,900.43
Drainage/Utilities/Sub-Grade	tons per phase	0.26	5.04	0.69	0.04	0.03	0.01	841.51	0.23	0.01	849.46

Paving Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Pavers	0.14	3.45	0.28	0.01	0.01	0.00	441.23	0.14	0.00	445.99
	1		Tier 4	Paving Equipment	0.12	3.08	0.25	0.01	0.01	0.00	391.48	0.13	0.00	395.70
			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Rollers	0.08	2.01	0.16	0.01	0.01	0.00	257.28	0.08	0.00	260.05
			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	4		Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Tier 4	Tractors/Loaders/Backhoes	0.19	4.73	0.38	0.02	0.02	0.01	609.06	0.20	0.01	615.61
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Paving	pounds per day	0.54	13.27	1.08	0.05	0.05	0.02	1,699.05	0.55	0.02	1,717.35
	Paving	tons per phase	0.02	0.57	0.05	0.00	0.00	0.00	72.89	0.02	0.00	73.67
Total Emissions all Phases (tons per construction period) =>			0.88	17.09	1.94	0.10	0.09	0.03	2,802.55	0.86	0.03	2,831.64

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		85		8
Excavators		163		8
Forklifts		89		8
Generator Sets		84		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		46		8

END OF DATA ENTRY SHEET

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Appendix D Project-Level CO Protocol Flowchart

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2.13 Mitigation Measures

For the purposes of the Protocol a mitigation measure is anything added to the project design concept or scope that is intended to reduce local CO emissions. Such measures are often added to projects as a result of the environmental review process of the RTP. Applicable mitigation measures shall be accounted for in the project-level CO reviews only where there are written commitments from the project sponsor(s) and/or operator to the implementation of such measures. "Written commitments must also be obtained for project-level mitigation…measures which are conditions for making conformity determinations for a transportation plan or TIP and are included in the project design concept and scope which is used in the regional emissions analysis…or used in the project-level hot-spot analysis" [40 CFR §§ 93.125(a) and 123(c)(4)]. Other issues concerning the enforceability of project-level mitigation measures are contained in 40 CFR § 93.125(b)-(d). The project sponsor(s) should consult these sections prior to making the final conformity determination.

2.14 Projects Exempt from All Emissions Analyses

Certain projects are ordinarily exempt from all emissions analyses according to Table 2 of 40 CFR § 93.126, reproduced in Table 1 of the Protocol. However, the exempt status may be revoked if the MPO, in consultation with the local air district, the California Air Resources Board (CARB), Caltrans, EPA, and the FHWA (in the case of a highway project) or the FTA (in the case of a transit project) concur that a project has potential adverse local and/or regional emissions impacts for any reason [40 CFR § 93.126].

Table 1. Projects Exempt from All Emissions Analyses

Safety
Railroad/highway crossing
Hazard elimination program
Safer non-Federal-aid system roads
Shoulder improvements
Increasing sight distance
Safety improvement program
Traffic control devices and operating assistance other than signalization projects
Railroad/highway crossing warning devices
Guardrails, median barriers, crash cushions
Pavement resurfacing and/or rehabilitation
Pavement marking demonstration
Emergency relief (23 U.S.C. 125)
Fencing
Skid treatments
Safety roadside rest areas
Adding medians
Truck climbing lanes outside the urbanized area
Lighting improvements
Widening narrow pavements or reconstructing bridges (no additional travel lanes)
Emergency truck pullovers
Mass Transit
Operating assistance to transit agencies
Purchase of support vehicles
Rehabilitation of transit vehicles[2]
Purchase of office, shop, and operating equipment for existing facilities
Purchase of operating equipment for vehicles (e.g. radios, fareboxes, lifts, etc.)
Construction of renovation of power, signal, and communications systems
Construction of small passenger shelters and information kiosks
Reconstruction or renovation of transit buildings and structures (e.g., rail or bus buildings, storage and maintenance facilities, stations, terminals, and ancillary structures).
Rehabilitation or reconstruction of track structures, track and track bed in existing right-of-way
Purchase of new buses and rail cars to replace exiting vehicles or for minor expansions of the fleet[2]
Construction of new bus or rail storage/maintenance facilities categorically excluded in 23 CFR Part 771
Air Quality
Continuation of ride-sharing and van-pooling promotion activities at current level
Bicycle and pedestrian facilities

Table 1 (continued). Projects Exempt from all Emissions Analyses

Other

[2] PM_{10} nonattainment or maintenance areas, such projects are exempt only if they are in compliance with control measures in the applicable implementation plan.

Specific activities which do not involve or lead directly to construction, such as: Planning and technical studies Grants for training and research programs Planning activities conducted pursuant to titles 23 and 49 U.S.C. Federal-aid systems revisions
Engineering to assess social, economic, and environmental effects of the proposed action or alternatives to that action
Noise attenuation
Emergency or hardship advance land acquisitions [23 CFR 712.204(d)]
Acquisition of scenic easements
Plantings, landscaping, etc.
Sign removal
Directional and informational signs
Transportation enhancement activities (except rehabilitation and operation of historic transportation buildings, structures, or facilities)
Repair of damage caused by natural disasters, civil unrest, or terrorist acts, except projects involving substantial functional, locational or capacity changes

Source: 40 CFR Part 93, Table 2

2.15 Projects Exempt from Regional Emissions Analyses

Certain projects are ordinarily exempt from all regional emissions analyses according to Table 3 of 40 CFR § 93.127, reproduced in Table 2 of the Protocol. However, the exempt status may be revoked if the MPO, in consultation with the local air district, the California Air Resources Board (CARB), Caltrans, EPA, and the FHWA (in the case of a highway project) or the FTA (in the case of a transit project) concur that a project has potential regional emissions impacts for any reason [40 CFR § 93.127].

