Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR

Appendix B

Air Quality and Greenhouse Gas Emissions

1.0 INTRODUCTION

This Air Quality and Greenhouse Gases appendix was developed to assist with the public disclosure requirements established under the California Environmental Quality Act (CEQA). The Draft EIR addresses the potential impact to air quality and climate change from the development of the proposed Project. This Air Quality and Greenhouse Gases appendix identifies the technical assumptions, methodologies, databases, and models that were used to conduct the Air Quality and Greenhouse Gas Emissions analyses for the EIR.

1.1 Background

The City of Los Angeles, through its aviation department, Los Angeles World Airports (LAWA), proposes to construct improvements to the Runway Safety Area (RSA) for Runway 6L-24R and RSA for Runway 6R-24L located on the north airfield of Los Angeles International Airport (LAX). These improvements are being proposed in order to comply with the requirements of the Transportation, Treasury, Housing and Urban Development, the Judiciary, the District of Columbia, and Independent Agencies Appropriations Act, 2006 (Public Law [P.L.] 109-115). This Act requires completion of RSA improvements by airport sponsors that hold a certificate under Title 14, Code of Federal Regulations (CFR), Part 139, Certification and Operations: Land Airports Serving Certain Air Carriers, to comply with Federal Aviation Administration (FAA) design standards by December 31, 2015.

1.2 Project Location

The Airport is located on the western end of the Los Angeles Basin and is bounded on the north by the City of Los Angeles communities of Westchester and Playa Del Rey (which form the Westchester-Playa Del Rey Community Plan Area), on the east by the City of Inglewood and the community of Lennox (unincorporated Los Angeles County), to the south by the City of El Segundo and the community of Del Aire (unincorporated Los Angeles County), and to the west by the Pacific Ocean. A regional map of LAX is shown in **Figure 1**.

Runway 6L-24R is the most northern runway located in the northern portion of the LAX airfield, entirely within the Air Operations Area (AOA). The Project site and potential construction staging areas are shown in **Figure 2**.

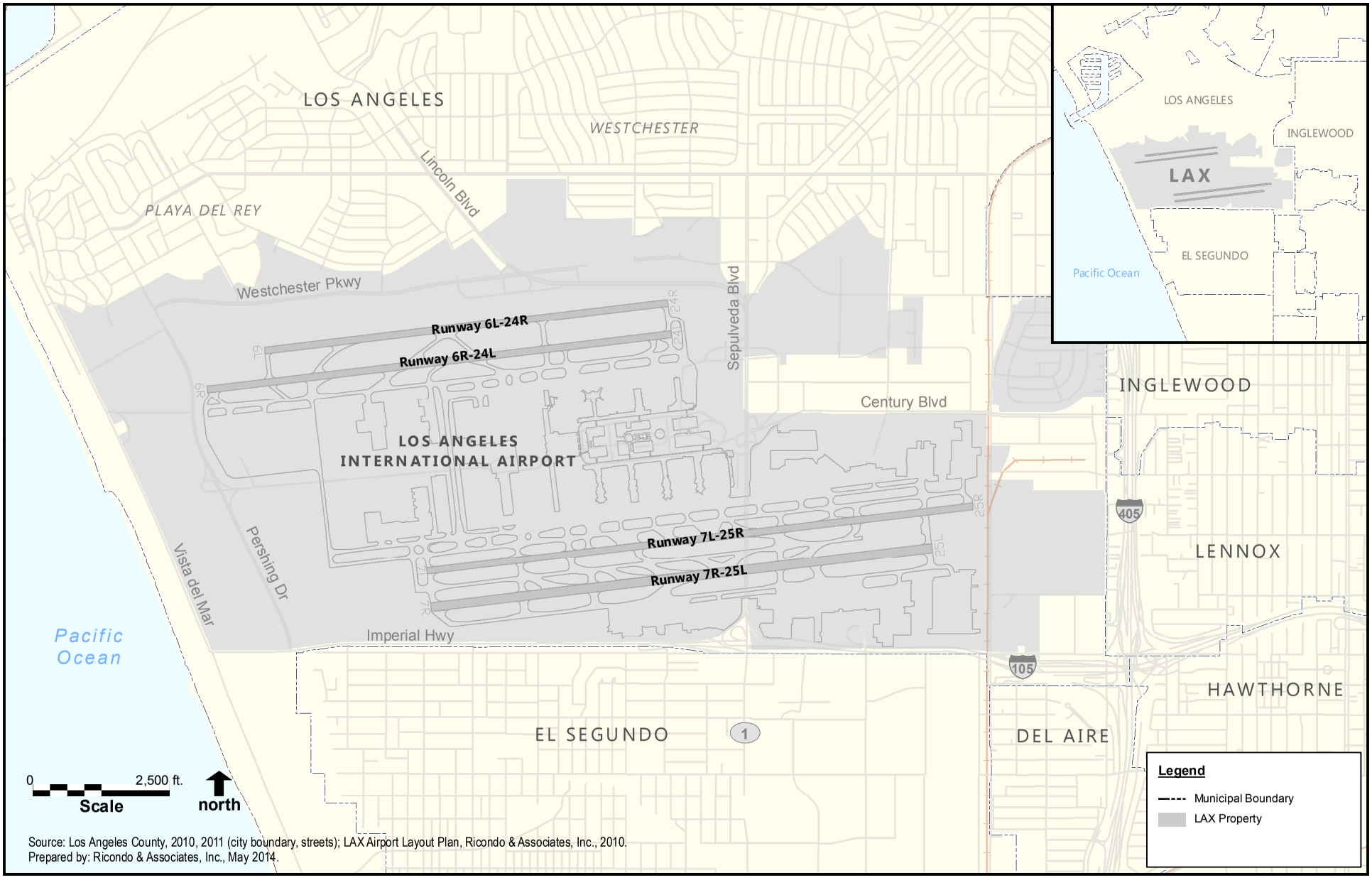
1.3 Project Components

The proposed Project would involve the covering of portions of the Argo Ditch, the relocation of a portion of a service road along Lincoln Boulevard, closure of a portion of a service road located within the Runway 6L-24R RSA south of the runway, relocation of a portion of a service road located within the Runway 6R-24L RSA north of the runway, and closure of parking areas located within the Runway 6R-24L RSA. The relocated service road along Lincoln Boulevard would become the limiting object, providing for a 641-foot RSA beyond the Runway 24R end. In order to provide a 1,000-foot standard RSA on that end, declared distances (see below) would

be implemented, reducing the Runway 6L Accelerate-Stop Distance Available (ASDA) and Landing Distance Available (LDA) by 359 feet, from 8,925 feet to 8,566 feet. This alternative would also provide the required minimum 600 feet of RSA prior to the Runway 24R landing threshold. No improvements are required on the Runway 6L end.

Declared distances would also be implemented on Runway 6R-24L. The Runway 6R ASDA and LDA would be reduced by 115 feet to provide a 1,000-foot RSA from the Runway 6R localizer. The proposed improvements would not correct the 104-foot deficiency for the Runway 6R arrival RSA, the 835-foot deficiency for the Runway 24L RSA, and would not remove the portion of the service road located within the RSA south of the runway. As stated previously, LAWA is considering alternatives to address these RSA issues but due to complexities with interactions for aircraft operating on the two runways, additional analysis and coordination with FAA needs to occur before LAWA can identify an alternative that will address all RSA deficiencies for Runway 6R-24L. The components of the proposed Project related to Runway 6L-24R and Runway 6R-24L RSA improvements are depicted on **Figures 3** and **4**, respectively. The primary components of the RSA improvements include:

- Implementation of declared distances on Runway 6L and Runway 6R
- Demolition of service road segments on the west end of Runway 6L
- Service roads in the eastern portion of the Runway 6L-24R RSA would be relocated outside the RSA
- Two segments of service roads would be constructed for access to navigational aids (navaids) east of the runways
- Service road segments would be constructed between the Runway 6L-24R RSA and the Runway 6R-24L RSA
- Cover a segment of the Argo Ditch
- Pavement rehabilitation of Runway 6L-24R and Taxiway AA
    - Runway centerline and touchdown lighting replacement
    - Runway pavement markings
- Closure of vehicle service roads located within the Runway 6R-24L RSA
- Relocate security gate(s)
- Relocate Air Operations Area (AOA) Fence
- LAWA equipment parking areas closures
- Realignment of taxiway hold bars
- Construction Staging Areas



Source: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010.
Prepared by: Ricondo & Associates, Inc., May 2014.

LAX Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR

General Location and Vicinity Map

Figure 1

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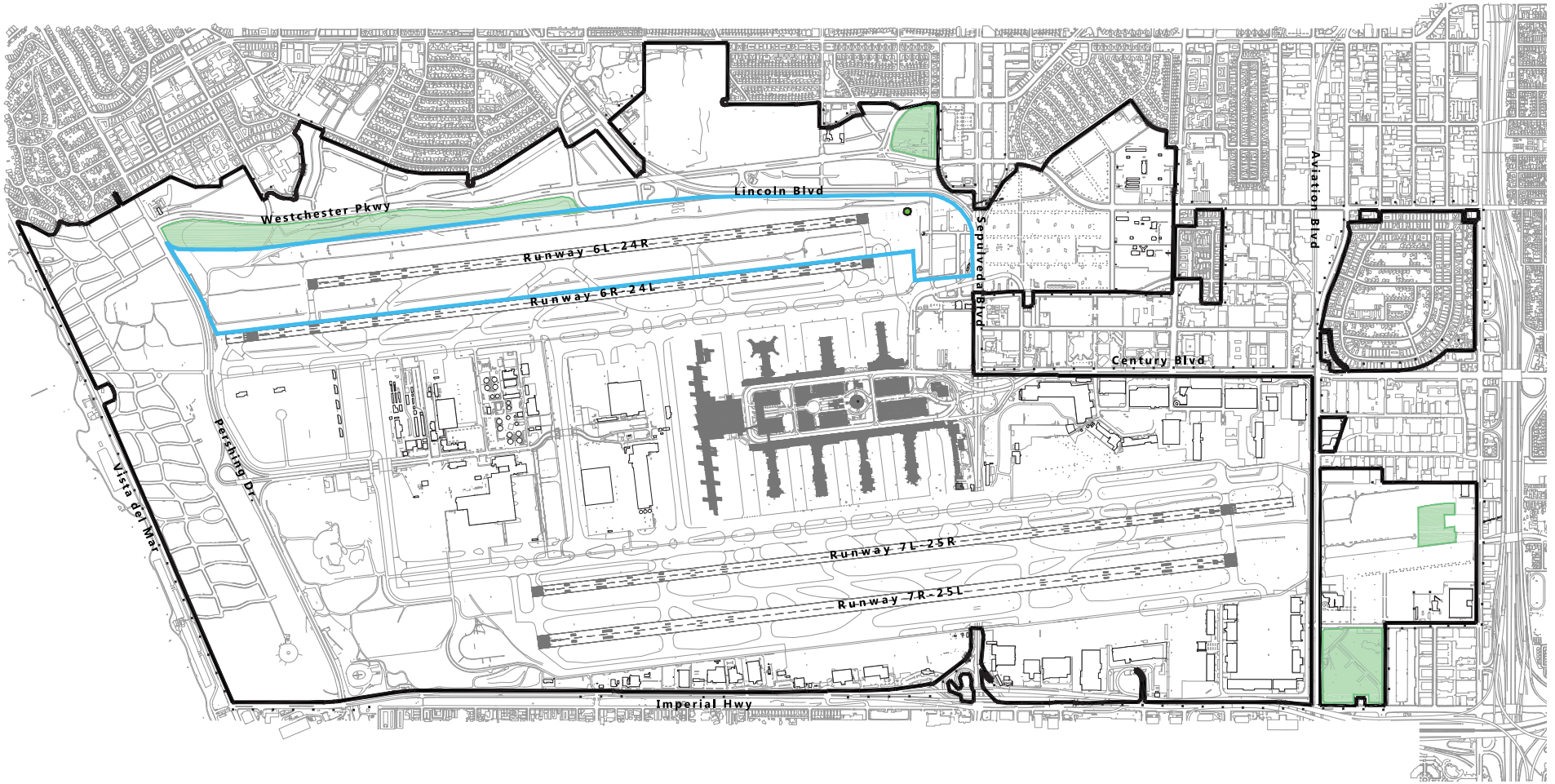

0 1,600 ft.
Scale north

Source: Landrum & Brown, *Los Angeles International Airport, Airport Layout Plan*, 2005; Ricondo & Associates, Inc., October 2013.
Prepared by: Ricondo & Associates, Inc., March 2014.

Legend
- Potential Construction Staging Area
- LAX Property Boundary
- Construction Area

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvments Draft EIR	**Proposed Project Location and Potential Staging Areas**	Figure **2**

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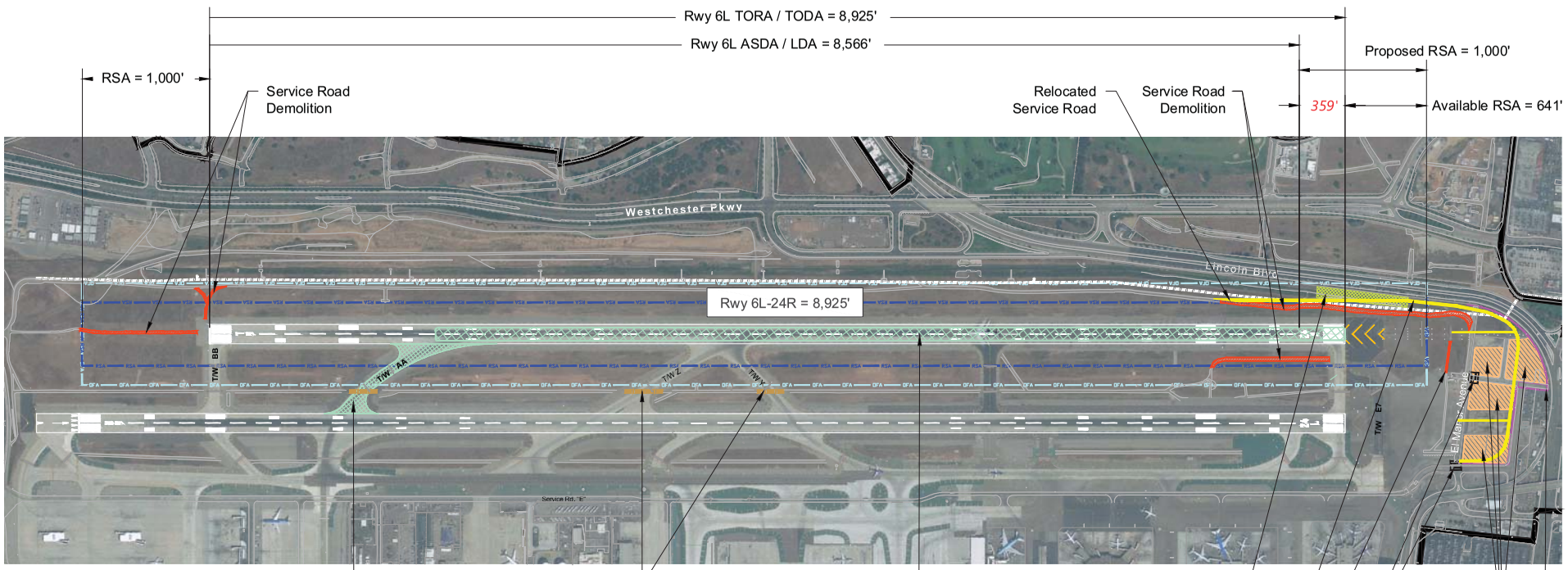

0 800 ft.
Scale north

Source: Federal Aviation Administration, Advisory Circular 150/5300-13A, Airport Design,September 28, 2012; Landrum & Brown, Los Angeles International Airport, Airport Layout Plan,2005; Los Angeles World Airports, April 2013 (aerial photography); Ricondo & Associates, Inc., October 2013.
Prepared by: Ricondo & Associates, Inc., December 2013.

Legend

- LAX Property Boundary
- Runway Safety Area (RSA)
- Runway Object Free Area (OFA)
- Parking Area Closure
- Relocated Service Road
- Argo Ditch to be Covered
- Relocated AOA Fence
- Service Road Pavement to be Demolished
- XXX Distances Needed to meet RSA Requirements
- LA Dept. of Water and Power Water Main
- Security Gate
- Taxiway Hold Bar Realignment
- Taxiway Pavement Rehabilitation
- Runway Pavement Rehabilitation

Notes

Acronyms:

TORA	Take-Off Run Available
TODA	Take-Off Distance Available
ASDA	Accelerate-Stop Distance Available
LDA	Landing Distance Available
AOA	Air Operations Area

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvments Draft EIR

Runway 6L-24R Proposed Project

Figure 3

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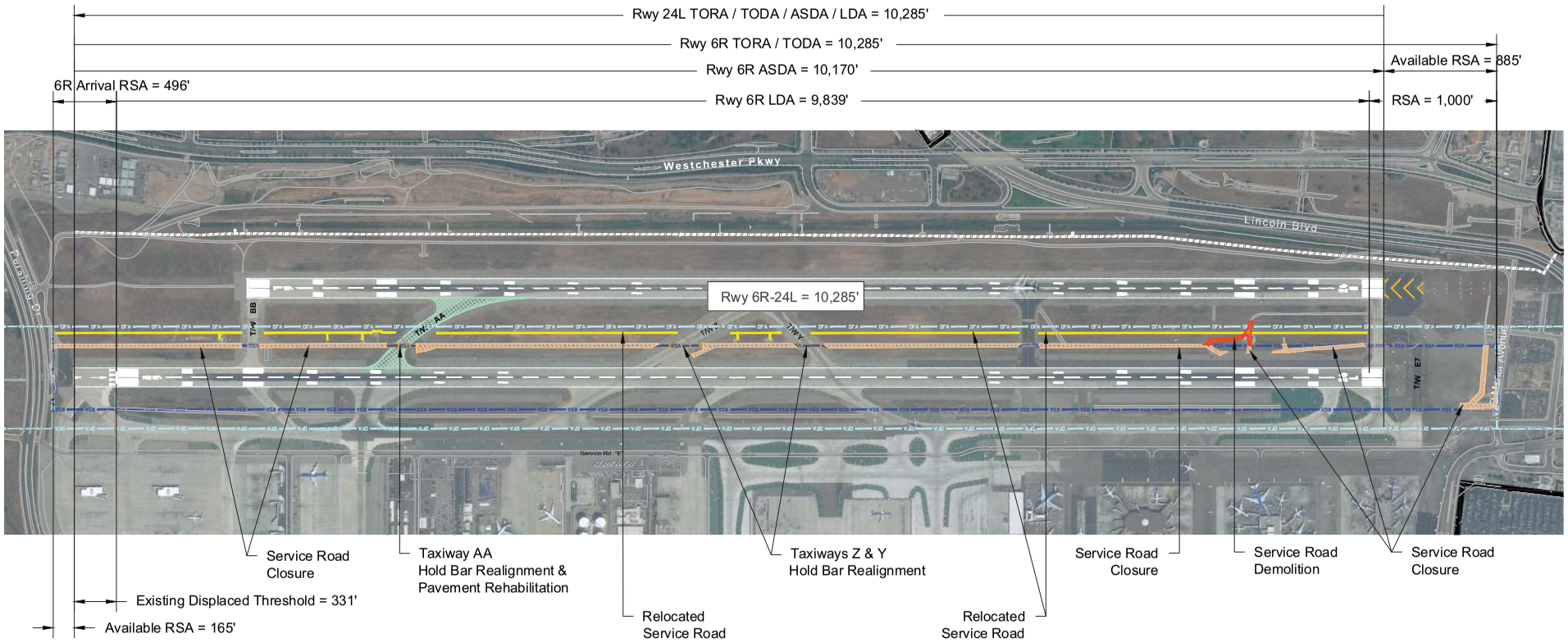

0 800 ft.

Scale north

Source: Federal Aviation Administration, Advisory Circular 150/5300-13A, Airport Design,September 28, 2012; Landrum & Brown, Los Angeles International Airport, Airport Layout Plan,2005; Los Angeles World Airports, April 2013 (aerial photography); Ricondo & Associates, Inc., October 2013.

Prepared by: Ricondo & Associates, Inc., December 2013.

Legend

- LAX Property Boundary
- Runway Safety Area
- Runway Object Free Area
- Service Road to be Closed
- Relocated Service Road
- Service Road Pavement to be Demolished
- Taxiway Hold Bar Realignment
- Taxiway Pavement Rehabilitation
- LA Dept. of Water and Power Water Main

Notes

Acronyms:

TORA	Take-Off Run Available
TODA	Take-Off Distance Available
ASDA	Accelerate-Stop Distance Available
LDA	Landing Distance Available
AOA	Air Operations Area

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvments Draft EIR

Runway 6R-24L Proposed Project

Figure **4**

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1.4 Pollutants of Interest

1.4.1 Criteria Pollutants

Six criteria pollutants were evaluated for the proposed Project: ozone (O_3) using as surrogates volatile organic compounds (VOCs)[1] and oxides of nitrogen (NO_X), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM_{10}), and particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers ($PM_{2.5}$). These pollutants were analyzed because they were shown to have potentially significant impacts in the air quality analysis documented in Chapter 4.6, *Air Quality*, of the Los Angeles International Airport (LAX) Master Plan Final EIR.[2] In addition, these six criteria pollutants are considered to be pollutants of concern based on the type of emission sources associated with construction of the proposed Project, and are thus included in this assessment. Although lead (Pb) is a criteria pollutant, it was not evaluated in the Air Quality or Greenhouse Gas Emission chapters of this EIR because the proposed Project would have negligible impacts on Pb levels in the Basin. The only source of lead emissions from LAX is from aviation gasoline (AvGas) associated with piston-engine general aviation aircraft; however, due to the low number of piston-engine general aviation aircraft operations at LAX, AvGas quantities are low and emissions from these sources would not be affected by the proposed Project. Sulfate compounds (e.g., ammonium sulfate) are generally not emitted directly into the air but are formed through various chemical reactions in the atmosphere; thus, sulfate is considered a secondary pollutant. All sulfur emitted by airport-related sources included in this analysis was assumed to be released and to remain in the atmosphere as SO_2. Therefore, no sulfate inventories or concentrations were estimated.

Following standard industry practice, the evaluation of O_3 was conducted by evaluating emissions of VOCs and NO_X, which are precursors in the formation of O_3. O_3 is a regional pollutant and ambient concentrations can only be predicted using regional photochemical models that account for all sources of precursors, which is beyond the scope of this analysis. Therefore, no photochemical O_3 modeling was conducted. Additional information regarding the six criteria pollutants that were evaluated in the air quality analysis is presented below.

1.4.1.1 Ozone (O_3)

O_3, a component of smog, is formed in the atmosphere rather than being directly emitted from pollutant sources. O_3 forms as a result of VOCs and NO_X reacting in the presence of sunlight in the atmosphere. O_3 levels are highest in warm-weather months. VOCs and NO_X are termed "O_3 precursors" and their emissions are regulated in order to control the creation of O_3.

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1 The emissions of volatile organic compounds (VOC) and reactive organic gases (ROG) are essentially the same for the combustion emission sources that are considered in this EIR. This EIR will typically refer to organic emissions as VOC.

2 City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, April 2004, Available: http://ourlax.org/pub_finalEIR.aspx.

O_3 damages lung tissue and reduces lung function. Scientific evidence indicates that ambient levels of O_3 not only affect people with impaired respiratory systems (e.g., asthmatics), but also healthy children and adults. O_3 can cause health effects such as chest discomfort, coughing, nausea, respiratory tract and eye irritation, and decreased pulmonary functions.

1.4.1.2 Nitrogen Dioxide (NO_2)

NO_2 is a reddish-brown to dark brown gas with an irritating odor. NO_2 forms when nitric oxide reacts with atmospheric oxygen. Most sources of NO_2 are man-made; the primary source of NO_2 is high-temperature combustion. Significant sources of NO_2 at airports are boilers, aircraft operations, and vehicle movements. NO_2 emissions from these sources are highest during high-temperature combustion, such as aircraft takeoff mode.

NO_2 may produce adverse health effects such as nose and throat irritation, coughing, choking, headaches, nausea, stomach or chest pains, and lung inflammation (e.g., bronchitis, pneumonia).

1.4.1.3 Carbon Monoxide (CO)

CO is an odorless, colorless gas that is toxic. It is formed by the incomplete combustion of fuels. The primary sources of this pollutant in Los Angeles County are automobiles and other mobile sources. The health effects associated with exposure to CO are related to its interaction with hemoglobin once it enters the bloodstream. At high concentrations, CO reduces the amount of oxygen in the blood, causing heart difficulties in people with chronic diseases, reduced lung capacity, and impaired mental abilities.

