San Bernardino County FLOD Project
AIR QUALITY IMPACT ANALYSIS
COUNTY OF SAN BERNARDINO

PREPARED BY:

Haseeb Qureshi
hqureshi@urbanxroads.com
(949) 660-1994 x217

Stephen Abille
sabille@urbanxroads.com
(949) 660-1994 x234

FEBRUARY 4, 2015

TABLE OF CONTENTS

APPENDICES

APPENDIX 3.1: CALEEMOD EMISSIONS MODEL OUTPUTS
APPENDIX 3.2: STATE/FEDERAL ATTAINMENT STATUS OF CRITERIA POLLUTANTS

LIST OF EXHIBITS

LIST OF TABLES

LIST OF ABBREVIATED TERMS

(1)	Reference
µg/m3	Microgram per Cubic Meter
AADT	Annual Average Daily Trips
AQIA	Air Quality Impact Analysis
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
BACM	Best Available Control Measures
BMPs	Best Management Practices
CAA	Federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish & Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
DPM	Diesel Particulate Matter
EMD	Environmental Management Division
EPA	Environmental Protection Agency
LST	Localized Significance Threshold
NAAQS	National Ambient Air Quality Standards
NO2	Nitrogen Dioxide
NOx	Oxides of Nitrogen
Pb	Lead
PM10	Particulate Matter 10 microns in diameter or less
PM2.5	Particulate Matter 2.5 microns in diameter or less
PPM	Parts Per Million
Project	San Bernardino County FLOD Project
ROG	Reactive Organic Gases
SARWQCB	Santa Ana Regional Water Quality Control Board
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District

SIPs	State Implementation Plans
SRA	Source Receptor Area
TAC	Toxic Air Contaminant
TOG	Total Organic Gases
USACE	US Army Corp of Engineers
VOC	Volatile Organic Compounds

This page intentionally left blank

EXECUTIVE SUMMARY

For regional emissions, the Project will exceed the numerical thresholds of significance established by the South Coast Air Quality Management District (SCAQMD) for emissions of Nitrogen Oxides (NO_x) prior to implementation of mitigation measures (MMs).

The proposed mitigation measure MM AQ-1 is recommended to reduce the impacts to less than significant levels. After implementation of the recommended mitigation measure, construction activity emissions will not exceed the numerical thresholds established by the SCAQMD for any phase of construction activity. Thus a less than significant impact will occur with the implementation of MM AQ-1.

Without best available control measure (BACMs) and mitigation, emissions during construction activity will exceed the SCAQMD's localized significance threshold for PM_{10} and $PM_{2.5}$. It should be noted that the impacts without BACMs and mitigation do not take credit for reductions achieved through standard regulatory requirements (Rule 403). A less than significant impact would occur with the application of BACM AQ-1 and MM AQ-1.

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

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

This page intentionally left blank

1 INTRODUCTION

This report presents the results of the air quality impact analysis (AQIA) prepared by Urban Crossroads, Inc., for the proposed San Bernardino County FLOD Project (referred to as "Project").

The purpose of this AQIA is to evaluate the potential impacts to air quality associated with the proposed maintenance activities on the Project site, and recommend measures to mitigate impacts considered potentially significant in comparison to established regulatory thresholds.

1.1 SITE LOCATION

The District is divided into six zones. The Proposed Project is located in three of these six zones as shown in Exhibit 1-A. Zone 1 is a 275-square-mile area in the western portion of the San Bernardino valley extending from Beech Avenue in Fontana west to the Los Angeles/San Bernardino County boundary, south of the San Gabriel Mountains. Included in the zone are the incorporated cities of Chino, Chino Hills, Fontana, Montclair, Ontario, Rancho Cucamonga, and Upland and the unincorporated community of Etiwanda. Thirteen Project facilities are located in Zone 1.

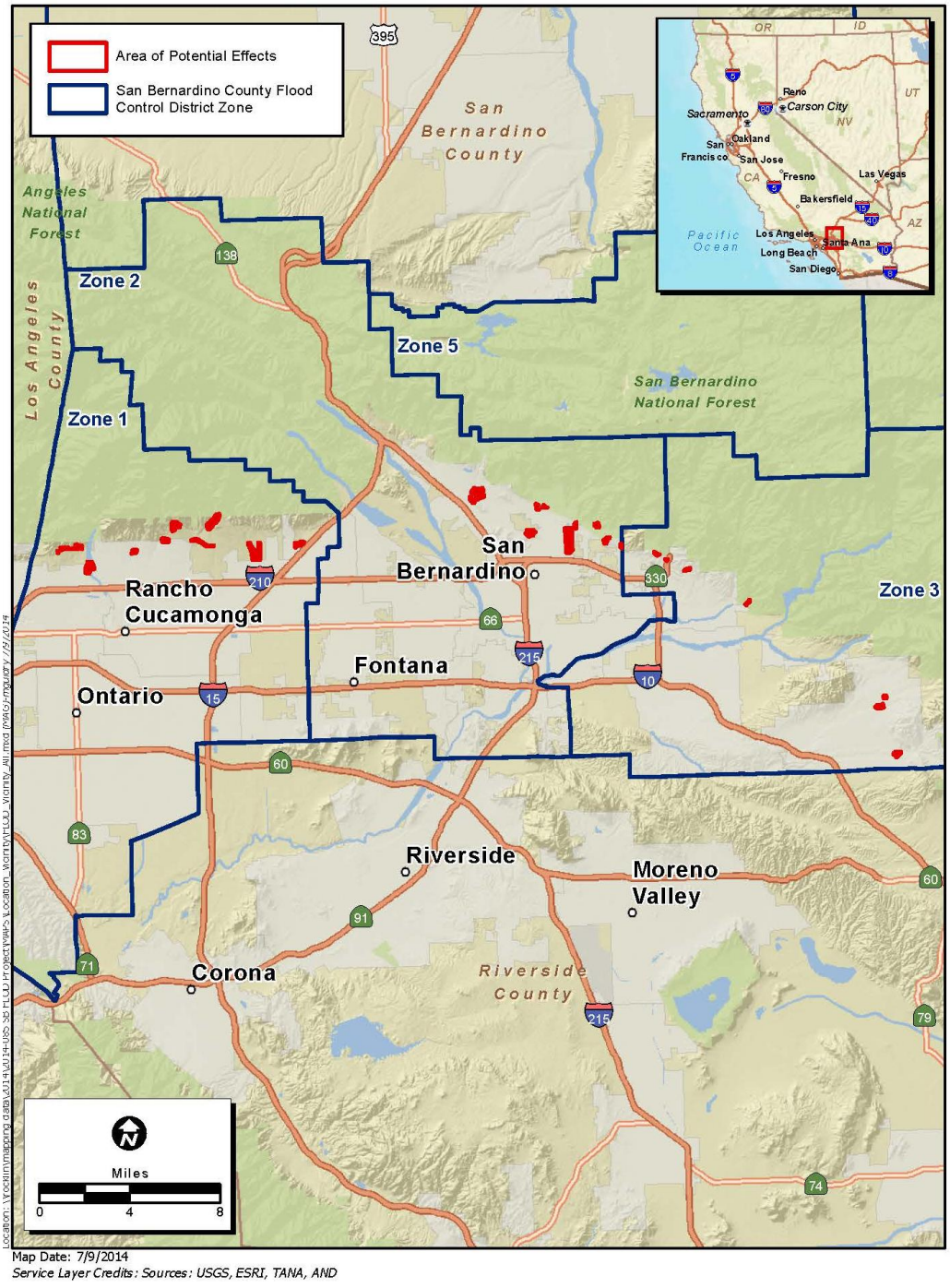
Zone 2 is located in the central area of the San Bernardino Valley, east of Zone 1. It is a 318-square-mile area mostly affected by the Santa Ana River and City Creek. Zone 2 includes portions of the cities of Colton, Fontana, Grand Terrace, Highland, Loma Linda, Redlands, Rialto, and San Bernardino and the unincorporated communities of Bloomington, Del Rosa, Devore, and Muscoy. Eleven Project facilities are located in Zone 2.

Zone 3 is a 366-square-mile area located on the east end of the San Bernardino Valley, east of Zone 2. Zone 3 includes portions of the cities of Highland, Loma Linda, Redlands, San Bernardino, and Yucaipa and the unincorporated community of Mentone. Eight Project facilities are located in Zone 3.

1.2 PROJECT DESCRIPTION

The Environmental Management Division (EMD) requires regulatory permits from California Department of Fish & Wildlife (CDFW), the Santa Ana Regional Water Quality Control Board (SARWQCB), and the US Army Corp of Engineers (USACE) to support routine maintenance efforts of its priority detention/debris basins. The purpose of this project is to provide routine maintenance of various flood control facilities (dam, basins, and spreading grounds) in order to ensure that the basins continue to provide flood protection and water conservation, as well as to prevent any type of damage to both public and private property, and to protect the District's other facilities located within the County.

EXHIBIT 1-A: LOCATION MAP



Source: Ecorp Consulting, Inc., Figure 1 Regional Map, 2014-085 San Bernardino Flod Project

2 AIR QUALITY SETTING

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

2.1 SOUTH COAST AIR BASIN

The Project site is located in the South Coast Air Basin (SCAB) within the jurisdiction of SCAQMD (1). The SCAQMD was created by the 1977 Lewis-Presley Air Quality Management Act, which merged four county air pollution control bodies into one regional district. Under the Act, the SCAQMD is responsible for bringing air quality in areas under its jurisdiction into conformity with federal and state air quality standards. As discussed above, the Project site is located within the South Coast Air Basin, a 6,745-square mile subregion of the SCAQMD, which includes portions of Los Angeles, Riverside, and San Bernardino Counties, and all of Orange County. The larger South Coast district boundary includes 10,743 square miles.

The SCAB is bound by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Los Angeles County portion of the Mojave Desert Air Basin is bound by the San Gabriel Mountains to the south and west, the Los Angeles / Kern County border to the north, and the Los Angeles / San Bernardino County border to the east. The Riverside County portion of the Salton Sea Air Basin is bound by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley.

2.2 REGIONAL CLIMATE

The regional climate has a substantial influence on air quality in the SCAB. In addition, the temperature, wind, humidity, precipitation, and amount of sunshine influence the air quality.

The annual average temperatures throughout the SCAB vary from the low to middle 60s (degrees Fahrenheit). Due to a decreased marine influence, the eastern portion of the SCAB shows greater variability in average annual minimum and maximum temperatures. January is the coldest month throughout the SCAB, with average minimum temperatures of 47°F in downtown Los Angeles and 36°F in San Bernardino. All portions of the SCAB have recorded maximum temperatures above 100°F.

Although the climate of the SCAB can be characterized as semi-arid, the air near the land surface is quite moist on most days because of the presence of a marine layer. This shallow layer of sea air is an important modifier of SCAB climate. Humidity restricts visibility in the SCAB, and the conversion of sulfur dioxide to sulfates is heightened in air with high relative humidity. The marine layer provides an environment for that conversion process, especially during the spring and summer months. The annual average relative humidity within the SCAB is 71 percent along the coast and 59 percent inland. Since the ocean effect is dominant, periods of heavy early morning fog are frequent and low stratus clouds are a characteristic feature. These effects decrease with distance from the coast.

More than 90 percent of the SCAB's rainfall occurs from November through April. The annual average rainfall varies from approximately nine inches in Riverside to fourteen inches in downtown Los Angeles. Monthly and yearly rainfall totals are extremely variable. Summer rainfall usually consists of widely scattered thunderstorms near the coast and slightly heavier shower activity in the eastern portion of the SCAB with frequency being higher near the coast.

Due to its generally clear weather, about three-quarters of available sunshine is received in the SCAB. The remaining one-quarter is absorbed by clouds. The ultraviolet portion of this abundant radiation is a key factor in photochemical reactions. On the shortest day of the year there are approximately 10 hours of possible sunshine, and on the longest day of the year there are approximately 14 1/2 hours of possible sunshine.

The importance of wind to air pollution is considerable. The direction and speed of the wind determines the horizontal dispersion and transport of the air pollutants. During the late autumn to early spring rainy season, the SCAB is subjected to wind flows associated with the traveling storms moving through the region from the northwest. This period also brings five to ten periods of strong, dry offshore winds, locally termed "Santa Anas" each year. During the dry season, which coincides with the months of maximum photochemical smog concentrations, the wind flow is bimodal, typified by a daytime onshore sea breeze and a nighttime offshore drainage wind. Summer wind flows are created by the pressure differences between the relatively cold ocean and the unevenly heated and cooled land surfaces that modify the general northwesterly wind circulation over southern California. Nighttime drainage begins with the radiational cooling of the mountain slopes. Heavy, cool air descends the slopes and flows through the mountain passes and canyons as it follows the lowering terrain toward the ocean. Another characteristic wind regime in the SCAB is the "Catalina Eddy," a low level cyclonic (counterclockwise) flow centered over Santa Catalina Island which results in an offshore flow to the southwest. On most spring and summer days, some indication of an eddy is apparent in coastal sections.