Table 2. Projects Exempt from Regional Emissions Analysis

Intersection channelization projects
Intersection signalization projects at individual intersections
Interchange reconfiguration projects
Changes in vertical and horizontal alignment
Truck size and weight inspection stations
Bus terminals and transfer points

Source: 40 CFR Part 93, Table 3

2.16 Traffic signal synchronization projects

Traffic signal synchronization projects may be approved, funded, and implemented without satisfying the requirements of the conformity rule. However, all subsequent regional emissions analyses required by 40 CFR 93.118 and 93.119 for transportation plans, TIPs, or projects not from a conforming plan and TIP must include such regionally significant traffic signal synchronization projects. [FR Doc. 97–20968 Filed 8–14–97; 8:45 am]

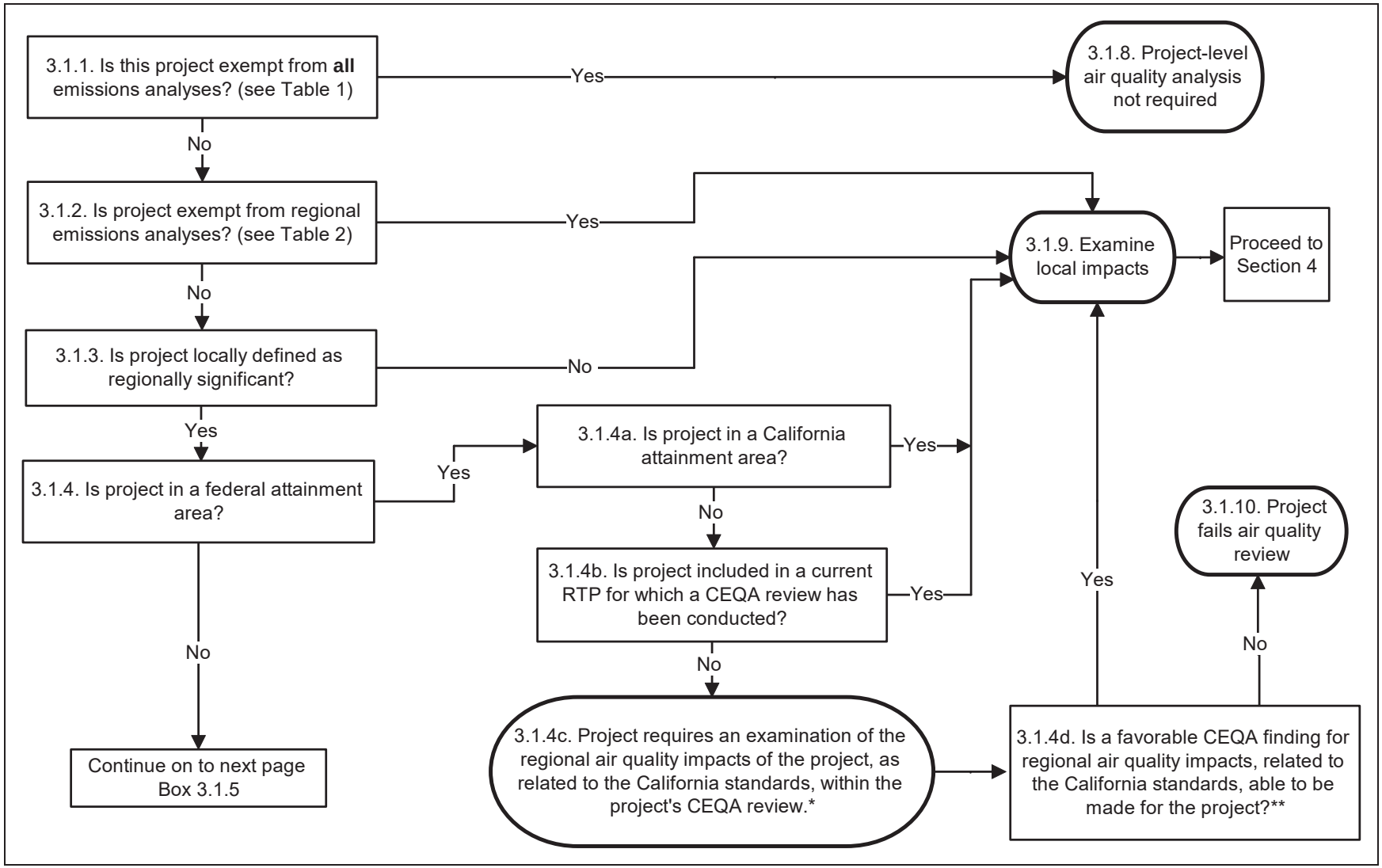

Figure 1. Requirements for New Projects

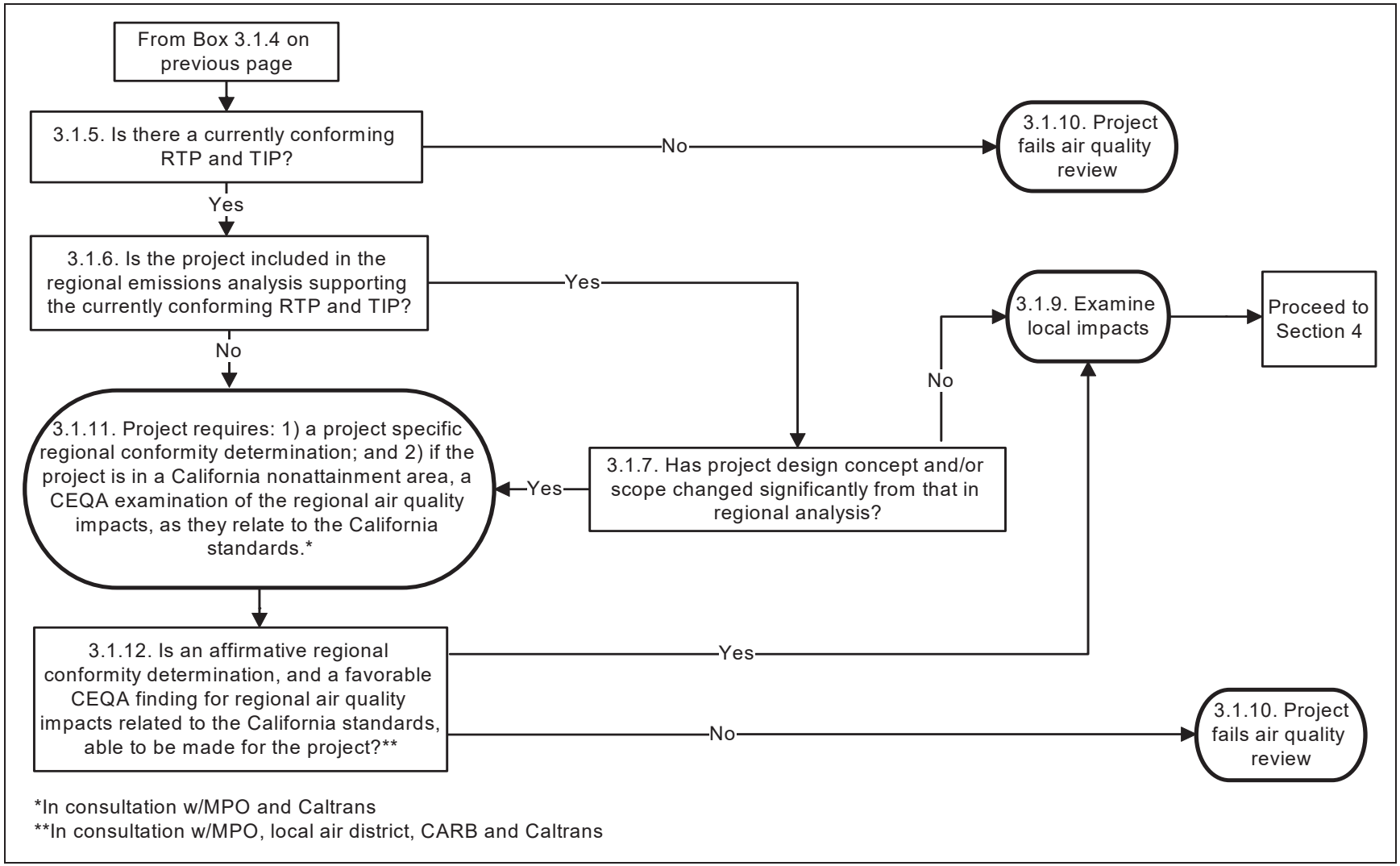

Figure 1 (cont.). Requirements for New Projects

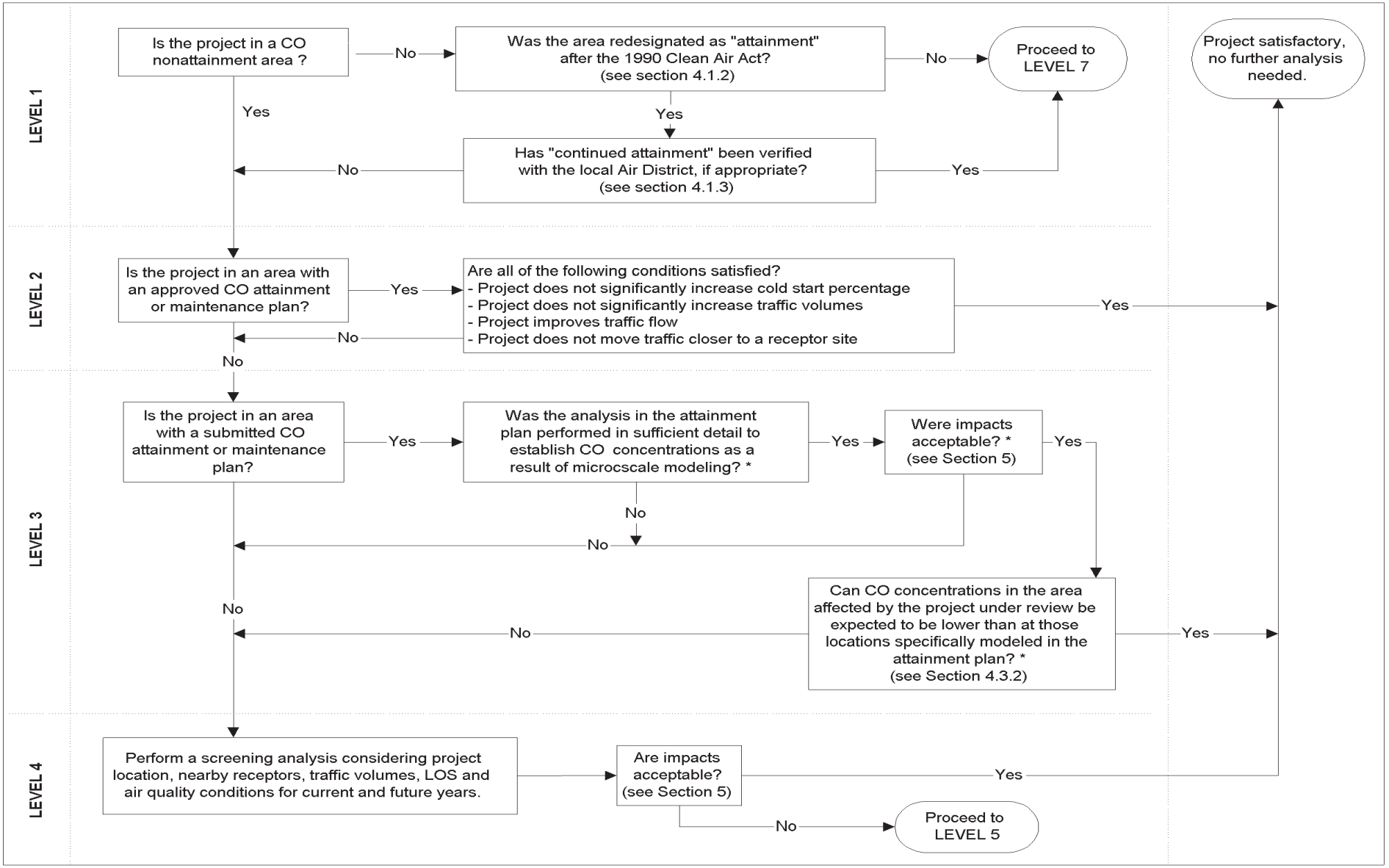

Figure 3. Local CO Analysis

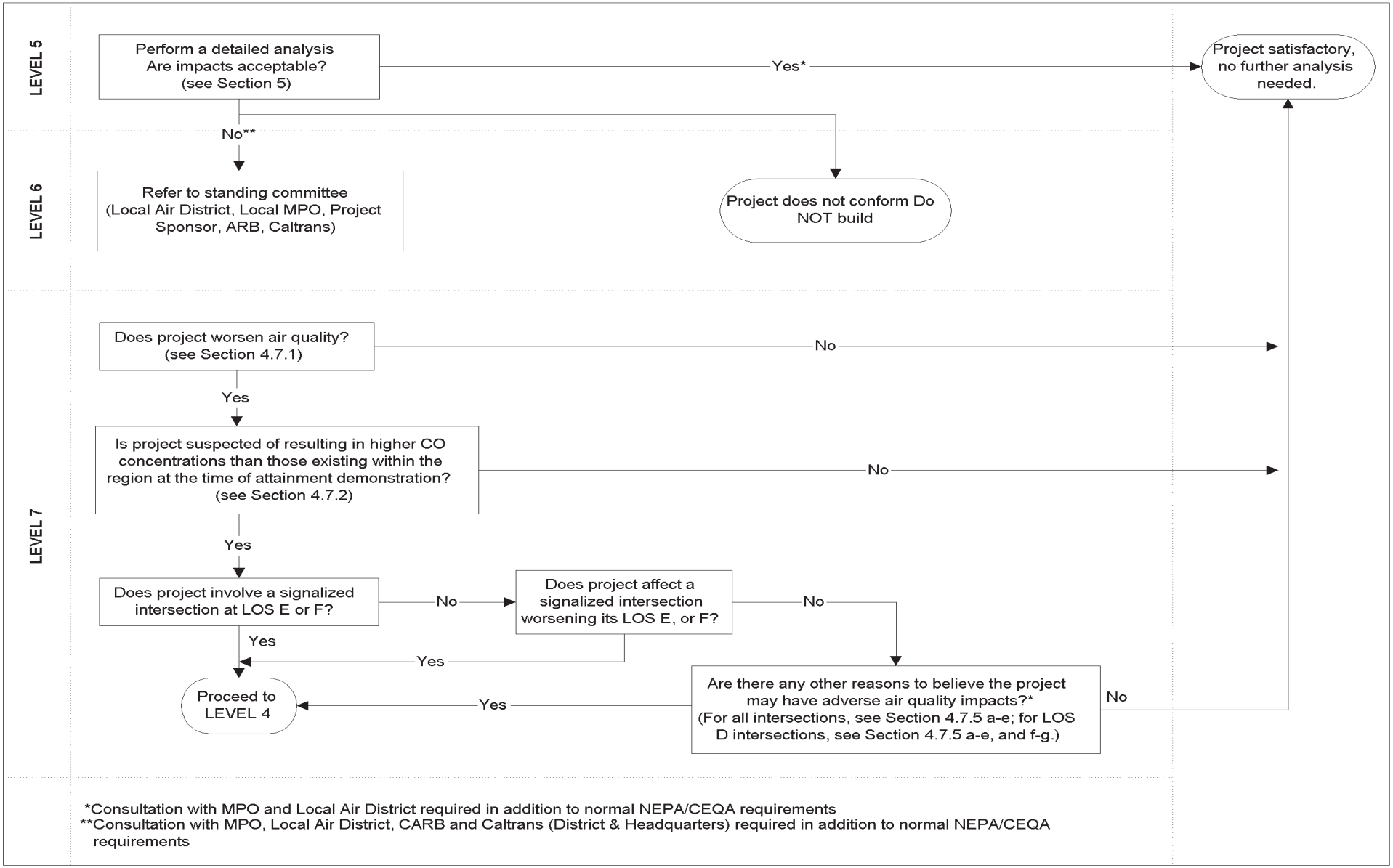

Figure 3 (cont.). Local CO Analysis

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Appendix E Compliance with 40 CFR 1502.22 Language

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Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents

Appendix C - Council on Environmental Quality (CEQ) Provisions Covering Incomplete or Unavailable Information (40 CFR 1502.22)

PDF files can be viewed with the Acrobat® Reader®

Sec. 1502.22 Incompete Or Unavailable Information

When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking.

- If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement.
- If the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known, the agency shall include within the environmental impact statement:
    - a statement that such information is incomplete or unavailable;