1.4.1.4 Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$)

Particulate matter consists of solid and liquid particles of dust, soot, aerosols, and other matter small enough to remain suspended in the air for a long period of time. PM_{10} refers to particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (microns, um or µm) and $PM_{2.5}$ refers to particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers. Particles smaller than 10 micrometers (i.e., PM_{10} and $PM_{2.5}$) represent that portion of particulate matter thought to represent the greatest hazard to public health.[3] PM_{10} and $PM_{2.5}$ can accumulate in the respiratory system and are associated with a variety of negative health effects. Exposure to particulate matter can aggravate existing respiratory conditions, increase respiratory symptoms and disease, decrease long-term lung function, and possibly cause premature death. The segments of the population that are most sensitive to the negative effects of particulate matter in the air are the elderly, individuals with cardiopulmonary disease, and children. Aside from adverse health effects, particulate matter in the air causes a reduction of visibility and damage to paints and building materials.

A portion of the particulate matter in the air comes from natural sources such as windblown dust and pollen. Man-made sources of particulate matter include fuel combustion, automobile exhaust, field burning, cooking, tobacco smoking, factories, and vehicle movement on, or other

[3] U.S. Environmental Protection Agency, Particle Pollution and Your Health, September 2003.

man-made disturbances of, unpaved areas. Secondary formation of particulate matter may occur in some cases where gases like sulfur oxides (SO_X)[4] and NO_X interact with other compounds in the air to form particulate matter. In the Basin, both VOCs and ammonia are also considered precursors to $PM_{2.5}$. Fugitive dust generated by construction activities is a major source of suspended particulate matter.

The secondary creators of particulate matter, SO_X and NO_X, are also major precursors to acidic deposition (acid rain). While SO_X is a major precursor to particulate matter formation, NO_X has other environmental effects. NO_X reacts with ammonia, moisture, and other compounds to form nitric acid and related particles. Human health concerns include effects on breathing and the respiratory system, damage to lung tissue, and premature death. Small particles penetrate into sensitive parts of the lungs and can cause or worsen respiratory disease. NO_X has the potential to change the composition of some species of vegetation in wetland and terrestrial systems, to create the acidification of freshwater bodies, impair aquatic visibility, create eutrophication of estuarine and coastal waters, and increase the levels of toxins harmful to aquatic life.

1.4.1.5 Sulfur Dioxide (SO_2)

Sulfur oxides are formed when fuel containing sulfur (typically, coal and oil) is burned, and during other industrial processes. The term "sulfur oxides" accounts for distinct but related compounds, primarily SO_2 and sulfur trioxide. As a conservative assumption for this analysis, it was assumed that all SO_X are emitted as SO_2; therefore, SO_X and SO_2 are considered equivalent in this document. Higher SO_2 concentrations are usually found in the vicinity of large industrial facilities.

The physical effects of SO_2 include temporary breathing impairment, respiratory illness, and aggravation of existing cardiovascular disease. Children and the elderly are most susceptible to the negative effects of exposure to SO_2.

1.4.2 Greenhouse Gases

Parts of the earth's atmosphere act as an insulating blanket, trapping sufficient solar energy to keep the global average temperature in a suitable range. The blanket is a collection of atmospheric gases called GHGs. These gases – primarily water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone, chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) – all act as effective global insulators, reflecting back to earth visible light and infrared radiation. Human activities, such as producing electricity and driving vehicles, have elevated the concentrations of these gases in the atmosphere. Many scientists believe that these elevated levels, in turn, are causing the earth's temperature to rise. A warmer earth may lead to changes in rainfall patterns, much smaller polar ice caps, a rise in sea level, and a wide range of impacts on plants, wildlife, and humans.

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[4] The term SO_X accounts for distinct but related compounds, primarily SO_2 and, to a far lesser degree, sulfur trioxide. As a conservative assumption for this analysis, it was assumed that all SO_X is emitted as SO_2, therefore SO_X and SO_2 are considered equivalent in this document and only the latter term is used henceforth.

Climate change is driven by "forcings" and "feedbacks." Radiative forcing is the difference between the incoming energy and outgoing energy in the climate system. A feedback is "an internal climate process that amplifies or dampens the climate response to a specific forcing."[5] The global warming potential (GWP) is the potential of a gas or aerosol to trap heat in the atmosphere; it is the "cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas."[6] Individual GHG species have varying GWP and atmospheric lifetimes. The carbon dioxide equivalent (CO_2e) -- the mass emissions of an individual GHG multiplied by its GWP -- is a consistent methodology for comparing GHG emissions because it normalizes various GHG emissions to a consistent metric. The reference gas for GWP is CO_2; CO_2 has a GWP of 1. Compared to CH_4's GWP of 21, CH_4 has a greater global warming effect than CO_2 on a molecule-per-molecule basis. **Table 1-1** identifies the GWP of several select GHGs using the IPCC's Second Assessment Report.

Table 1-1

Global Warming Potentials and Atmospheric Lifetimes of Select Greenhouse Gases

Gas	Atmospheric Lifetime (Years)	Global Warming Potential (100 Year Time Horizon)
Carbon Dioxide	50 - 200	1
Methane	12 ± 3	21
Nitrous Oxide	120	310
HFC-23	264	11,700
HFC-134a	14.6	1,300
HFC-152a	1.5	140
PFC: Perfluromethane (CF_4)	50,000	6,500
PFC: Perfluoroethane (C_2F_6)	10,000	9,200
Sulfur Hexafluoride (SF_6)	3,200	23,900

Source: Intergovernmental Panel on Climate Change, Climate Change 1995: The Science of Climate Change. Contribution of Working Group I to the Second Assessment Report (SAR) of the Intergovernmental Panel on Climate Change, 1996.[7]

2.0 REGULATORY SETTING

Air quality is regulated by federal, State, and local laws. On the federal level, air quality is governed by the federal Clean Air Act (CAA) administered by the United States Environmental

[5] National Research Council of the National Academies, Radiative Forcing of Climate Change: Expanding the Concept and Addressing Uncertainties, 2005.

[6] U.S. Environmental Protection Agency, Glossary of Climate Terms, Available: www.epa.gov/climatechange/glossary.html, Accessed October 10, 2013.

[7] GWP values have been updated in IPCC's subsequent assessment reports (e.g., Third Assessment Report [TAR], etc.). However, in accordance with international and U.S. convention to maintain the value of the carbon dioxide 'currency', GHG emission inventories are calculated using the GWPs from the IPCC SAR.

Protection Agency (USEPA). Additionally, air quality in California is governed by regulations under the California Clean Air Act (CCAA) administered by the California Air Resources Board (CARB) and by the regional air quality management districts. Air quality in the Los Angeles region is subject to the rules and regulations established by CARB and the South Coast Air Quality Management District (SCAQMD).

Greenhouse Gas emissions are primarily regulated on the State and local level with some federal regulations concerning GHG and fuel efficiency standards for passenger cars, light-duty trucks, and medium- and heavy-duty engines and vehicles from USEPA and the National Highway Traffic Safety Administration. Various international, federal, State, and local agencies also provide guidance concerning GHG emissions.

2.1 Federal/International

2.1.1 Criteria Pollutants

The USEPA is responsible for enforcing the CAA. Under the authority granted by the CAA, USEPA has established National Ambient Air Quality Standards (NAAQS) for the following criteria pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), respirable particulate matter or particulate matter sized 10 microns or less (PM_{10}), fine particulate matter or particulate matter sized 2.5 microns or less ($PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb). **Table 2-1** presents the NAAQS that are currently in effect for criteria air pollutants. O_3 is a secondary pollutant, meaning that it is formed from reactions of precursor compounds under certain conditions. The primary precursor compounds that can lead to the formation of O_3 include volatile organic compounds (VOCs) and oxides of nitrogen (NO_x).

Table 2-1

National and California Ambient Air Quality Standards (NAAQS and CAAQS)

			NAAQS	
Pollutant	**Averaging Time**	**CAAQS**	**Primary**	**Secondary**
Ozone (O_3)	8-hour	0.07 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	Same as Primary
	1-Hour	0.09 ppm (180 µg/m^3)	N/A	N/A
Carbon Monoxide (CO)	8-hour	9.0 ppm (10 mg/m^3)	9.0 ppm (10 mg/m^3)	N/A
	1-Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	N/A
Nitrogen Dioxide (NO_2)	Annual	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
	1-Hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	N/A [1]
Sulfur Dioxide (SO_2) [2]	Annual	N/A	0.03 ppm (80 µg/m^3)	N/A
	24-Hour	0.04 ppm	0.14 ppm	N/A

Table 2-1

National and California Ambient Air Quality Standards (NAAQS and CAAQS)

		(105 µg/m^3)	(365 µg/m^3)	
	3-Hour	N/A	N/A	0.5 ppm (1300 µg/m3)
	1-Hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	N/A
Respirable Particulate Matter (PM_{10})	AAM	20 µg/m^3	N/A	N/A
	24-Hour	50 µg/m^3	150 µg/m^3	Same as Primary
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 µg/m^3	15 µg/m^3	Same as Primary
	24-Hour	N/A	35 µg/m^3	Same as Primary
Lead (Pb)	Rolling 3-month Average	N/A	1.5 µg/m^3	Same as Primary
	Monthly	1.5 µg/m^3	N/A	N/A
Sulfates	24-Hour	25 µg/m^3	N/A	N/A

Notes:

NAAQS = National Ambient Air Quality Standards

CAAQS = California Ambient Air Quality Standards

ppm = parts per million (by volume)

µg/m^3 = micrograms per cubic meter

N/A = Not applicable

mg/m^3 = milligrams per cubic meter

AAM = Annual arithmetic mean

1 On March 20, 2012, the USEPA took final action to retain the current secondary NAAQS for NO_2 (0.053 ppm averaged over a year) and SO_2 (0.5 ppm averaged over three hours, not to be exceeded more than once per year) (77 Federal Register [FR] 20264).

2 On June 22, 2010, the 1-hour SO_2 NAAQS was updated and the previous 24-hour and annual primary NAAQS were revoked. The previous 1971 SO_2 NAAQS (24-hour: 0.14 ppm; annual: 0.030 ppm) remain in effect until one year after an area is designated for the 2010 NAAQS (75 FR 35520).

Source: California Air Resources Board, Ambient Air Quality Standards Chart, Available at: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed April 12, 2013.

The CAA also specifies future dates for achieving compliance with the NAAQS and mandates that states submit and implement a State Implementation Plan (SIP) 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 identify specific emission reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones.

LAX is located within the South Coast Air Basin (Basin), which is a sub-region of the South Coast Air Quality Management District's (SCAQMD's) jurisdiction including all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Basin is designated as a federal non-attainment area for O_3, $PM_{2.5}$, and Pb. The nonattainment designation under the CAA for O_3 is categorized into levels of severity based on the level of concentration above the standard, which is also used to set the required attainment date. The Basin is classified as an extreme nonattainment area for O_3. The Basin was reclassified on September 22, 1998 to attainment/maintenance for NO_2 and on June 11, 2007 for CO since concentrations of these pollutants dropped below the NO_2 and CO NAAQS for several years. More recently, the Los Angeles Basin was reclassified to attainment/maintenance for PM_{10} on July 26, 2013. Attainment/maintenance means that the pollutant is currently in attainment and

that measures are included in the SIP to ensure that the NAAQS for that pollutant are not exceeded again (maintained). **Table 2-2** presents the NAAQS and CAAQS attainment designation for each of the federal criteria air pollutants.

Table 4.1-4

South Coast Air Basin Attainment Status

Pollutant	National Standards (NAAQS) [1]	California Standards (CAAQS) [2]
Ozone	Nonattainment - Extreme	Nonattainment
Carbon Monoxide	Attainment - Maintenance	Attainment
Nitrogen Dioxide	Attainment - Maintenance	Nonattainment
Sulfur Dioxide	Attainment	Attainment
PM_{10}	Attainment - Maintenance	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
Lead	Nonattainment	Nonattainment

Notes:
1 Status as of July 31, 2013.
2 Effective April 1, 2013.

Sources: U.S. Environmental Protection Agency. Green Book. Available at http://www.epa.gov/air/oaqps/greenbook/index.html. As of July 31, 2013; California Air Resources Board. "Area Designations Maps/State and National." Available at www.arb.ca.gov/desig/adm/adm.htm. Effective 04/01/1013.

2.1.1 Greenhouse Gases

International Governmental Panel on Climate Change (IPCC)

In 1988, the United Nations and the World Meteorological Organization established the IPCC to assess "the scientific, technical and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation."

United Nations Framework Convention on Climate Change

On March 21, 1994, the U.S. joined other countries around the world in signing the United Nations Framework Convention on Climate Change (UNFCCC). Under the Convention, governments gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

Kyoto Protocol

The Kyoto Protocol is a treaty made under the UNFCCC. Countries can sign the treaty to demonstrate their commitment to reduce their emissions of GHGs or engage in emissions trading. More than 160 countries, accounting for 55 percent of global emissions, are under the protocol. The U.S. symbolically signed the Protocol in 1998. However, in order for the Protocol to be formally ratified, it must be adopted by the U.S. Senate, which has not been done to date. The original GHG reduction commitments made under the Protocol expired at the end of 2012. A second commitment period was agreed to at the Doha, Qatar, meeting held December 8, 2012, which extended the commitment period to December 31, 2020.

Massachusetts et al. v. United States Environmental Protection Agency et al.

Massachusetts et. al. v. Environmental Protection Agency et. al. (549 U.S. 497 [2007]) was argued before the U.S. Supreme Court on November 29, 2006, in which it was petitioned that USEPA regulate four GHGs, including CO_2, under Section 202(a)(1) of the Clean Air Act (CAA). The Court issued an opinion on April 2, 2007, in which it held that petitioners have standing to challenge the USEPA and that the USEPA has statutory authority to regulate emissions of GHGs from motor vehicles.

Endangerment Finding

The USEPA subsequently published its endangerment finding for GHGs in the Federal Register,[8] which responds to the court case noted above. The USEPA Administrator determined that six GHGs, taken in combination, endanger both the public health and welfare of current and future generations. Although the endangerment finding discusses the effects of six GHGs, it acknowledges that transportation sources only emit four of the key GHGs: CO_2, CH_4, N_2O, and HFCs. Further, the USEPA Administrator found that the combined emissions of these GHGs from new motor vehicles contribute to air pollution that endangers the public health and welfare under the CAA, Section 202(a).

GHG and Fuel Efficiency Standards for Passenger Cars and Light-Duty Trucks

In April 2010, the USEPA and National Highway Traffic Safety Administration (NHTSA) finalized GHG standards for new (model year 2012 through 2016) passenger cars, light-duty trucks, and medium-duty passenger vehicles. Under these standards, CO_2 emission limits would decrease from 295 grams per mile (g/mi) in 2012 to 250 g/mi in 2016 for a combined fleet of cars and light trucks. If all of the necessary emission reductions were made from fuel economy improvements, then the standards would correspond to a combined fuel economy of 30.1 miles per gallon (mpg) in 2012 and 35.5 mpg in 2016. The agencies issued a joint Final Rule for a

[8] U.S. Environmental Protection Agency, Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the CAA, Federal Register 74 (15 December 2009): 66496-66546.

coordinated National Program for model years 2017 to 2025 light-duty vehicles on August 28, 2012, that would correspond to a combined fuel economy of 36.6 mpg in 2017 and 54.5 mpg in 2025.

GHG and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles

In October 2010, the USEPA and NHTSA announced a program to reduce GHG emissions and to improve fuel efficiency for medium- and heavy-duty vehicles (model years 2014 through 2018). These standards were signed into law on August 9, 2011. The two agencies' complementary standards form a new Heavy-Duty National Program that has the potential to reduce GHG emissions by 270 million metric tons and to reduce oil consumption by 530 million barrels over the life of the affected vehicles.

2.2 State of California

2.2.1 Criteria Pollutants

The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the CAAQS by the earliest practical date. The CAAQS are at least as stringent as, and in several cases more stringent than, the NAAQS and include several more pollutants such as visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. The currently applicable CAAQS are presented with the NAAQS in Table 2-1. The attainment status with regard to the CAAQS is presented in Table 2-2 along with the federal attainment status for each criteria pollutant. Additionally, the area is in attainment for sulfates and unclassified for hydrogen sulfide and visibility reducing particles.

California Air Resources Board (CARB) has been granted jurisdiction over a number of air pollutant emission sources that operate in the State. Specifically, CARB has the authority to develop emission standards for on-road motor vehicles, as well as for stationary sources and some off-road mobile sources. In turn, CARB has granted authority to the regional air pollution control and air quality management districts to develop stationary source emission standards, issue air quality permits, and enforce permit conditions.

2.2.2 Greenhouse Gases

California Air Resources Board

In October 2008, CARB published draft preliminary guidance to agencies on how to establish interim significance thresholds for analyzing GHG emissions in Recommended Approaches for Setting Interim Thresholds for Greenhouse Gases under the California Environmental Quality Act. For industrial projects, the CARB guidance proposed that projects that emit less than 7,000 metric tons of CO_2e ($MTCO_2e$) per year (amortized), as well as meeting performance standards for construction and transportation, may be considered less than significant.

Title 24 Energy Standards

Although not originally intended to reduce GHG emissions, California's Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. The latest amendments were made in April 2008 and went into effect on January 1, 2010. The premise for the standards is that energy efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions. Therefore, increased energy efficiency in buildings results in fewer GHG emissions on a building-by-building basis.

California Assembly Bill 1493 (AB 1493) - Pavley

Enacted on July 22, 2002, this bill required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light-duty trucks. Regulations adopted by CARB apply to 2009 and later model year vehicles. CARB estimates that the regulation will reduce GHG emissions from the light-duty and passenger vehicle fleet by an estimated 18 percent in 2020 and by 27 percent in 2030, compared to recent years. In 2011, the U.S. Department of Transportation, USEPA, and California announced a single timeframe for proposing fuel and economy standards, thereby aligning the Pavley standards with the federal standards for passenger cars and light-duty trucks. Emission estimates included in this analysis account for the Pavley-I standards.

Executive Order S-3-05

California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, the following GHG emission reduction targets for all of California: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.

California Assembly Bill 32 (AB 32)

AB 32, titled The California Global Warming Solutions Act of 2006 and signed by Governor Schwarzenegger in September 2006, requires CARB to adopt regulations to require the reporting and verification of Statewide GHG emissions and to monitor and enforce compliance with the program. In general, the bill requires CARB to reduce Statewide GHG emissions to the equivalent of those in 1990 by 2020. CARB adopted regulations in December 2007 for mandatory GHG emissions reporting. On August 24, 2011, CARB adopted the scoping plan indicating how emission reductions will be achieved. Part of the scoping plan includes an economy-wide cap-and-trade program. The final cap-and-trade plan was approved on October 21, 2011 and went into effect on January 1, 2013.

California Senate Bill 375 (SB 375)

SB 375 requires CARB to set regional targets for 2020 and 2035 to reduce GHG emissions from passenger vehicles. A regional target will be developed for each of the 18 metropolitan planning organizations (MPOs) in the State; the Southern California Association of Governments (SCAG) is the MPO that has jurisdiction over the LAX area. A Regional Targets Advisory Committee (RTAC) was appointed by CARB to provide recommendations to be considered and methodologies to be used in CARB's target setting process. The final RTAC report was released on January 23, 2009.

Each MPO is required to develop Sustainable Community Strategies through integrated land use and transportation planning and to demonstrate an ability to attain the proposed reduction targets by 2020 and 2035. CARB issued an eight percent per capita reduction target to the SCAG region for 2020 and a target of 13 percent per capita reduction by 2035. SCAG adopted the Regional Transportation Plan/Sustainable Community Strategies for the six-county southern California region on April 4, 2012.

Executive Order S-01-07 and the Low Carbon Fuel Standard

California Executive Order S-01-07 established a Statewide goal to reduce the carbon intensity of transportation fuels sold in California by at least 10 percent by 2020 from 2005. The Executive Order also mandated the creation of Low Carbon Fuel Standard (LCFS) for transportation fuels. The LCFS requires that the life-cycle GHG emissions for the mix of fuels sold in California decline on average. Each fuel provider may meet the standard by selling fuel with lower carbon content, using previously banked credits from selling fuel that exceeded the LCFS, or purchasing credit from other fuel providers who have earned credits. On December 29, 2011, U.S. District Judge Lawrence O'Neill granted an injunction to prevent CARB from implementing the LCFS because it violates a federal law on interstate commerce. CARB's motion to stay the decision was also subsequently denied on January 24, 2012 (Rocky Mountain Farmers Union v. Goldstene, E.D. Cal., No. 09-cv-02234).

Senate Bill 97 (SB 97)

SB 97 requires the Office of Planning and Research (OPR) to prepare guidelines to submit to the California Natural Resources Agency (CNRA) regarding feasible mitigation of GHG emissions or the effects of GHG emissions as required by CEQA. The CNRA adopted amendments to the State CEQA Guidelines for GHG emissions on December 30, 2009. The amendments became effective on March 18, 2010. The guidelines apply retroactively to any incomplete EIR, negative declaration, mitigated negative declaration, or other related document, and are reflected in this EIR.

Renewables Portfolio Standard

Senate Bill 1078 (SB 1078) (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008, the Governor signed Executive

Order S-14-08, which expands the State's Renewable (Energy) Portfolio Standard (RPS) to 33 percent renewable power by 2020. On September 15, 2009, the Governor issued Executive Order S-21-0911 requiring CARB, under its AB 32 authority, to adopt regulations to meet a 33 percent RPS target by 2020. The CARB regulations would use a phased-in or tiered requirement to increase the amount of electricity from eligible renewable sources over an eight year period beginning in 2012. CARB adopted the regulations in September 2010. In March 2011, the Legislature passed SB X1-2, which was signed into law by the Governor the following month. SB X1-2 requires utilities to procure renewable energy products equal to 33 percent of retail sales by December 31, 2020 and also establishes interim targets: 20 percent by December 31, 2013 and 25 percent by December 31, 2016. SB X1-2 also applies to publicly-owned utilities in California. According to the most recent data available from the Los Angeles Department of Water and Power (LADWP), the utility provider for the City of Los Angeles, approximately 19 percent of its electricity purchases in 2011 were from eligible renewable sources.

2.3 Regional

2.3.1 Criteria Pollutants

South Coast Air Quality Management District

SCAQMD has jurisdiction over an area of 10,743 square miles consisting of Orange County and the urban, non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, and the Riverside County portions of the Salton Sea Air Basin and Mojave Desert Air Basin. The Basin is a sub-region of SCAQMD's jurisdiction and covers an area of 6,745 square miles. While air quality in this area has improved, the Basin requires continued diligence to meet air quality standards.

The SCAQMD has adopted a series of Air Quality Management Plans (AQMPs) to meet the CAAQS and NAAQS. SCAQMD and CARB have adopted the 2012 AQMP which incorporates the latest scientific and technological information and planning assumptions, including the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), and updated emission inventory methodologies for various source categories.[9] The Final 2012 AQMP was adopted by the AQMD Governing Board on December 7, 2012. Therefore, the 2012 AQMP is the most appropriate plan to use for consistency analysis. The AQMP builds upon other agencies' plans to achieve federal standards for air quality in the Basin. It incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, and on-road and off-road mobile sources. The 2012 AQMP builds upon improvements in previous plans, and includes new and changing federal requirements, implementation of new technology measures, and the continued development of economically sound, flexible compliance approaches. In addition, it highlights the significant amount of emission reductions needed and the urgent need to identify additional strategies, especially in the area of mobile

[9] http://www.aqmd.gov/aqmp/2012aqmp/index.htm

sources, to meet all federal criteria pollutant standards within the timeframes allowed under the federal CAA.

The 2012 AQMP's key undertaking is to bring the Basin into attainment with NAAQS for 24-hour $PM_{2.5}$ by 2014. It also intensifies the scope and pace of continued air quality improvement efforts toward meeting the 2023 8-hour O_3 standard deadline with new measures designed to reduce reliance on the CAA Section 182(e)(5) long-term measures for NO_X and VOC reductions. SCAQMD expects exposure reductions to be achieved through implementation of new and advanced control technologies as well as improvement of existing technologies.

The control measures in the 2012 AQMP consist of four components: 1) Basin-wide and Episodic Short-term $PM_{2.5}$ Measures; 2) Contingency Measures; 3) 8-hour O_3 Implementation Measures; and 4) Transportation and Control Measures provided by the Southern California Association of Governments (SCAG). The Plan includes eight short-term $PM_{2.5}$ control measures, 16 stationary source 8-hour O_3 measures, 10 early action measures for mobile sources and seven early action measures are proposed to accelerate near-zero and zero emission technologies for goods movement related sources, and five on-road and five off-road mobile source control measures. In general, the District's control strategy for stationary and mobile sources is based on the following approaches: 1) available cleaner technologies; 2) best management practices; 3) incentive programs; 4) development and implementation of zero-near-zero technologies and vehicles and control methods; and 5) emission reductions from mobile sources.

The SCAQMD also adopts rules to implement portions of the AQMP. At least one of these rules is applicable to the construction phase of the proposed Project. Rule 403 requires the implementation of best available fugitive dust control measures during active construction activities capable of generating fugitive dust emissions from on-site earth-moving activities, construction/demolition activities, and construction equipment travel on paved and unpaved roads. Also, SCAQMD Rule 1113 limits the amount of volatile organic compounds from architectural coatings and solvents, which lowers the emissions of odorous compounds.

The SCAQMD has developed CEQA operational and construction-related thresholds of significance for air pollutant emissions from projects proposed in the Basin. Construction and operational emission thresholds are summarized in **Table 2-3**.