In the SCAB, there are two distinct temperature inversion structures that control vertical mixing of air pollution. During the summer, warm high-pressure descending (subsiding) air is undercut by a shallow layer of cool marine air. The boundary between these two layers of air is a persistent marine subsidence/inversion. This boundary prevents vertical mixing which effectively acts as an impervious lid to pollutants over the entire SCAB. The mixing height for the inversion structure is normally situated 1,000 to 1,500 feet above mean sea level.

A second inversion-type forms in conjunction with the drainage of cool air off the surrounding mountains at night followed by the seaward drift of this pool of cool air. The top of this layer forms a sharp boundary with the warmer air aloft and creates nocturnal radiation inversions. These inversions occur primarily in the winter, when nights are longer and onshore flow is weakest. They are typically only a few hundred feet above mean sea level. These inversions effectively trap pollutants, such as NOX and CO from vehicles, as the pool of cool air drifts seaward. Winter is therefore a period of high levels of primary pollutants along the coastline.

2.3 WIND PATTERNS AND PROJECT LOCATION

The distinctive climate of the Project area and the SCAB is determined by its terrain and geographical location. The Basin is located in a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean in the southwest quadrant with high mountains forming the remainder of the perimeter.

Wind patterns across the south coastal region are characterized by westerly and southwesterly on-shore winds during the day and easterly or northeasterly breezes at night. Winds are characteristically light although the speed is somewhat greater during the dry summer months than during the rainy winter season.

2.4 EXISTING AIR QUALITY

Existing air quality is measured at established SCAQMD air quality monitoring stations. Monitored air quality is evaluated and in the context of ambient air quality standards. These standards are the levels of air quality that are considered safe, with an adequate margin of safety, to protect the public health and welfare. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) currently in effect, as well health effects of each pollutant regulated under these standards are shown in Table 2-1 (2)(3).

The determination of whether a region's air quality is healthful or unhealthful is determined by comparing contaminant levels in ambient air samples to the state and federal standards presented in Table 2-1. The air quality in a region is considered to be in attainment by the state if the measured ambient air pollutant levels for O3, CO, SO2, NO2, PM10, and PM2.5 are not equaled or exceeded at any time in any consecutive three-year period; and the federal standards (other than O3, PM10, PM2.5, and those based on annual averages or arithmetic mean) are not exceeded more than once per year. The O3 standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

TABLE 2-1: 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)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM10)[8]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5)[8]	24 Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[9]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[10]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[10]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[10]	—	
Lead[11,12]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m^3		
Visibility Reducing Particles[13]	8 Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[11]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

See footnotes at: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf

For more information please call ARB-PIO at (916) 322-2990 — California Air Resources Board (6/4/13)

2.5 REGIONAL AIR QUALITY

The SCAQMD monitors levels of various criteria pollutants at 30 monitoring stations throughout the air district. In 2012, the federal and state ambient air quality standards (NAAQS and CAAQS) were exceeded on one or more days for ozone, PM10, and PM2.5 at most monitoring locations (4). No areas of the SCAB exceeded federal or state standards for NO2, SO2, CO, sulfates or lead. See Table 2-2 for attainment designations for the SCAB (5)(6). Appendix 3.2 provides geographic representation of the state and federal attainment status for applicable criteria pollutants within the SCAB.

2.6 LOCAL AIR QUALITY

For purposes of this analysis, because the Project spans across vast regions within San Bernardino County, local air quality information was gathered based on the nearest monitoring station data in relation to the San Bernardino Heights Basin #1. Project-related maintenance activities within the San Bernardino-Height Basin #1 occur in close proximity to sensitive receptors. Therefore, as a conservative measure, ambient air quality emissions for criteria pollutants are analyzed for this sub-region of the Project.

Relative to the San Bernardino Heights Basin #1, the nearest long-term air quality monitoring site for Ozone (O_3), Carbon Monoxide (CO), and Nitrogen Dioxide (NO_2) is the South Coast Air Quality Management District Northwest San Bernardino Valley monitoring station (SRA 32), located approximately 4.50 miles south of the Project site (7). The nearest long-term air quality monitoring site for Inhalable Particulates (PM_{10}) and Ultra-Fine Particulates ($PM_{2.5}$) is the South Coast Air Quality Management District Central San Bernardino Valley 2 monitoring station (SRA 34), located approximately 22 miles southeast of the San Bernardino Heights Basin #1. It should be noted that the Central San Bernardino Valley 2 monitoring station was utilized in lieu of the Northwest San Bernardino Valley monitoring station only where data was not available.

The most recent three (3) years of data available is shown on Table 2-3 and identifies the number of days ambient air quality standards were exceeded for the study area, which is was considered to be representative of the local air quality at the Project site (4) (8). Additionally, data for SO2 has been omitted as attainment is regularly met in the South Coast Air Basin and few monitoring stations measure SO2 concentrations.

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

- Carbon Monoxide (CO): Is a colorless, odorless gas produced by the incomplete combustion of carbon-containing fuels, such as gasoline or wood. CO concentrations tend to be the highest during the winter morning, when little to no wind and surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, unlike ozone, motor vehicles operating at slow speeds are the primary source of CO in the Basin. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections.

- Sulfur Dioxide (SO2): Is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of burning high sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When SO2 oxidizes in the atmosphere, it forms sulfates (SO4). Collectively, these pollutants are referred to as sulfur oxides (SOX).

  Nitrogen Oxides (Oxides of Nitrogen, or NOx): Nitrogen oxides (NOx) consist of nitric oxide (NO), nitrogen dioxide (NO2) and nitrous oxide (N2O) and are formed when nitrogen (N2) combines with oxygen (O2). Their lifespan in the atmosphere ranges from one to seven days for nitric oxide and nitrogen dioxide, to 170 years for nitrous oxide. Nitrogen oxides are typically created during combustion processes, and are major contributors to smog formation and acid deposition. NO2 is a criteria air pollutant, and may result in numerous adverse health effects; it absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility. Of the seven types of nitrogen oxide compounds, NO2 is the most abundant in the atmosphere. As ambient concentrations of NO2 are related to traffic density, commuters in heavy traffic may be exposed to higher concentrations of NO2 than those indicated by regional monitors.
- Ozone (O3): Is a highly reactive and unstable gas that is formed when volatile organic compounds (VOCs) and nitrogen oxides (NOX), both byproducts of internal combustion engine exhaust, undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.
- PM10 (Particulate Matter less than 10 microns): A major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. The size of the particles (10 microns or smaller, about 0.0004 inches or less) allows them to easily enter the lungs where they may be deposited, resulting in adverse health effects. PM10 also causes visibility reduction and is a criteria air pollutant.
- PM2.5 (Particulate Matter less than 2.5 microns): A similar air pollutant consisting of tiny solid or liquid particles which are 2.5 microns or smaller (which is often referred to as fine particles). These particles are formed in the atmosphere from primary gaseous emissions that include sulfates formed from SO2 release from power plants and industrial facilities and nitrates that are formed from NOX release from power plants, automobiles and other types of combustion sources. The chemical composition of fine particles highly depends on location, time of year, and weather conditions. PM2.5 is a criteria air pollutant.
- Volatile Organic Compounds (VOC): Volatile organic compounds are hydrocarbon compounds (any compound containing various combinations of hydrogen and carbon atoms) that exist in the ambient air. VOCs contribute to the formation of smog through atmospheric photochemical reactions and/or may be toxic. Compounds of carbon (also known as organic compounds) have different levels of reactivity; that is, they do not react at the same speed or do not form ozone to the same extent when exposed to photochemical processes. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints. Exceptions to the VOC designation include: carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate. VOCs are a criteria pollutant since they are a precursor to O3, which is a criteria pollutant. The SCAQMD uses the terms VOC and ROG (see below) interchangeably.
- Reactive Organic Gases (ROG): Similar to VOC, Reactive Organic Gases (ROG) are also precursors in forming ozone and consist of compounds containing methane, ethane, propane, butane, and longer chain hydrocarbons, which are typically the result of some type of combustion/decomposition process. Smog is formed when ROG and nitrogen oxides react in

the presence of sunlight. ROGs are a criteria pollutant since they are a precursor to O3, which is a criteria pollutant. The SCAQMD uses the terms ROG and VOC (see previous) interchangeably.

- Lead (Pb): Lead is a heavy metal that is highly persistent in the environment. In the past, the primary source of lead in the air was emissions from vehicles burning leaded gasoline. As a result of the removal of lead from gasoline, there have been no violations at any of the SCAQMD's regular air monitoring stations since 1982. Currently, emissions of lead are largely limited to stationary sources such as lead smelters. It should be noted that the Project is not anticipated to generate a quantifiable amount of lead emissions. Lead is a criteria air pollutant.

TABLE 2-2: ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE SOUTH COAST AIR BASIN (SCAB)

Criteria Pollutant	State Designation	Federal Designation
Ozone - 1hour standard	Nonattainment	No Standard
Ozone - 8 hour standard	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Attainment
Lead[1]	Attainment	Attainment

Source: State/Federal designations were taken from http://www.arb.ca.gov/desig/adm/adm.htm
Note: See Appendix 3.2 for a detailed map of State/National Area Designations within the South Coast Air Basin

[1] The Federal nonattainment designation for lead is only applicable towards the Los Angeles County portion of the SCAB.

TABLE 2-3: PROJECT AREA AIR QUALITY MONITORING SUMMARY 2011-2013

POLLUTANT	STANDARD	YEAR		
		2011	2012	2013
Ozone (O_3)				
Maximum 1-Hour Concentration (ppm)		0.145	0.136	0.143
Maximum 8-Hour Concentration (ppm)		0.122	0.111	0.111
Number of Days Exceeding State 1-Hour Standard	> 0.09 ppm	36	42	--
Number of Days Exceeding State 8-Hour Standard	> 0.07 ppm	45	66	--
Number of Days Exceeding Federal 1-Hour Standard	> 0.12 ppm	5	4	3
Number of Days Exceeding Federal 8-Hour Standard	> 0.075 ppm	36	45	27
Number of Days Exceeding Health Advisory	≥ 0.15 ppm	0	0	0
Carbon Monoxide (CO)				
Maximum 1-Hour Concentration (ppm)		--	--	3
Maximum 8-Hour Concentration (ppm)		1.3	1.1	1.4
Number of Days Exceeding State 1-Hour Standard	> 20 ppm	0	0	0
Number of Days Exceeding Federal / State 8-Hour Standard	> 9.0 ppm	0	0	0
Number of Days Exceeding Federal 1-Hour Standard	> 35 ppm	0	0	0
Nitrogen Dioxide (NO_2)				
Maximum 1-Hour Concentration (ppm)		0.0685	0.0667	0.062
Annual Arithmetic Mean Concentration (ppm)		0.0196	0.0195	--
Number of Days Exceeding State 1-Hour Standard	> 0.18 ppm	0	0	0
Particulate Matter ≤ 10 Microns (PM_{10})				
Maximum 24-Hour Concentration ($\mu g/m^3$)		56	53	102
Number of Samples		58	55	60
Number of Samples Exceeding State Standard	> 50 $\mu g/m^3$	3	--	--
Number of Samples Exceeding Federal Standard	> 150 $\mu g/m^3$	0	0	0
Particulate Matter ≤ 2.5 Microns ($PM_{2.5}$)				
Maximum 24-Hour Concentration ($\mu g/m^3$)		65.0	34.8	55.3
Annual Arithmetic Mean ($\mu g/m^3$)		12.2	11.8	11.4
Number of Samples Exceeding Federal 24-Hour Standard	> 35 $\mu g/m^3$	2	0	--

-- = data not available from either SCAQMD or EPA

Health Effects of Air Pollutants

Ozone

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

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

Carbon Monoxide

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

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

Particulate Matter

A consistent correlation between elevated ambient fine particulate matter (PM10 and PM2.5) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. In recent years, some studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, reduction in life-span, and an increased mortality from lung cancer.

Daily fluctuations in PM2.5 concentration levels have also been related to hospital admissions for acute respiratory conditions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children, and to increased medication use in children and adults with asthma. Recent studies show lung function growth in children is reduced with longterm exposure to particulate matter.

The elderly, people with pre-existing respiratory or cardiovascular disease, and children appear to be more susceptible to the effects of high levels of PM10 and PM2.5.

Nitrogen Dioxide

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

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

Sulfur Dioxide

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

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

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

Lead

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

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

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

Odors

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

2.7 REGULATORY BACKGROUND

2.7.1 FEDERAL REGULATIONS

The U.S. EPA is responsible for setting and enforcing the NAAQS for O3, CO, NOx, SO2, PM10, and lead (9). The U.S. EPA has jurisdiction over emissions sources that are under the authority of the federal government including aircraft, locomotives, and emissions sources outside state waters (Outer Continental Shelf). The U.S. EPA also establishes emission standards for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission requirements of the CARB.