    - a statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment;
    - a summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment; and
    - the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community. For the purposes of this section, "reasonably foreseeable" includes impacts that have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.
- The amended regulation will be applicable to all environmental impact statements for which a Notice to Intent (40 CFR 1508.22) is published

in the Federal Register on or after May 27, 1986. For environmental impact statements in progress, agencies may choose to comply with the requirements of either the original or amended regulation.

Incomplete Or Unavailable Information For Project-Specific MSAT Health Impacts Analysis

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in mobile source air toxic (MSAT) emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The Environmental Protection Agency (EPA) is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, https://www.epa.gov/iris). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). A number of HEI studies are summarized in Appendix D of FHWA's Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are: cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI Special Report 16, https://www.healtheffects.org/publication/mobile-source-air-toxics-critical-review-literature-exposure-and-health-effects) or in the future as vehicle emissions substantially decrease.

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts – each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT

health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (Special Report 16, https://www.healtheffects.org/publication/mobile-source-air-toxics-critical-review-literature-exposure-and-health-effects). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA states that with respect to diesel engine exhaust, "[t]he absence of adequate data to develop a sufficiently confident dose-response relationship from the epidemiologic studies has prevented the estimation of inhalation carcinogenic risk (EPA IRIS database, Diesel Engine Exhaust, Section II.C. https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0642.htm#quainhal)."