The SCAQMD has also developed operational and construction-related thresholds of significance for air pollutant concentration impacts from projects proposed in the Basin. These thresholds are summarized in **Table 2-4**. The SCAQMD's recommended thresholds for the evaluation of localized air quality impacts are based on the difference between the maximum monitored ambient pollutant concentrations in the area and the CAAQS or NAAQS. Therefore, the thresholds depend upon the concentrations of pollutants monitored locally with respect to a project site. For pollutants that already exceed the CAAQS or NAAQS (e.g., PM_{10} and $PM_{2.5}$), the thresholds are based on SCAQMD Rule 403 for construction and Rule 1303, Table A-2 for operations as described in the *Final Localized Significance Threshold Methodology*.

The methodology requires that the anticipated increase in ambient air concentrations, determined using a computer-based air quality dispersion model, be compared to localized

significance thresholds for PM_{10}, $PM_{2.5}$, NO_2, and CO.[10] The significance threshold for PM_{10} represents compliance with Rule 403 (Fugitive Dust) and Rule 1303 (New Source Review Requirements), while the thresholds for NO_2 and CO represent the allowable increase in concentrations above background levels in the vicinity of the Project site that would not cause or contribute to an exceedance of the relevant ambient air quality standards. The significance thresholds for $PM_{2.5}$ are intended to constrain emissions so as to aid in the progress toward attainment of the ambient air quality standards.[11] For the purposes of this analysis, the localized construction and operations emissions resulting from development of the proposed Project were assessed with respect to the thresholds in Table 2-4 using detailed dispersion modeling.

Table 2-3

SCAQMD CEQA Thresholds of Significance for Air Pollutant Emissions in the South Coast Air Basin

	Mass Emission Thresholds lbs/day	
Pollutant	**Construction**	**Operations**
Carbon monoxide, CO	550	550
Volatile organic compounds, VOC [1]	75	55
Nitrogen oxides, NOx	100	55
Sulfur dioxide, SO_2	150	150
Inhalable particulate matter, PM_{10}	150	150
Fine particulate matter, $PM_{2.5}$	55	55
Lead, Pb [2]	3	3

Notes:

1 The emissions of VOCs and reactive organic gases are essentially the same for the combustion emission sources that are considered in this EIR. This EIR will typically refer to organic emissions as VOCs.

2 The only source of lead emissions from LAX is from aviation gasoline (AvGas) associated with piston-engine general aviation aircraft; however, due to the low number of piston-engine general aviation aircraft operations at LAX, AvGas quantities are low and emissions from these sources would not be materially affected by the Project.

Source: South Coast Air Quality Management District, "SCAQMD Air Quality Significance Thresholds," March 2011. Available: www.aqmd.gov/ceqa/handbook/signthres.pdf, Accessed October 28, 2013.

10 South Coast Air Quality Management District, Final Localized Significance Threshold Methodology, (2008).

11 South Coast Air Quality Management District, Final Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, (2006).

Table 2-4

SCAQMD CEQA Thresholds of Significance for Air Pollutant Concentrations in the South Coast Air Basin

		Project-Related Concentration Thresholds		
Pollutant	**Averaging Period**	**Construction**	**Operations**	**Project Only or Total**
PM_{10}	Annual	1.0 µg/m^3	1.0 µg/m^3	Project Only
PM_{10}	24-hour	10.4 µg/m^3	2.5 µg/m^3	Project Only
$PM_{2.5}$	24-hour	10.4 µg/m^3	2.5 µg/m^3	Project Only
CO	1-hour	20 ppm (23 mg/m^3)	20 ppm (23 mg/m^3)	Total incl. Background
CO	8-hour	9.0 ppm (10 mg/m^3)	9.0 ppm (10 mg/m^3)	Total incl. Background
NO_2	1-hour (State)	0.18 ppm (339 µg/m^3)	0.18 ppm (339 µg/m^3)	Total incl. Background
NO_2	1-hour (Federal)[3]	0.100 ppm (188 µg/m^3)	0.100 ppm (188 µg/m^3)	Total incl. Background
NO_2	Annual (State)[2]	0.030 ppm (57 µg/m^3)	0.030 ppm (57 µg/m^3)	Total incl. Background
SO_2	1-hour (State)	0.25 ppm (655 µg/m^3)	0.25 ppm (655 µg/m^3)	Total incl. Background
SO_2	1-hour (Federal)[4]	0.075 ppm (196 µg/m^3)	0.075 ppm (196 µg/m^3)	Total incl. Background
SO_2	24-hour	0.04 ppm (105 µg/m^3)	0.04 ppm (105 µg/m^3)	Total incl. Background

Notes:

1 The concentration threshold for CO and NO2 is the CAAQS, which is at least as stringent as the NAAQS. The concentration threshold for PM10 and PM2.5 has been developed by SCAQMD for construction or operational impacts associated with the proposed Project.

2 The state standard is more stringent than the federal standard.

3 To evaluate impacts of the proposed Project to ambient 1-hour NO2 levels, the analysis includes both the current SCAQMD 1-hour state NO2 threshold and the more stringent revised 1-hour federal ambient air quality standard of 188 µg/m3. To attain the federal standard, the 3-year average of 98th percentile of the daily maximum 1-hour average at a receptor must not exceed 0.100 ppm.

4 To attain the SO2 federal 1-hour standard, the 3-year average of the 99th percentile of the daily maximum 1-hour averages at a receptor must not exceed 0.075 ppm.

Source: SCAQMD, 1993, 2011; USEPA, 2010a (75 FR 6474, Primary National Ambient Air Quality Standards for Nitrogen Dioxide, Final Rule, February 9, 2010) and 2010b (75 FR 35520, Primary National Ambient Air Quality Standard for Sulfur Dioxide, Final Rule, June 22, 2010).

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is the metropolitan planning organization (MPO) representing six counties, including Los Angeles, and serving as a forum for the discussion of various planning and policy initiatives. As the federally designated MPO for the southern California region, SCAG is mandated by the federal government to research and develop plans for transportation, hazardous waste management, growth management, and air quality. Under the federal CAA, SCAG is also responsible for determining conformity of transportation projects, plans, and programs with applicable air quality plans.

Other Related Rules and Policies

In the Basin, the City of Los Angeles, CARB, and the SCAQMD have adopted or proposed additional rules and policies governing the use of cleaner fuels in public vehicle fleets. The City of Los Angeles Policy CF#00-0157 requires that City-owned or operated diesel-fueled vehicles

be equipped with particulate traps and that they use ultra-low-sulfur diesel fuel. CARB has adopted a Risk Reduction Plan for diesel-fueled engines and vehicles. The SCAQMD has proposed a series of rules that would require the use of clean fuel technologies in on-road school buses, on-road heavy-duty public fleets, and street sweepers. This analysis includes the use of diesel particulate traps.

2.3.2 Greenhouse Gases

California Air Pollution Control Officers Association (CAPCOA) Guidance

CAPCOA published a white paper to provide a common platform of information and tools to address climate change in CEQA analyses, including the evaluation and mitigation of GHG emissions from proposed projects and identifying significance thresholds options. The white paper addresses issues inherent in establishing CEQA thresholds, evaluates tools, catalogues mitigation measures, and provides air districts and lead agencies with options for incorporating climate change into their programs.

South Coast Air Quality Management District

The SCAQMD has convened a GHG CEQA Significance Threshold Working Group to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. Members of the working group include government agencies implementing CEQA and representatives from various stakeholder groups that provide input to the SCAQMD staff on developing GHG CEQA significance thresholds.

SCAQMD released a draft guidance document regarding interim CEQA GHG significance thresholds in October 2008 and adopted this proposal in December 2008. SCAQMD proposed a tiered approach, whereby the level of detail and refinement needed to determine significance increases with a project's total GHG emissions. SCAQMD also proposed a screening level of 10,000 $MTCO_2e$ per year for industrial projects and 3,000 $MTCO_2e$ per year for residential and commercial projects, under which project impacts are considered "less than significant." The 10,000 $MTCO_2e$ per year screening level was intended to achieve the same policy objective of capturing 90 percent of the GHG emissions from new development projects in the industrial sector; similarly, the 3,000 $MTCO_2e$ per year screening level was intended to achieve the same policy objective of capturing 90 percent of the GHG emissions from new development projects in the residential and commercial sector.[12] For projects with GHG emissions increases greater than 10,000 $MTCO_2e$ per year (for industrial projects) or 3,000 $MTCO_2e$ (for residential and commercial projects), the use of a percent emission reduction target (e.g., 30 percent) was proposed to determine significance. This emission reduction target is a reduction below what is considered "business as usual." As noted earlier, SCAQMD also proposes that projects amortize construction emissions over the 30-year lifetime of any given project for comparison

[12] South Coast Air Quality Management District, Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, (2008).

relative to these thresholds. Proposed project construction emissions can be amortized by calculating total construction period emissions and dividing by the 30-year lifetime of the project.

The interim GHG significance threshold is for projects where the SCAQMD is lead agency. The SCAQMD has not adopted guidance for CEQA projects under other lead agencies.

2.4 Local Regulations and Directives

2.4.1 Criteria Pollutants

City of Los Angeles

The City of Los Angeles CEQA significance thresholds applicable to the proposed Project, as it pertains to criteria pollutant emissions, are shown in **Table 2-5**.

Table 2-5

City of LA CEQA Significance Thresholds

CEQA Subcategory	CEQA Significance Threshold
Construction Emissions	Would site preparation or construction activities for the proposed project result in substantial emissions that would not be controlled on site by existing regulations? Considers: Combustion Emissions from Construction Equipment Fugitive Dust Grading, Excavation and Hauling Heavy-Duty Equipment Travel on Unpaved Roads Other Mobile Source Emissions
Operational Emissions	• Result in a development and/or activity level equal to or greater than the thresholds provided in the CEQA Air Quality Handbook's Screening Table for Operation – Daily Thresholds of Potential Significance for Air Quality? • Conflict with the regional population forecast and distribution in the most recent Air Quality Management Plan (AQMP)? • Have the potential to create or be subjected to an objectionable odor or localized CO hot spot that could impact sensitive receptors? Operational emissions exceed any of the daily thresholds presented in Table 2-3. • Causes or contributes to an exceedance of the California 1-hour or 8-hour CO standards of 20 or 9.0 parts per million (ppm), respectively, at an intersection or roadway within 1/4 mile of a sensitive receptor.

Source: City of Los Angeles, L.A. CEQA Thresholds Guide, 2006.

2.4.2 Greenhouse Gases

Green LA

In May 2007, the City of Los Angeles introduced *Green LA - An Action Plan to Lead the Nation in Fighting Global Warming* (Green LA).[13] Green LA presents a framework targeted to reduce the City's GHG emissions by 35 percent below 1990 levels by 2030. The plan calls for an increase in the City's use of renewable energy to 35 percent by 2020 in combination with promoting water conservation, improving the transportation system, reducing waste generation, greening the ports and airports, creating more parks and open space, and greening the economic sector. Green LA identifies objectives and actions in various focus areas, including airports. The goal for LA's airports is to "green the airports," and the following actions are identified: 1) fully implement the Sustainability Performance Improvement Management System (discussed below); 2) develop and implement policies to meet the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) green building rating standards in future construction; 3) improve recycling, increase use of alternative fuel sources, increase use of recycled water, increase water conservation, reduce energy needs, and reduce GHG emissions; and 4) evaluate options to reduce aircraft-related GHG emissions.

Climate LA

In 2008, the City of Los Angeles followed up Green LA with an implementation plan called *Climate LA - Municipal Program Implementing the Green LA Climate Action Plan* (Climate LA).[14] A Departmental Action Plan for LAWA is included in Climate LA, which identifies goals to reduce CO_2 emissions 35 percent below 1990 levels by 2030 at LAX and the other three LAWA airports, implement sustainability practices, and develop programs to reduce the generation of waste and pollutants. Actions are specified in the areas of aircraft operations, ground vehicles, electrical consumption, building, and other actions.

Executive Directive No. 10

In July 2007, Mayor Antonio Villaraigosa issued Executive Directive No. 10 regarding environmental stewardship practices. Executive Directive No. 10 requires that City departments, including LAWA, create and adopt a "Statement of Sustainable Building Policies," which should encompass sustainable design, energy and atmosphere, materials and resources, water efficiency, landscaping, and transportation resources. In addition, City departments and offices must create and adopt sustainability plans that include all the policies, procedures, programs, and policies that are designed to improve internal environmental efficiency. Finally, City departments are required to submit annual sustainability reports to the Mayor for review.[15]

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13 City of Los Angeles, Green LA - An Action Plan to Lead the Nation in Fighting Global Warming, 2007.

14 City of Los Angeles, Climate LA - Municipal Program Implementing the Green LA Climate Action Plan, 2008.

15 Antonio R. Villaraigosa, *Executive Directive No. 10, Sustainable Practices in the City of Los Angeles,* July 2007.

City of Los Angeles Green Building Code (LAGBC)

In December 2010, the Los Angeles City Council approved Ordinance No. 181,481, which amended Chapter IX of the Los Angeles Municipal Code (LAMC) by adding a new Article 9 to incorporate various provisions of the 2010 CALGreen Code. The requirements of the adopted LAGBC apply to new building construction, building renovations, and building additions within the City of Los Angeles. Specific mandatory requirements and elective measures are provided for three categories: (1) low-rise residential buildings; (2) nonresidential and high-rise residential buildings; and (3) additions and alterations to nonresidential and high-rise residential buildings. Key measures in the LAGBC that apply to nonresidential buildings include, but are not limited to, the following:

- Construction – A Storm Water Pollution Prevention Plan conforming to the State Storm Water National Pollutant Discharge Elimination System Construction Permit or local ordinance, whichever is stricter, is required for a project regardless of acreage disturbed;
- Construction – Construction waste reduction of at least 50 percent of construction debris;
- Construction – 100 percent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled;
- Transportation Demand – Designated parking for any combination of low emitting, fuel-efficient, and carpool/vanpool vehicles shall be provided;
- Energy Conservation – Electric vehicle supply wiring for a minimum of 5 percent of the total number of parking spaces shall be provided;
- Energy Conservation – Energy conservation for new buildings must exceed California Energy Commission (CEC) requirements, based on the 2008 Energy Efficiency Standards, by 15 percent using an Alternative Calculation Method approved by the CEC;
- Energy Conservation – Each appliance provided and installed shall meet Energy Star requirements, if an Energy Star designation is applicable for that appliance;
- Renewable Energy – Future access, off-grid prewiring, and space for electrical solar systems shall be provided;
- Water – A schedule of plumbing fixtures and fixture fittings shall be provided that will reduce the overall use of potable water within the building by at least 20 percent based on the maximum allowable water use per plumbing fixture and fittings as required by the California Building Standards Code; and
- Wastewater – Each building shall reduce wastewater by 20 percent based on the maximum allowable water use per plumbing fixture and fittings as required by the California Building Standards Code.

LAWA Sustainability Plan

LAWA's Sustainability Plan, developed in April 2008, describes LAWA's current sustainability practices and sets goals and actions that LAWA will undertake to implement the initiatives described above (Green LA, Climate LA, and LAGBC).[16] The Sustainability Plan presents initiatives for the fiscal year 2008-2009 and long-term objectives and targets to meet the fundamental objectives identified above.

LAWA has also developed the *Sustainable Airport Planning, Design and Construction Guidelines for Implementation on All Airport Projects* (LAWA Guidelines).[17] The LAWA Guidelines were developed to provide a comprehensive set of performance standards focusing on sustainability specifically for Airport projects on a project-level basis. A portion of the LAWA Guidelines is based on the LEED® rating systems for buildings. The LAWA Guidelines incorporate a "LAWA-Sustainable Rating System" based on the number of planning and design points and construction points a project achieves, based on the criteria and performance standards defined in the LAWA Guidelines.

Based on the above, LAWA has taken steps to increase its sustainability practices related to daily Airport operations, many of which directly or indirectly contribute to a reduction in GHG emissions. Actions that LAWA has been undertaking include promoting and expanding the Fly Away non-stop shuttle service to the Airport in an effort to reduce the number of vehicle trips to the Airport, establishment of an employee Rideshare Program, use of alternative fuel vehicles, purchasing renewably generated Green Power from LADWP, and reducing electricity consumption by installing energy-efficient lighting, variable demand motors on terminal escalators, and variable frequency drives on fan units at terminals and LAWA buildings.

LAWA defines sustainability (and measures sustainable performance) as the Triple Bottom Line, consistent with the Global Reporting Initiative (GRI) and CEQA, which are the social, economic, and environmental impacts of its organization. All projects are subject to various sustainable requirements in the City of Los Angeles and at LAWA, including, but not limited to:

- LAGBC (Ordinance 181479);
- Low Impact Development (Ordinance 181899);
- Standard Urban Stormwater Mitigation Plan (Ordinance 173494);
- Demolition Debris Recycling Program (Ordinance 181519);
- LAX Construction & Maintenance Services – Recycling Program; and
- LAX Master Plan – Mitigation Monitoring and Reporting Program (MMRP). Highlights of the LAX Master Plan MMRP include, but are not limited to the following measures:
  - C-1: Work with LAWA to approve and coordinate staging areas, haul routes, etc.;
  - MM-AQ-2: Utilize on-site rock-crushing facility, when feasible, during construction to reuse rock/concrete and minimize off-site truck-haul trips; and

[16] Los Angeles World Airports, Sustainability Plan, April 2008.

[17] Los Angeles World Airports, Sustainable Airport Planning, Design and Construction Guidelines for Implementation on All Airport Projects, February 2010.

- W-1: Maximize use of Reclaimed Water.

All building projects in the City of Los Angeles are subject to the LAGBC, which is based on CALGreen with some modifications unique to the City of Los Angeles. The LAGBC is a code-requirement that is part of Title 24, and is enforced by the Los Angeles Department of Building & Safety (LADBS).

Given that the LAGBC has replaced LEED® in the Los Angeles Municipal Code, LAWA has based its new sustainable construction standards on the mandatory and voluntary tiers defined in the LAGBC. All building projects with an LADBS permit-valuation over $200,000 shall achieve LAGBC Tier 1 conformance, to be certified by LADBS during final plan check (on the issued building permit) and validated by the LADBS inspector during final inspection (on the Certificate of Occupancy). Tier 1 refers specific practices that are to be incorporated into projects to "achieving enhanced construction levels by incorporating additional green building measures." Should a project pose unique issues/circumstances based on the scope and/or location of work, LAWA may require more prescriptive approaches to resolving issues such as energy performance, site drainage, etc.

3.0 EXISTING ENVIRONMENTAL SETTING

3.1 Climatological Conditions

The airport is located within the South Coast Air Basin of California, a 6,745 square-mile area encompassing all of Orange County and the urban, non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The meteorological conditions at the airport are heavily influenced by the proximity of the airport to the Pacific Ocean to the west and the mountains to the north and east. This location tends to produce a regular daily reversal of wind direction: onshore (from the west) during the day and offshore (from the east) at night. Comparatively warm, moist Pacific air masses drifting over cooler air resulting from coastal upwelling of cooler water often form a bank of fog that is generally swept inland by the prevailing westerly (i.e., from the west) winds. The "marine layer" is generally 1,500 to 2,000 feet deep, extending only a short distance inland and rising during the morning hours producing a deck of low clouds. The air above is usually relatively warm, dry, and cloudless. The prevalent temperature inversion in the Basin tends to prevent vertical mixing of air through more than a shallow layer.

A dominating factor in the weather of California is the semi-permanent high-pressure area of the North Pacific Ocean. This pressure center moves northward in summer, holding storm tracks well to the north, and minimizing precipitation. Changes in the circulation pattern allow storm centers to approach California from the southwest during the winter months and large amounts of moisture are carried ashore. The Los Angeles region receives on average 10 to 15 inches of precipitation per year, of which 83 percent occurs during the months of November through March. Thunderstorms are light and infrequent, and on very rare occasions, trace amounts of snowfall have been reported at the airport.

The annual minimum mean, maximum mean, and overall mean temperatures at the airport are 55 degrees Fahrenheit (°F), 70°F, and 63°F, respectively. The prevailing wind direction at the

airport is from the west-southwest with an average wind speed of roughly 6.4 knots (7.4 miles per hour [mph] or 3.3 meters per second [m/s]). Maximum recorded gusts range from 27 knots (31 mph or 13.9 m/s) in July to 54 knots (62 mph or 27.8 m/s) in March. The monthly average wind speeds range from 5.7 knots (6.5 mph or 2.9 m/s) in December to 7.4 knots (8.5 mph or 3.8 m/s) in April.[18]

3.2 Ambient Air Quality

In an effort to monitor the various concentrations of air pollutants throughout the basin, the SCAQMD has divided the region into 38 Source Receptor Areas in which monitoring stations operate. The monitoring station that is most representative of existing air quality conditions at LAX is the Southwest Coastal Los Angeles Monitoring Station located at 7201 W. Westchester Parkway (referred to as the LAX Hastings site), less than 0.5-mile from Runway 6L-24R (northernmost LAX runway). This station monitors O_3, CO, SO_2, NO_2, and PM_{10}. The nearest representative monitoring station that monitors $PM_{2.5}$ is the South Coastal Los Angeles County 1 Station, which is located at 1305 E. Pacific Coast Highway (Long Beach). The most recent data available from the SCAQMD for these monitoring stations encompassed the years 2008 to 2012, as shown in **Table 3-1**.

The data shows the following pollutant trends (refer to Table 2-1 for NAAQS and CAAQS standards):

Ozone - The maximum 1-hour O_3 concentration recorded during the 2008 to 2012 period was 0.106 ppm, recorded in 2012. During the reporting period, the California standard was exceeded once. The maximum 8-hour O_3 concentration was 0.076 ppm recorded in 2008. The California standards were exceeded once during the reporting period, while the NAAQS were not violated.

Carbon Monoxide - The highest 1-hour CO concentration recorded was 3.6 ppm, recorded in 2008. The maximum 8-hour CO concentration recorded was 2.53 ppm recorded in 2008. As demonstrated by the data, the standards were not exceeded during the five-year period.

Nitrogen Dioxide - The highest 1-hour NO_2 concentration recorded was 0.098 ppm in 2011 and 2012. The maximum 98th percentile 1-hour concentration was 0.070 ppm, recorded in 2009. The highest recorded NO_2 annual arithmetic mean was 0.014 ppm recorded in 2008. As shown, the standards were not exceeded during the five-year period.

Sulfur Dioxide - The highest 1-hour concentration of SO_2 was 0.026 ppm recorded in 2010, while the highest 99th percentile 1-hour concentration recorded was 0.016 ppm in 2010. The maximum 24-hour concentration was 0.006 ppm, recorded in 2009. The highest annual arithmetic mean concentration was 0.001, recorded in 2008. As shown, the standards were not exceeded during the five-year period.

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[18] Ruffner, J.A., Climates of the States: National Oceanic and Atmospheric Administration Narrative Summaries, Table, and Maps for Each State with Overview of State Climatologist Programs, Third Edition, Volume 1: Alabama-New Mexico, Gale Research Company, 1985.

Table 3-1

Southwest Coastal Los Angeles and South Coastal Los Angeles County Monitoring Station Ambient Air Quality Data

Pollutant [1,2]	2008	2009	2010	2011	2012
Ozone (O_3)					
Maximum Concentration 1-hr period, ppm	0.086	0.077	0.089	0.078	0.106
Days over State Standard (0.09 ppm)	0	0	0	0	1
Maximum National Concentration 8-hr period, ppm	0.075	0.070	0.070	0.067	0.075
Days over Federal Standard (0.075 ppm)	0	0	0	0	0
Maximum California Concentration 8-hr period, ppm	0.076	0.070	0.070	0.067	0.075
Days over State Standard (0.07 ppm)	1	0	0	0	1
Carbon Monoxide (CO)					
Maximum Concentration 1-hr period, ppm	3.6	2.6	2.6	2.3	2.8
Days over State Standard (20.0 ppm)	0	0	0	0	0
Maximum Concentration 8-hr period, ppm	2.53	1.99	2.19	1.79	1.51
Days over State Standard (9.0 ppm)	0	0	0	0	0
Nitrogen Dioxide (NO_2)					
Maximum Concentration 1-hr period, ppm	0.094	0.077	0.076	0.098	0.098
98th Percentile Concentration 1-hr period, ppm	N/A	0.070	0.061	0.065	0.055
Days over State Standard (0.18 ppm)	0	0	0	0	0
Annual Arithmetic Mean (AAM), ppm	0.014	---	0.012	0.013	0.010
Exceed State Standard? (0.030 ppm)	No	No	No	No	No
Sulfur Dioxide (SO_2)					
Maximum Concentration 1-hr period, ppm	0.021	0.022	0.026	0.011	0.005
Days over State Standard (75 ppb)	0	0	0	0	0
99th Percentile Concentration 1-hr period, ppm	N/A	0.012	0.016	0.008	N/A
Maximum Concentration 24-hr period, ppm	0.004	0.006	0.004	0.002	0.001
Days over State Standard (140 ppb)	0	0	0	0	0
Annual Arithmetic Mean (AAM), ppm	0.001	---	0.000	0.000	0.000
Respirable Particulate Matter (PM_{10}) [3]					
Maximum National Concentration 24-hr period, µg/m^3	50	52	37	41	31
Days over Federal Standard (150 µg/m^3)	0	0	0	0	0
Maximum California Concentration 24-hr period, µg/m^3	50	52	37	41	30
Days over State Standard (50 µg/m^3)	0	6	*	0	0
Annual National Concentration, µg/m^3	25.6	25.6	20.6	21.7	19.8
Annual California Concentration, µg/m^3	25.5	25.5	---	21.4	19.5
Exceed State Standard? (20 µg/m^3)	Yes	Yes	*	Yes	No
Fine Particulate Matter ($PM_{2.5}$) [3]					
Maximum National Concentration 24-hr period, µg/m^3	57.2	63.0	35.0	39.7	49.8
Days over Federal Standard (35 µg/m^3)	8	6	0	2	4
Maximum California Concentration 24-hr period, µg/m^3	57.2	63.0	35.0	39.7	49.8
Annual National Concentration, µg/m^3	14.1	12.8	10.3	11.3	10.4

Table 3-1

Southwest Coastal Los Angeles and South Coastal Los Angeles County Monitoring Station Ambient Air Quality Data

Pollutant [1,2]	2008	2009	2010	2011	2012
Exceed State Standard? (12 µg/m^3)	Yes	Yes	No	No	No

Notes:

AAM = Annual arithmetic mean
ppb = parts per billion (by volume)
ppm = parts per million (by volume)
µg/m^3 = micrograms per cubic meter
* = insufficient data to determine the value
N/A = not applicable

1 Monitoring data from the Southwest Coastal Los Angeles Station (Station No. 820) was used for O_3, CO, NO_2, SO_2, and PM_{10} concentrations. Monitoring Data from the South Coastal Los Angeles County 1 Monitoring Station (Station No. 072) was used for $PM_{2.5}$ concentrations.