The Federal Clean Air Act (CAA) was first enacted in 1955, and has been amended numerous times in subsequent years (1963, 1965, 1967, 1970, 1977, and 1990). The CAA establishes the federal air quality standards, the NAAQS, and specifies future dates for achieving compliance (10). The CAA also mandates that states submit and implement State Implementation Plans (SIPs) for local areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA that identify specific emission reduction goals for areas not meeting the NAAQS require a demonstration of reasonable further progress toward attainment and incorporate additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA most directly applicable to the development of the Project site include Title I (Non-Attainment Provisions) and Title II (Mobile Source Provisions). Title I provisions were established with the goal of attaining the NAAQS for the following criteria pollutants O3, NO2, SO2, PM10, CO, PM2.5, and lead. The NAAQS were amended in July 1997 to include an

additional standard for O3 and to adopt a NAAQS for PM2.5. Table 3-1 (previously presented) provides the NAAQS within the basin.

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

2.7.2 CALIFORNIA REGULATIONS

The CARB, which became part of the California EPA in 1991, is responsible for ensuring implementation of the California Clean Air Act (AB 2595), responding to the federal CAA, and for regulating emissions from consumer products and motor vehicles. The California CAA mandates achievement of the maximum degree of emissions reductions possible from vehicular and other mobile sources in order to attain the state ambient air quality standards by the earliest practical date. The CARB established the CAAQS for all pollutants for which the federal government has NAAQS and, in addition, establishes standards for sulfates, visibility, hydrogen sulfide, and vinyl chloride. However at this time, hydrogen sulfide and vinyl chloride are not measured at any monitoring stations in the SCAB because they are not considered to be a regional air quality problem. Generally, the CAAQS are more stringent than the NAAQS (3)(2).

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

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

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

2.7.3 AIR QUALITY MANAGEMENT PLANNING

Currently, the NAAQS and CAAQS are exceeded in most parts of the SCAB. In response, the SCAQMD has adopted a series of Air Quality Management Plans (AQMPs) to meet the state and

federal ambient air quality standards (11). AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy. A detailed discussion on the AQMP and Project consistency with the AQMP is provided in Section 3.8.

2.8 EXISTING PROJECT SITE AIR QUALITY CONDITIONS

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

This page intentionally left blank

3 PROJECT AIR QUALITY IMPACT

3.1 INTRODUCTION

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

3.2 STANDARDS OF SIGNIFICANCE

The criteria used to determine the significance of potential Project-related air quality impacts are taken from the Initial Study Checklist in Appendix G of the State CEQA Guidelines (14 California Code of Regulations §§15000, et seq.). Based on these thresholds, a project would result in a significant impact related to air quality if it would (12):

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

Within the context of the above threshold considerations, and based on the SCAQMD's CEQA Air Quality Handbook (1993), a project's localized CO emissions impacts would be significant if they exceed the following California standards for localized CO concentrations (13):

- 1-hour CO standard of 20.0 parts per million (ppm)
- 8-hour CO standard of 9.0 ppm.

The SCAQMD has also developed regional and localized significance thresholds for other regulated pollutants, as summarized at Table 3-1 (14). The SCAQMD's CEQA Air Quality Significance Thresholds (March 2011) indicate that any projects in the SCAB with daily emissions that exceed any of the indicated thresholds should be considered as having an individually and cumulatively significant air quality impact.

TABLE 3-1: MAXIMUM DAILY EMISSIONS REGIONAL THRESHOLDS

Pollutant	Construction
NOx	100 lbs/day
VOC	75 lbs/day
PM10	150 lbs/day
PM2.5	55 lbs/day
Sox	150 lbs/day
CO	550 lbs/day
Lead	3 lbs/day

3.3 PROJECT-RELATED SOURCES OF POTENTIAL IMPACT

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

On October 2, 2013, the SCAQMD in conjunction with the California Air Pollution Control Officers Association (CAPCOA) released the latest version of the California Emissions Estimator Model™ (CalEEMod™) v2013.2.2. The purpose of this model is to calculate construction-source and operational-source criteria pollutant (NO_x, VOC, PM_{10}, $PM_{2.5}$, SO_x, and CO) and greenhouse gas (GHG) emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation measures (15). Accordingly, the latest version of CalEEMod™ has been used for this Project to determine construction and operational air quality emissions. Output from the model runs for both construction and operational activity are provided in Appendix 3.1.

3.4 CONSTRUCTION EMISSIONS

Construction activities associated with the Project will result in emissions of CO, VOCs, NOx, SOx, PM10, and PM2.5. Construction related emissions are expected from the following construction activities:

- Removal of Vegetation / Graffiti Removal
- Bank Repair / Stockpiling
- Ingress/Egress

Construction is expected to commence in September 2015 and will last through October 2015. Construction duration by phase is shown on Table 3-2. The construction schedule utilized in the analysis represents a “worst-case” analysis scenario should construction occur any time after the respective dates since emission factors for construction decrease as the analysis year increases. The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required per CEQA guidelines. Site specific construction fleet may vary due to specific project needs at the time of construction. The duration of construction activity was developed in consultation with the

applicant and assumes no overlap of all phases of construction due to limited staffing and equipment availability. Construction emissions from maintenance activity were analyzed based on the maximum amount of emissions possible in any of the Project basins. Associated equipment was estimated based on information provided by the applicant. Please refer to specific detailed modeling inputs/outputs contained in Appendix 3.1 of this Analysis. A detailed summary of construction equipment assumptions by phase is provided at Table 3-3. It should be noted that the construction equipment estimates provided at Table 3-3 represent a "worst-case" (i.e. overestimation) of actual construction equipment that will likely be used during construction activities.

Dust is typically a major concern during rough grading activities. Because such emissions are not amenable to collection and discharge through a controlled source, they are called "fugitive emissions". Fugitive dust emissions rates vary as a function of many parameters (soil silt, soil moisture, wind speed, area disturbed, number of vehicles, depth of disturbance or excavation, etc.). The CalEEMod model was utilized to calculate fugitive dust emissions resulting from this phase of activity.

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

TABLE 3-2: CONSTRUCTION DURATION

Phase	Duration (working days)
Removal of Vegetation / Graffiti Removal	11
Bank Repair / Stockpiling	16
Ingress/Egress	6

TABLE 3-3: CONSTRUCTION EQUIPMENT ASSUMPTIONS

Activity	Equipment	Number	Hours Per Day
Removal of Vegetation / Graffiti Removal	Dump Truck	8	2
	Grader	8	1
	Loader	8	1
	Service Truck	8	2
	Skid Steer Loader	8	1
	Speed Loader	8	1
	Sprayer Trucks / Equipment	8	1
	Tractor / Boom Mower	8	1
	Water Truck	8	1
Bank Repair / Stockpiling	Dozer	8	1
	Dump Truck	8	8
	Excavator	8	1
	Gradall	8	1
	Grader	8	1
	Loader	8	1
	Scraper	8	2
	Service Truck	8	1
	Skid Steer Loader	8	1
	Speed Loader	8	1
	Sprayer Trucks / Equipment	8	1
	Tractor / Boom Mower	8	1
	Water Truck	8	1
Ingress/Egress	Cement Truck	8	1
	Dozer	8	1
	Dump Truck	8	6
	Excavator	8	1
	Gradall	8	1
	Grader	8	1
	Loader	8	1
	Service Truck	8	1
	Tractor and Disc	8	1
	Water Truck	8	1

3.4.1 CONSTRUCTION EMISSIONS SUMMARY

Impacts without BACMs, Regulatory Requirements, and Mitigation

The estimated maximum daily construction emissions without BACMs and mitigation are summarized on Table 3-4. Detailed construction model outputs are presented in Appendix 3.1. Under the assumed scenarios, emissions resulting from the Project construction will exceed criteria pollutant thresholds established by the SCAQMD for emissions of NOx (before mitigation). It should be noted that the impacts do not take credit for reductions achieved through regulatory requirements (SCAQMD's Rule 403).

TABLE 3-4: EMISSIONS SUMMARY OF OVERALL CONSTRUCTION (WITHOUT BACMS & MITIGATION)

Year	Emissions (pounds per day)					
	VOC	NOx	CO	SOx	PM10	PM2.5
2015	10.23	113.19	69.91	0.11	14.41	8.52
Maximum Daily Emissions	**10.23**	**119.19**	**69.91**	**0.11**	**14.41**	**8.52**
SCAQMD Regional Threshold	75	100	550	150	150	55
Threshold Exceeded?	**NO**	**YES**	**NO**	**NO**	**NO**	**NO**

Impacts with BACMs, Regulatory Requirements, and Mitigation

The estimated maximum daily construction emissions with BACMs and mitigation are summarized on Table 3-5. Detailed construction model outputs are presented in Appendix 3.1. BACM AQ-1 and MM AQ-1 are recommended to reduce the severity of the impact. After implementation of BACMs, standard regulatory requirements, and recommended mitigation measures, construction activity emissions will not exceed the numerical thresholds established by the SCAQMD for criteria pollutants. Thus a less than significant impact would occur with implementation of BACM AQ-1 and MM AQ-1.

TABLE 3-5: EMISSIONS SUMMARY OF OVERALL CONSTRUCTION (WITH BACMS & MITIGATION)

Year	Emissions (pounds per day)					
	VOC	NOx	CO	SOx	PM10	PM2.5
2015	5.62	84.73	58.02	0.11	6.97	4.44
Maximum Daily Emissions	**5.62**	**84.73**	**58.02**	**0.11**	**6.97**	**4.44**
SCAQMD Regional Threshold	75	100	550	150	150	55
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

3.5 LOCALIZED SIGNIFIANCE - CONSTRUCTION ACTIVITY

The analysis makes use of methodology included in the SCAQMD *Final Localized Significance Threshold Methodology* (Methodology)(16). As previously discussed, the SCAQMD has established that impacts to air quality are significant if there is a potential to contribute or

cause localized exceedances of the federal and/or state ambient air quality standards (NAAQS/CAAQS). Collectively, these are referred to as Localized Significance Thresholds (LSTs).

The significance of localized emissions impacts depends on whether ambient levels in the vicinity of a given project are above or below State standards. In the case of CO and NO_2, if ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a state or federal standard, then project emissions are considered significant if they increase ambient concentrations by a measurable amount. This would apply to PM_{10} and $PM_{2.5}$; both of which are non-attainment pollutants.

The SCAQMD established LSTs in response to the SCAQMD Governing Board's Environmental Justice Initiative I-4. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest residence or sensitive receptor. The SCAQMD states that lead agencies can use the LSTs as another indicator of significance in its air quality impact analyses.

LSTs were developed in response to environmental justice and health concerns raised by the public regarding exposure of individuals to criteria pollutants in local communities. To address the issue of localized significance, the SCAQMD adopted LSTs that show whether a project would cause or contribute to localized air quality impacts and thereby cause or contribute to potential localized adverse health effects. The analysis makes use of methodology included in the SCAQMD *Final Localized Significance Threshold Methodology* (Methodology) (SCAQMD, June 2003).

APPLICABILITY OF LSTS FOR THE PROJECT

As previously noted in Section 2.6, the appropriate Source Receptor Area (SRA) for the LST analysis is the Northwest San Bernardino Valley monitoring station (SRA 32). LSTs apply to carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter ≤ 10 microns (PM_{10}), and particulate matter ≤ 2.5 microns ($PM_{2.5}$).

The SCAQMD produced look-up tables for projects less than or equal to 5 acres in size. In order to determine the appropriate methodology for determining localized impacts that could occur as a result of Project-related construction, the following process is undertaken:

- The CalEEMod model is utilized to determine the maximum daily on-site emissions that will occur during construction activity.
- The SCAQMD's Fact Sheet for Applying CalEEMod to Localized Significance Thresholds (17) is used to determine the maximum site acreage that is actively disturbed based on the construction equipment fleet and equipment hours as estimated in CalEEMod.
- If the total acreage disturbed is less than or equal to five acres per day, then the SCAQMD's screening look-up tables are utilized to determine if a Project has the potential to result in a significant impact (the SCAQMD recommends that Projects exceeding the screening look-up tables undergo dispersion modeling to determine actual impacts). The look-up tables establish a maximum daily emissions threshold in pounds per day that can be compared to CalEEMod outputs.

- If the total acreage disturbed is greater than five acres per day, then the SCAQMD recommends dispersion modeling to be conducted to determine the actual pollutant concentrations for applicable LSTs in the air. In other words, the maximum daily on-site emissions as calculated in CalEEMod are modeled via air dispersion modeling to calculate the actual concentration in the air (e.g., parts per million or micrograms per cubic meter) in order to determine if any applicable thresholds are exceeded.