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable

(https://www.cadc.uscourts.gov/internet/opinions.nsf/284E23FFE079CD59852578000050C9DA/$file/07-1053-1120274.pdf).

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

Due to the limitations cited, a discussion such as the example provided in this Appendix (reflecting any local and project-specific circumstances), should be included regarding incomplete or unavailable information in accordance with Council on Environmental Quality (CEQ) regulations [40 CFR 1502.22(b)]. The FHWA Headquarters and Resource Center staff, Victoria Martinez (787) 771-2524, James Gavin (202) 366-1473, and Michael Claggett (505) 820-2047, are available to provide guidance and technical assistance and support.

Appendix F SCAQMD Rule 403 Fugitive Dust Control

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(Adopted May 7, 1976) (Amended November 6, 1992)
(Amended July 9, 1993) (Amended February 14, 1997)
(Amended December 11, 1998)(Amended April 2, 2004)
(Amended June 3, 2005)

RULE 403. FUGITIVE DUST

(a) Purpose

The purpose of this Rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.

(b) Applicability

The provisions of this Rule shall apply to any activity or man-made condition capable of generating fugitive dust.

(c) Definitions

(1) ACTIVE OPERATIONS means any source capable of generating fugitive dust, including, but not limited to, earth-moving activities, construction/demolition activities, disturbed surface area, or heavy- and light-duty vehicular movement.

(2) AGGREGATE-RELATED PLANTS are defined as facilities that produce and / or mix sand and gravel and crushed stone.