2 An exceedance is not necessarily a violation. Violations are defined in 40 CFR 50 for NAAQS and 17 CCR 70200 for CAAQS.

3 Statistics may include data that are related to an exceptional event.

Source: California Air Resource Board, iADAM: Air Quality Data Statistics, Available at: www.arb.ca.gov/adam/, Accessed March 24, 2014; California Air Resource Board, AQMIS2, Available at: www.arb.ca.gov/aqmis2/aqmis2.php, Accessed March 24, 2014.

Respirable Particulate Matter (PM_{10}) - The highest recorded 24-hour PM_{10} concentration recorded was 52 µg/m^3 in 2009. During the period 2008 to 2012, the CAAQS for 24-hour PM_{10} was exceeded between 0 and 1.6 percent of the time; the NAAQS was not violated. The maximum annual arithmetic mean recorded was 25.6 µg/m^3 in 2008 and 2009.

Fine Particulates ($PM_{2.5}$) - The maximum 24-hour $PM_{2.5}$ concentration recorded was 63.0 µg/m^3 in 2009. The 24-hour NAAQS was exceeded between 0 and 2.2 percent annually from 2008-2012. The highest annual arithmetic mean of 14.1 was recorded in 2008.

3.3 Existing Airport Emissions

3.3.1 Criteria Pollutants

The existing (2012) airport-related emissions, including those from aircraft, GSE and APU operations, on-airport roadways, and stationary sources, are shown in **Table 3-2**.

Table 3-2

Existing (2012) Airport Emissions

Emission Source	Peak Daily Emissions (lbs/day)					
	CO	VOC	NO_X	SO_2	PM_{10}	$PM_{2.5}$
Aircraft	15,598	2,599	17,517	1,700	244	244
Ground Support Equipment	3,572	251	1,417	2	58	56
Auxiliary Power Units	563	47	550	75	76	76
Busing Operations	2	<1	13	<1	<1	<1
On-Airport Roadways [1]	681	80	1,481	<1	30	28
On-Airport Subtotal	20,417	2,980	20, 978	1,776	409	405

Note:
1 Emissions from traffic within the central terminal area (CTA) only.

Source: Ricondo & Associates, Inc., 2013.

3.3.2 Greenhouse Gases

According to the IPCC in 2007, worldwide man-made emissions of GHGs were approximately 40,000 million metric tons of CO_2e ($MMTCO_2e$), including ongoing emissions from industrial and agricultural sources, but excluding emissions from land use changes (i.e., deforestation, biomass decay). Total U.S. GHG emissions in 2011 were 6,702 $MMTCO_2e$, or about 17 percent of worldwide GHG emissions.[19] California is a substantial contributor of global GHGs as it is the second largest contributor in the United States (Texas is number one). As mandated by the Global Warming Solutions Act of 2006 (AB32), CARB is required to compile GHG inventories for the State of California, including the 1990 Greenhouse Gas Emissions Level. Inventories have been prepared for 2000 through 2011. Based on the 2011 GHG inventory data (i.e., the latest year for which data are available), California emitted 448 $MMTCO_2e$ *including* emissions resulting from imported electrical power in 2011 and 401 $MMTCO_2e$ *excluding* emissions related to imported power.[20] **Table 3-3** identifies and quantifies statewide anthropogenic GHG emissions and sinks in 1990 and 2011. California emissions are due in part to its large size and large population. By contrast, California had the fifth lowest CO_2 emissions per capita from fossil fuel combustion in the U.S., due to the success of its energy efficiency and renewable

19 U.S. Environmental Protection Agency, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2011, April 12, 2013. Available: www.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2013-Main-Text.pdf, Accessed March 2014.

20 California Air Resources Board, California Greenhouse Gas 2000-2011 Inventory by Scoping Plan Category - Summary, Available: www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-11_2013-08-01.pdf, Accessed March 2014.

energy programs and commitments that have lowered the State's GHG emissions rate of growth by more than half of what it would have been otherwise.[21]

Table 3-3

State of California GHG Emissions [1]

Category	Total 1990 Emissions ($MMTCO_2e$)	Percent of Total 1990 Emissions	Total 2011 Emissions ($MMTCO_2e$)	Percent of Total 2011 Emissions
Transportation	150.7	35%	168.4	38%
Electric Power	110.6	26%	86.6	19%
Commercial	14.4	3%	15.6	3%
Residential	29.7	7%	29.9	7%
Industrial	103.0	24%	93.2	21%
Recycling and Waste [2]	–	–	7.0	2%
High GWP/Non-Specified [3]	1.3	<1%	15.2	3%
Agriculture	23.4	5%	32.2	7%
Forestry	0.2	<1%	0.2	<1%
Forestry Sinks	-6.7	–	– [4]	–
Net Total	**426.6**	**100%**	**448.1**	**100%**

Notes:
1 Numbers may not add up exactly due to rounding.
2 Included in other categories for the 1990 emissions inventory.
3 High GWP gases are not specifically called out in the 1990 emissions inventory.
4 Revised methodology under development (not reported for 2010).

Source: California Air Resources Board, "California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit," available: http://www.arb.ca.gov/cc/inventory/pubs/reports/staff_report_1990_level.pdf, November 16, 2007, Accessed March 2014; California Air Resources Board, "California Greenhouse Gas Inventory for 2000-2011 – by Category as Defined in the 2008 Scoping Plan," available: www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-11_2013-08-01.pdf, Accessed March 2014.

Between 1990 and 2010, the population of California grew by approximately 7.5 million (from 29.8 to 37.3 million).[22] This represents an increase of approximately 25 percent from 1990 population levels. In addition, the California economy, measured as gross state product, grew from $773 billion in 1990 to $1.88 trillion in 2010 representing an increase of approximately 143 percent (over twice the 1990 gross state product). Despite the population and economic

21 California Air Resources Board, California Greenhouse Gas 2000-2010 Inventory by Scoping Plan Category - Summary, Available: www.arb.ca.gov/cc/inventory/data/data.htm, accessed October 2013.

22 U.S. Census Bureau, Data Finders, Available: www.census.gov/, Accessed April 2013; California Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, January 2011 and 2012, with 2000 Benchmark, Available: www.dof.ca.gov/research/demographic/reports/estimates/e-5/2011-20/view.php, Accessed October 2013.

growth, California's net GHG emissions only grew by approximately 6 percent.[23] The California Energy Commission attributes the slow rate of growth to the success of California's renewable energy programs and its commitment to clean air and clean energy.[24]

The existing operational emissions (2012), including those from aircraft, GSE, APU operations, busing operations, and on-airport roadways, are shown in units of $MTCO_2e$ in **Table 3-4**.

Table 3-4

Existing (2012) On-Airport Operational GHG Emissions

	Annual Emissions (metric tons CO_2e [1,2] per year)			
Emission Source	**CO_2 [3]**	**CH_4 [4,9]**	**N_2O [5,9]**	**Total**
Aircraft	688,996	399	6,764	696,159
Ground Support Equipment	31,305	217	768	32,290
Auxiliary Power Units [6]	N/A	N/A	N/A	N/A
Busing Operations [7]	321	<1	<1	321
On-Airport Roadways [8]	46,253	174	1,099	47,526
On-Airport Emissions	**766,875**	**790**	**8,631**	**776,296**

Notes:
1 CO_2e = carbon dioxide equivalent
2 CO_2e emissions are determined by multiplying the individual pollutant emissions by its respective GWP. The GWP for CH_4 is 21 and the GWP for N_2O is 310.
3 CO_2 = carbon dioxide
4 CH_4 = methane
5 N_2O = nitrous oxide
6 The EDMS model does not provide GHG emissions or fuel consumption data for APUs; therefore GHG emissions cannot be estimated.
7 Busing emissions only include GHG emissions from diesel-fueled buses (approximately 54 percent of the existing fleet); emissions factors for GHG pollutants were not available for alternatively-fueled buses.
8 This inventory only includes traffic traveling through the central terminal area (CTA).
9 CH_4 and N_2O emissions were estimated from the Los Angeles World Airports *GHG Emissions Inventory* (CDM, 2008).

Source: Ricondo & Associates, Inc., 2013.

23 California Department of Finance, Gross Domestic Product, California, Available: www.dof.ca.gov/html/fs_data/latestecondata/FS_Misc.htm, Accessed April 2013. Estimated gross state product for 1990 and 2012 are based on current dollars as of June 2012.

24 California Energy Commission, Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004, (2006).

4.0 METHODOLOGY

4.1 Air Quality

As part of the air quality analysis for the EIR, emission inventories were prepared and dispersion modeling was conducted. The results of these efforts were evaluated to ensure that the proposed Project complies with all Federal, State, and local regulations.

4.1.1 Scope of Analysis

The air quality analysis conducted for the proposed Project addresses construction-related emissions in 2015. The scope of the evaluation of construction emissions was conducted to:

- Identify construction-related emissions sources for the identified sources.
- Develop peak daily construction emissions inventories.
- Compare emissions inventories with appropriate California Environmental Quality Act (CEQA) thresholds for construction.
- Conduct dispersion modeling for Project construction emissions.
- Obtain background concentration data from SCAQMD and estimate future concentrations resulting from construction of the proposed Project.
- Identify potential construction-related mitigation measures if warranted beyond what is already required through LAX Master Plan commitments and mitigation measures.

4.1.1.1 Scenarios

The notice of preparation (NOP) for the EIR was issued in August 2013; thus, 2012 was used as the baseline for the EIR as this represents the last full year of available data. The air quality analysis conducted for the proposed Project addresses construction-related impacts for the one year of proposed construction activities.

Analyses for the following scenarios in 2015 were conducted in the EIR:

- 2015 Normal Operations – 2015 activity levels and existing airfield configuration.
- 2015 Shortened Runway Period – 2015 activity levels with existing airfield configuration, except for Runway 6R-24L which would operate at a reduced length of 7,000 feet for a period of 60 days.
- 2015 Runway Closure Period – 2015 activity levels with the existing airfield configuration, except for Runway 6R-24L which would be closed for a period of 122 days.

4.1.1.2 Types of Analysis

Below is an overview of the types of analyses performed for the EIR, including the emissions inventory and localized dispersion modeling. A detailed approach including technical assumptions, methodologies, databases, and models used to conduct the air quality analysis can be found in Sections 4.1.2 and 4.1.3.

4.1.1.2.1 Inventory

Criteria pollutant emission inventories were developed for the projected construction period of the proposed Project, anticipated to occur entirely within 2015, from June through December. The basic construction inventory process steps are summarized below:

- Identify construction-related emissions sources associated with the proposed Project.
- Capture construction activities of site-preparation, construction of paved and concrete surface, building erection-related activities, material delivery, and construction employee commuter trips.
- Prepare emissions inventory of construction emissions for the construction year.
- Compare emissions inventories with appropriate CEQA thresholds for construction.
- Identify potential construction-related mitigation measures beyond LAX Master Plan commitments and mitigation measures (if required).

4.1.1.2.2 Dispersion Modeling

Air dispersion modeling was conducted to predict pollutant concentrations for construction sources for the 2015 normal operations and 2015 runway closure period scenarios. Dispersion modeling was not conducted for the shortened runway period as the full runway closure represents a more conservative approach. Basic components of dispersion modeling include inputting inventory data, meteorological data, and receptor locations into FAA's Emissions and Dispersion Modeling System (EDMS), Version 5.1.4.1.[25] Incremental concentrations were compared to CEQA Thresholds.

- Receptors were established along the airport fence line and in the CTA.
- Five years of hourly surface data collected at the SCAQMD's on-airport meteorological station at LAX was used in the modeling to determine peak concentrations.
- Background concentration data was obtained from SCAQMD and added to the modeled Project effects to estimate future concentrations of construction of the proposed Project.

[25] U.S. Department of Transportation, Federal Aviation Administration, available: www.faa.gov/about/office_org/headquarters_offices/apl/research/models/edms_model/, accessed October 2013.

4.1.1.2.3 Cumulative impacts

The construction of various on-going and anticipated future projects at LAX would potentially occur simultaneously with the proposed Project. Emissions for several of these related LAWA projects were estimated or obtained from publicly available and readily accessible environmental documents. The estimated mass emissions from these projects were added to those of the proposed Project and compared against SCAQMD CEQA thresholds.

4.1.2 Emissions Inventory Methodology

The criteria pollutant emission inventories were developed using standard industry software/models and federal, State, and locally approved methodologies. Results of the emission inventories were compared to mass daily emissions thresholds established by SCAQMD for the Basin.

The air quality assessment for the proposed Project was conducted in accordance with the SCAQMD's 1993 CEQA Air Quality Handbook and updates published on the SCAQMD website. Emissions estimating and modeling used in this analysis are consistent with those used in the preparation of the following documents:

- The LAX Master Plan Final EIR;
- The Final General Conformity Determination;
- The Final EIR for the South Airfield Improvement Project (SAIP);
- The Final EIR for the Crossfield Taxiway Project (CFTP);
- The Final EIR for the Bradley West Project;
- The Final EIR for the LAX Specific Plan Amendment Study (SPAS);
- The Final EIR for the Runway 7L/25R Runway Safety Area (RSA) and Associated Improvements Project;
- The Final EIR for the West Aircraft Maintenance Area (WAMA) Project; and
- The Draft EIR for the Midfield Satellite Concourse (MSC).

Mass emissions inventories were prepared for construction of the proposed Project. As the construction of the proposed Project is expected to occur entirely within 2015, construction inventories were only calculated for this year. Construction inventories include emissions from construction activities and the change in aircraft operations during the runway closure period and the shortened runway period. The following section discusses the assumptions associated with the Project-related construction emissions inventory; cumulative effects are discussed in Section 4.1.4.

4.1.2.1 Construction Activities

This section describes the data and methodologies used to estimate emissions of criteria pollutants (CO, VOC, NO_X, SO_2, PM_{10} and $PM_{2.5}$) generated by construction of the proposed

Project.[26] Estimates of construction-related emissions were developed for the proposed Project using standard industry methodologies and techniques, and are consistent with methodologies used to estimate construction emissions in support of other EIR documents for projects at LAX. Emissions inventories for construction activity were prepared commensurate with the CEQA thresholds upon which the project were compared, as outlined in Section 2.3.1.

Construction emissions analyses generally require information such as the type of construction equipment to be used, the amount of time the equipment will operate, estimates of required construction material, areas to be paved, and the number of employees anticipated to be on site. A construction schedule and estimate of various material quantities were provided by URS Corporation. Construction activity estimates, including types, number, and specifications of equipment for various construction activities, were derived from data provided by MARRS Services, Inc., in support of the LAX Runway 7L/25R RSA.[27] This data included various types and numbers of construction equipment organized into crews. Crews were assigned to specific construction activities associated with the Proposed Action Alternative by identifying activities that are similar in nature to activities included in the LAX Runway 7L/25R RSA EA. Estimates of construction-related emissions were developed for the Proposed Action Alternative using standard industry methodologies and techniques. Activities associated with construction of the Proposed Action are anticipated to begin in June 2015 and to be completed in December 2015.

Using the provided construction data, monthly construction emissions estimates were developed. Daily emissions were calculated by dividing monthly emissions by the number of work days in the given month, based on a 6-day-per-week workweek, from which maximum daily emissions were derived. These daily emissions were compared against applicable SCAQMD mass daily significance thresholds. Annual emissions were based on the monthly emissions estimates.

Emission estimates for criteria pollutants were developed for the following construction sources:

- Off-road construction equipment
- On-road construction equipment
- Construction worker commute vehicles and delivery/haul trucks
- Pavement Crushing
- Fugitive Dust
- Fugitive VOCs

A summary of construction source pollutants and models/references used in the analysis is shown in **Table 4-1**.

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[26] Various sources for emission factors used in this analysis may generate emissions of pollutants different from the standard criteria pollutants. For purposes of this analysis in comparing daily emissions to the SCAQMD mass daily significance thresholds, emissions of reactive organic compounds (ROG) and hydrocarbons (HC) are assumed to be equivalent to VOC and emissions of sulfur dioxide (SO_2) are assumed to be equivalent to SO_X.

[27] City of Los Angeles, Los Angeles World Airports, Final Environmental Assessment for Los Angeles International Airport (LAX) Runway 7L/25R Runway Safety Area (RSA) and Associated Improvements Project, August 2013.

Table 4-1

Construction Sources Pollutant and Model Summary

Construction Source	Pollutant(s)	Model/Reference
Off-Road Equipment	CO, SO_2	OFFROAD2007[1]
	VOC, NO_X, PM_{10}	OFFROAD2011[2] and USEPA tiered emissions standards[3]
	$PM_{2.5}$	CEIDARS[4]
On-Road On-Site Equipment	CO, VOC, NO_X, PM_{10}	EMFAC2011[5]
On-Road Off-Site Equipment	CO, VOC, NO_X, PM_{10}	EMFAC2011
Fugitive Dust	PM_{10}, $PM_{2.5}$	USEPA AP-42[6]
Fugitive VOCs	VOC	CalEEMod[7]

Notes:

1 California Air Resources Board, OFFROAD2007 Model, available: www.arb.ca.gov/msei/offroad/offroad.htm.

2 California Air Resources Board, 2011 Inventory Model for In-Use Off-Road Equipment, available: www.arb.ca.gov/msei/categories.htm#offroad_motor_vehicles.

3 South Coast Air Quality Management District off-road engine emission rates, available: www.aqmd.gov/ceqa/handbook/mitigation/offroad/TableII.xls.

4 California Air Resources Board, California Emission Inventory and Reporting System (CEIDARS) – Particulate Matter Speciation Profiles – Summary of Overall Size Fractions and Reference Documentation.

5 California Air Resources Board, Research Division, EMFAC2011 On-Road Emissions Inventory Estimation Model.

6 U.S. Environmental Protection Agency, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume 1: Stationary Point and Area Sources (dates vary by chapter).

7 South Coast Air Quality Management District, California Emissions Estimator Model, prepared by ENVIRON International Corporation, available: http://www.caleemod.com/.

Source: Ricondo & Associates, Inc., 2013.

Detailed data and calculations used to estimate criteria pollutant emissions generated from construction activities are provided in **Attachment B.1**.

Off-Road Construction Equipment

Off-road construction equipment includes dozers, loaders, sweepers, and other heavy-duty construction equipment that operates on a construction site, that are not licensed to travel on public roadways. Off-road equipment emissions were calculated as shown in **Equation 4-1**.

Equation 4-1

Off-Road On-Site Equipment Emissions

$$E = HP \times L \times H \times e \times EF$$

Where:

E	=	emissions (lb/month)
HP	=	horsepower
L	=	load factor
H	=	total hours per month of equipment operation
e	=	efficiency factor
EF	=	emission factor (lb/hp-hr)

Source: Ricondo & Associates, Inc., 2014.

Off-road equipment types, models, horsepower, and load factor were assigned to each construction task for the proposed Project, as previously described. Equipment operating times were derived assuming a 10-hour-per-day, 6-day-per-week workweek. To account for equipment downtime throughout the day, an equipment-specific efficiency factor was calculated from data obtained from the California Air Resources Board (CARB) OFFROAD2007 emission factor model, consistent with the methodology used in the LAX Runway 7L/25R RSA EA.

Emission factors for off-road equipment were obtained from several sources. For CO and SO_X, emission factors were obtained from CARB's OFFROAD2007 emission factor model for 2015. For each construction equipment type, the model generates emissions in tons per day for several horsepower ranges/bins. For each equipment type and horsepower bin combination, the emissions in tons per day were multiplied by 2000 (pounds per ton) and divided by activity (hours per day), load factor (from the OFFROAD2007 data file), and average horsepower (from the OFFROAD2007 data file). Using this methodology, an emission factor in pounds per horsepower-hour (lb/hp-hr) was derived for each equipment type by horsepower bin. The emission factor applied to a given piece of equipment was then selected based on the horsepower of the equipment. It should be noted that the OFFROAD2007 model does not include every specific type of equipment assumed for construction of the Proposed Project Alternative. Where necessary, specific equipment types were matched with an equivalent/representative OFFROAD2007 equipment type for purposes of selecting an appropriate emission factor.

Emission factors for VOC, NO_X, and PM_{10} were obtained and used based on construction-related air quality control measures developed for LAX. All off-road diesel-powered construction equipment greater than 50 horsepower was assumed to meet USEPA Tier 4 off-road emission standards for these pollutants (final Tier 4 NO_X standards were assumed for most equipment types, based on assumptions used in the LAX Runway 7L/25R RSA EA). These emissions standards are reflected in emission factors reported in grams per horsepower-hour (g/hp-hr) for various horsepower ranges. The factors were converted to lb/hp-hr for emissions calculation purposes.

CARB's OFFROAD2011 emission factor model was used for deriving emission factors of VOC, NO_X, and PM_{10} for off-road construction equipment less than 50 horsepower. The computation of emission factors from OFFROAD2011 was performed essentially identically to the methodology described previously for deriving emission factors from OFFROAD2007.

$PM_{2.5}$ emission factors were derived using the PM_{10} emission factors and $PM_{2.5}$ size profiles derived from the CARB-approved California Emission Inventory Development and Reporting System (CEIDARS) database. In this case, a factor 0.92 was applied to PM_{10} emission factors to derive $PM_{2.5}$ emission factors. This factor represents the size fraction of PM_{10} emissions that can be assumed to be $PM_{2.5}$ emissions with respect to diesel vehicle exhaust.

On-Road Construction Equipment

On-road on-site equipment emissions are generated from on-site pickup trucks, water trucks, haul trucks, cement trucks, flatbed trucks, and other trucks that are licensed to travel on public roadways. **Equation 4-2** was used to calculate emissions from on-road on-site equipment.

Equation 4-2

On-Road On-Site Equipment Emissions

$$E = VMT \times EF$$

Where:

E = emissions (lb/month)
VMT = vehicle miles traveled per day
EF = emission factor (lb/hr)

Source: Ricondo & Associates, Inc., 2014.

Equipment types and specifications by construction activity for on-road on-site equipment were developed in the same way as nonroad equipment. Emissions factors for all criteria pollutants (including $PM_{2.5}$) for on-road on-site equipment were obtained from CARB's EMFAC2011 emission factor model. The EMFAC2011 model was run for 2015 and each seasonal period (annual, summer, winter) in the South Coast Air Basin.

EMFAC2011 contains a comprehensive list of vehicle categories. For this analysis, on-site pickup trucks were assumed to be represented by the LHD2 (gasoline) EMFAC2011 vehicle category, which is defined as light-heavy-duty trucks (10,001-140,000 lbs.). All other on-road on-site equipment was assumed to be represented by the T7 single construction (diesel) EMFAC2011 vehicle category. This category is defined as heavy-heavy duty diesel single unit construction trucks. In accordance with construction-related air quality control measures developed for LAX, emission factors for these vehicles were modeled for model year 2007 vehicles to represent compliance with U.S. EPA 2007 on-road emissions standards.

For diesel vehicles, the EMFAC2011 factors account for running and idling emissions for all pollutants. PM_{10} and $PM_{2.5}$ factors include tire and brake wear. For gasoline vehicles, VOC emission factors include diurnal, hot soak, running, and resting emissions, and the PM_{10} and $PM_{2.5}$ factors include tire and brake wear. EMFAC2011 emission factors are expressed in pounds per mile; therefore, roundtrip distances for on-site travel were determined for each vehicle type to calculate emissions in pounds per day. Travel distances were assumed to be 5 miles roundtrip for water trucks and sweepers, and 2 miles roundtrip for all other vehicles. In addition, on-road on-site vehicles were assumed to travel at a speed of 20 mph. These assumptions are consistent with the LAX Runway 7L/25R RSA EA.