EMISSIONS CONSIDERED

SCAQMD's Methodology clearly states that "off-site mobile emissions from the Project should NOT be included in the emissions compared to LSTs (18)." Therefore, for purposes of the construction LST analysis only emissions included in the CalEEMod "on-site" emissions outputs were considered.

MAXIMUM DAILY DISTURBED-ACREAGE

Table 3-6 is used to determine the maximum daily disturbed-acreage for use in determining the applicability of the SCAQMD's LST look-up tables. Based on Table 3-6, the proposed Project could actively disturb approximately 3.5 acres per day and thus would not exceed the 5 acre per day limit established by the SCAQMD's LST look-up tables. Site specific construction fleet may vary due to specific project needs at the time of construction. The SCAQMD produced look-up tables for projects less than or equal to 5 acres in size; since the Project does not exceed a disturbance area of 5 acres in size, SCAQMD LST look-up tables will be used to determine localized impacts consistent with SCAQMD protocol.

TABLE 3-6 MAXIMUM DAILY DISTURBED-ACREAGE

Construction Phase	Equipment Type	Equipment Quantity	Acres grader per 8 hour day	Operating Hours per Day	Acres graded per day
Bank Repair / Stockpiling	Tractors/Boom Mowers	1	0.5	8	0.5
	Graders	1	0.5	8	0.5
	Dozers	1	0.5	8	0.5
	Scrapers	2	1.0	8	2.0
Total acres graded per day					3.5
Applicable LST Mass Rate Look-up Table					3.5

Receptors

The nearest potentially affected sensitive receptor is the existing single-family residential dwellings located immediately adjacent to the west of the San Antonio Heights Basin #1. Notwithstanding, the *Methodology* explicitly recognizes that "*It is possible that a project may have receptors closer than 25 meters [82 feet]. Projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters* (19)." Accordingly, LSTs for receptors at 25 meters are utilized in this analysis and provide for a conservative i.e. "health protective" standard of care.

Impacts without BACMs, Regulatory Requirements, and Mitigation

Without BACMS and mitigation measures, emissions during construction activity will exceed the SCAQMD's localized significance thresholds for emissions of PM_{10} and $PM_{2.5}$. Table 3-7 identifies the unmitigated localized impacts at the nearest receptor location in the vicinity of the Project. It should be noted that the impacts do not take credit for reductions achieved through regulatory requirements (SCAQMD's Rule 403).

TABLE 3-7: LOCALIZED SIGNIFICANCE SUMMARY CONSTRUCTION (WITHOUT BACMS & MITIGATION)

Bank Repair / Stockpiling	Emissions (pounds per day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
Maximum Daily Emissions	**128.86**	**65.85**	**13.81**	**8.36**
SCAQMD Localized Threshold	220	1,712.50	11.00	7.00
Threshold Exceeded?	**NO**	**NO**	**YES**	**YES**

Impacts with BACMs, Regulatory Requirements, and Mitigation

After implementation of BACM AQ-1 and MM AQ-1, emissions during construction activity will not exceed the SCAQMD's localized significance threshold for any of the applicable emissions. Table 3-8 identifies the localized impacts at the nearest receptor location in the vicinity of the Project with implementation of BACMs and MM AQ-1.

TABLE 3-8: LOCALIZED SIGNIFICANCE SUMMARY CONSTRUCTION (WITH BACMS & MITIGATION)

Bank Repair / Stockpiling	Emissions (pounds per day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
Maximum Daily Emissions	**84.40**	**53.96**	**6.37**	**4.28**
SCAQMD Localized Threshold	220	1,712.50	11.00	7.00
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**

3.6 CO "HOT SPOT" ANALYSIS

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

It has long been recognized that adverse localized CO concentrations ("hot spots") are caused by vehicular emissions, primarily when idling at congested intersections. In response, vehicle emissions standards have become increasingly stringent in the last twenty years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated

and efficient emissions control technologies, CO concentrations in the Project vicinity have steadily declined, as indicated by historical emissions data presented previously at Table 2-3.

A CO "hotspot" would occur if an exceedance of the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm were to occur. At the time of the 1993 Handbook, the SCAB was designated nonattainment under the California AAQS and National AAQS for CO (13). As identified within SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak carbon monoxide concentrations in the SCAB were a result of unusual meteorological and topographical conditions and not a result of congestion at a particular intersection (20). To establish a more accurate record of baseline CO concentrations affecting the SCAB, a CO "hot spot" analysis was conducted in 2003 for four busy intersections in Los Angeles at the peak morning and afternoon time periods. This hot spot analysis did not predict any violation of CO standards. It can therefore be reasonably concluded that projects (such as the proposed San Bernardino County FLOD Project) that are not subject to the extremes in vehicle volumes and vehicle congestion that was evidenced in the 2003 Los Angeles hot spot analysis would similarly not create or result in CO hot spots. Similar considerations are also employed by other Air Districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District (BAAQMD) concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (21). The proposed Project considered herein would not produce the volume of traffic required to generate a CO hotspot either in the context of the 2003 Los Angeles hot spot study, or based on representative BAAQMD CO threshold considerations. Therefore, CO hotspots are not an environmental impact of concern for the proposed Project. Localized air quality impacts related to mobile-source emissions would therefore be less than significant.

3.7 AIR QUALITY MANAGEMENT PLANNING

The Project site is located within the SCAB, which is characterized by relatively poor air quality. The SCAQMD has jurisdiction over an approximately 10,743 square-mile area consisting of the four-county Basin and the Los Angeles County and Riverside County portions of what use to be referred to as the Southeast Desert Air Basin. In these areas, the SCAQMD is principally responsible for air pollution control, and works directly with the Southern California Association of Governments (SCAG), county transportation commissions, local governments, as well as state and federal agencies to reduce emissions from stationary, mobile, and indirect sources to meet state and federal ambient air quality standards.

Currently, these state and federal air quality standards are exceeded in most parts of the Basin. In response, the SCAQMD has adopted a series of Air Quality Management Plans (AQMPs) to meet the state and federal ambient air quality standards. AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy.

The Final 2012 AQMP was adopted by the AQMD Governing Board on December 7, 2012 (11). The 2012 AQMP incorporates the latest scientific and technological information and planning

assumptions, including the 2012 Regional Transportation Plan/Sustainable Communities Strategy and updated emission inventory methodologies for various source categories.

Similar to the 2007 AQMP, the 2012 AQMP was based on assumptions provided by both CARB and SCAG in the latest available EMFAC model for the most recent motor vehicle and demographics information, respectively. The air quality levels projected in the 2012 AQMP are based on several assumptions. For example, the 2012 AQMP has assumed that development associated with general plans, specific plans, residential projects, and wastewater facilities will be constructed in accordance with population growth projections identified by SCAG in its 2012 RTP. The 2012 AQMP also has assumed that such development projects will implement strategies to reduce emissions generated during the construction and operational phases of development. The Project's consistency with the 2012 AQMP is discussed as follows:

Criteria for determining consistency with the AQMP are defined in Chapter 12, Section 12.2 and Section 12.3 of the SCAQMD's CEQA Air Quality Handbook (1993) (13). These indicators are discussed below:

- Consistency Criterion No. 1: The proposed Project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

The violations that Consistency Criterion No. 1 refers to are the CAAQS and NAAQS. CAAQS and NAAQS violations would occur if localized significance thresholds (LSTs) were exceeded. As evaluated as part of the Project LST analysis (previously presented), the Project's localized construction-source emissions with BACMs and mitigation will not exceed applicable LSTs, and a less than significant impact is expected.

On the basis of the preceding discussion, the Project is determined to be consistent with the first criterion.

- Consistency Criterion No. 2: The Project will not exceed the assumptions in the AQMP based on the years of Project build-out phase.

The 2012 Air Quality Management Plan (AQMP) demonstrates that the applicable ambient air quality standards can be achieved within the timeframes required under federal law. Growth projections from local general plans adopted by cities in the district are provided to the Southern California Association of Governments (SCAG), which develops regional growth forecasts, which are then used to develop future air quality forecasts for the AQMP. The Project is not a development project, but rather proposes maintenance activities in various flood control zones. Emissions from construction activities will be short-term and finite, and are less than all applicable thresholds. Therefore, the Project is considered to be consistent with the AQMP.

AQMP Consistency Conclusion

The Project would not result in or cause NAAQS or CAAQS violations. The Project's does not propose a land use development but rather proposes routine maintenance on various flood control zones. The Project is therefore considered to be consistent with the AQMP.

3.8 POTENTIAL IMPACTS TO SENSITIVE RECEPTORS

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

Results of the LST analysis indicate that the Project will not exceed the SCAQMD localized significance thresholds during construction (with BACMs and mitigation). Therefore sensitive receptors would not be subject to a significant air quality impact during Project construction.

The proposed Project would not result in a CO "hotspot" as a result of Project related traffic during ongoing construction, nor would the Project result in a significant adverse health impact as discussed in Section 3.8.

3.9 ODORS

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

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

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

intervals in compliance with the County's solid waste regulations. The proposed Project would also be required to comply with SCAQMD Rule 402 to prevent occurrences of public nuisances. Therefore, odors associated with the proposed Project construction would be less than significant and no mitigation is required.

3.10 CUMULATIVE IMPACTS

The Project area is designated as an extreme non-attainment area for ozone, and a non-attainment area for PM_{10} and $PM_{2.5}$.

The SCAQMD has recognized that there is typically insufficient information to quantitatively evaluate the cumulative contributions of multiple projects because each project applicant has no control over nearby projects. Nevertheless, the potential cumulative impacts from the Project and other projects are discussed below.

Related projects could contribute to an existing or projected air quality exceedance because the Basin is currently nonattainment for ozone, PM10, and PM2.5. With regard to determining the significance of the contribution from the Project, the SCAQMD recommends that any given project's potential contribution to cumulative impacts should be assessed using the same significance criteria as for project-specific impacts. Therefore, this analysis assumes that individual projects that do not generate construction emissions that exceed the SCAQMD's recommended daily thresholds for project-specific impacts would also not cause a commutatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment, and, therefore, would not be considered to have a significant, adverse air quality impact. Alternatively, individual project-related construction emissions that exceed SCAQMD thresholds for project-specific impacts would be considered cumulatively considerable. As previously noted, the Project will not exceed the applicable SCAQMD regional threshold for construction-source emissions. As such, the Project will result in a cumulatively less than significant impact.

4 FINDINGS & CONCLUSIONS

For regional emissions, the Project will exceed the numerical thresholds of significance established by the South Coast Air Quality Management District (SCAQMD) for emissions of Nitrogen Oxides (NO_x) prior to implementation of mitigation measures (MMs).

The proposed mitigation measure MM AQ-1 is recommended to reduce the impacts to less than significant levels. After implementation of the recommended mitigation measure, construction activity emissions will not exceed the numerical thresholds established by the SCAQMD for any phase of construction activity. Thus a less than significant impact will occur with the implementation of MM AQ-1.

Without best available control measure (BACMs) and mitigation, emissions during construction activity will exceed the SCAQMD's localized significance threshold for PM_{10} and $PM_{2.5}$. It should be noted that the impacts without BACMs and mitigation do not take credit for reductions achieved through standard regulatory requirements (Rule 403). A less than significant impact would occur with the application of BACM AQ-1 and MM AQ-1.

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

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

4.1 STANDARD REGULATORY REQUIREMENTS/BEST AVAILABLE CONTROL MEASURES (BACMS)

Measures listed below (or equivalent language) shall appear on all Project grading plans, construction specifications and bid documents, and the County shall ensure such language is incorporated prior to issuance of any development permits.

SCAQMD Rules that are currently applicable during construction activity for this Project include but are not limited to: Rule 1113 (Architectural Coatings) (22); Rule 431.2 (Low Sulfur Fuel) (23); Rule 403 (Fugitive Dust) (24); and Rule 1186 / 1186.1 (Street Sweepers) (25). It should be noted that BACMs are not mitigation as they are standard regulatory requirements.

BACM AQ-1

The following measures shall be incorporated into Project plans and specifications as implementation of Rule 403 (4):

- All clearing, grading, earth-moving, or excavation activities shall cease when winds exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.

- The contractor shall ensure that all disturbed unpaved roads and disturbed areas within the Project are watered at least three (3) times daily during dry weather. Watering, with complete coverage of disturbed areas, shall occur at least three times a day, preferably in the mid-morning, afternoon, and after work is done for the day.
- The contractor shall ensure that traffic speeds on unpaved roads and Project site areas are reduced to 15 miles per hour or less

4.2 MITIGATION MEASURES

MM AQ-1

During construction activity, all construction equipment (≥ 150 horsepower) shall be California Air Resources Board (CARB) Tier 2 Certified or better.