(3) AGRICULTURAL HANDBOOK means the region-specific guidance document that has been approved by the Governing Board or hereafter approved by the Executive Officer and the U.S. EPA. For the South Coast Air Basin, the Board-approved region-specific guidance document is the Rule 403 Agricultural Handbook dated December 1998. For the Coachella Valley, the Board-approved region-specific guidance document is the Rule 403 Coachella Valley Agricultural Handbook dated April 2, 2004.

(4) ANEMOMETERS are devices used to measure wind speed and direction in accordance with the performance standards, and maintenance and calibration criteria as contained in the most recent Rule 403 Implementation Handbook.

(5) BEST AVAILABLE CONTROL MEASURES means fugitive dust control actions that are set forth in Table 1 of this Rule.

(6) BULK MATERIAL is sand, gravel, soil, aggregate material less than two inches in length or diameter, and other organic or inorganic particulate matter.

(7) CEMENT MANUFACTURING FACILITY is any facility that has a cement kiln at the facility.

(8) CHEMICAL STABILIZERS are any non-toxic chemical dust suppressant which must not be used if prohibited for use by the Regional Water Quality Control Boards, the California Air Resources Board, the U.S. Environmental Protection Agency (U.S. EPA), or any applicable law, rule or regulation. The chemical stabilizers shall meet any specifications, criteria, or tests required by any federal, state, or local water agency. Unless otherwise indicated, the use of a non-toxic chemical stabilizer shall be of sufficient concentration and application frequency to maintain a stabilized surface.

(9) COMMERCIAL POULTRY RANCH means any building, structure, enclosure, or premises where more than 100 fowl are kept or maintained for the primary purpose of producing eggs or meat for sale or other distribution.

(10) CONFINED ANIMAL FACILITY means a source or group of sources of air pollution at an agricultural source for the raising of 3,360 or more fowl or 50 or more animals, including but not limited to, any structure, building, installation, farm, corral, coop, feed storage area, milking parlor, or system for the collection, storage, or distribution of solid and liquid manure; if domesticated animals, including horses, sheep, goats, swine, beef cattle, rabbits, chickens, turkeys, or ducks are corralled, penned, or otherwise caused to remain in restricted areas for commercial agricultural purposes and feeding is by means other than grazing.

(11) CONSTRUCTION/DEMOLITION ACTIVITIES means any on-site mechanical activities conducted in preparation of, or related to, the building, alteration, rehabilitation, demolition or improvement of property, including, but not limited to the following activities: grading, excavation, loading, crushing, cutting, planing, shaping or ground breaking.

(12) CONTRACTOR means any person who has a contractual arrangement to conduct an active operation for another person.

(13) DAIRY FARM is an operation on a property, or set of properties that are contiguous or separated only by a public right-of-way, that raises cows or

produces milk from cows for the purpose of making a profit or for a livelihood. Heifer and calf farms are dairy farms.

(14) DISTURBED SURFACE AREA means a portion of the earth's surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for emission of fugitive dust. This definition excludes those areas which have:

(A) been restored to a natural state, such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby natural conditions;

(B) been paved or otherwise covered by a permanent structure; or

(C) sustained a vegetative ground cover of at least 70 percent of the native cover for a particular area for at least 30 days.

(15) DUST SUPPRESSANTS are water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive dust emissions.

(16) EARTH-MOVING ACTIVITIES means the use of any equipment for any activity where soil is being moved or uncovered, and shall include, but not be limited to the following: grading, earth cutting and filling operations, loading or unloading of dirt or bulk materials, adding to or removing from open storage piles of bulk materials, landfill operations, weed abatement through disking, and soil mulching.

(17) DUST CONTROL SUPERVISOR means a person with the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule 403 requirements at an active operation.

(18) FUGITIVE DUST means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person.

(19) HIGH WIND CONDITIONS means that instantaneous wind speeds exceed 25 miles per hour.

(20) INACTIVE DISTURBED SURFACE AREA means any disturbed surface area upon which active operations have not occurred or are not expected to occur for a period of 20 consecutive days.

(21) LARGE OPERATIONS means any active operations on property which contains 50 or more acres of disturbed surface area; or any earth-moving operation with a daily earth-moving or throughput volume of 3,850 cubic

meters (5,000 cubic yards) or more three times during the most recent 365-day period.

(22) OPEN STORAGE PILE is any accumulation of bulk material, which is not fully enclosed, covered or chemically stabilized, and which attains a height of three feet or more and a total surface area of 150 or more square feet.

(23) PARTICULATE MATTER means any material, except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions.

(24) PAVED ROAD means a public or private improved street, highway, alley, public way, or easement that is covered by typical roadway materials, but excluding access roadways that connect a facility with a public paved roadway and are not open to through traffic. Public paved roads are those open to public access and that are owned by any federal, state, county, municipal or any other governmental or quasi-governmental agencies. Private paved roads are any paved roads not defined as public.

(25) PM_{10} means particulate matter with an aerodynamic diameter smaller than or equal to 10 microns as measured by the applicable State and Federal reference test methods.

(26) PROPERTY LINE means the boundaries of an area in which either a person causing the emission or a person allowing the emission has the legal use or possession of the property. Where such property is divided into one or more sub-tenancies, the property line(s) shall refer to the boundaries dividing the areas of all sub-tenancies.

(27) RULE 403 IMPLEMENTATION HANDBOOK means a guidance document that has been approved by the Governing Board on April 2, 2004 or hereafter approved by the Executive Officer and the U.S. EPA.

(28) SERVICE ROADS are paved or unpaved roads that are used by one or more public agencies for inspection or maintenance of infrastructure and which are not typically used for construction-related activity.

(29) SIMULTANEOUS SAMPLING means the operation of two PM_{10} samplers in such a manner that one sampler is started within five minutes of the other, and each sampler is operated for a consecutive period which must be not less than 290 minutes and not more than 310 minutes.

(30) SOUTH COAST AIR BASIN means the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange

County as defined in California Code of Regulations, Title 17, Section 60104. The area is bounded on the west by the Pacific Ocean, on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains, and on the south by the San Diego county line.

(31) STABILIZED SURFACE means any previously disturbed surface area or open storage pile which, through the application of dust suppressants, shows visual or other evidence of surface crusting and is resistant to wind-driven fugitive dust and is demonstrated to be stabilized. Stabilization can be demonstrated by one or more of the applicable test methods contained in the Rule 403 Implementation Handbook.