In accordance with construction-related air quality control measures developed for LAX, diesel vehicles (in this case the T7 single construction vehicles) were assumed to be fitted with exhaust retrofit devices providing an 85-percent reduction in PM_{10} and $PM_{2.5}$ emissions.

Construction Worker Commute Vehicles and Delivery/Haul Trucks

On-road off-site trips include personal vehicles used by construction workers to access the construction site, as well as hauling trips for the transport of various materials to and from the site. The emissions calculation is the same as the calculation of on-site on-road vehicles (Equation 4-2).

Emission factors for on-road off-site vehicles were obtained from EMFAC2011 in the same way as described previously for on-road on-site vehicles, although emission factors were used in units of g/mi and applied to the VMT estimates to calculate total emissions. For all on-road off-site vehicles, emission factors were obtained assuming an aggregated speed.

Total daily construction workers for a given construction activity was derived from crew data provided by MARRS Services, Inc. for the LAX Runway 7L/25R RSA EA. Total daily workers were converted to daily vehicle trips by assuming a factor of 1.15 workers per vehicle per trip. Daily VMT for construction worker vehicles was then calculated by multiplying the number of daily vehicle trips by an assumed roundtrip distance of 40 miles.

To represent a mix of construction worker vehicles, the analysis assumed a mix of:

- 50 percent passenger cars (EMFAC2011 vehicle category LDA);
- 30 percent light-duty trucks (0-3,750 lbs.) (LDT1); and
- 20 percent light duty trucks (3,751-5,750 lbs.) (LDT2).

This vehicle mix is identified in the South Coast Air Quality Management District (SCAQMD) California Emissions Estimator Model (CalEEMod) as an option for modeling emissions from construction worker vehicles and represents a reasonable vehicle mix for such trips.

Off-site hauling trips include the delivery of construction materials, concrete, asphalt, and base material to the construction site, and hauling of excess cut/fill material and demolished pavement from the construction site. The calculation of VMT for on-road on-site hauling trips was based on quantities provided by URS Corporation. Haul trucks were assumed to have a capacity of 20 cubic yards, while transit cement mixers were assumed to have a capacity of 10 cubic yards. Based on information from Connico, Inc., haul trucks were assumed to travel a roundtrip distance of 40 miles for all hauling trips, except for concrete deliveries (25 miles) and

hauling of demolished pavement (5 miles). For off-site hauling trips, the T-7 single construction EMFAC2011 vehicle category was assumed for all vehicles.

Pavement Crushing

Various elements of the proposed Project involve the demolition of existing concrete or asphalt pavement. Demolished pavement associated with the rehabilitation of Runway 6L-24R and Taxiway AA was assumed to be concrete, while demolished pavement associated with the removal of applicable vehicle service roads was assumed to be asphalt. It was assumed that the demolished pavement would be hauled to an on-site crusher and crushed. The crushing process generates exhaust emissions from the running crusher, as well as fugitive dust. Emissions generated from pavement crushing operations were estimated using methodologies and assumptions contained in AP-42 Section 11.19.2, Crushed Stone Processing and Pulverized Mineral Processing. Estimated emissions associated with pavement crushing operations, as well as specific assumptions used to develop the emissions estimates, are presented in Appendix B.1.

Fugitive Dust

Additional sources of PM_{10} and $PM_{2.5}$ emissions associated with construction activities are related to fugitive dust. Fugitive dust includes re-suspended road dust from both off- and on-road vehicles, as well as dust from grading, loading, unloading, and other activities. Additional sources of fugitive dust quantified in the analysis included building demolition, crushing of demolished pavement, and concrete batching.

Fugitive dust emissions (PM_{10} and $PM_{2.5}$) were calculated using the guidance from the USEPA's AP-42, the SCAQMD's CEQA Air Quality Handbook, and documentation associated with CalEEMod. Fugitive dust emissions were calculated for the following construction activities and incorporated into the off-road, on-road, and pavement crushing emissions analyses, as appropriate:

- Vehicles traveling on paved roads. All off-site on-road vehicles are assumed to travel on paved roads.
- Vehicles traveling on unpaved roads. All on-road on-site vehicles are assumed to travel on unpaved roads.
- On-site construction activities (grading, crushing, loading, hauling and storage).
- An on-site rock crusher. An overall emission factor was derived by summing emission factors for crushing activities including tertiary crushing, fine crushing, and screening.

Water, as required under LAWA construction contracts and also being one of the main dust suppression measures recognized in SCAQMD Rule 402, was assumed to reduce fugitive dust emissions by 61 percent.

Fugitive VOCs

The primary source of construction-related fugitive VOC emissions is hot-mix asphalt paving. VOC emissions from asphalt paving operations result from evaporation of the petroleum distillate solvent, or diluent, used to liquefy asphalt cement. Based on the CARB default data contained within CalEEMod, an emission factor of 2.62 pounds of VOC (from asphalt curing) per acre of asphalt material was used to determine VOC emissions from asphalt paving. VOCs resulting from the application of runway/taxiway striping were also estimated.

4.1.2.2 Aircraft Operations during Construction

This section describes the data and methodologies used to estimate emissions of criteria pollutants (CO, VOC, NO_X, SO_2, PM_{10}, and $PM_{2.5}$) associated with the shift in operations during construction of the proposed Project, including the closure of Runway 6L-24R for 122 days, and the shortened runway period for 60 days.

Estimates of operational emissions during construction were developed for the proposed Project using standard industry methodologies and techniques, and are consistent with methodologies used to estimate operational emissions in support of other EIR documents for projects at LAX. Using the design day flight schedule, among other operational characteristics, annual emissions were calculated for the 2015 normal operations conditions, the 2015 runway closure period, and the 2015 shortened runway period. Daily emissions were compared against applicable SCAQMD mass daily significance thresholds.

Detailed data and calculations used to estimate criteria pollutant emissions generated from operational sources are provided in **Attachment B.2**.

Aircraft

Construction emissions associated with the shift in operations during the construction phase were calculated using the FAA's Emissions and Dispersion Modeling System (EDMS) Version 5.1.4.1. EDMS is a combined emissions and dispersion model developed by the FAA. EDMS is the FAA's and EPA's preferred guideline model for air quality analyses at airports. The primary applications of the model are to generate an inventory of emissions caused by sources on and around an airport and to calculate pollutant concentrations in the surrounding environment. EDMS data tables include emission factors for civilian and military aircraft, ground support equipment, and motor vehicles. EDMS criteria pollutant emissions inventories include CO, VOC, NO_X, SO_X, PM_{10}, and $PM_{2.5}$. Main inputs into EDMS include annual operations (arrivals and departures), fleet mix, and aircraft times in mode.

Three scenarios were modeled in EDMS to determine 2015 emissions from aircraft operations during construction: normal operations, runway closure period, and the shortened runway period. Runway 6L-24R would be closed for approximately 4 months during the runway rehabilitation construction period; operations from this runway must be accommodated through the use of other runways at LAX during this time. In order to determine air quality impacts during this period, airport simulation models (SIMMOD) were developed for the 2015 No Action Alternative and the 2015 runway closure period. Information on the number and types of aircraft operations considered at LAX for 2015 were developed specifically for the Project. These data

were used to develop SIMMOD of aircraft operations in order to determine Project-specific taxi/idle times. The SIMMOD used information about facilities and operations to predict specific timing, volume, and location (e.g., runway used) for aircraft operations. In addition, to allow for construction work on the Argo Ditch, Runway 6L-24R must operate at a reduced length of 7,000 feet for a period of 60 days (2 months).

Annual Operations and Fleet Mix

Annual landing and takeoff (LTO) cycles data were assembled to determine projected pollutant emissions from aircraft operations. LTO cycles are one-half the number of total aircraft operations, because one aircraft operation represents one takeoff or landing. Annual aircraft operations were developed based on aircraft operations forecasts for 2015, as included in Attachment B.2. The total 2015 annual operations were extrapolated based on the Specific Plan Amendment Study (SPAS) Passenger Forecast. The number and types of airport operations, as well as the fleet mix, do not change under the construction phases (runway closure and shortened runway periods).

Aircraft Time in Mode

To model aircraft emissions, it is necessary to determine the time for each of the five operating modes that make up an LTO cycle – approach, taxi-in, taxi-out, takeoff, and climbout. To derive times spent in the approach, takeoff, and climbout modes, EDMS uses a dynamic flight performance modeling module that accounts for aircraft weight and meteorological conditions. Mixing heights at LAX are adjusted to 1,806 feet.[28] To obtain taxi-in and taxi-out times, SIMMOD was used, as discussed above. SIMMOD of aircraft operations for the 2015 normal operations and runway closure period were developed in order to determine Project-specific taxi/idle times. Aircraft emissions were then calculated using EDMS and the taxi/idle times derived from the SIMMOD results. Taxi times for this shortened runway period were calculated using the increased taxiing distance and a taxiway speed of 15 knots.

Taxi times were calculated based on the difference of the averages of the following runway operating conditions from SIMMOD:

- Visual flight rules (VFR) with visual approaches – West Flow (69.2%); and
- VFR with simultaneous instrument landing system (ILS) approaches – West Flow (24.6%)

These configurations make up nearly 94 percent of the runway operating configurations at LAX, as shown in **Table 4-2**.

[28] [insert original source from LAX Master Plan EIS/EIR]

Table 4-2

LAX Primary Runway Operating Configurations

Configuration	Annual Use
VFR Visual - West Flow	69.2%
VFR ILS – West Flow	24.6%
VFR ILS – East Flow	2.1%
IFR – West Flow	4.1%

Source: Ricondo & Associates, Inc., 2014

The incremental differences in taxi/idle times were used for the analysis of aircraft emissions associated with the shift in aircraft operations during the runway closure period and the shortened runway period; taxi/idle times during both of these periods will be slightly greater than normal operations during 2015. As no other phases of the landing-takeoff (LTO) cycle (approach, taxi/idle, takeoff, and climbout) would be affected by the proposed Project, only taxi/idle emissions were analyzed. A summary of the taxi times are shown in **Table 4-3**. As mentioned above, these are average taxi times based on two of the primary runway operating configurations; they include unimpeded taxi time and ground delay.

Table 4-3

LAX Primary Runway Operating Configurations

Year/Scenario	Days in 2015	Taxi-In Time (minutes per operation)	Taxi-Out Time (minutes per operation)
2015 Without Project	183	9.21	12.05
2015 Runway Closure Period	122	9.26	12.62
2015 Shortened Runway Period	60	9.39	12.05

Source: Ricondo & Associates, Inc., 2014

Ground Support Equipment and Auxiliary Power Units

GSE emissions during the construction phase of the proposed Project would not differ from the normal operations in 2015; therefore, GSE emissions were not included in the inventory.

APU emissions were calculated using EDMS for each scenario. Although it was assumed that 400 hertz (Hz) electric power and pre-conditioned air would be available at all commercial airline gates, APUs would continue to be used a portion of the time. APU emissions were calculated using default emissions factors and times in mode.

4.1.3 Dispersion Modeling Methodology

4.1.3.1 Construction Activities

General Approach

The project-specific air quality modeling of localized construction impacts was conducted consistent with SCAQMD methodology. The USEPA and SCAQMD-approved dispersion model, AMS/EPA Regulatory Model (AERMOD), was used to model the air quality impacts of NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ emissions. AERMOD can estimate the air quality impacts of single or multiple point, area, or volume sources using historical meteorological conditions. Volume sources are three-dimensional sources of emissions that can be used to model releases from a variety of industrial uses, including moving diesel trucks and equipment; they were used to represent the emissions from trucks, heavy-duty construction equipment, and fugitive dust. To be conservative, this analysis did not calculate PM_{10} deposition. For the purpose of the dispersion modeling, the maximum daily emissions that could occur due to construction activities from the peak construction year were selected for the LST analysis.

The general approach used for construction dispersion modeling is as follows:

1. Emission rates were established for the peak month of construction for each pollutant. The maximum lbs/day were computed based on a peak month average day over the entire construction period. It was assumed that an average workday would result in 10 hours of emissions-generating activity. Therefore, the maximum daily emissions were divided by 10 to convert the maximum daily emissions into emission rates in units of pounds per hour. These emissions were then converted to grams/second.
2. The construction schedule prepared by URS has the project divided into several sub-tasks based on project components and projected timing. The emissions rate for each sub-task (g/s) was divided by the number of areas for each source to create a series of emission volume sources by task.
3. Release heights were assigned to each source area based on location of exhaust of equipment.
4. Temporal factors were calculated based on the construction schedule and the assumed hours worked per week. As previously discussed, it is assumed there would be 10 work hours per day, and a 6 day workweek (Monday through Saturday).

Detailed data used in dispersion modeling for construction activities are provided in **Attachment B.3**.

AERMOD Settings

The SCAQMD requires that AERMOD be run using USEPA regulatory default options, unless non-default options are justified; therefore, AERMOD was run using USEPA regulatory default options. Additional modeling options are listed below:

- Urban dispersion (Los Angeles County population of 9,862,049, as per SCAQMD guidance);

- Averaging periods: 1-hour (CO and NO_2), 8-hour (CO), 24-hour (PM_{10} and $PM_{2.5}$); Annual (NO_2, PM_{10} and $PM_{2.5}$)
- Flagpole receptor heights: 1.8 meters; and
- No building downwash (no point sources modeled).

Source and Receptor Locations

Construction activities were assumed to be located at the proposed Project depicted on Figure 3. Receptor points are the geographic locations where the air dispersion model calculates air pollutant concentrations. These discrete Cartesian receptors were used to determine air quality impacts in the vicinity of the proposed Project site. Field receptors were placed at the boundary of LAX (along the fence line), as well as at the Theme Building, as shown in **Figure 5**.

Meteorology

The meteorological data from the monitoring station located at the LAX Hastings site was used in the analysis. The meteorological data were obtained from the SCAQMD website, which were preprocessed using AERMET. AERMET is a meteorological preprocessor for organizing available meteorological data into a format suitable for use in the AERMOD air quality dispersion model. These files were also developed by the SCAQMD using site specific surface characteristics (i.e., surface albedo, surface roughness, and Bowen ratio) obtained using AERSURFACE. AERSURFACE is a tool that provides realistic and reproducible surface characteristic values, including albedo, Bowen ratio, and surface roughness length, for input into AERMET. The dataset used consisted of five years of hourly surface data collected at LAX for calendar years 2005 through 2009; the data included ambient temperature, wind speed, wind direction, and atmospheric stability parameters, as well as mixing height parameters from the appropriate upper air station. All five years of meteorological data were loaded into AERMOD to determine the maximum concentrations over the five year period for each pollutant and averaging period combination.

Ozone Limiting Method for NO_2 Modeling

AERMOD contains the ozone limiting method (OLM) and Plume Volume Molar Ratio Method (PVMRM) options, which are used to model the conversion of NO_X to NO_2. The OLM option was used in this modeling analysis. The SCAQMD provides hourly O_3 data for modeling conversion of NO_X to NO_2 using the OLM option. In addition, the following values were used in the analysis:

- Ambient Equilibrium NO_2/ NO_X Ratio: 0.90
- In-stack NO_2/ NO_X Ratio: 0.135
- Default Ozone Value: 40 parts per billion (used only for missing data in the hourly O_3 data file provided by the SCAQMD)

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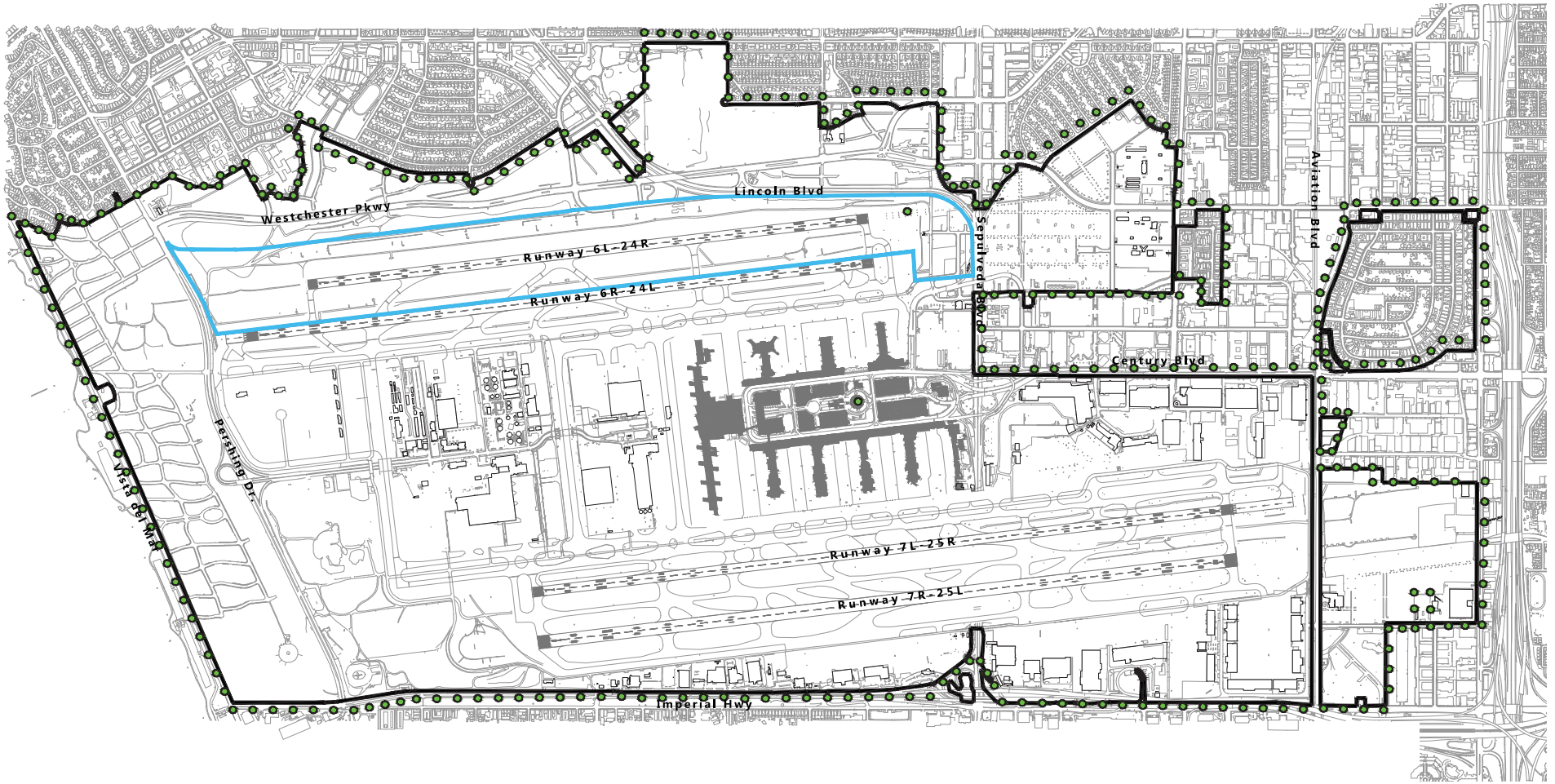

0 1,600 ft.
Scale north

Source: Landrum & Brown, *Los Angeles International Airport, Airport Layout Plan* , 2005; Ricondo & Associates, Inc., October 2013.
Prepared by: Ricondo & Associates, Inc., March 2014.

Legend
- Fenceline Air Quality Receptors
- LAX Property Boundary
- Construction Area

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvments Draft EIR	**Construction Air Quality Analysis Fenceline Receptor Locations**	Figure **5**

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4.1.3.2 Aircraft Operations during Construction

Consistent with SCAQMD methodology, localized operational concentrations were predicted through the AERMOD software. EDMS results (categorized by source for each hour) were used for the operations dispersion in AERMOD. Dispersion accounts for location of sources and not just annual or daily emissions inventory; assumptions for dispersion parameters are outlined below.

The source groups from EDMS include Aircraft, Gates, and Taxiway Queues. Detailed information on these is presented below.

General Approach

The Project-specific air quality modeling of localized operational impacts was conducted consistent with SCAQMD methodology using AERMOD. The dispersion model was based on the emissions inventory, source locations, and hourly meteorological data. By distributing aircraft and APU emissions to their respective locations using airport-specific hourly, daily, and monthly temporal factors and pre-processed weather data from SCAQMD, EDMS produces an hourly emissions rate (HRE) file. The HRE file contains all of the emissions broken into hourly bins by source; this file was used as input for each pollutant into AERMOD. Specific data regarding inputs into the dispersion modeling for operational activities are provided in **Attachment B.3**.

An overview of inputs for each emission source group is provided below:

Aircraft:

- As the VFR West flow configuration is predominantly used at LAX (69 percent of the time), the SIMMOD outputs for this configuration were used in the dispersion modeling.
- Runway use percentages were calculated by runway use from the SIMMOD runs and aircraft class (heavy, large, and small).
- Quarter hour profiles for each arrival/departure, aircraft, gate assignment, and runway assignment combination were established based on the peak hour of daily operations.
- Day of the week and monthly operational profiles were obtained from LAWA's Aircraft Noise and Operations Monitoring System (ANOMS) data from calendar year 2012.
- In accordance with EDMS methodology, dynamic sequencing was performed. To align the emissions inventories, a user-adjusted taxiway speed was used for each modeled scenario.

Gates:

- As predefined by EDMS, the source group for gates includes aircraft startup and APUs.
- Aircraft startup emissions were distributed as described above.

Taxiway Queues:

- Corresponding airfield layouts for each scenario were modeled into EDMS and thus AERMOD.

- Taxipaths to/from each runway/gate were defined based on actual operations at LAX and the SIMMOD outputs.

AERMOD Settings

As required by the SCAQMD, AERMOD was run using USEPA regulatory default options. Additional modeling options are the same as those outlined in Section 4.1.3.1.

In regards to source locations, operational activities were assumed to be located at the respective on-airport locations for individual sources. Aircraft operations were distributed between the taxiways and runways, as well as on the approach and departure paths. APU operations were located directly at the gates.

Receptor points for operational dispersion modeling were the same as those depicted in Figure 5. Meteorology and the OLM method for NO_2 modeling were the same as those outlined in Section 4.1.3.1.

4.1.4 Cumulative Impacts

For disclosure purposes, a list of past, present, and probable future LAWA projects that could overlap in time for construction are provided below. The projects listed include related LAWA projects planned on the entire LAX property (3,650 acres) and not just the proposed Project site. Emissions for several of these related LAWA projects were estimated or obtained from publicly available and readily accessible environmental documents. Construction emissions for other projects were estimated based on the ratio of the project costs as compared to the proposed Project. Calculation details are provided in **Attachment B.4**.

1. Runway Safety Area Improvements – South Airfield
2. LAX Bradley West Project – Remaining Work
3. Terminal 3 Connector
4. North Terminals Improvements
5. South Terminals Improvements
6. Midfield Satellite Concourse – North
7. Central Utility Plant Replacement – Remaining Work
8. Miscellaneous Projects and Improvements
9. West Aircraft Maintenance Area Project
10. LAX Northside Area Development
11. LAX Master Plan Alt. D/SPAS Development [3]
12. Metro Crenshaw / LAX Transit Corridor and Station

4.2 Greenhouse Gas Emissions

The greenhouse gas emissions analysis conducted for the proposed Project addresses construction emissions for 2015. Construction activities analyzed include on-site and off-site construction equipment that would occur during the temporary construction period. Emissions inventories were also developed for the aircraft operational emissions during construction.

4.2.1 Construction Activities

In addition to criteria pollutant emissions, construction equipment is a source of GHG emissions. The Project-related construction sources for which GHG emissions were calculated are the same as those calculated for criteria pollutant emissions and include the following:

- Off-Road Construction Equipment
- On-Road Construction Equipment
- Construction Worker Commute Vehicles and Delivery/Haul Trucks

Data such as the project schedule, quantity data, construction equipment usage and construction activity, are used in the same way for developing the GHG emissions inventory as for the criteria pollutant inventory. Differences in methodology as to how applicable GHG emission factors are derived are described below. Detailed data and calculations used to estimate GHG emissions generated from construction activities are provided in Attachment B.1.

Off-Road Construction Equipment

In addition to criteria pollutants, OFFROAD2007 provides data for calculating emission factors for GHGs, including CO_2 and CH_4. For off-road on-site equipment, these emission factors were derived and applied using the same methodology described in Section 4.1.2.1 for CO and SO_2. For each equipment type, the appropriate emission factor for CH_4 was multiplied by its global warming potential (21) and added to the appropriate emission factor for CO_2 (with a global warming potential of 1) to calculate an emission factor of CO_2e in lb/hp-hr. This emission factor was then multiplied by equipment horsepower, load factor, an efficiency factor, and total operating hours, resulting in GHG emissions for the 2015 construction year.