5 REFERENCES

1. **South Coast Air Quality Management District.** Southern California Air Basins. [Online] [Cited: November 13, 2013.] http://www.aqmd.gov/map/mapaqmd1.pdf.
2. **Environmental Protection Agency.** National Ambient Air Quality Standards (NAAQS). [Online] 1990. [Cited: November 13, 2013.] http://www.epa.gov/air/criteria.html.
3. **Air Resources Board.** California Ambient Air Quality Standards (CAAQS). [Online] 2009. [Cited: November 13, 2013.] http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm.
4. **Environmental Protection Agency.** Monitor Values Report. [Online] [Cited: November 13, 2013.] http://www.epa.gov/airdata/ad_rep_mon.html.
5. **Air Resources Board.** Air Quality Standards and Area Designations. [Online] 2012. [Cited: November 13, 2013.] http://www.arb.ca.gov/desig/desig.htm.
6. **Environmental Protection Agency.** Currently Designated Nonattainment Areas for All Criteria Pollutants. [Online] 2013. http://www.epa.gov/oaqps001/greenbk/ancl.html.
7. **South Coast Air Quality Management District.** *Air Quality Reporting.* [pdf] Diamond Bar : Sierra Wade Associates, 1999.
8. **Air Resources Board.** [Online] [Cited: November 13, 2013.] http://www.arb.ca.gov/adam/select8/sc8start.php.
9. **Environmental Protection Agency.** National Ambient Air Quality Standards (NAAQS). [Online] 1990. [Cited: September 17, 2014.] http://www.epa.gov/air/criteria.html.
10. —. Air Pollution and the Clean Air Act. [Online] [Cited: November 13, 2013.] http://www.epa.gov/air/caa/.
11. **South Coast Air Quality Management District.** 2012 Air Quality Management Plan (AQMP). [Online] 2012. [Cited: November 13, 2013.] http://www.aqmd.gov/aqmp/2012aqmp/draft/index.html.
12. **California Environmental Quality Act.** Checklist. [Online] [Cited: Nnovember 13, 2013.] http://ceres.ca.gov/ceqa/guidelines/Appendix_G.html.
13. **South coast Air Quality Management District.** CEQA Air Quality Handbook (1993). [Online] 1993. [Cited: November 13, 2013.] http://www.aqmd.gov/ceqa/oldhdbk.html.
14. **South Coast Air Quality Management District.** Greenhouse Gases (GHG) CEQA Significance Thresholds. [Online] [Cited: November 13, 2013.] http://www.aqmd.gov/ceqa/handbook/GHG/GHG.html.
15. —. California Emissions Estimator Model. [Online] 2013. [Cited: November 13, 2013.] http://www.caleemod.com/.
16. —. RULE 402. Nuisance. [Online] May 7, 1976. [Cited: September 17, 2013.] http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-402.pdf?sfvrsn=4.
17. —. Fact Sheet for Applying CalEEMod to Localized Significance Thresholds. [Online] [Cited: December 9, 2013.] http://aqmd.gov/ceqa/handbook/LST/CalEEModguidance.pdf.
18. —. *Localized Significance Thresholds Methodology.* s.l. : South Coast Air Quality Managment District, 2003.
19. —. *Localized Significance Thresholds Methodology.* s.l. : South Coast Air Quality Managment District, 2003.

20. —. 2003 Air Quality Management Plan. [Online] 2003. http://www.aqmd.gov/aqmp/aqmd03aqmp.htm.
21. **Bay Area Air Quality Management District.** [Online] http://www.baaqmd.gov/.
22. **South Coast Air Quality Management District.** RULE 1113. Architectural Coatings. [Online] http://www.aqmd.gov/rules/reg/reg11/r1113.pdf.
23. —. RULE 431.2. Sulfur Content of Liquid Fuels. [Online] http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-431-2.pdf?sfvrsn=4.
24. —. RULE 403. Fugitive Dust. [Online] http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf?sfvrsn=4.
25. —. RULE 1186. PM10 Emissions From Paved and Unpaved Roads, and Livestock Operations. [Online] http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1186-1-less-polluting-sweepers.pdf?sfvrsn=4.

6 CERTIFICATION

The contents of this air study report represent an accurate depiction of the environmental impacts associated with the proposed San Bernardino County FLOD Project Project. The information contained in this air quality impact assessment report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 660-1994 ext. 217.

Haseeb Qureshi
Senior Associate
URBAN CROSSROADS, INC.
41 Corporate Park, Suite 300
Irvine, CA 92606
(949) 660-1994 x217
hqureshi@urbanxroads.com

EDUCATION

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

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

PROFESSIONAL AFFILIATIONS

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

PROFESSIONAL CERTIFICATIONS

Environmental Site Assessment – American Society for Testing and Materials • June, 2013
Planned Communities and Urban Infill – Urban Land Institute • June, 2011
Indoor Air Quality and Industrial Hygiene – EMSL Analytical • April, 2008
Principles of Ambient Air Monitoring – California Air Resources Board • August, 2007
AB2588 Regulatory Standards – Trinity Consultants • November, 2006
Air Dispersion Modeling – Lakes Environmental • June, 2006

This page intentionally left blank

APPENDIX 3.1:

CALEEMOD EMISSIONS MODEL OUTPUTS

San Bernardino County FLOD

San Bernardino-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	779.80	Acre	779.80	33,968,088.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2015
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	551.29	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

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

Land Use - based on information provided by the applicant

Construction Phase - based on consultation with the applicant

Off-road Equipment - based on consultation with the applicant

Vehicle Trips - operational emissions not modeled

Vechicle Emission Factors - operational emissions not modeled

Vechicle Emission Factors - operational emissions not modeled

Vechicle Emission Factors - operational emissions not modeled

Energy Use - operational emissions not modeled

Water And Wastewater - operational emissions not modeled

Construction Off-road Equipment Mitigation - tier 2 mitigation to all construction equipment greater than 150 HP

Off-road Equipment - based on information provided by the applicant

Off-road Equipment - based on information provided by the applicant

Off-road Equipment - based on information provided by the applicant

Grading -

Solid Waste - operational emissions not modeled

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

tblConstructionPhase	NumDays	1,240.00	16.00
tblConstructionPhase	NumDays	1,240.00	6.00
tblConstructionPhase	NumDays	480.00	11.00
tblOffRoadEquipment	HorsePower	400.00	189.00
tblOffRoadEquipment	HorsePower	400.00	189.00
tblOffRoadEquipment	HorsePower	400.00	189.00
tblOffRoadEquipment	LoadFactor	0.38	0.50
tblOffRoadEquipment	LoadFactor	0.38	0.50
tblOffRoadEquipment	LoadFactor	0.38	0.50
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType	Excavators	Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType	Scrapers	Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Graders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Scrapers
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Tractors

tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	PhaseName		Ingress / Egress
tblOffRoadEquipment	PhaseName		Ingress / Egress
tblOffRoadEquipment	PhaseName		Ingress / Egress
tblOffRoadEquipment	PhaseName		Ingress / Egress
tblOffRoadEquipment	PhaseName		Ingress / Egress
tblOffRoadEquipment	PhaseName		Ingress / Egress
tblOffRoadEquipment	PhaseName		Ingress / Egress

tblProjectCharacteristics	CO2IntensityFactor	630.89	551.29
tblProjectCharacteristics	OperationalYear	2014	2015
tblSolidWaste	SolidWasteGenerationRate	67.06	0.00
tblVehicleEF	HHD	0.04	0.00
tblVehicleEF	HHD	0.04	0.00
tblVehicleEF	HHD	0.04	0.00
tblVehicleEF	LDA	0.47	0.00
tblVehicleEF	LDA	0.47	0.00
tblVehicleEF	LDA	0.47	0.00
tblVehicleEF	LDT1	0.07	0.00
tblVehicleEF	LDT1	0.07	0.00
tblVehicleEF	LDT1	0.07	0.00
tblVehicleEF	LDT2	0.17	0.00
tblVehicleEF	LDT2	0.17	0.00
tblVehicleEF	LDT2	0.17	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD2	9.1200e-003	0.00
tblVehicleEF	LHD2	9.1200e-003	0.00
tblVehicleEF	LHD2	9.1200e-003	0.00
tblVehicleEF	MCY	4.8710e-003	0.00
tblVehicleEF	MCY	4.8710e-003	0.00
tblVehicleEF	MCY	4.8710e-003	0.00
tblVehicleEF	MDV	0.16	0.00
tblVehicleEF	MDV	0.16	0.00
tblVehicleEF	MDV	0.16	0.00
tblVehicleEF	MH	2.9140e-003	0.00

tblVehicleEF	MH	2.9140e-003	0.00
tblVehicleEF	MH	2.9140e-003	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	OBUS	1.1190e-003	0.00
tblVehicleEF	OBUS	1.1190e-003	0.00
tblVehicleEF	OBUS	1.1190e-003	0.00
tblVehicleEF	SBUS	7.2300e-004	0.00
tblVehicleEF	SBUS	7.2300e-004	0.00
tblVehicleEF	SBUS	7.2300e-004	0.00
tblVehicleEF	UBUS	1.3380e-003	0.00
tblVehicleEF	UBUS	1.3380e-003	0.00
tblVehicleEF	UBUS	1.3380e-003	0.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	9,727.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	OutdoorWaterUseRate	929,117,156.47	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	10.2282	113.1650	69.9108	0.1071	9.2658	5.1425	14.4083	3.7536	4.7675	8.5211	0.0000	10,926.6317	10,926.6317	2.9485	0.0000	10,988.5507
Total	**10.2282**	**113.1650**	**69.9108**	**0.1071**	**9.2658**	**5.1425**	**14.4083**	**3.7536**	**4.7675**	**8.5211**	**0.0000**	**10,926.6317**	**10,926.6317**	**2.9485**	**0.0000**	**10,988.5507**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	5.6243	84.7124	58.0184	0.1071	3.9750	2.9935	6.9685	1.5598	2.8790	4.4387	0.0000	10,926.6317	10,926.6317	2.9485	0.0000	10,988.5507
Total	**5.6243**	**84.7124**	**58.0184**	**0.1071**	**3.9750**	**2.9935**	**6.9685**	**1.5598**	**2.8790**	**4.4387**	**0.0000**	**10,926.6317**	**10,926.6317**	**2.9485**	**0.0000**	**10,988.5507**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**45.01**	**25.14**	**17.01**	**0.00**	**57.10**	**41.79**	**51.64**	**58.45**	**39.61**	**47.91**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	888.2505	8.0000e-004	0.0824	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		0.1707	0.1707	4.9000e-004		0.1810
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**888.2505**	**8.0000e-004**	**0.0824**	**1.0000e-005**	**0.0000**	**3.0000e-004**	**3.0000e-004**	**0.0000**	**3.0000e-004**	**3.0000e-004**		**0.1707**	**0.1707**	**4.9000e-004**	**0.0000**	**0.1810**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	888.2505	8.0000e-004	0.0824	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		0.1707	0.1707	4.9000e-004		0.1810
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**888.2505**	**8.0000e-004**	**0.0824**	**1.0000e-005**	**0.0000**	**3.0000e-004**	**3.0000e-004**	**0.0000**	**3.0000e-004**	**3.0000e-004**		**0.1707**	**0.1707**	**4.9000e-004**	**0.0000**	**0.1810**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Removal of Vegetation / Graffitti Removal	Site Preparation	9/15/2015	9/29/2015	5	11	
2	Bank Repair / Stockpiling	Grading	9/30/2015	10/21/2015	5	16	
3	Ingress / Egress	Grading	10/22/2015	10/29/2015	5	6	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Removal of Vegetation / Graffitti Removal	Rubber Tired Loaders	1	8.00	199	0.36
Removal of Vegetation / Graffitti Removal	Off-Highway Trucks	2	8.00	400	0.38
Removal of Vegetation / Graffitti Removal	Dumpers/Tenders	2	8.00	16	0.38
Bank Repair / Stockpiling	Rubber Tired Dozers	1	8.00	255	0.40
Bank Repair / Stockpiling	Dumpers/Tenders	8	8.00	16	0.38
Ingress / Egress	Cement and Mortar Mixers	1	8.00	9	0.56
Bank Repair / Stockpiling	Excavators	1	8.00	162	0.38