(32) TRACK-OUT means any bulk material that adheres to and agglomerates on the exterior surface of motor vehicles, haul trucks, and equipment (including tires) that have been released onto a paved road and can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(33) TYPICAL ROADWAY MATERIALS means concrete, asphaltic concrete, recycled asphalt, asphalt, or any other material of equivalent performance as determined by the Executive Officer, and the U.S. EPA.

(34) UNPAVED ROADS means any unsealed or unpaved roads, equipment paths, or travel ways that are not covered by typical roadway materials. Public unpaved roads are any unpaved roadway owned by federal, state, county, municipal or other governmental or quasi-governmental agencies. Private unpaved roads are all other unpaved roadways not defined as public.

(35) VISIBLE ROADWAY DUST means any sand, soil, dirt, or other solid particulate matter which is visible upon paved road surfaces and which can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(36) WIND-DRIVEN FUGITIVE DUST means visible emissions from any disturbed surface area which is generated by wind action alone.

(37) WIND GUST is the maximum instantaneous wind speed as measured by an anemometer.

(d) Requirements

(1) No person shall cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that:

(A) the dust remains visible in the atmosphere beyond the property line of the emission source; or

(B) the dust emission exceeds 20 percent opacity (as determined by the appropriate test method included in the Rule 403 Implementation Handbook), if the dust emission is the result of movement of a motorized vehicle.

(2) No person shall conduct active operations without utilizing the applicable best available control measures included in Table 1 of this Rule to minimize fugitive dust emissions from each fugitive dust source type within the active operation.

(3) No person shall cause or allow PM_{10} levels to exceed 50 micrograms per cubic meter when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. EPA-approved equivalent method for PM_{10} monitoring. If sampling is conducted, samplers shall be:

(A) Operated, maintained, and calibrated in accordance with 40 Code of Federal Regulations (CFR), Part 50, Appendix J, or appropriate U.S. EPA-published documents for U.S. EPA-approved equivalent method(s) for PM_{10}.

(B) Reasonably placed upwind and downwind of key activity areas and as close to the property line as feasible, such that other sources of fugitive dust between the sampler and the property line are minimized.

(4) No person shall allow track-out to extend 25 feet or more in cumulative length from the point of origin from an active operation. Notwithstanding the preceding, all track-out from an active operation shall be removed at the conclusion of each workday or evening shift.

(5) No person shall conduct an active operation with a disturbed surface area of five or more acres, or with a daily import or export of 100 cubic yards or more of bulk material without utilizing at least one of the measures listed in subparagraphs (d)(5)(A) through (d)(5)(E) at each vehicle egress from the site to a paved public road.

(A) Install a pad consisting of washed gravel (minimum-size: one inch) maintained in a clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long.

(B) Pave the surface extending at least 100 feet and at least 20 feet wide.

(C) Utilize a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(D) Install and utilize a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(E) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the actions specified in subparagraphs (d)(5)(A) through (d)(5)(D).

(6) Beginning January 1, 2006, any person who operates or authorizes the operation of a confined animal facility subject to this Rule shall implement the applicable conservation management practices specified in Table 4 of this Rule.

(e) Additional Requirements for Large Operations

(1) Any person who conducts or authorizes the conducting of a large operation subject to this Rule shall implement the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards can not be met through use of Table 2 actions; and shall:

(A) submit a fully executed Large Operation Notification (Form 403 N) to the Executive Officer within 7 days of qualifying as a large operation;

(B) include, as part of the notification, the name(s), address(es), and phone number(s) of the person(s) responsible for the submittal, and a description of the operation(s), including a map depicting the location of the site;

(C) maintain daily records to document the specific dust control actions taken, maintain such records for a period of not less than three years; and make such records available to the Executive Officer upon request;

(D) install and maintain project signage with project contact signage that meets the minimum standards of the Rule 403 Implementation Handbook, prior to initiating any earthmoving activities;

(E) identify a dust control supervisor that:

(i) is employed by or contracted with the property owner or developer;

(ii) is on the site or available on-site within 30 minutes during working hours;

(iii) has the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule requirements;

(iv) has completed the AQMD Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class; and

(F) notify the Executive Officer in writing within 30 days after the site no longer qualifies as a large operation as defined by paragraph (c)(18).

(2) Any Large Operation Notification submitted to the Executive Officer or AQMD-approved dust control plan shall be valid for a period of one year from the date of written acceptance by the Executive Officer. Any Large Operation Notification accepted pursuant to paragraph (e)(1), excluding those submitted by aggregate-related plants and cement manufacturing facilities must be resubmitted annually by the person who conducts or authorizes the conducting of a large operation, at least 30 days prior to the expiration date, or the submittal shall no longer be valid as of the expiration date. If all fugitive dust sources and corresponding control measures or special circumstances remain identical to those identified in the previously accepted submittal or in an AQMD-approved dust control plan, the resubmittal may be a simple statement of no-change (Form 403NC).

(f) Compliance Schedule

The newly amended provisions of this Rule shall become effective upon adoption. Pursuant to subdivision (e), any existing site that qualifies as a large operation will have 60 days from the date of Rule adoption to comply with the notification and recordkeeping requirements for large operations. Any Large Operation

Notification or AQMD-approved dust control plan which has been accepted prior to the date of adoption of these amendments shall remain in effect and the Large Operation Notification or AQMD-approved dust control plan annual resubmittal date shall be one year from adoption of this Rule amendment.

(g) Exemptions

(1) The provisions of this Rule shall not apply to:

(A) Dairy farms.

(B) Confined animal facilities provided that the combined disturbed surface area within one continuous property line is one acre or less.

(C) Agricultural vegetative crop operations provided that the combined disturbed surface area within one continuous property line and not separated by a paved public road is 10 acres or less.

(D) Agricultural vegetative crop operations within the South Coast Air Basin, whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Agricultural Handbook;

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(E) Agricultural vegetative crop operations outside the South Coast Air Basin whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Coachella Valley Agricultural Handbook; and

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Coachella Valley Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(F) Active operations conducted during emergency life-threatening situations, or in conjunction with any officially declared disaster or state of emergency.

(G) Active operations conducted by essential service utilities to provide electricity, natural gas, telephone, water and sewer during periods of service outages and emergency disruptions.