On-Road On-Site Equipment

EMFAC2011 was used to obtain emission factors of CO_2. These emission factors were obtained and applied using the same methodology described in Section 4.1.2.1 for criteria pollutants. CO_2 emission factors obtained from EMFAC2011 and used in this analysis assume Pavley-I and Low Carbon Fuel Standard (LCFS) benefits.

In accordance with CARB guidance, for heavy-duty vehicles (assumed to be all on-road on-site vehicles except on-site pickup trucks) emission factors for CH_4 were calculated by multiplying the TOG emission factor by 0.0408. N_2O emission factors for all on-road on-site diesel vehicles were calculated by applying a factor of 0.3316 grams/gallon of fuel consumed by the vehicles. EMFAC2011 was used to derive the gallons of fuel consumed per VMT for T7 single

construction vehicles by year. The resulting fuel consumption was multiplied by the grams/gallon factor above to derive an emission factor of N_2O in g/mi. This emission factor was then multiplied by an assumed on-site speed of 20 mph, resulting in an emission factor in g/hr.

For on-road gasoline vehicles (i.e., on-site pickup trucks), EMFAC2011-LDV was used to calculate CH_4 emission factors in g/mi and multiplied by an assumed speed of 20 mph to derive emission factors in g/hr. Per CARB guidance, N_2O emission factors for gasoline vehicles were derived by multiplying the appropriate NO_X emission factor (in g/hr) by 4.16 percent.

Once appropriate emission factors for CO_2, CH_4, and N_2O were calculated for each vehicle, a combined emission factor of CO_2e was derived by taking the sum of the emission factor of CO_2 (multiplied by a global warming potential of 1), the emission factor for CH_4 (multiplied by a global warming potential of 21) and the emission factor for N_2O (multiplied by a global warming potential of 310). The resulting emission factor of CO_2e in g/hr was converted to lb/hr, which was applied to the monthly operating hours for each equipment type to estimate monthly emissions.

Construction Worker Commute Vehicles and Delivery/Haul Trucks

GHG emission factors and resulting emissions for construction worker commute vehicles and delivery/haul trucks were obtained and applied using the same methodology described in Section 4.1.2.1 for criteria pollutants. Emission factors of CO_2e were calculated using the same methodology described previously for on-road construction equipment, except that emission factors were derived in lb/mi and multiplied by the monthly operating hours for each equipment type to estimate monthly emissions.

4.2.2 Aircraft Operations during Construction

In addition to criteria pollutants, EDMS also provides aircraft CO_2 emissions. DDFS inputs into EDMS were the same as those outlined in Section 4.1.2.2 for criteria pollutants. CH_4 and N_2O emissions are not directly estimated by EDMS; therefore, it was necessary to estimate emissions using other methods. Emissions were calculated using fuel burn (converted from lbs to gallons) from EDMS and emission factors (in g/gal of fuel) from the U.S. Energy Information Administration. Emission factors for CH_4 and N_2O are shown in **Table 4-4**. Once appropriate emissions for CH_4 and N_2O were calculated, $MTCO_2e$ was calculated by taking the sum of CO_2 emissions (multiplied by a global warming potential of 1), the CH_4 emissions (multiplied by a global warming potential of 21) and the N_2O emissions (multiplied by a global warming potential of 310).

Although operations of APUs are expected to contribute to GHG emissions, EDMS does not estimate CO_2 emissions or fuel consumption; therefore APUs are not included in the emissions inventory.

Detailed data and calculations used to estimate GHG emissions generated from construction activities are provided in Attachment B.2.

Table 4-4

Jet Fuel GHG Emission Factors

Fuel Type	CH_4 (g/gal fuel)	N_2O (g/gal fuel)
Jet Fuel	0.27	0.31

Source: U.S. Energy Information Administration, "Voluntary Reporting of Greenhouse Gases Program Fuel Emission Coefficients," January 31, 2011, available: www.eia.gov/oiaf/1605/coefficients.html#tbl7.

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Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR

Appendix B

Air Quality and Greenhouse Gas Emissions

Air Quality and Greenhouse Gas Assessment Files

Provided by Ricondo & Associates

April 2014

Attachment B.1
Construction – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- Activities, Crew, and Schedule
- On-Site Equipment Data
- Off-Site Hauling Trip Data
- Criteria Pollutants – 2015 Construction Emissions Summary
- Criteria Pollutants – 2015 Construction Crew Emissions Summary
- Criteria Pollutants – On-Site Equipment Emission Factors
- Criteria Pollutants – On-Site Equipment Emissions
    - 2015 Off-Road On-Site Equipment Emissions
    - 2015 On-Road On-Site Equipment Emissions
- Criteria Pollutants – Construction Worker Vehicles
    - 2015 Construction Worker Vehicle Assumptions and Emission Factors
    - 2015 Construction Worker Vehicle Emissions
- Criteria Pollutants – On-Road Off-Site Hauling Emissions
    - 2015 On-Road Off-Site Hauling Emission Factors
    - 2015 On-Road Off-Site Hauling Emissions
- Criteria Pollutants – 2015 Pavement Crushing Emissions
- Fugitive Dust Emission Factors
- Asphalt Paving and Painting Fugitive Emissions
- GHGs – 2015 Construction Emissions Summary
- GHGs – 2015 Construction Crew Emissions Summary
- GHGs – On-Site Equipment Emission Factors
- GHGs – 2015 On-Site Equipment Emissions
- GHGs – 2015 Construction Worker Vehicle Emissions
- GHGs – 2015 On-Road Off-Site Hauling Emissions
- GHGs – 2015 Pavement Crushing Emissions

Attachment B.1

Construction – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- Activities, Crew, and Schedule

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Activities, Crews, and Schedule

Activity	Start Date	End Date	Duration (Days)	Crew	Crew Quantity
Mobilization	**3/30/2015**	**6/26/2015**	**77**		
Security Badging and Training	3/30/2015	6/26/2015	77	No emissions estimated prior to the installation of field offices, plants, and temporary facilities	
Contractor's Schedule Submittal, Review and Approval Process	3/30/2015	5/8/2015	35		
Contractor's Safety/Operations Plan Submittal, Review and Approval Process	3/30/2015	5/8/2015	35		
Contractor's QA/QC Plan Submittal, Review and Approval Process	3/30/2015	6/5/2015	59		
Utility Coordination	3/30/2015	5/8/2015	35		
Install temporary fencing	5/11/2015	6/5/2015	23		
Installation of Field Offices, Plants, and Temporary Facilities	5/18/2015	6/26/2015	35		
Field Office and Facilities	5/18/2015	6/26/2015	35	Setup (Estimated)	1.0
Clearing and Grubbing	5/18/2015	6/26/2015	35	B-11A	0.5
Runway 6L-24R Keel Replacement	**6/27/2015**	**11/16/2015**	**122**		
Install erosion and sediment controls	6/27/2015	7/2/2015	5	2 Clab	1.0
Paint Removal (entire runway)	6/29/2015	7/21/2015	20	B-79	1.0
PCC Demolition/ Excavation/Disposal	6/29/2015	9/2/2015	57		
PCC Pavement Removal	6/29/2015	8/27/2015	52	B-38	17.0
PCC Pavement Sawcut	6/29/2015	8/27/2015	52	B-89	4.0
Demo Electrical	8/28/2015	9/2/2015	5	Electrical (Estimated)	7.0
Prepare sub-grade	7/20/2015	9/5/2015	42	B-33B	1.0
Drill dowel holes	7/27/2015	9/7/2015	37	2 Clab	1.0
Install ductbank	8/3/2015	9/8/2015	32	Electrical (Estimated)	5.0
Install base cans for runway light fixtures	8/10/2015	9/9/2015	27	Electrical (Estimated)	4.0
Reinforced PCC Paving - Slipform	**8/17/2015**	**10/23/2015**	**59**		
Install reinforcing steel	8/17/2015	9/22/2015	32	2 Rodmen	1.0
Pave Pilot Lanes (Lanes 1 and 3)	8/20/2015	9/7/2015	16		
3.5" Asphalt Treated Base	8/20/2015	8/25/2015	5	B-25	1.0
17.5" PCC	8/26/2015	9/7/2015	11	B-26A	0.5
Pave Fill-in Lanes (Lanes 2 and 4)	9/8/2015	9/25/2015	16		
3.5" Asphalt Treated Base	9/8/2015	9/13/2015	5	B-25	1.0
17.5" PCC	9/14/2015	9/25/2015	11	B-26A	0.5
Curing-4wk	9/26/2015	10/23/2015	24	2 Clab	1.0
Runway light fixtures installation & testing	9/10/2015	10/16/2015	32	Electrical (Estimated)	13.0
PCC Grooving	10/16/2015	11/7/2015	20	B-71	5.0
Install pavement markings	10/23/2015	11/14/2015	20	B-79	1.0
Cleaning & final touch up	11/10/2015	11/16/2015	6	2 Clab	1.0
Taxiway AA Pavement Rehab & Hold Bar Rotation	**6/27/2015**	**11/5/2015**	**113**		
Install erosion and sediment controls	6/27/2015	7/2/2015	5	2 Clab	1.0
PCC Demolition/ Excavation/Disposal	6/29/2015	7/16/2015	16		
PCC Pavement Removal	6/29/2015	7/14/2015	14	B-38	20.0
PCC Pavement Sawcut	6/29/2015	7/14/2015	14	B-89	5.0
Demo Electrical	7/15/2015	7/16/2015	2	Electrical (Estimated)	6.0
Prepare sub-grade	7/10/2015	7/22/2015	11	B-33B	1.0
Drill dowel holes	7/13/2015	7/24/2015	11	2 Clab	1.0
Install ductbank	7/20/2015	7/27/2015	7	Electrical (Estimated)	7.0
Install base cans for runway light fixtures	7/24/2015	7/28/2015	4	Electrical (Estimated)	8.0
Reinforced PCC Paving	**7/24/2015**	**9/12/2015**	**44**		
Install reinforcing steel	7/24/2015	8/4/2015	10	2 Rodmen	1.0
Pave Pilot Lanes	7/29/2015	8/6/2015	8		
3.5" Asphalt Treated Base	7/29/2015	7/30/2015	2	B-25	1.0
17.5" PCC	7/31/2015	8/6/2015	6	B-26A	0.5
Pave Fill-in Lanes	8/7/2015	8/15/2015	8		
3.5" Asphalt Treated Base	8/7/2015	8/8/2015	2	B-25	1.0
17.5" PCC	8/9/2015	8/15/2015	6	B-26A	0.5
Curing-4wk	8/17/2015	9/12/2015	24	2 Clab	1.0
Runway light fixtures installation & testing	9/2/2015	9/12/2015	10	Electrical (Estimated)	1.0
PCC Grooving	9/10/2015	9/16/2015	6	B-71	5.0
Install pavement markings	9/17/2015	9/23/2015	6	B-79	1.0
Cleaning & final touch up	9/23/2015	9/24/2015	2	2 Clab	1.0
Taxiway Z Hold Bar Rotation	**9/25/2015**	**10/15/2015**	**18**		
Painting and Paint Removal	9/25/2015	10/2/2015	7	B-79	1.0
Lighting Relocation	10/3/2015	10/10/2015	7	Electrical (Estimated)	1.0
Signage Relocation	10/11/2015	10/15/2015	4	2 Clab	1.0
Taxiway Y Hold Bar Rotation	**10/16/2015**	**11/5/2015**	**18**		
Painting and Paint Removal	10/16/2015	10/23/2015	7	B-79	1.0
Lighting Relocation	10/24/2015	10/31/2015	7	Electrical (Estimated)	1.0
Signage Relocation	11/1/2015	11/5/2015	4	2 Clab	1.0
Argo Ditch Construction	**6/27/2015**	**12/3/2015**	**137**		
Install erosion and sediment controls	6/27/2015	7/2/2015	5	2 Clab	1.0
Construct temporary by-pass structures/Shoring	6/30/2015	7/20/2015	18	Setup (Estimated)	1.0
Site Demolition	7/21/2015	7/27/2015	6	B-12A	1.0
Excavation/disposal	7/21/2015	7/29/2015	8		
Excavation	7/21/2015	7/27/2015	6	B-12A	1.0
Disposal	7/28/2015	7/29/2015	2	B-34C	1.0
Prepare sub-grade	7/25/2015	7/31/2015	6	B-33B	1.0
6" CAB	7/28/2015	8/1/2015	5	B-36C	1.0
Floor Slab	**7/29/2015**	**9/19/2015**	**46**		
Place Rebars	7/29/2015	8/19/2015	19	2 Rodmen	1.0

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Activities, Crews, and Schedule

Activity	Start Date	End Date	Duration (Days)	Crew	Crew Quantity
Form work	8/11/2015	8/21/2015	10	2 Carp	1.0
Place Concrete	8/14/2015	8/22/2015	8	Foundation (Estimated)	1.0
Remove Form work	8/19/2015	8/27/2015	8	2 Carp	1.0
Concrete Curing (4]weeks)	8/24/2015	9/19/2015	24	2 Clab	1.0
Wall Slab	**8/20/2015**	**10/14/2015**	**48**		
Place Rebars	8/20/2015	9/2/2015	12	2 Rodmen	1.0
Form work	8/22/2015	9/15/2015	21	2 Carp	1.0
Place Concrete	9/5/2015	9/16/2015	10	Foundation (Estimated)	1.0
Remove Form work	9/11/2015	9/22/2015	10	2 Carp	1.0
Concrete Curing (4-weeks)	9/17/2015	10/14/2015	24	2 Clab	1.0
Construct 24" SD and catch basin	9/21/2015	10/3/2015	12	B-21	1.0
Backfill/Compaction on south side of walls	10/7/2015	10/15/2015	8	B-10M	1.0
Roof Slab	**9/12/2015**	**11/11/2015**	**52**		
Form work	9/12/2015	9/30/2015	16	2 Rodmen	1.0
Place Rebars	9/15/2015	10/12/2015	24	2 Carp	1.0
Place Concrete	10/6/2015	10/14/2015	8	Foundation (Estimated)	1.0
Remove Form work	10/10/2015	10/19/2015	8	2 Carp	1.0
Concrete Curing (4-weeks)	10/15/2015	11/11/2015	24	2 Clab	1.0
Backfill/Compaction on top portions	11/4/2015	11/12/2015	8	B-10M	1.0
Headwall and Outlet Structure	**10/12/2015**	**11/28/2015**	**42**		
Place Rebars	10/12/2015	10/22/2015	10	2 Rodmen	1.0
Form work	10/14/2015	10/24/2015	10	2 Carp	1.0
Place Concrete	10/26/2015	10/31/2015	6	Foundation (Estimated)	1.0
Remove Form work	10/31/2015	11/6/2015	6	2 Carp	1.0
Concrete Curing (4-weeks)	11/2/2015	11/28/2015	24	2 Clab	1.0
Divert flow to Argo Ditch and close by]pass structure	11/7/2015	11/7/2015	1	2 Carp	1.0
Construct Chain Link Fence	11/9/2015	11/12/2015	4	B-6	1.0
Backfill/Compaction on rest of areas	11/23/2015	12/3/2015	10	B-10M	1.0
Infield Vehicle Service Roads	**6/27/2015**	**9/7/2015**	**62**		
Install erosion and sediment controls	6/27/2015	7/2/2015	5	2 Clab	1.0
AC Demolition/ Excavation/disposal	6/29/2015	7/7/2015	8	B-38	2.0
Excavation/disposal	7/8/2015	7/16/2015	8		
Excavation	7/8/2015	7/11/2015	4	B-12A	2.0
Disposal	7/12/2015	7/16/2015	4	B-34C	2.0
Prepare sub-grade	7/17/2015	7/25/2015	8	B-33B	1.0
AC Paving	**7/27/2015**	**8/6/2015**	**10**		
6" CAB	7/27/2015	8/1/2015	6	B-36C	1.0
3" AC Paving	8/3/2015	8/6/2015	4		
AC Paving	8/3/2015	8/5/2015	3	B-25	2.0
Prime Coat	8/6/2015	8/6/2015	1	B-45	1.0
Install permanent pavement markings, cleaning & final touch up	9/3/2015	9/7/2015	4	B-79	1.0
North Perimeter Vehicle Service Road	**7/3/2015**	**12/26/2015**	**152**		
Install erosion and sediment controls	7/3/2015	7/8/2015	5	2 Clab	1.0
AC Demolition	7/9/2015	7/16/2015	7	B-38	2.0
Excavation/disposal	7/17/2015	7/24/2015	7		
Excavation	7/17/2015	7/21/2015	4	B-12A	2.0
Disposal	7/22/2015	7/24/2015	3	B-34C	2.0
Prepare sub-grade	7/27/2015	8/3/2015	7	B-33B	2.0
Install ductbank for light poles	8/4/2015	8/31/2015	24	Electrical (Estimated)	2.0
AC Paving	**11/13/2015**	**11/27/2015**	**13**		
12" CAB	11/13/2015	11/24/2015	10	B-36C	1.0
6" AC Paving	11/16/2015	11/26/2015	10		
AC Paving	11/16/2015	11/23/2015	7	B-25	2.0
Prime Coat	11/24/2015	11/26/2015	3	B-45	1.0
6" CAB - Shoulder	11/23/2015	11/27/2015	5	B-36C	1.0
3" AC Paving - Shoulder	11/24/2015	11/27/2015	4		
AC Paving	11/24/2015	11/26/2015	3	B-25	2.0
Prime Coat	11/27/2015	11/27/2015	1	B-45	1.0
Install security fence	10/31/2015	11/27/2015	24	B-6	1.0
Install ligtning	10/31/2015	11/27/2015	24	Electrical (Estimated)	2.0
Install permanent pavement markings, cleaning & final touch up	12/23/2015	12/26/2015	4	B-79	1.0
Finalize Project	**12/18/2015**	**12/29/2015**	**10**		
Punchlist	12/18/2015	12/29/2015	10	2 Clab	1.0
Project Completion	12/29/2015	12/29/2015	1		

Source: URS Corporation, 2013 (schedule); Ricondo & Associates, Inc., 2014 (crew assignments).

Attachment B.1

Construction – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- On-Site Equipment Data

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
On-Site Equipment Data

Off-Road On-Site Equipment	Make/Model	Fuel	HP	Load Factor	Usage Factor[1]	OFFROAD2007 Category	OFFROAD2011 Category
Asphalt Paver, 130 HP	Barber-Greene BG270B	Diesel	200	0.4154	39.5%	Pavers	Pavers
Backhoe Loader, 48 HP	CAT 428 Backhoe	Diesel	83	0.3685	45.3%	Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
Belt Placer	Gomaco RTP-500 Belt Placers	Diesel	200	0.3551	39.9%	Paving Equipment	Paving Equipment
Compactor, Roller,Vibratory, 25 Ton	CAT 825G	Diesel	315	0.3752	33.4%	Rollers	Rollers
Concrete Paver	Gomaco GHP-2800 Slipform Paver	Diesel	335	0.4154	39.5%	Pavers	Pavers
Concrete Pump	Putzeister 52M	Diesel	290	0.3551	39.9%	Paving Equipment	Paving Equipment
Concrete Saw	Walk Behind Saw	Diesel	10	0.4154	29.3%	Concrete/Industrial Saws	Other Construction Equipment
Cure/Texture Rig	Gomaco TC-400 Cure/Texture Rig	Diesel	70	0.3551	39.9%	Paving Equipment	Paving Equipment
Dozer, 200 HP	CAT D8R	Diesel	305	0.3953	76.4%	Rubber Tired Dozers	Rubber Tired Dozers
Dozer, 300 HP	CAT D8R	Diesel	305	0.3953	76.4%	Rubber Tired Dozers	Rubber Tired Dozers
FE Loader, W.M., 1.5 CY	CAT 966F	Diesel	220	0.3685	45.3%	Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
FE Loader, W.M., 4 CY	CAT 988F	Diesel	499	0.3685	45.3%	Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
Generator	CAT 3412TA	Diesel	749	0.4154	5.5%	Generator Sets	Other Construction Equipment
Grader, 30,000 lbs	CAT 16H Motor Grader	Diesel	275	0.4087	44.7%	Graders	Graders
Heating Kettle, 115 Gallon	Marathon KEB115T	Diesel	85	0.4154	33.2%	Other Construction Equipment	Other Construction Equipment
Hyd. Crane 25 tons	Grove RT500C	Diesel	130	0.2881	60.2%	Cranes	Cranes
Hyd. Excavator, 1 C.Y.	CAT 330L	Diesel	222	0.3819	67.1%	Excavators	Excavators
Hyd. Hammer (1200 lbs)	CAT 330L	Diesel	222	0.4154	45.9%	Crushing/Proc. Equipment	Other Construction Equipment
Paint Thermo. Striper, TM	Kontur 700TP	Diesel	85	0.3015	24.2%	Surfacing Equipment	Surfacing Equipment
Pavt. Rem. Bucket	CAT 330L	Diesel	222	0.3819	67.1%	Excavators	Excavators
Pvmt. Profiler, 750 HP	Pavement Profiler	Diesel	750	0.3551	39.9%	Paving Equipment	Paving Equipment
Roller, Pneum., Whl., 12 Ton	CAT CB634C	Diesel	145	0.3752	33.4%	Rollers	Rollers
S.P. Crane, 4x4, 5 Ton	Gradall 544D10-55	Diesel	125	0.2881	60.2%	Cranes	Cranes
Scraper, Towed, 10 C.Y.	CAT 631E	Diesel	450	0.4824	52.5%	Scrapers	Scrapers
Tandem Roller, 10 Ton	CAT CB634C	Diesel	145	0.3752	33.4%	Rollers	Rollers
Vibrator	Northrock PRO 8G/GW	Diesel	8	0.4154	9.9%	Plate Compactors	Other Construction Equipment

On-Road On-Site Equipment	Make/Model	Fuel	HP	Load Factor	Usage Factor	EMFAC2011 Category	PM Control Device Reduction	Miles/Day per Vehicle
Flatbed Truck	Freightliner FLD120SD	Diesel	360	1.000	100.0%	T7 single construction	85.00%	2
Pickup Truck	Ford F250	Gas	200	1.000	100.0%	LHD2 (light-heavy-duty truck)		2
Road Sweeper	Vacuum Sweeper	Diesel	170	1.000	100.0%	T7 single construction	85.00%	5
Transit Mixer	Freightliner FLD120SD	Diesel	360	1.000	100.0%	T7 single construction	85.00%	2
Truck Tractor	DAF CF 85 Delphi ECU	Diesel	460	1.000	100.0%	T7 single construction	85.00%	2
Water Truck	CAT 766C	Diesel	870	1.000	100.0%	T7 single construction	85.00%	5

Notes:

HP = horsepower; PM = particulate matter.

[1] Usage factors are derived from OFFROAD2007, consistent with City of Los Angeles, Los Angeles World Airports, *Final Environmental Assessment for Los Angeles International Airport (LAX) Runway 7L/25R Runway Safety Area (RSA) and Associated Improvements Project* , August 2013.

[2] All on-road diesel trucks are assumed to be fitted with particulate control devices, consistent with the Draft EIR for the West Maintenance Area Project. Emission reductions apply equally to PM_{10} and $PM_{2.5}$.

Sources: Ricondo & Associates, Inc., 2014; URS Corporation, 2012; MARRS Services, Inc., 2012.

Attachment B.1

Construction – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- Off-Site Hauling Trip Data

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Off-Site Hauling Trip Data

Project Construction Components	Construction Material Delivery Trips	Concrete Delivery Trips	Base Material Trips	ATB Deliveries	Asphalt Delivery Trips	Cut/Fill (CY)	Cut/Fill Hauling Trips	Pavement Demo (CY)	Pavement Demo Haul Trips
Runway 6L-24R Keel Replacement	200	3,140	0	327	0	0	0	31,396	1,570
Taxiway AA Pavement Rehab & Hold Bar Rotation	100	676	0	62	0	0	0	6,756	338
Argo Ditch Construction	100	524	0	0	0	3,600	180	0	0
Infield Vehicle Service Roads	0	0	142	0	34	4,204	210	1,112	56
North Perimeter Vehicle Service Road	100	0	163	0	81	4,204	210	1,198	60

Notes:

CY = cubic yards; sf = square feet; ATB = asphalt treated base.

Assumed vehicles include flatbed trucks, haul trucks, and end dump trucks.

Assumed haul truck capacity is 20 cubic yards

Source: Ricondo & Associates, Inc., 2014; URS Corporation, 2013.

Assumed Roundtrip Distance (miles)	
Construction Material Deliveries	40
Concrete Deliveries	25
Asphalt Treated Base Material Deliveries	40
Base Material Deliveries	40
Asphalt Deliveries	40
Cut/Fill Material Hauling	40
Demolished Pavement Material Hauling	5

Note:

[1] Demolished pavement material is assumed to be hauled to an on-site rock crusher.

Source: Connico, Inc., 2013.