Removal of Vegetation / Graffitti Removal	Skid Steer Loaders	2	8.00	64	0.37
Removal of Vegetation / Graffitti Removal	Air Compressors	1	8.00	78	0.48
Ingress / Egress	Rubber Tired Dozers	1	8.00	255	0.40
Ingress / Egress	Dumpers/Tenders	6	8.00	16	0.38
Bank Repair / Stockpiling	Rough Terrain Forklifts	1	8.00	100	0.40
Ingress / Egress	Excavators	1	8.00	162	0.38
Removal of Vegetation / Graffitti Removal	Off-Highway Tractors	1	8.00	122	0.44
Bank Repair / Stockpiling	Rubber Tired Loaders	1	8.00	199	0.36
Ingress / Egress	Rough Terrain Forklifts	1	8.00	100	0.40
Removal of Vegetation / Graffitti Removal	Graders	1	8.00	174	0.41
Removal of Vegetation / Graffitti Removal	Off-Highway Trucks	1	8.00	189	0.50
Bank Repair / Stockpiling	Scrapers	2	8.00	361	0.48
Bank Repair / Stockpiling	Off-Highway Trucks	1	8.00	400	0.38
Bank Repair / Stockpiling	Skid Steer Loaders	2	8.00	64	0.37
Bank Repair / Stockpiling	Air Compressors	1	8.00	78	0.48
Bank Repair / Stockpiling	Off-Highway Tractors	1	8.00	122	0.44
Bank Repair / Stockpiling	Off-Highway Trucks	1	8.00	189	0.50
Bank Repair / Stockpiling	Graders	1	8.00	174	0.41
Ingress / Egress	Graders	1	8.00	174	0.41
Ingress / Egress	Rubber Tired Loaders	1	8.00	199	0.36
Ingress / Egress	Off-Highway Trucks	1	8.00	400	0.38
Ingress / Egress	Off-Highway Tractors	1	8.00	122	0.44
Ingress / Egress	Off-Highway Trucks	1	8.00	189	0.50
Removal of Vegetation / Graffitti Removal	Rubber Tired Dozers	0	8.00	255	0.40
Ingress / Egress	Scrapers	0	8.00	361	0.48
Bank Repair / Stockpiling	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Ingress / Egress	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Removal of Vegetation / Graffitti Removal	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Removal of Vegetation / Graffitti R	11	28.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Bank Repair / Stockpiling	21	53.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Ingress / Egress	15	38.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Removal of Vegetation / Graffitti Removal - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	5.7418	62.6927	29.8550	0.0609		2.8930	2.8930		2.6883	2.6883		6,321.9932	6,321.9932	1.8011		6,359.8167
Total	**5.7418**	**62.6927**	**29.8550**	**0.0609**	**0.5303**	**2.8930**	**3.4232**	**0.0573**	**2.6883**	**2.7456**		**6,321.9932**	**6,321.9932**	**1.8011**		**6,359.8167**

3.2 Removal of Vegetation / Graffitti Removal - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1347	0.1635	2.1450	3.9400e-003	0.3130	2.4500e-003	0.3154	0.0830	2.2400e-003	0.0852		339.1509	339.1509	0.0178		339.5242
Total	**0.1347**	**0.1635**	**2.1450**	**3.9400e-003**	**0.3130**	**2.4500e-003**	**0.3154**	**0.0830**	**2.2400e-003**	**0.0852**		**339.1509**	**339.1509**	**0.0178**		**339.5242**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2068	0.0000	0.2068	0.0223	0.0000	0.0223			0.0000			0.0000
Off-Road	4.5583	55.5311	30.9451	0.0609		2.3225	2.3225		2.1853	2.1853	0.0000	6,321.9931	6,321.9931	1.8011		6,359.8167
Total	**4.5583**	**55.5311**	**30.9451**	**0.0609**	**0.2068**	**2.3225**	**2.5293**	**0.0223**	**2.1853**	**2.2076**	**0.0000**	**6,321.9931**	**6,321.9931**	**1.8011**		**6,359.8167**

3.2 Removal of Vegetation / Graffitti Removal - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1347	0.1635	2.1450	3.9400e-003	0.3130	2.4500e-003	0.3154	0.0830	2.2400e-003	0.0852		339.1509	339.1509	0.0178		339.5242
Total	**0.1347**	**0.1635**	**2.1450**	**3.9400e-003**	**0.3130**	**2.4500e-003**	**0.3154**	**0.0830**	**2.2400e-003**	**0.0852**		**339.1509**	**339.1509**	**0.0178**		**339.5242**

3.3 Bank Repair / Stockpiling - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	9.9732	112.8556	65.8506	0.0997		5.1379	5.1379		4.7632	4.7632		10,284.6675	10,284.6675	2.9149		10,345.8800
Total	**9.9732**	**112.8556**	**65.8506**	**0.0997**	**8.6733**	**5.1379**	**13.8112**	**3.5965**	**4.7632**	**8.3597**		**10,284.6675**	**10,284.6675**	**2.9149**		**10,345.8800**

3.3 Bank Repair / Stockpiling - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2550	0.3094	4.0602	7.4500e-003	0.5924	4.6300e-003	0.5970	0.1571	4.2400e-003	0.1614		641.9641	641.9641	0.0337		642.6708
Total	**0.2550**	**0.3094**	**4.0602**	**7.4500e-003**	**0.5924**	**4.6300e-003**	**0.5970**	**0.1571**	**4.2400e-003**	**0.1614**		**641.9641**	**641.9641**	**0.0337**		**642.6708**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	5.3693	84.4030	53.9582	0.0997		2.9889	2.9889		2.8748	2.8748	0.0000	10,284.6675	10,284.6675	2.9149		10,345.8799
Total	**5.3693**	**84.4030**	**53.9582**	**0.0997**	**3.3826**	**2.9889**	**6.3715**	**1.4026**	**2.8748**	**4.2774**	**0.0000**	**10,284.6675**	**10,284.6675**	**2.9149**		**10,345.8799**

3.3 Bank Repair / Stockpiling - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2550	0.3094	4.0602	7.4500e-003	0.5924	4.6300e-003	0.5970	0.1571	4.2400e-003	0.1614		641.9641	641.9641	0.0337		642.6708
Total	**0.2550**	**0.3094**	**4.0602**	**7.4500e-003**	**0.5924**	**4.6300e-003**	**0.5970**	**0.1571**	**4.2400e-003**	**0.1614**		**641.9641**	**641.9641**	**0.0337**		**642.6708**

3.4 Ingress / Egress - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	6.2090	68.4741	37.1783	0.0611		3.1322	3.1322		2.8925	2.8925		6,281.5503	6,281.5503	1.7962		6,319.2705
Total	**6.2090**	**68.4741**	**37.1783**	**0.0611**	**6.5523**	**3.1322**	**9.6845**	**3.3675**	**2.8925**	**6.2599**		**6,281.5503**	**6,281.5503**	**1.7962**		**6,319.2705**

3.4 Ingress / Egress - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1828	0.2218	2.9111	5.3400e-003	0.4248	3.3200e-003	0.4281	0.1127	3.0400e-003	0.1157		460.2762	460.2762	0.0241		460.7828
Total	**0.1828**	**0.2218**	**2.9111**	**5.3400e-003**	**0.4248**	**3.3200e-003**	**0.4281**	**0.1127**	**3.0400e-003**	**0.1157**		**460.2762**	**460.2762**	**0.0241**		**460.7828**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5554	0.0000	2.5554	1.3133	0.0000	1.3133			0.0000			0.0000
Off-Road	3.7579	54.0538	32.5473	0.0611		1.9477	1.9477		1.8483	1.8483	0.0000	6,281.5503	6,281.5503	1.7962		6,319.2705
Total	**3.7579**	**54.0538**	**32.5473**	**0.0611**	**2.5554**	**1.9477**	**4.5031**	**1.3133**	**1.8483**	**3.1616**	**0.0000**	**6,281.5503**	**6,281.5503**	**1.7962**		**6,319.2705**

3.4 Ingress / Egress - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1828	0.2218	2.9111	5.3400e-003	0.4248	3.3200e-003	0.4281	0.1127	3.0400e-003	0.1157		460.2762	460.2762	0.0241		460.7828
Total	**0.1828**	**0.2218**	**2.9111**	**5.3400e-003**	**0.4248**	**3.3200e-003**	**0.4281**	**0.1127**	**3.0400e-003**	**0.1157**		**460.2762**	**460.2762**	**0.0241**		**460.7828**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	0.00	0.00	0.00	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	888.2505	8.0000e-004	0.0824	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		0.1707	0.1707	4.9000e-004		0.1810
Unmitigated	888.2505	8.0000e-004	0.0824	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		0.1707	0.1707	4.9000e-004		0.1810

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	215.6742					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	672.5681					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.1400e-003	8.0000e-004	0.0824	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		0.1707	0.1707	4.9000e-004		0.1810
Total	**888.2505**	**8.0000e-004**	**0.0824**	**1.0000e-005**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**		**0.1707**	**0.1707**	**4.9000e-004**		**0.1810**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	672.5681					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.1400e-003	8.0000e-004	0.0824	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		0.1707	0.1707	4.9000e-004		0.1810
Architectural Coating	215.6742					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**888.2505**	**8.0000e-004**	**0.0824**	**1.0000e-005**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**		**0.1707**	**0.1707**	**4.9000e-004**		**0.1810**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

San Bernardino County FLOD

San Bernardino-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	779.80	Acre	779.80	33,968,088.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2015
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	551.29	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

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

Land Use - based on information provided by the applicant

Construction Phase - based on consultation with the applicant

Off-road Equipment - based on consultation with the applicant

Vehicle Trips - operational emissions not modeled

Vechicle Emission Factors - operational emissions not modeled

Vechicle Emission Factors - operational emissions not modeled

Vechicle Emission Factors - operational emissions not modeled

Energy Use - operational emissions not modeled

Water And Wastewater - operational emissions not modeled

Construction Off-road Equipment Mitigation - tier 2 mitigation to all construction equipment greater than 150 HP

Off-road Equipment - based on information provided by the applicant

Off-road Equipment - based on information provided by the applicant

Off-road Equipment - based on information provided by the applicant

Grading -

Solid Waste - operational emissions not modeled

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

tblConstructionPhase	NumDays	1,240.00	16.00
tblConstructionPhase	NumDays	1,240.00	6.00
tblConstructionPhase	NumDays	480.00	11.00
tblOffRoadEquipment	HorsePower	400.00	189.00
tblOffRoadEquipment	HorsePower	400.00	189.00
tblOffRoadEquipment	HorsePower	400.00	189.00
tblOffRoadEquipment	LoadFactor	0.38	0.50
tblOffRoadEquipment	LoadFactor	0.38	0.50
tblOffRoadEquipment	LoadFactor	0.38	0.50
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType	Excavators	Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType	Scrapers	Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Graders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Scrapers
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Tractors

tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	PhaseName		Ingress / Egress
tblOffRoadEquipment	PhaseName		Ingress / Egress
tblOffRoadEquipment	PhaseName		Ingress / Egress
tblOffRoadEquipment	PhaseName		Ingress / Egress
tblOffRoadEquipment	PhaseName		Ingress / Egress
tblOffRoadEquipment	PhaseName		Ingress / Egress
tblOffRoadEquipment	PhaseName		Ingress / Egress

tblProjectCharacteristics	CO2IntensityFactor	630.89	551.29
tblProjectCharacteristics	OperationalYear	2014	2015
tblSolidWaste	SolidWasteGenerationRate	67.06	0.00
tblVehicleEF	HHD	0.04	0.00
tblVehicleEF	HHD	0.04	0.00
tblVehicleEF	HHD	0.04	0.00
tblVehicleEF	LDA	0.47	0.00
tblVehicleEF	LDA	0.47	0.00
tblVehicleEF	LDA	0.47	0.00
tblVehicleEF	LDT1	0.07	0.00
tblVehicleEF	LDT1	0.07	0.00
tblVehicleEF	LDT1	0.07	0.00
tblVehicleEF	LDT2	0.17	0.00
tblVehicleEF	LDT2	0.17	0.00
tblVehicleEF	LDT2	0.17	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD2	9.1200e-003	0.00
tblVehicleEF	LHD2	9.1200e-003	0.00
tblVehicleEF	LHD2	9.1200e-003	0.00
tblVehicleEF	MCY	4.8710e-003	0.00
tblVehicleEF	MCY	4.8710e-003	0.00
tblVehicleEF	MCY	4.8710e-003	0.00
tblVehicleEF	MDV	0.16	0.00
tblVehicleEF	MDV	0.16	0.00
tblVehicleEF	MDV	0.16	0.00
tblVehicleEF	MH	2.9140e-003	0.00