(H) Any contractor subsequent to the time the contract ends, provided that such contractor implemented the required control measures during the contractual period.

(I) Any grading contractor, for a phase of active operations, subsequent to the contractual completion of that phase of earth-moving activities, provided that the required control measures have been implemented during the entire phase of earth-moving activities, through and including five days after the final grading inspection.

(J) Weed abatement operations ordered by a county agricultural commissioner or any state, county, or municipal fire department, provided that:

(i) mowing, cutting or other similar process is used which maintains weed stubble at least three inches above the soil; and

(ii) any discing or similar operation which cuts into and disturbs the soil, where watering is used prior to initiation of these activities, and a determination is made by the agency issuing the weed abatement order that, due to fire hazard conditions, rocks, or other physical obstructions, it is not practical to meet the conditions specified in clause (g)(1)(H)(i). The provisions this clause shall not exempt the owner of any property from stabilizing, in accordance with paragraph (d)(2), disturbed surface areas which have been created as a result of the weed abatement actions.

(K) sandblasting operations.

(2) The provisions of paragraphs (d)(1) and (d)(3) shall not apply:

(A) When wind gusts exceed 25 miles per hour, provided that:

(i) The required Table 3 contingency measures in this Rule are implemented for each applicable fugitive dust source type, and;

(ii) records are maintained in accordance with subparagraph (e)(1)(C).

(B) To unpaved roads, provided such roads:

(i) are used solely for the maintenance of wind-generating equipment; or

(ii) are unpaved public alleys as defined in Rule 1186; or

(iii) are service roads that meet all of the following criteria:

(a) are less than 50 feet in width at all points along the road;

(b) are within 25 feet of the property line; and

(c) have a traffic volume less than 20 vehicle-trips per day.

(C) To any active operation, open storage pile, or disturbed surface area for which necessary fugitive dust preventive or mitigative actions are in conflict with the federal Endangered Species Act, as determined in writing by the State or federal agency responsible for making such determinations.

(3) The provisions of (d)(2) shall not apply to any aggregate-related plant or cement manufacturing facility that implements the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards of paragraphs (d)(1) and (d)(3) can not be met through use of Table 2 actions.

(4) The provisions of paragraphs (d)(1), (d)(2), and (d)(3) shall not apply to:

(A) Blasting operations which have been permitted by the California Division of Industrial Safety; and

(B) Motion picture, television, and video production activities when dust emissions are required for visual effects. In order to obtain this exemption, the Executive Officer must receive notification in writing at least 72 hours in advance of any such activity and no nuisance results from such activity.

(5) The provisions of paragraph (d)(3) shall not apply if the dust control actions, as specified in Table 2, are implemented on a routine basis for

each applicable fugitive dust source type. To qualify for this exemption, a person must maintain records in accordance with subparagraph (e)(1)(C).

(6) The provisions of paragraph (d)(4) shall not apply to earth coverings of public paved roadways where such coverings are approved by a local government agency for the protection of the roadway, and where such coverings are used as roadway crossings for haul vehicles provided that such roadway is closed to through traffic and visible roadway dust is removed within one day following the cessation of activities.

(7) The provisions of subdivision (e) shall not apply to:

(A) officially-designated public parks and recreational areas, including national parks, national monuments, national forests, state parks, state recreational areas, and county regional parks.

(B) any large operation which is required to submit a dust control plan to any city or county government which has adopted a District-approved dust control ordinance.

(C) any large operation subject to Rule 1158, which has an approved dust control plan pursuant to Rule 1158, provided that all sources of fugitive dust are included in the Rule 1158 plan.

(8) The provisions of subparagraph (e)(1)(A) through (e)(1)(C) shall not apply to any large operation with an AQMD-approved fugitive dust control plan provided that there is no change to the sources and controls as identified in the AQMD-approved fugitive dust control plan.

(h) Fees

Any person conducting active operations for which the Executive Officer conducts upwind/downwind monitoring for PM_{10} pursuant to paragraph (d)(3) shall be assessed applicable Ambient Air Analysis Fees pursuant to Rule 304.1. Applicable fees shall be waived for any facility which is exempted from paragraph (d)(3) or meets the requirements of paragraph (d)(3).

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Backfilling	01-1 Stabilize backfill material when not actively handling; and 01-2 Stabilize backfill material during handling; and 01-3 Stabilize soil at completion of activity.	✓ Mix backfill soil with water prior to moving ✓ Dedicate water truck or high capacity hose to backfilling equipment ✓ Empty loader bucket slowly so that no dust plumes are generated ✓ Minimize drop height from loader bucket
Clearing and grubbing	02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and 02-2 Stabilize soil during clearing and grubbing activities; and 02-3 Stabilize soil immediately after clearing and grubbing activities.	✓ Maintain live perennial vegetation where possible ✓ Apply water in sufficient quantity to prevent generation of dust plumes
Clearing forms	03-1 Use water spray to clear forms; or 03-2 Use sweeping and water spray to clear forms; or 03-3 Use vacuum system to clear forms.	✓ Use of high pressure air to clear forms may cause exceedance of Rule requirements
Crushing	04-1 Stabilize surface soils prior to operation of support equipment; and 04-2 Stabilize material after crushing.	✓ Follow permit conditions for crushing equipment ✓ Pre-water material prior to loading into crusher ✓ Monitor crusher emissions opacity ✓ Apply water to crushed material to prevent dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Cut and fill	05-1 Pre-water soils prior to cut and fill activities; and 05-2 Stabilize soil during and after cut and fill activities.	✓ For large sites, pre-water with sprinklers or water trucks and allow time for penetration ✓ Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts
Demolition – mechanical/manual	06-1 Stabilize wind erodible surfaces to reduce dust; and 06-2 Stabilize surface soil where support equipment and vehicles will operate; and 06-3 Stabilize loose soil and demolition debris; and 06-4 Comply with AQMD Rule 1403.	✓ Apply water in sufficient quantities to prevent the generation of visible dust plumes
Disturbed soil	07-1 Stabilize disturbed soil throughout the construction site; and 07-2 Stabilize disturbed soil between structures	✓ Limit vehicular traffic and disturbances on soils where possible ✓ If interior block walls are planned, install as early as possible ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes
Earth-moving activities	08-1 Pre-apply water to depth of proposed cuts; and 08-2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and 08-3 Stabilize soils once earth-moving activities are complete.	✓ Grade each project phase separately, timed to coincide with construction phase ✓ Upwind fencing can prevent material movement on site ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Importing/exporting of bulk materials	09-1 Stabilize material while loading to reduce fugitive dust emissions; and 09-2 Maintain at least six inches of freeboard on haul vehicles; and 09-3 Stabilize material while transporting to reduce fugitive dust emissions; and 09-4 Stabilize material while unloading to reduce fugitive dust emissions; and 09-5 Comply with Vehicle Code Section 23114.	✓ Use tarps or other suitable enclosures on haul trucks ✓ Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage ✓ Comply with track-out prevention/mitigation requirements ✓ Provide water while loading and unloading to reduce visible dust plumes
Landscaping	10-1 Stabilize soils, materials, slopes	✓ Apply water to materials to stabilize ✓ Maintain materials in a crusted condition ✓ Maintain effective cover over materials ✓ Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes ✓ Hydroseed prior to rain season
Road shoulder maintenance	11-1 Apply water to unpaved shoulders prior to clearing; and 11-2 Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	✓ Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs ✓ Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Screening	12-1 Pre-water material prior to screening; and 12-2 Limit fugitive dust emissions to opacity and plume length standards; and 12-3 Stabilize material immediately after screening.	✓ Dedicate water truck or high capacity hose to screening operation ✓ Drop material through the screen slowly and minimize drop height ✓ Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point
Staging areas	13-1 Stabilize staging areas during use; and 13-2 Stabilize staging area soils at project completion.	✓ Limit size of staging area ✓ Limit vehicle speeds to 15 miles per hour ✓ Limit number and size of staging area entrances/exists
Stockpiles/ Bulk Material Handling	14-1 Stabilize stockpiled materials. 14-2 Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	✓ Add or remove material from the downwind portion of the storage pile ✓ Maintain storage piles to avoid steep sides or faces