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Off-Site Hauling Trip Data

Construction Material Deliveries						
Project Construction Components	Days	% Year	Total Trips	Total VMT	Trips/Day	VMT/Day
Runway 6L-24R Keel Replacement	65	100.0%	200	8,000	3	123
Taxiway AA Pavement Rehab & Hold Bar Rotation	24	100.0%	100	4,000	4	167
Argo Ditch Construction	71	100.0%	100	4,000	1	56
Infield Vehicle Service Roads	0	0.0%	0	0	0	0
North Perimeter Vehicle Service Road	48	100.0%	100	4,000	2	83

Concrete Deliveries						
Project Construction Components	Days	% Year	Total Trips	Total VMT	Trips/Day	VMT/Day
Runway 6L-24R Keel Replacement	22	100.0%	3,140	78,491	143	3,568
Taxiway AA Pavement Rehab & Hold Bar Rotation	12	100.0%	676	16,889	56	1,407
Argo Ditch Construction	32	100.0%	524	13,100	16	409
Infield Vehicle Service Roads	0	0.0%	0	0	0	0
North Perimeter Vehicle Service Road	0	0.0%	0	0	0	0

Asphalt Treated Base Material Deliveries						
Project Construction Components	Days	% Year	Total Trips	Total VMT	Trips/Day	VMT/Day
Runway 6L-24R Keel Replacement	10	100.0%	327	13,082	33	1,308
Taxiway AA Pavement Rehab & Hold Bar Rotation	4	100.0%	62	2,489	16	622
Argo Ditch Construction	0	0.0%	0	0	0	0
Infield Vehicle Service Roads	0	0.0%	0	0	0	0
North Perimeter Vehicle Service Road	0	0.0%	0	0	0	0

Base Material Deliveries						
Project Construction Components	Days	% Year	Total Trips	Total VMT	Trips/Day	VMT/Day
Runway 6L-24R Keel Replacement	0	0.0%	0	0	0	0
Taxiway AA Pavement Rehab & Hold Bar Rotation	0	0.0%	0	0	0	0
Argo Ditch Construction	0	0.0%	0	0	0	0
Infield Vehicle Service Roads	6	100.0%	142	5,671	24	945
North Perimeter Vehicle Service Road	13	100.0%	163	6,515	13	501

Asphalt Deliveries						
Project Construction Components	Days	% Year	Total Trips	Total VMT	Trips/Day	VMT/Day
Runway 6L-24R Keel Replacement	0	0.0%	0	0	0	0
Taxiway AA Pavement Rehab & Hold Bar Rotation	0	0.0%	0	0	0	0
Argo Ditch Construction	0	0.0%	0	0	0	0
Infield Vehicle Service Roads	4	100.0%	34	1,371	9	343
North Perimeter Vehicle Service Road	10	100.0%	81	3,258	8	326

Cut/Fill Material Hauling						
Project Construction Components	Days	% Year	Total Trips	Total VMT	Trips/Day	VMT/Day
Runway 6L-24R Keel Replacement	0	0.0%	0	0	0	0
Taxiway AA Pavement Rehab & Hold Bar Rotation	0	0.0%	0	0	0	0
Argo Ditch Construction	2	100.0%	180	7,200	90	3,600
Infield Vehicle Service Roads	4	100.0%	210	8,408	53	2,102
North Perimeter Vehicle Service Road	3	100.0%	210	8,408	70	2,803

Demolished Pavement Material Hauling						
Project Construction Components	Days	% Year	Total Trips	Total VMT	Trips/Day	VMT/Day
Runway 6L-24R Keel Replacement	52	100.0%	1,570	7,849	30	151
Taxiway AA Pavement Rehab & Hold Bar Rotation	14	100.0%	338	1,689	24	121
Argo Ditch Construction	0	0.0%	0	0	0	0
Infield Vehicle Service Roads	8	100.0%	56	278	7	35
North Perimeter Vehicle Service Road	7	100.0%	60	300	9	43

Source: Ricondo & Associates, Inc., 2014; URS Corporation, 2013; Connico, Inc., 2013.

Attachment B.1

Construction – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- Criteria Pollutants – 2015 Construction Emissions Summary

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 Construction Emissions Summary

Carbon Monoxide (CO)

Day	Emissions (lb/day)[1]							
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	6.7	364.9	232.1	112.1	70.1		6.2
2	0.0	6.7	364.9		117.2	70.1	63.0	6.2
3		6.7	361.6	250.6	88.3	70.4	63.0	6.2
4	0.0	6.7	361.6	235.1	88.3		69.2	0.0
5	0.0	6.7		233.4	99.3	67.5	69.2	0.0
6	0.0	6.7	361.6	215.2		78.6	68.1	
7	0.0		361.6	213.5	86.8	84.8	68.1	0.0
8	0.0	6.7	349.1	213.5	76.2	84.8		0.0
9	0.0	6.7	365.9		53.4	84.8	27.6	0.0
10		6.7	378.4	231.2	136.7	85.9	28.7	0.0
11	0.0	6.7	378.4	232.3	137.8		28.7	0.0
12	0.0	6.7		232.3	138.9	83.7	27.6	0.0
13	0.0	6.7	382.7	232.3		82.6	31.3	
14	0.0		382.7	243.3	138.0	83.7	31.3	0.0
15	0.0	6.7	229.3	243.3	139.1	72.7		0.0
16	0.0	6.7	229.3		138.0	111.8	47.5	0.0
17		6.7	193.3	234.2	90.0	52.1	46.4	0.0
18	6.7	6.7	193.3	234.2	90.0		46.4	1.1
19	6.7	6.7		235.3	90.0	52.1	46.4	1.1
20	6.7	6.7	238.3	249.5		51.0	46.4	
21	6.7		239.9	249.5	91.8	51.0	46.4	1.1
22	6.7	6.7	241.4	249.5	91.8	51.0		1.1
23	6.7	6.7	228.9		90.7	53.9	63.6	5.3
24		6.7	266.5	239.5	86.5	53.2	64.7	5.3
25	6.7	6.7	266.9	239.5	89.6		53.7	5.3
26	6.7	6.7		244.8	71.2	63.1	53.7	5.3
27	6.7	4.3	294.7	244.8	0.0	63.1	33.3	
28	6.7		281.7	121.5	71.2	63.1	7.3	1.1
29	6.7	361.2	258.3	121.5	71.2	63.1		1.1
30	6.7	364.9	245.1		71.2	63.1	6.2	0.0
31		-----	244.6	121.5	-----	76.4	-----	0.0
Max (lb/day)	**6.7**	**364.9**	**382.7**	**250.6**	**139.1**	**111.8**	**69.2**	**6.2**
Total (lb)	**80.9**	**885.4**	**8,064.9**	**5,793.5**	**2,554.9**	**1,887.9**	**1,137.6**	**46.4**
Quarter (lb)	**966.3**		**16,413.3**			**3,071.9**		
Tons	**10.23**							

Notes:

lb/day = pounds per day; black shaded cells represent max daily emissions.

Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014; URS Corporation, 2013.

Mobilization	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	6.7	6.7	0.0	0.0	0.0	0.0	0.0	0.0
Total (lb)	80.9	155.1	0.0	0.0	0.0	0.0	0.0	0.0
Quarter (lb)	235.9		0.0			0.0		

Runway 6L-24R Keel Replacement	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	159.5	170.9	229.8	107.6	103.1	46.5	0.0
Total (lb)	0.0	320.0	4,383.4	5,104.7	1,945.0	1,483.0	310.5	0.0
Quarter (lb)	320.0		11,433.1			1,793.5		

Taxiway AA Pavement Rehab & Hold Bar Rotation	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	181.8	194.3	12.9	48.5	4.6	1.1	0.0
Total (lb)	0.0	364.7	2,793.0	166.6	365.3	106.2	4.3	0.0
Quarter (lb)	364.7		3,324.9			110.5		

Argo Ditch Construction	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	4.8	37.9	14.5	16.5	21.8	11.2	6.2
Total (lb)	0.0	6.9	245.0	168.3	227.7	286.6	146.7	18.7
Quarter (lb)	6.9		641.1			452.1		

Infield Vehicle Service Roads	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	18.8	18.8	20.5	4.2	0.0	0.0	0.0
Total (lb)	0.0	38.7	334.6	78.0	16.9	0.0	0.0	0.0
Quarter (lb)	38.7		429.5			0.0		

North Perimeter Vehicle Service Road	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	0.0	25.0	25.0	0.0	12.2	57.4	4.2
Total (lb)	0.0	0.0	308.9	275.9	0.0	12.2	676.0	16.9
Quarter (lb)	0.0		584.8			705.1		

Finalize Project	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
Total (lb)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.8
Quarter (lb)	0.0		0.0			10.8		

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 Construction Emissions Summary

Reactive Organic Gases (ROG)

Day	Emissions (lb/day)[1]							
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.5	35.5	21.6	10.3	6.0		0.4
2	0.0	0.5	35.5		10.8	6.0	8.4	0.4
3		0.5	35.2	24.1	8.7	5.7	8.4	0.4
4	0.0	0.5	35.2	23.3	8.7		8.8	0.0
5	0.0	0.5		23.1	9.9	5.5	8.8	0.0
6	0.0	0.5	35.2	21.7		6.7	8.7	
7	0.0		35.2	19.9	9.1	7.0	8.7	0.0
8	0.0	0.5	34.0	19.9	7.0	7.0		0.0
9	0.0	0.5	35.7		5.2	7.0	4.9	0.0
10		0.5	36.5	21.7	12.3	7.1	5.0	0.0
11	0.0	0.5	36.5	21.8	12.4		5.0	0.0
12	0.0	0.5		21.8	12.5	7.0	4.9	0.0
13	0.0	0.5	37.5	21.8		6.9	5.5	
14	0.0		37.5	23.0	13.3	7.0	5.5	0.0
15	0.0	0.5	22.0	23.0	13.4	5.8		0.0
16	0.0	0.5	22.0		13.3	9.8	4.5	0.0
17		0.5	17.9	21.7	9.0	5.0	4.4	0.0
18	0.5	0.5	17.9	21.7	9.0		4.4	0.1
19	0.5	0.5		21.8	9.0	5.0	4.4	0.1
20	0.5	0.5	21.4	23.4		4.9	4.4	
21	0.5		21.6	23.4	9.1	4.9	4.4	0.1
22	0.5	0.5	22.7	23.4	9.1	4.9		0.1
23	0.5	0.5	21.9		9.0	8.0	5.6	0.8
24		0.5	24.9	22.3	8.4	7.6	5.7	0.8
25	0.5	0.5	23.7	22.3	8.9		4.9	0.8
26	0.5	0.5		23.7	6.1	8.7	4.9	0.8
27	0.5	0.4	26.0	23.7	0.0	8.7	2.7	
28	0.5		26.1	11.1	6.1	8.7	0.5	0.1
29	0.5	35.2	24.4	11.1	6.1	8.7		0.1
30	0.5	35.5	22.0		6.1	8.7	0.4	0.0
31		-----	22.3	11.1	-----	9.8	-----	0.0
Max (lb/day)	**0.5**	**35.5**	**37.5**	**24.1**	**13.4**	**9.8**	**8.8**	**0.8**
Total (lb)	**5.8**	**82.2**	**766.3**	**547.5**	**243.0**	**188.2**	**133.5**	**4.7**
Quarter (lb)	**88.0**		**1,556.8**			**326.4**		
Tons	**0.99**							

Notes:

lb/day = pounds per day; black shaded cells represent max daily emissions.

Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014; URS Corporation, 2013.

Mobilization								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Total (lb)	5.8	11.1	0.0	0.0	0.0	0.0	0.0	0.0
Quarter (lb)	16.9			0.0			0.0	

Runway 6L-24R Keel Replacement								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	15.5	16.2	22.4	9.9	8.8	7.1	0.0
Total (lb)	0.0	31.0	421.8	477.1	182.6	149.8	62.3	0.0
Quarter (lb)	31.0			1,081.6			212.0	

Taxiway AA Pavement Rehab & Hold Bar Rotation								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	17.8	18.6	1.7	4.5	0.6	0.1	0.0
Total (lb)	0.0	35.6	261.8	20.3	35.8	10.9	0.4	0.0
Quarter (lb)	35.6			317.9			11.2	

Argo Ditch Construction								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	0.4	4.1	1.5	1.6	1.9	0.7	0.4
Total (lb)	0.0	0.6	22.2	16.8	22.0	26.6	9.8	1.1
Quarter (lb)	0.6			60.9			37.5	

Infield Vehicle Service Roads								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	1.8	1.8	2.8	0.7	0.0	0.0	0.0
Total (lb)	0.0	3.8	32.0	11.3	2.6	0.0	0.0	0.0
Quarter (lb)	3.8			45.9			0.0	

North Perimeter Vehicle Service Road								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	0.0	1.9	1.6	0.0	1.0	5.2	0.7
Total (lb)	0.0	0.0	28.5	22.1	0.0	1.0	61.1	2.6
Quarter (lb)	0.0			50.6			64.7	

Finalize Project								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total (lb)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Quarter (lb)	0.0			0.0			1.0	

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 Construction Emissions Summary

Nitrogen Oxides (NO_X)

Day	Emissions (lb/day)[1]							
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.7	98.2	90.9	64.9	9.5		0.7
2	0.0	0.7	98.2		67.7	9.5	11.3	0.7
3		0.7	97.9	88.0	65.3	8.7	11.3	0.7
4	0.0	0.7	97.9	86.8	65.3		12.0	0.0
5	0.0	0.7		84.3	72.7	7.6	12.0	0.0
6	0.0	0.7	97.9	77.4		15.1	11.9	
7	0.0		97.9	63.1	71.1	15.8	11.9	0.0
8	0.0	0.7	93.7	63.1	38.7	15.8		0.0
9	0.0	0.7	98.9		36.8	15.8	5.9	0.0
10		0.7	100.5	73.8	47.1	15.9	6.0	0.0
11	0.0	0.7	100.5	73.8	47.2		6.0	0.0
12	0.0	0.7		73.8	47.3	16.5	5.9	0.0
13	0.0	0.7	130.6	73.8		16.4	14.2	
14	0.0		130.6	81.3	75.4	16.5	14.2	0.0
15	0.0	0.7	84.8	81.3	75.5	9.0		0.0
16	0.0	0.7	84.8		75.4	16.2	24.8	0.0
17		0.7	48.7	59.8	62.5	9.3	24.7	0.0
18	0.7	0.7	48.7	59.8	62.5		24.7	0.1
19	0.7	0.7		59.9	62.5	9.3	24.7	0.1
20	0.7	0.7	55.5	82.6		9.2	24.7	
21	0.7		55.3	82.6	63.5	9.2	24.7	0.1
22	0.7	0.7	94.3	82.6	63.5	9.2		0.1
23	0.7	0.7	92.7		63.4	9.5	27.9	1.3
24		0.7	95.9	75.2	62.1	8.6	28.1	1.3
25	0.7	0.7	56.3	75.2	63.3		25.6	1.3
26	0.7	0.7		106.3	9.6	16.0	25.6	1.3
27	0.7	0.4	74.3	106.3	0.0	16.0	13.7	
28	0.7		125.8	66.9	9.6	16.0	0.8	0.1
29	0.7	97.0	136.2	66.9	9.6	16.0		0.1
30	0.7	98.2	83.5		9.6	16.0	0.7	0.0
31		-----	92.5	66.9	-----	19.0	-----	0.0
Max (lb/day)	**0.7**	**98.2**	**136.2**	**106.3**	**75.5**	**19.0**	**28.1**	**1.3**
Total (lb)	**8.5**	**211.8**	**2,472.4**	**2,002.6**	**1,392.0**	**351.4**	**393.3**	**7.9**
Quarter (lb)	**220.3**		**5,867.0**			**752.7**		
Tons	**3.42**							

Notes:
lb/day = pounds per day; black shaded cells represent max daily emissions.
Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014; URS Corporation, 2013.

Mobilization	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Total (lb)	8.5	16.3	0.0	0.0	0.0	0.0	0.0	0.0
Quarter (lb)	24.7			0.0			0.0	

Runway 6L-24R Keel Replacement	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	43.4	44.9	103.0	63.7	13.8	8.0	0.0
Total (lb)	0.0	87.0	1,177.1	1,528.4	1,209.8	204.0	56.2	0.0
Quarter (lb)	87.0			3,915.3			260.1	

Taxiway AA Pavement Rehab & Hold Bar Rotation	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	48.3	49.9	24.2	9.7	1.3	0.1	0.0
Total (lb)	0.0	96.6	708.1	272.5	83.9	17.2	0.4	0.0
Quarter (lb)	96.6			1,064.5			17.6	

Argo Ditch Construction	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	1.3	57.8	8.6	7.9	9.3	1.7	0.7
Total (lb)	0.0	1.4	153.6	89.0	93.3	127.3	17.1	2.0
Quarter (lb)	1.4			335.9			146.5	

Infield Vehicle Service Roads	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	5.2	30.9	16.3	1.3	0.0	0.0	0.0
Total (lb)	0.0	10.5	252.7	58.0	5.0	0.0	0.0	0.0
Quarter (lb)	10.5			315.8			0.0	

North Perimeter Vehicle Service Road	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	0.0	41.2	3.2	0.0	2.9	27.4	1.3
Total (lb)	0.0	0.0	180.7	54.7	0.0	2.9	319.6	5.0
Quarter (lb)	0.0			235.4			327.6	

Finalize Project	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total (lb)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
Quarter (lb)	0.0			0.0			0.9	

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 Construction Emissions Summary

Sulfur Oxides (SO_X)

Day	Emissions (lb/day)[1]							
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	1.3	0.8	0.3	0.1		0.0
2	0.0	0.0	1.3		0.3	0.1	0.2	0.0
3		0.0	1.3	0.8	0.3	0.1	0.2	0.0
4	0.0	0.0	1.3	0.8	0.3		0.2	0.0
5	0.0	0.0		0.7	0.3	0.1	0.2	0.0
6	0.0	0.0	1.3	0.7		0.1	0.2	
7	0.0		1.3	0.7	0.3	0.1	0.2	0.0
8	0.0	0.0	1.2	0.7	0.2	0.1		0.0
9	0.0	0.0	1.3		0.1	0.1	0.0	0.0
10		0.0	1.3	0.7	0.3	0.1	0.0	0.0
11	0.0	0.0	1.3	0.7	0.3		0.0	0.0
12	0.0	0.0		0.7	0.3	0.1	0.0	0.0
13	0.0	0.0	1.4	0.7		0.1	0.1	
14	0.0		1.4	0.8	0.4	0.1	0.1	0.0
15	0.0	0.0	0.8	0.8	0.4	0.1		0.0
16	0.0	0.0	0.8		0.4	0.2	0.1	0.0
17		0.0	0.6	0.7	0.2	0.1	0.1	0.0
18	0.0	0.0	0.6	0.7	0.2		0.1	0.0
19	0.0	0.0		0.7	0.2	0.1	0.1	0.0
20	0.0	0.0	0.7	0.8		0.1	0.1	
21	0.0		0.7	0.8	0.3	0.1	0.1	0.0
22	0.0	0.0	0.8	0.8	0.3	0.1		0.0
23	0.0	0.0	0.8		0.3	0.1	0.2	0.0
24		0.0	0.8	0.7	0.2	0.1	0.2	0.0
25	0.0	0.0	0.8	0.7	0.3		0.1	0.0
26	0.0	0.0		0.8	0.1	0.2	0.1	0.0
27	0.0	0.0	0.8	0.8	0.0	0.2	0.1	
28	0.0		0.9	0.3	0.1	0.2	0.0	0.0
29	0.0	1.3	0.9	0.3	0.1	0.2		0.0
30	0.0	1.3	0.8		0.1	0.2	0.0	0.0
31		-----	0.8	0.3	-----	0.2	-----	0.0
Max (lb/day)	**0.0**	**1.3**	**1.4**	**0.8**	**0.4**	**0.2**	**0.2**	**0.0**
Total (lb)	**0.1**	**2.8**	**27.2**	**17.9**	**6.6**	**3.9**	**2.6**	**0.1**
Quarter (lb)	**2.9**		**51.7**			**6.6**		
Tons	**0.03**							

Notes:
lb/day = pounds per day; black shaded cells represent max daily emissions.
Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014; URS Corporation, 2013.

Mobilization								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total (lb)	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Quarter (lb)	0.4			0.0			0.0	

Runway 6L-24R Keel Replacement								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	0.6	0.6	0.8	0.3	0.2	0.1	0.0
Total (lb)	0.0	1.1	15.1	15.9	5.1	3.0	0.8	0.0
Quarter (lb)	1.1			36.2			3.9	

Taxiway AA Pavement Rehab & Hold Bar Rotation								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	0.6	0.7	0.1	0.1	0.0	0.0	0.0
Total (lb)	0.0	1.3	8.8	0.9	1.0	0.1	0.0	0.0
Quarter (lb)	1.3			10.6			0.2	

Argo Ditch Construction								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0
Total (lb)	0.0	0.0	0.8	0.4	0.5	0.7	0.3	0.0
Quarter (lb)	0.0			1.7			1.0	

Infield Vehicle Service Roads								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Total (lb)	0.0	0.1	1.3	0.2	0.0	0.0	0.0	0.0
Quarter (lb)	0.1			1.6			0.0	

North Perimeter Vehicle Service Road								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0
Total (lb)	0.0	0.0	1.1	0.5	0.0	0.0	1.6	0.0
Quarter (lb)	0.0			1.6			1.6	

Finalize Project								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total (lb)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Quarter (lb)	0.0			0.0			0.0	

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 Construction Emissions Summary

Respirable Particulate Matter (PM_{10})

Day	Emissions (lb/day)[1]							
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	1.7	84.3	94.8	38.1	4.3		3.0
2	0.0	1.7	84.3		39.4	4.3	3.5	3.0
3		1.7	84.1	92.9	37.7	4.4	3.5	3.0
4	0.0	1.7	84.1	75.2	37.7		6.5	0.0
5	0.0	1.7		74.0	40.9	3.9	6.5	0.0
6	0.0	1.7	84.1	61.7		7.1	6.5	
7	0.0		84.1	60.1	31.5	10.1	6.5	0.0
8	0.0	1.7	79.4	60.1	22.3	10.1		0.0
9	0.0	1.7	84.7		21.3	10.1	4.7	0.0
10		1.7	94.1	60.2	25.1	10.2	4.7	0.0
11	0.0	1.7	94.1	60.2	25.1		4.7	0.0
12	0.0	1.7		60.2	25.2	10.4	4.7	0.0
13	0.0	1.7	107.9	60.2		10.4	10.9	
14	0.0		107.9	63.4	32.8	10.4	10.9	0.0
15	0.0	1.7	67.9	63.4	32.8	7.2		0.0
16	0.0	1.7	67.9		32.8	6.3	25.3	0.0
17		1.7	56.9	54.0	27.9	2.8	25.2	0.0
18	1.7	1.7	56.9	54.0	27.9		25.2	0.1
19	1.7	1.7		54.1	27.9	2.8	25.2	0.1
20	1.7	1.7	68.8	69.0		2.7	25.2	
21	1.7		68.6	69.0	28.3	2.7	25.2	0.1
22	1.7	1.7	86.8	69.0	28.3	2.7		0.1
23	1.7	1.7	77.5		28.2	2.5	34.3	0.2
24		1.7	79.2	65.8	28.1	2.4	34.4	0.2
25	1.7	1.7	69.7	65.8	28.2		28.3	0.2
26	1.7	1.7		74.8	4.4	5.6	28.3	0.2
27	1.7	0.2	91.4	74.8	0.0	5.6	13.7	
28	1.7		119.7	39.1	4.4	5.6	3.1	0.1
29	1.7	83.8	128.8	39.1	4.4	5.6		0.1
30	1.7	84.3	104.9		4.4	5.6	3.0	0.0
31		-----	104.1	39.1	-----	6.8	-----	0.0
Max (lb/day)	**1.7**	**84.3**	**128.8**	**94.8**	**40.9**	**10.4**	**34.4**	**3.0**
Total (lb)	**20.0**	**206.6**	**2,322.2**	**1,653.8**	**685.0**	**162.5**	**370.1**	**10.3**
Quarter (lb)	**226.6**		**4,661.0**			**542.9**		
Tons	**2.72**							

Notes:
lb/day = pounds per day; black shaded cells represent max daily emissions.
Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014; URS Corporation, 2013.