tblVehicleEF	MH	2.9140e-003	0.00
tblVehicleEF	MH	2.9140e-003	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	OBUS	1.1190e-003	0.00
tblVehicleEF	OBUS	1.1190e-003	0.00
tblVehicleEF	OBUS	1.1190e-003	0.00
tblVehicleEF	SBUS	7.2300e-004	0.00
tblVehicleEF	SBUS	7.2300e-004	0.00
tblVehicleEF	SBUS	7.2300e-004	0.00
tblVehicleEF	UBUS	1.3380e-003	0.00
tblVehicleEF	UBUS	1.3380e-003	0.00
tblVehicleEF	UBUS	1.3380e-003	0.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	9,727.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	OutdoorWaterUseRate	929,117,156.47	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	10.2134	113.1864	69.3325	0.1065	9.2658	5.1425	14.4083	3.7536	4.7675	8.5211	0.0000	10,869.5215	10,869.5215	2.9485	0.0000	10,931.4406
Total	**10.2134**	**113.1864**	**69.3325**	**0.1065**	**9.2658**	**5.1425**	**14.4083**	**3.7536**	**4.7675**	**8.5211**	**0.0000**	**10,869.5215**	**10,869.5215**	**2.9485**	**0.0000**	**10,931.4406**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	5.6095	84.7338	57.4402	0.1065	3.9750	2.9935	6.9685	1.5598	2.8790	4.4387	0.0000	10,869.5215	10,869.5215	2.9485	0.0000	10,931.4406
Total	**5.6095**	**84.7338**	**57.4402**	**0.1065**	**3.9750**	**2.9935**	**6.9685**	**1.5598**	**2.8790**	**4.4387**	**0.0000**	**10,869.5215**	**10,869.5215**	**2.9485**	**0.0000**	**10,931.4406**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**45.08**	**25.14**	**17.15**	**0.00**	**57.10**	**41.79**	**51.64**	**58.45**	**39.61**	**47.91**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	888.2505	8.0000e-004	0.0824	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		0.1707	0.1707	4.9000e-004		0.1810
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**888.2505**	**8.0000e-004**	**0.0824**	**1.0000e-005**	**0.0000**	**3.0000e-004**	**3.0000e-004**	**0.0000**	**3.0000e-004**	**3.0000e-004**		**0.1707**	**0.1707**	**4.9000e-004**	**0.0000**	**0.1810**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	888.2505	8.0000e-004	0.0824	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		0.1707	0.1707	4.9000e-004		0.1810
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**888.2505**	**8.0000e-004**	**0.0824**	**1.0000e-005**	**0.0000**	**3.0000e-004**	**3.0000e-004**	**0.0000**	**3.0000e-004**	**3.0000e-004**		**0.1707**	**0.1707**	**4.9000e-004**	**0.0000**	**0.1810**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Removal of Vegetation / Graffitti Removal	Site Preparation	9/15/2015	9/29/2015	5	11	
2	Bank Repair / Stockpiling	Grading	9/30/2015	10/21/2015	5	16	
3	Ingress / Egress	Grading	10/22/2015	10/29/2015	5	6	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Removal of Vegetation / Graffitti Removal	Rubber Tired Loaders	1	8.00	199	0.36
Removal of Vegetation / Graffitti Removal	Off-Highway Trucks	2	8.00	400	0.38
Removal of Vegetation / Graffitti Removal	Dumpers/Tenders	2	8.00	16	0.38
Bank Repair / Stockpiling	Rubber Tired Dozers	1	8.00	255	0.40
Bank Repair / Stockpiling	Dumpers/Tenders	8	8.00	16	0.38
Ingress / Egress	Cement and Mortar Mixers	1	8.00	9	0.56
Bank Repair / Stockpiling	Excavators	1	8.00	162	0.38

Removal of Vegetation / Graffitti Removal	Skid Steer Loaders	2	8.00	64	0.37
Removal of Vegetation / Graffitti Removal	Air Compressors	1	8.00	78	0.48
Ingress / Egress	Rubber Tired Dozers	1	8.00	255	0.40
Ingress / Egress	Dumpers/Tenders	6	8.00	16	0.38
Bank Repair / Stockpiling	Rough Terrain Forklifts	1	8.00	100	0.40
Ingress / Egress	Excavators	1	8.00	162	0.38
Removal of Vegetation / Graffitti Removal	Off-Highway Tractors	1	8.00	122	0.44
Bank Repair / Stockpiling	Rubber Tired Loaders	1	8.00	199	0.36
Ingress / Egress	Rough Terrain Forklifts	1	8.00	100	0.40
Removal of Vegetation / Graffitti Removal	Graders	1	8.00	174	0.41
Removal of Vegetation / Graffitti Removal	Off-Highway Trucks	1	8.00	189	0.50
Bank Repair / Stockpiling	Scrapers	2	8.00	361	0.48
Bank Repair / Stockpiling	Off-Highway Trucks	1	8.00	400	0.38
Bank Repair / Stockpiling	Skid Steer Loaders	2	8.00	64	0.37
Bank Repair / Stockpiling	Air Compressors	1	8.00	78	0.48
Bank Repair / Stockpiling	Off-Highway Tractors	1	8.00	122	0.44
Bank Repair / Stockpiling	Off-Highway Trucks	1	8.00	189	0.50
Bank Repair / Stockpiling	Graders	1	8.00	174	0.41
Ingress / Egress	Graders	1	8.00	174	0.41
Ingress / Egress	Rubber Tired Loaders	1	8.00	199	0.36
Ingress / Egress	Off-Highway Trucks	1	8.00	400	0.38
Ingress / Egress	Off-Highway Tractors	1	8.00	122	0.44
Ingress / Egress	Off-Highway Trucks	1	8.00	189	0.50
Removal of Vegetation / Graffitti Removal	Rubber Tired Dozers	0	8.00	255	0.40
Ingress / Egress	Scrapers	0	8.00	361	0.48
Bank Repair / Stockpiling	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Ingress / Egress	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Removal of Vegetation / Graffitti Removal	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Removal of Vegetation / Graffitti R	11	28.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Bank Repair / Stockpiling	21	53.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Ingress / Egress	15	38.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Removal of Vegetation / Graffitti Removal - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	5.7418	62.6927	29.8550	0.0609		2.8930	2.8930		2.6883	2.6883		6,321.9932	6,321.9932	1.8011		6,359.8167
Total	**5.7418**	**62.6927**	**29.8550**	**0.0609**	**0.5303**	**2.8930**	**3.4232**	**0.0573**	**2.6883**	**2.7456**		**6,321.9932**	**6,321.9932**	**1.8011**		**6,359.8167**

3.2 Removal of Vegetation / Graffitti Removal - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1269	0.1748	1.8395	3.5800e-003	0.3130	2.4500e-003	0.3154	0.0830	2.2400e-003	0.0852		308.9795	308.9795	0.0178		309.3528
Total	**0.1269**	**0.1748**	**1.8395**	**3.5800e-003**	**0.3130**	**2.4500e-003**	**0.3154**	**0.0830**	**2.2400e-003**	**0.0852**		**308.9795**	**308.9795**	**0.0178**		**309.3528**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2068	0.0000	0.2068	0.0223	0.0000	0.0223			0.0000			0.0000
Off-Road	4.5583	55.5311	30.9451	0.0609		2.3225	2.3225		2.1853	2.1853	0.0000	6,321.9931	6,321.9931	1.8011		6,359.8167
Total	**4.5583**	**55.5311**	**30.9451**	**0.0609**	**0.2068**	**2.3225**	**2.5293**	**0.0223**	**2.1853**	**2.2076**	**0.0000**	**6,321.9931**	**6,321.9931**	**1.8011**		**6,359.8167**

3.2 Removal of Vegetation / Graffitti Removal - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1269	0.1748	1.8395	3.5800e-003	0.3130	2.4500e-003	0.3154	0.0830	2.2400e-003	0.0852		308.9795	308.9795	0.0178		309.3528
Total	**0.1269**	**0.1748**	**1.8395**	**3.5800e-003**	**0.3130**	**2.4500e-003**	**0.3154**	**0.0830**	**2.2400e-003**	**0.0852**		**308.9795**	**308.9795**	**0.0178**		**309.3528**

3.3 Bank Repair / Stockpiling - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	9.9732	112.8556	65.8506	0.0997		5.1379	5.1379		4.7632	4.7632		10,284.6675	10,284.6675	2.9149		10,345.8800
Total	**9.9732**	**112.8556**	**65.8506**	**0.0997**	**8.6733**	**5.1379**	**13.8112**	**3.5965**	**4.7632**	**8.3597**		**10,284.6675**	**10,284.6675**	**2.9149**		**10,345.8800**

3.3 Bank Repair / Stockpiling - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2402	0.3308	3.4819	6.7800e-003	0.5924	4.6300e-003	0.5970	0.1571	4.2400e-003	0.1614		584.8540	584.8540	0.0337		585.5606
Total	**0.2402**	**0.3308**	**3.4819**	**6.7800e-003**	**0.5924**	**4.6300e-003**	**0.5970**	**0.1571**	**4.2400e-003**	**0.1614**		**584.8540**	**584.8540**	**0.0337**		**585.5606**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	5.3693	84.4030	53.9582	0.0997		2.9889	2.9889		2.8748	2.8748	0.0000	10,284.6675	10,284.6675	2.9149		10,345.8799
Total	**5.3693**	**84.4030**	**53.9582**	**0.0997**	**3.3826**	**2.9889**	**6.3715**	**1.4026**	**2.8748**	**4.2774**	**0.0000**	**10,284.6675**	**10,284.6675**	**2.9149**		**10,345.8799**

3.3 Bank Repair / Stockpiling - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2402	0.3308	3.4819	6.7800e-003	0.5924	4.6300e-003	0.5970	0.1571	4.2400e-003	0.1614		584.8540	584.8540	0.0337		585.5606
Total	**0.2402**	**0.3308**	**3.4819**	**6.7800e-003**	**0.5924**	**4.6300e-003**	**0.5970**	**0.1571**	**4.2400e-003**	**0.1614**		**584.8540**	**584.8540**	**0.0337**		**585.5606**

3.4 Ingress / Egress - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	6.2090	68.4741	37.1783	0.0611		3.1322	3.1322		2.8925	2.8925		6,281.5503	6,281.5503	1.7962		6,319.2705
Total	**6.2090**	**68.4741**	**37.1783**	**0.0611**	**6.5523**	**3.1322**	**9.6845**	**3.3675**	**2.8925**	**6.2599**		**6,281.5503**	**6,281.5503**	**1.7962**		**6,319.2705**

3.4 Ingress / Egress - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1722	0.2372	2.4965	4.8600e-003	0.4248	3.3200e-003	0.4281	0.1127	3.0400e-003	0.1157		419.3293	419.3293	0.0241		419.8359
Total	**0.1722**	**0.2372**	**2.4965**	**4.8600e-003**	**0.4248**	**3.3200e-003**	**0.4281**	**0.1127**	**3.0400e-003**	**0.1157**		**419.3293**	**419.3293**	**0.0241**		**419.8359**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5554	0.0000	2.5554	1.3133	0.0000	1.3133			0.0000			0.0000
Off-Road	3.7579	54.0538	32.5473	0.0611		1.9477	1.9477		1.8483	1.8483	0.0000	6,281.5503	6,281.5503	1.7962		6,319.2705
Total	**3.7579**	**54.0538**	**32.5473**	**0.0611**	**2.5554**	**1.9477**	**4.5031**	**1.3133**	**1.8483**	**3.1616**	**0.0000**	**6,281.5503**	**6,281.5503**	**1.7962**		**6,319.2705**

3.4 Ingress / Egress - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1722	0.2372	2.4965	4.8600e-003	0.4248	3.3200e-003	0.4281	0.1127	3.0400e-003	0.1157		419.3293	419.3293	0.0241		419.8359
Total	**0.1722**	**0.2372**	**2.4965**	**4.8600e-003**	**0.4248**	**3.3200e-003**	**0.4281**	**0.1127**	**3.0400e-003**	**0.1157**		**419.3293**	**419.3293**	**0.0241**		**419.8359**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	0.00	0.00	0.00	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	888.2505	8.0000e-004	0.0824	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		0.1707	0.1707	4.9000e-004		0.1810
Unmitigated	888.2505	8.0000e-004	0.0824	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		0.1707	0.1707	4.9000e-004		0.1810

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	215.6742					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	672.5681					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.1400e-003	8.0000e-004	0.0824	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		0.1707	0.1707	4.9000e-004		0.1810
Total	**888.2505**	**8.0000e-004**	**0.0824**	**1.0000e-005**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**		**0.1707**	**0.1707**	**4.9000e-004**		**0.1810**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	672.5681					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.1400e-003	8.0000e-004	0.0824	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		0.1707	0.1707	4.9000e-004		0.1810
Architectural Coating	215.6742					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**888.2505**	**8.0000e-004**	**0.0824**	**1.0000e-005**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**		**0.1707**	**0.1707**	**4.9000e-004**		**0.1810**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

This page intentionally left blank

APPENDIX 3.2:

STATE/FEDERAL ATTAINMENT STATUS OF CRITERIA POLLUTANTS

2013
Area Designations for State Ambient Air Quality Standards
OZONE

Source Date:
June 2013
Air Quality Planning Branch, AQPSD

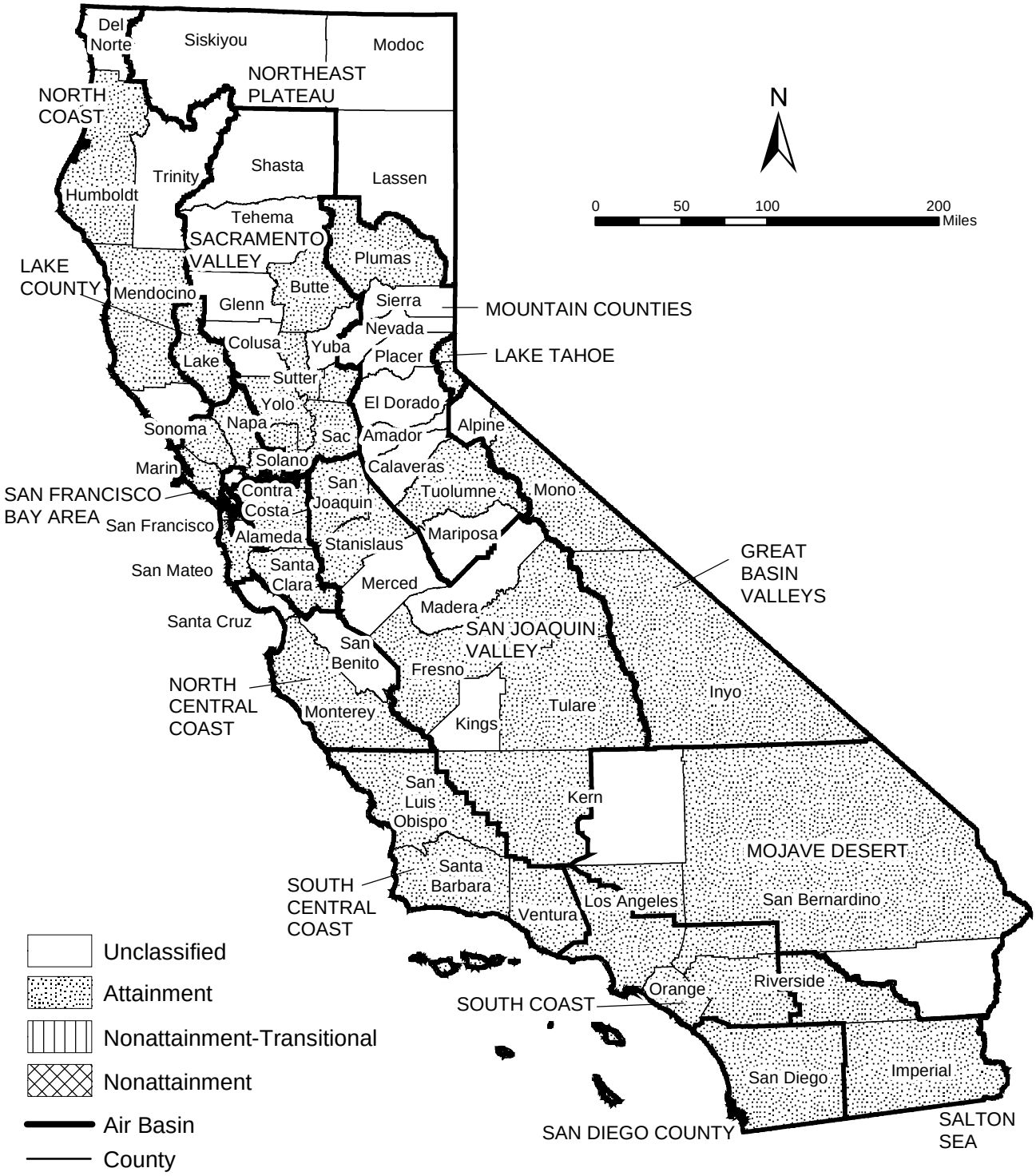
2013
Area Designations for State Ambient Air Quality Standards
PM10

Source Date:
June 2013
Air Quality Planning Branch, AQPSD

2013
Area Designations for State Ambient Air Quality Standards
PM2.5

Source Date:
June 2013
Air Quality Planning Branch, AQPSD

2013
Area Designations for State Ambient Air Quality Standards
CARBON MONOXIDE



Source Date:
June 2013
Air Quality Planning Branch, AQPSD

2013
Area Designations for State Ambient Air Quality Standards
NITROGEN DIOXIDE

Source Date:
June 2013
Air Quality Planning Branch, AQPSD

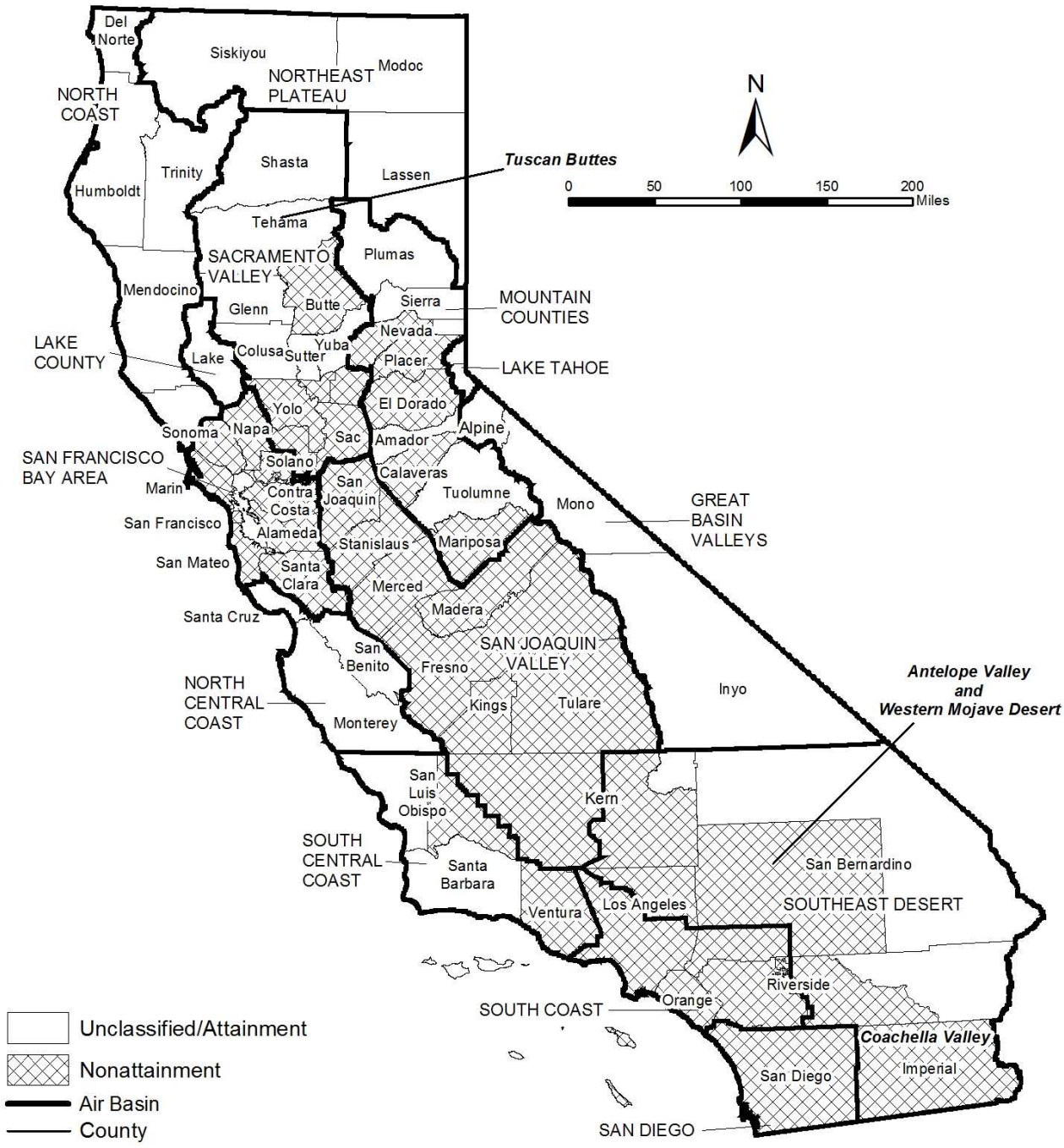
2013
Area Designations for State Ambient Air Quality Standards
SULFUR DIOXIDE

Source Date:
June 2013
Air Quality Planning Branch, AQPSD

2013
Area Designations for State Ambient Air Quality Standards
LEAD

Source Date:
June 2013
Air Quality Planning Branch, AQPSD

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



Source Date:
June 2013
Air Quality Planning Branch, AQPSD

Area Designations for National Ambient Air Quality Standards PM10

Source Date:
September 2013
Air Quality Planning Branch, AQPSD

Area Designations for National Ambient Air Quality Standards PM2.5

Source Date:
June 2013
Air Quality Planning Branch, AQPSD

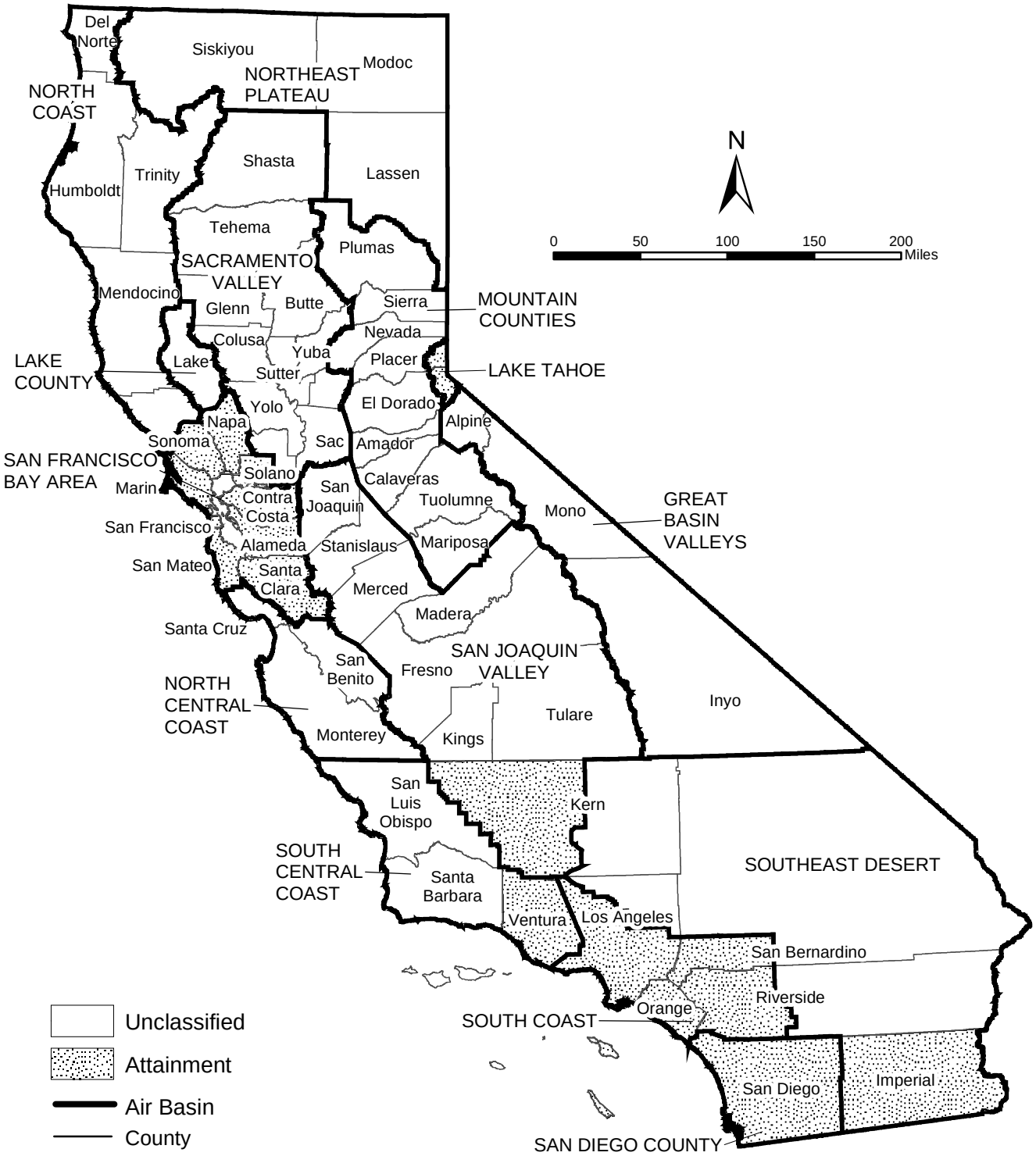
Area Designations for National Ambient Air Quality Standards CARBON MONOXIDE

Source Date:
June 2013
Air Quality Planning Branch, AQPSD

Area Designations for National Ambient Air Quality Standards NITROGEN DIOXIDE

Source Date:
June 2013
Air Quality Planning Branch, AQPSD

Area Designations for National Ambient Air Quality Standards SULFUR DIOXIDE



Source Date:
June 2013
Air Quality Planning Branch, AQPSD

Area Designations for National Ambient Air Quality Standards LEAD

Source Date:
June 2013
Air Quality Planning Branch, AQPSD