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Traffic areas for construction activities	15-1 Stabilize all off-road traffic and parking areas; and 15-2 Stabilize all haul routes; and 15-3 Direct construction traffic over established haul routes.	✓ Apply gravel/paving to all haul routes as soon as possible to all future roadway areas ✓ Barriers can be used to ensure vehicles are only used on established parking areas/haul routes
Trenching	16-1 Stabilize surface soils where trencher or excavator and support equipment will operate; and 16-2 Stabilize soils at the completion of trenching activities.	✓ Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching ✓ Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment
Truck loading	17-1 Pre-water material prior to loading; and 17-2 Ensure that freeboard exceeds six inches (CVC 23114)	✓ Empty loader bucket such that no visible dust plumes are created ✓ Ensure that the loader bucket is close to the truck to minimize drop height while loading
Turf Overseeding	18-1 Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and 18-2 Cover haul vehicles prior to exiting the site.	✓ Haul waste material immediately off-site

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Unpaved roads/parking lots	19-1 Stabilize soils to meet the applicable performance standards; and 19-2 Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	✓ Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements
Vacant land	20-1 In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures.	

Table 2
DUST CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY		CONTROL ACTIONS
Earth-moving (except construction cutting and filling areas, and mining operations)	(1a)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR
	(1a-1)	For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.
Earth-moving: Construction fill areas:	(1b)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Earth-moving: Construction cut areas and mining operations:	(1c)	Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
Disturbed surface areas (except completed grading areas)	(2a/b)	Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
Disturbed surface areas: Completed grading areas	(2c)	Apply chemical stabilizers within five working days of grading completion; OR
	(2d)	Take actions (3a) or (3c) specified for inactive disturbed surface areas.
Inactive disturbed surface areas	(3a)	Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR
	(3b)	Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR
	(3c)	Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR
	(3d)	Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Unpaved Roads	(4a)	Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR
	(4b)	Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR
	(4c)	Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open storage piles	(5a)	Apply chemical stabilizers; OR
	(5b)	Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR
	(5c)	Install temporary coverings; OR
	(5d)	Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile. This option may only be used at aggregate-related plants or at cement manufacturing facilities.
All Categories	(6a)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 2 may be used.

TABLE 3
CONTINGENCY CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY	CONTROL MEASURES
Earth-moving	(1A) Cease all active operations; OR (2A) Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	(0B) On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR (1B) Apply chemical stabilizers prior to wind event; OR (2B) Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR (3B) Take the actions specified in Table 2, Item (3c); OR (4B) Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	(1C) Apply chemical stabilizers prior to wind event; OR (2C) Apply water twice per hour during active operation; OR (3C) Stop all vehicular traffic.
Open storage piles	(1D) Apply water twice per hour; OR (2D) Install temporary coverings.
Paved road track-out	(1E) Cover all haul vehicles; OR (2E) Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All Categories	(1F) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.

Table 4
(Conservation Management Practices for Confined Animal Facilities)

SOURCE CATEGORY	CONSERVATION MANAGEMENT PRACTICES
Manure Handling **(Only applicable to Commercial Poultry Ranches)**	(1a) Cover manure prior to removing material off-site; AND (1b) Spread the manure before 11:00 AM and when wind conditions are less than 25 miles per hour; AND (1c) Utilize coning and drying manure management by removing manure at laying hen houses at least twice per year and maintain a base of no less than 6 inches of dry manure after clean out; or in lieu of complying with conservation management practice (1c), comply with conservation management practice (1d). (1d) Utilize frequent manure removal by removing the manure from laying hen houses at least every seven days and immediately thin bed dry the material.
Feedstock Handling	(2a) Utilize a sock or boot on the feed truck auger when filling feed storage bins.
Disturbed Surfaces	(3a) Maintain at least 70 percent vegetative cover on vacant portions of the facility; OR (3b) Utilize conservation tillage practices to manage the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, while growing crops (if applicable) in narrow slots or tilled strips; OR (3c) Apply dust suppressants in sufficient concentrations and frequencies to maintain a stabilized surface.
Unpaved Roads	(4a) Restrict access to private unpaved roads either through signage or physical access restrictions and control vehicular speeds to no more than 15 miles per hour through worker notifications, signage, or any other necessary means; OR (4b) Cover frequently traveled unpaved roads with low silt content material (i.e., asphalt, concrete, recycled road base, or gravel to a minimum depth of four inches); OR (4c) Treat unpaved roads with water, mulch, chemical dust suppressants or other cover to maintain a stabilized surface.
Equipment Parking Areas	(5a) Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR (5b) Apply material with low silt content (i.e., asphalt, concrete, recycled road base, or gravel to a depth of four inches).

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