Mobilization								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	1.7	1.7	0.0	0.0	0.0	0.0	0.0	0.0
Total (lb)	20.0	38.3	0.0	0.0	0.0	0.0	0.0	0.0
Quarter (lb)	58.2			0.0			0.0	

Runway 6L-24R Keel Replacement								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	37.3	46.7	73.2	37.5	5.5	2.1	0.0
Total (lb)	0.0	74.8	1,108.9	1,360.1	615.0	78.8	14.0	0.0
Quarter (lb)	74.8			3,084.0			92.8	

Taxiway AA Pavement Rehab & Hold Bar Rotation								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	41.3	50.6	10.7	3.3	0.2	0.1	0.0
Total (lb)	0.0	82.6	660.1	129.6	27.4	4.7	0.2	0.0
Quarter (lb)	82.6			817.0			4.9	

Argo Ditch Construction								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	0.6	39.7	6.5	3.5	6.8	3.3	3.0
Total (lb)	0.0	0.7	140.0	44.8	41.9	77.9	48.3	9.0
Quarter (lb)	0.7			226.7			135.2	

Infield Vehicle Service Roads								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	5.1	14.0	14.7	0.2	0.0	0.0	0.0
Total (lb)	0.0	10.3	224.6	58.8	0.7	0.0	0.0	0.0
Quarter (lb)	10.3			284.1			0.0	

North Perimeter Vehicle Service Road								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	0.0	18.7	18.7	0.0	1.2	31.3	0.2
Total (lb)	0.0	0.0	188.7	60.5	0.0	1.2	307.6	0.7
Quarter (lb)	0.0			249.2			309.4	

Finalize Project								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total (lb)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Quarter (lb)	0.0			0.0			0.6	

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 Construction Emissions Summary

Fine Particulate Matter ($PM_{2.5}$)

Day	Emissions (lb/day)[1]							
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.9	24.0	30.9	10.4	1.2		1.7
2	0.0	0.9	24.0		10.7	1.2	1.0	1.7
3		0.9	24.0	30.5	10.2	1.3	1.0	1.7
4	0.0	0.9	24.0	24.9	10.2		2.7	0.0
5	0.0	0.9		24.6	11.0	1.1	2.7	0.0
6	0.0	0.9	24.0	17.9		2.0	2.7	
7	0.0		24.0	19.3	8.1	3.6	2.7	0.0
8	0.0	0.9	22.1	19.3	7.5	3.6		0.0
9	0.0	0.9	24.3		7.2	3.6	2.1	0.0
10		0.9	27.3	17.6	8.4	3.6	2.1	0.0
11	0.0	0.9	27.3	17.6	8.4		2.1	0.0
12	0.0	0.9		17.6	8.4	3.7	2.1	0.0
13	0.0	0.9	30.7	17.6		3.7	4.6	
14	0.0		30.7	18.4	8.6	3.7	4.6	0.0
15	0.0	0.9	20.3	18.4	8.6	2.9		0.0
16	0.0	0.9	20.3		8.6	1.9	11.7	0.0
17		0.9	17.2	16.0	7.2	0.8	11.7	0.0
18	0.9	0.9	17.2	16.0	7.2		11.7	0.0
19	0.9	0.9		16.0	7.2	0.8	11.7	0.0
20	0.9	0.9	20.9	21.6		0.8	11.7	
21	0.9		20.8	21.6	7.3	0.8	11.7	0.0
22	0.9	0.9	25.4	21.6	7.3	0.8		0.0
23	0.9	0.9	22.4		7.3	0.8	16.7	0.1
24		0.9	22.9	20.7	7.2	0.8	16.7	0.1
25	0.9	0.9	21.2	20.7	7.3		13.4	0.1
26	0.9	0.9		21.2	1.3	1.6	13.4	0.1
27	0.9	0.1	29.0	21.2	0.0	1.6	6.2	
28	0.9		37.8	10.6	1.3	1.6	1.7	0.0
29	0.9	23.9	41.8	10.6	1.3	1.6		0.0
30	0.9	24.0	35.8		1.3	1.6	1.7	0.0
31		-----	33.9	10.6	-----	1.9	-----	0.0
Max (lb/day)	**0.9**	**24.0**	**41.8**	**30.9**	**11.0**	**3.7**	**16.7**	**1.7**
Total (lb)	**10.5**	**68.1**	**693.3**	**502.9**	**189.5**	**52.6**	**170.3**	**5.3**
Quarter (lb)	**78.6**		**1,385.7**			**228.2**		
Tons	**0.85**							

Notes:
lb/day = pounds per day; black shaded cells represent max daily emissions.
Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014; URS Corporation, 2013.

Mobilization								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0
Total (lb)	10.5	20.2	0.0	0.0	0.0	0.0	0.0	0.0
Quarter (lb)	30.7			0.0			0.0	

Runway 6L-24R Keel Replacement								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	11.1	14.0	20.8	10.2	1.6	0.7	0.0
Total (lb)	0.0	22.2	331.2	407.6	170.3	23.5	4.4	0.0
Quarter (lb)	22.2			909.1			27.9	

Taxiway AA Pavement Rehab & Hold Bar Rotation								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	10.8	13.7	4.4	1.0	0.1	0.0	0.0
Total (lb)	0.0	21.6	182.1	36.5	7.8	1.4	0.1	0.0
Quarter (lb)	21.6			226.4			1.5	

Argo Ditch Construction								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	0.2	12.4	3.4	0.9	2.7	1.7	1.7
Total (lb)	0.0	0.2	46.2	13.5	11.1	27.4	25.7	5.0
Quarter (lb)	0.2			70.8			58.0	

Infield Vehicle Service Roads								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	2.0	4.9	7.3	0.0	0.0	0.0	0.0
Total (lb)	0.0	3.9	74.2	27.3	0.2	0.0	0.0	0.0
Quarter (lb)	3.9			101.6			0.0	

North Perimeter Vehicle Service Road								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	0.0	5.9	5.9	0.0	0.3	15.0	0.0
Total (lb)	0.0	0.0	59.7	18.1	0.0	0.3	140.2	0.2
Quarter (lb)	0.0			77.7			140.8	

Finalize Project								
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max (lb/day)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total (lb)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Quarter (lb)	0.0			0.0			0.2	

Attachment B.1

Construction – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- Criteria Pollutants – 2015 Construction Crew Emissions Summary

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 Construction Crew Emissions Summary

Crew	Quantity	Emissions (lb/day)					
		CO	ROG	NOx	SOx	PM10	PM2.5
2 Carp		1.0899	0.0968	0.0895	0.0014	0.0601	0.0170
Carpenters	2						
Pickup Trucks, 3/4 Ton	0.5	0.0263	0.0026	0.0032	0.0000	0.0044	0.0004
Employees	2						
Employee Vehicles	69.57	1.0635	0.0942	0.0863	0.0013	0.0557	0.0167
2 Clab		1.0767	0.0955	0.0879	0.0013	0.0579	0.0168
Common Laborers	2						
Pickup Trucks, 3/4 Ton	0.25	0.0132	0.0013	0.0016	0.0000	0.0022	0.0002
Employees	2						
Employee Vehicles	69.57	1.0635	0.0942	0.0863	0.0013	0.0557	0.0167
2 Rodmen		1.0767	0.0955	0.0879	0.0013	0.0579	0.0168
Rodman	2						
Pickup Trucks, 3/4 Ton	0.25	0.0132	0.0013	0.0016	0.0000	0.0022	0.0002
Employees	2						
Employee Vehicles	69.57	1.0635	0.0942	0.0863	0.0013	0.0557	0.0167
B-6		2.7760	0.1854	0.8945	0.0040	0.2108	0.0476
Laborers	2						
Equipment Oper (Light)	1						
Pickup Trucks, 3/4 Ton	0.25	0.0132	0.0013	0.0016	0.0000	0.0022	0.0002
Backhoe Loader, 48 HP	1	1.1675	0.0428	0.7634	0.0020	0.1250	0.0224
Employees	3						
Employee Vehicles	104.35	1.5953	0.1414	0.1295	0.0020	0.0836	0.0250
B-10M		6.2377	0.3563	0.6755	0.0123	3.0102	1.6544
Equipment Oper. (Med.)	1						
Laborers	0.5						
Pickup Trucks, 3/4 Ton	0.25	0.0132	0.0013	0.0016	0.0000	0.0022	0.0002
Dozer, 300 HP	1	5.4269	0.2843	0.6092	0.0113	2.9662	1.6418
Employees	1.5						
Employee Vehicles	52.17	0.7977	0.0707	0.0648	0.0010	0.0418	0.0125
B-11A		6.5036	0.3798	0.6971	0.0127	3.0242	1.6586
Laborers	1						
Equipment Oper. (Med.)	1						
Pickup Trucks, 3/4 Ton	0.25	0.0132	0.0013	0.0016	0.0000	0.0022	0.0002
Dozer, 200 HP	1	5.4269	0.2843	0.6092	0.0113	2.9662	1.6418
Employees	2						
Employee Vehicles	69.57	1.0635	0.0942	0.0863	0.0013	0.0557	0.0167
B-12A		2.6180	0.2712	0.4643	0.0094	0.1402	0.0438
Equipment Oper (Crane)	1						
Laborers	1						
Pickup Trucks, 3/4 Ton	0.25	0.0132	0.0013	0.0016	0.0000	0.0022	0.0002
Hyd. Excavator, 1 C.Y.	1	1.5413	0.1756	0.3763	0.0080	0.0823	0.0269
Employees	2						
Employee Vehicles	69.57	1.0635	0.0942	0.0863	0.0013	0.0557	0.0167
B-21		2.6846	0.1997	0.2244	0.0039	0.1033	0.0326
Labor Foreman	1						
Laborers	1						
Skilled Worker	1						
Equipment Oper (Crane)	0.5						
Pickup Trucks, 3/4 Ton	0.25	0.0132	0.0013	0.0016	0.0000	0.0022	0.0002
S.P. Crane, 4x4, 5 Ton	0.5	0.8102	0.0335	0.0717	0.0015	0.0036	0.0033
Employees	3.5						

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 Construction Crew Emissions Summary

Crew	Quantity	Emissions (lb/day)					
		CO	ROG	NOx	SOx	PM10	PM2.5
Employee Vehicles	121.74	1.8612	0.1649	0.1511	0.0023	0.0975	0.0291
B-25		9.6402	0.7330	3.5647	0.0171	6.2031	3.3403
Labor Foreman	1						
Laborers	7						
Equipment Oper (Med.)	3						
Asphalt Paver, 130 HP	1	1.1805	0.1012	1.0844	0.0046	0.0108	0.0100
Pickup Trucks, 3/4 Ton	0.25	0.0132	0.0013	0.0016	0.0000	0.0022	0.0002
Tandem Roller, 10 Ton	1	1.2985	0.0561	1.0019	0.0026	2.9418	1.6193
Roller, Pneum., Whl., 12 Ton	1	1.2985	0.0561	1.0019	0.0026	2.9418	1.6193
Employees	11						
Employee Vehicles	382.61	5.8495	0.5183	0.4749	0.0073	0.3065	0.0916
B-26A		11.7761	0.9911	1.5740	0.0259	0.3696	0.1478
Labor Foreman	1						
Laborers	6						
Equipment Oper (Med.)	2						
Rodman	1						
Cement Finisher	1						
Grader, 30,000 lbs	1	1.5729	0.1549	0.3320	0.0062	0.0166	0.0153
Pickup Trucks, 3/4 Ton	0.25	0.0132	0.0013	0.0016	0.0000	0.0022	0.0002
Concrete Paver	1	2.3936	0.1695	0.3633	0.0068	0.0182	0.0167
Belt Placer	1	0.9980	0.0874	0.1872	0.0040	0.0094	0.0086
Cure/Texture Rig	1	0.8862	0.0306	0.0655	0.0015	0.0033	0.0030
Concrete Saw	1	0.0628	0.0291	0.1495	0.0002	0.0135	0.0125
Employees	11						
Employee Vehicles	382.61	5.8495	0.5183	0.4749	0.0073	0.3065	0.0916
B-33B		12.4753	0.7909	1.5924	0.0293	9.2473	2.9270
Equipment Oper. (Med.)	1.25						
Laborers	0.5						
Dozer, 300 HP	1.25	6.7836	0.3554	0.7615	0.0142	3.7078	2.0522
Pickup Trucks, 3/4 Ton	0.25	0.0132	0.0013	0.0016	0.0000	0.0022	0.0002
Scraper, Towed, 10 C.Y.	1	4.7480	0.3518	0.7538	0.0140	5.4885	0.8601
Employees	1.75						
Employee Vehicles	60.87	0.9306	0.0825	0.0755	0.0012	0.0488	0.0146
B-34C		0.5509	0.0504	0.0858	0.0008	0.0388	0.0093
Truck Driver (heavy)	1						
Truck Tractor, 6x4, 380 H.P.	1	0.0060	0.0020	0.0411	0.0001	0.0088	0.0008
Dump Trailer, 16.5 CY	1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pickup Trucks, 3/4 Ton	0.25	0.0132	0.0013	0.0016	0.0000	0.0022	0.0002
Employees	1						
Employee Vehicles	34.78	0.5318	0.0471	0.0432	0.0007	0.0279	0.0083
B-36C		10.9412	0.8000	2.5056	0.0258	6.0819	3.3254
Labor Foreman	1						
Equipment Oper (Med.)	3						
Truck Driver (heavy)	1						
Grader, 30,000 lbs	1	1.5729	0.1549	0.3320	0.0062	0.0166	0.0153
Dozer, 300 HP	1	5.4269	0.2843	0.6092	0.0113	2.9662	1.6418
Compactor, Roller,Vibratory, 25 Ton	1	1.2634	0.1219	1.3059	0.0049	2.9488	1.6258
Truck Tractor, 6x4, 450 HP	1	0.0060	0.0020	0.0411	0.0001	0.0088	0.0008
Pickup Trucks, 3/4 Ton	0.25	0.0132	0.0013	0.0016	0.0000	0.0022	0.0002
Water Tank Trailer, 5000 Gal	1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Employees	5						
Employee Vehicles	173.91	2.6589	0.2356	0.2159	0.0033	0.1393	0.0416

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 Construction Crew Emissions Summary

Crew	Quantity	Emissions (lb/day)					
		CO	ROG	NOx	SOx	PM10	PM2.5
B-38		8.6474	0.8430	2.1880	0.0311	1.7772	0.2980
Labor Foreman (outside)	1						
Laborers	2						
Equipment Oper. (Light)	1						
Equipment Oper. (Med.)	1						
Backhoe Loader, 48 HP	1	1.1675	0.0428	0.7634	0.0020	0.1250	0.0224
Pickup Trucks, 3/4 Ton	0.25	0.0132	0.0013	0.0016	0.0000	0.0022	0.0002
Hyd. Hammer (1200 lbs)	1	1.1218	0.1307	0.2800	0.0060	1.3440	0.1729
FE Loader, W.M., 4 CY	1	2.1448	0.2570	0.5508	0.0117	0.1479	0.0436
Pavt. Rem. Bucket	1	1.5413	0.1756	0.3763	0.0080	0.0188	0.0173
Employees	5						
Employee Vehicles	173.91	2.6589	0.2356	0.2159	0.0033	0.1393	0.0416
B-45		1.0977	0.1024	0.2318	0.0016	0.0886	0.0195
Equipment Oper (Med.)	1						
Truck Driver (heavy)	1						
Dist. Tanker, 3000 Gallon	1	0.0150	0.0049	0.1027	0.0002	0.0219	0.0019
Truck Tractor, 6x4, 380 H.P.	1	0.0060	0.0020	0.0411	0.0001	0.0088	0.0008
Pickup Trucks, 3/4 Ton	0.25	0.0132	0.0013	0.0016	0.0000	0.0022	0.0002
Employees	2						
Employee Vehicles	69.57	1.0635	0.0942	0.0863	0.0013	0.0557	0.0167
B-71		8.4481	0.7770	1.3514	0.0250	0.3868	0.1221
Labor Foreman	1						
Laborers	3						
Equipment Oper (Med.)	3						
Pvmt. Profiler, 750 HP	1	3.7423	0.3276	0.7020	0.0150	0.0351	0.0323
Pickup Trucks, 3/4 Ton	0.25	0.0132	0.0013	0.0016	0.0000	0.0022	0.0002
Road Sweeper, S.P., 8' wide	1	0.0150	0.0049	0.1027	0.0002	0.0219	0.0019
FE Loader, W.M., 1.5 CY	1	0.9552	0.1133	0.2428	0.0052	0.1325	0.0294
Employees	7						
Employee Vehicles	243.48	3.7224	0.3298	0.3022	0.0046	0.1950	0.0583
B-79		4.2198	0.3032	1.2567	0.0061	0.1716	0.0493
Labor Foreman	1						
Laborers	3						
Truck Driver (light)	1						
Paint Thermo. Striper, TM	1	0.5055	0.0191	0.3416	0.0009	0.0020	0.0019
Heating Kettle, 115 Gallon	1	0.9441	0.0362	0.6456	0.0017	0.0039	0.0036
Flatbed Truck, Gas, 3 Ton	1	0.0060	0.0020	0.0411	0.0001	0.0088	0.0008
Pickup Trucks, 3/4 Ton	2	0.1053	0.0103	0.0126	0.0001	0.0176	0.0015
Employees	5						
Employee Vehicles	173.91	2.6589	0.2356	0.2159	0.0033	0.1393	0.0416
B-89		1.1324	0.1253	0.2770	0.0016	0.0780	0.0299
Equipment Oper (Light)	1						
Truck Driver (light)	1						
Flatbed Truck, Gas, 3 Ton	1	0.0060	0.0020	0.0411	0.0001	0.0088	0.0008
Concrete Saw	1	0.0628	0.0291	0.1495	0.0002	0.0135	0.0125
Water Tank, 65 Gal	1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Employees	2						
Employee Vehicles	69.57	1.0635	0.0942	0.0863	0.0013	0.0557	0.0167
Electrical (Estimated)		4.5620	0.3669	0.3976	0.0062	0.2074	0.0623
Electrician Foreman	1						
Electrician	3						
Helpers	2						
Equipment Oper (Crane)	1						

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Criteria Pollutants - 2015 Construction Crew Emissions Summary

Crew	Quantity	Emissions (lb/day)					
		CO	ROG	NOx	SOx	PM10	PM2.5
S.P. Crane, 4x4, 5 Ton	0.5	0.8102	0.0335	0.0717	0.0015	0.0036	0.0033
Flatbed Truck	0.5	0.0030	0.0010	0.0205	0.0000	0.0044	0.0004
Pickup Trucks, 3/4 Ton	0.5	0.0263	0.0026	0.0032	0.0000	0.0044	0.0004
Cable Pulling Rig	0.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tensioning Rig	0.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cable Trailer	1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Employees	7						
Employee Vehicles	243.48	3.7224	0.3298	0.3022	0.0046	0.1950	0.0583
Foundation (Estimated)		9.4797	0.8852	1.4009	0.0180	0.4809	0.1527
Carpenter Foreman	1						
Carpenters	6						
Rodmen	2						
Laborers	2						
Truck Driver (heavy)	3						
Truckmixer, 10 CY	6	0.0360	0.0117	0.2466	0.0004	0.0525	0.0046
Concrete Pump	1	1.4470	0.1267	0.2715	0.0058	0.0136	0.0125
Generator	1	0.4248	0.0531	0.1138	0.0022	0.0057	0.0052
Vibrator	4	0.1007	0.0314	0.1616	0.0003	0.0146	0.0135
Pickup Trucks, 3/4 Ton	0.5	0.0263	0.0026	0.0032	0.0000	0.0044	0.0004
Employees	14						
Employee Vehicles	486.96	7.4448	0.6597	0.6044	0.0093	0.3901	0.1166
Setup (Estimated)		3.4896	0.2940	0.3583	0.0057	0.1519	0.0477
Labor	4						
Equipment Oper (Crane)	1						
Hyd. Crane 25 tons	0.25	0.4213	0.0174	0.0373	0.0008	0.0019	0.0017
Grader, 30,000 lbs	0.25	0.3932	0.0387	0.0830	0.0015	0.0042	0.0038
Flatbed Truck, Gas, 3 Ton	0.5	0.0030	0.0010	0.0205	0.0000	0.0044	0.0004
Pickup Trucks, 3/4 Ton	0.25	0.0132	0.0013	0.0016	0.0000	0.0022	0.0002
Employees	5						
Employee Vehicles	173.91	2.6589	0.2356	0.2159	0.0033	0.1393	0.0416

Notes:

Quantities for employee vehicles is vehicle miles traveled (VMT), calculated as the number of employees divided by a carpool factor of 1.15 employees per vehicle and multiplied by a roundtrip distance of 40 miles.

Emissions quantified using data and methodologies persented in this appendix and associated attachments.

Sources: Ricondo & Associates, 2014; URS Corporation, 2012 and MARRS Services, Inc., 2012 (crew equipment, employees, and quantities).

Attachment B.1

Construction – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- Criteria Pollutants – On-Site Equipment Emission Factors

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - On-Site Equipment Emission Factors

Off-Road On-Site Equipment	OFFROAD2007 Category	OFFROAD2007 Emission Factor (lb/hp-hr) - 2015[1]		Fully Loaded Emission Factor (lb/day) - 2015[2]	
		CO	SO_X	CO	SO_X
Asphalt Paver, 130 HP	Pavers	0.0036	0.00001	1.1805	0.0046
Backhoe Loader, 48 HP	Tractors/Loaders/Backhoes	0.0084	0.00001	1.1675	0.0020
Belt Placer	Paving Equipment	0.0035	0.00001	0.9980	0.0040
Compactor, Roller,Vibratory, 25 Ton	Rollers	0.0032	0.00001	1.2634	0.0049
Concrete Paver	Pavers	0.0044	0.00001	2.3936	0.0068
Concrete Pump	Paving Equipment	0.0035	0.00001	1.4470	0.0058
Concrete Saw	Concrete/Industrial Saws	0.0052	0.00002	0.0628	0.0002
Cure/Texture Rig	Paving Equipment	0.0089	0.00001	0.8862	0.0015
Dozer, 200 HP	Rubber Tired Dozers	0.0059	0.00001	5.4269	0.0113
Dozer, 300 HP	Rubber Tired Dozers	0.0059	0.00001	5.4269	0.0113
FE Loader, W.M., 1.5 CY	Tractors/Loaders/Backhoes	0.0026	0.00001	0.9552	0.0052
FE Loader, W.M., 4 CY	Tractors/Loaders/Backhoes	0.0026	0.00001	2.1448	0.0117
Generator	Generator Sets	0.0025	0.00001	0.4248	0.0022
Grader, 30,000 lbs	Graders	0.0031	0.00001	1.5729	0.0062
Heating Kettle, 115 Gallon	Other Construction Equipment	0.0081	0.00001	0.9441	0.0017
Hyd. Crane 25 tons	Cranes	0.0075	0.00001	1.6853	0.0032
Hyd. Excavator, 1 C.Y.	Excavators	0.0027	0.00001	1.5413	0.0080
Hyd. Hammer (1200 lbs)	Crushing/Proc. Equipment	0.0026	0.00001	1.1218	0.0060
Paint Thermo. Striper, TM	Surfacing Equipment	0.0082	0.00001	0.5055	0.0009
Pavt. Rem. Bucket	Excavators	0.0027	0.00001	1.5413	0.0080
Pvmt. Profiler, 750 HP	Paving Equipment	0.0035	0.00001	3.7423	0.0150
Roller, Pneum., Whl., 12 Ton	Rollers	0.0071	0.00001	1.2985	0.0026
S.P. Crane, 4x4, 5 Ton	Cranes	0.0075	0.00001	1.6205	0.0031
Scraper, Towed, 10 C.Y.	Scrapers	0.0042	0.00001	4.7480	0.0140
Tandem Roller, 10 Ton	Rollers	0.0071	0.00001	1.2985	0.0026
Vibrator	Plate Compactors	0.0077	0.00002	0.0252	0.0001

On-Road On-Site Equipment	EMFAC2011 Category	EMFAC2011 Emission Factor (g/veh-mi) - 2015[3]		Fully Loaded Emission Factor (lb/day) - 2015[4]	
		CO	SO_X	CO	SO_X
Flatbed Truck	T7 single construction	1.3604	0.0168	0.0060	0.0001
Pickup Truck	LHD2 (light-heavy-duty truck)	11.9438	0.0126	0.0527	0.0001
Road Sweeper	T7 single construction	1.3604	0.0168	0.0150	0.0002
Transit Mixer	T7 single construction	1.3604	0.0168	0.0060	0.0001
Truck Tractor	T7 single construction	1.3604	0.0168	0.0060	0.0001
Water Truck	T7 single construction	1.3604	0.0168	0.0060	0.0001

Notes:

CO = carbon monoxide; SO_X = sulfur oxides; lb/hp-hr = pounds per horsepower-hour; lb/day = pounds per day; g/veh-mi = grams per vehicle-mile.

[1] Emission factors as derived from OFFROAD2007.

[2] Fully loaded emission factors in pounds per day derived by multiplying OFFROAD2007 emission factor by equipment horsepower, load factor, and efficiency factor, assuming 10 hours per day.

[3] EMFAC2011 emission factors for CO and SO_X include running and idling emissions (and starting emissions for gasoline vehicles), assuming a speed of 20 miles per hour.

[4] Fully loaded emission factors in pounds per day derived by converting EMFAC2011 emission factor to pounds and multiplying by efficiency factor and miles traveled per day per vehicle.

Source: Ricondo & Associates, Inc., 2014; CARB OFFROAD2007; CARB EMFAC2011.

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - On-Site Equipment Emission Factors

Off-Road On-Site Equipment	USEPA Tiered Emissions Standards 2015	Emission Factor (lb/hp-hr) - 2015[1] ROG	NO_X	PM_{10}	$PM_{2.5}$	Fully Loaded Emission Factor (lb/day) - 2015[2] ROG	NO_X	PM_{10}	$PM_{2.5}$
Asphalt Paver, 130 HP	Tier 4	0.0003	0.0033	0.00003	0.00003	0.1012	1.0844	0.0108	0.0100
Backhoe Loader, 48 HP	Tier 4	0.0003	0.0055	0.00003	0.00003	0.0428	0.7634	0.1250	0.0224
Belt Placer	Tier 4f	0.0003	0.0007	0.00003	0.00003	0.0874	0.1872	0.0094	0.0086
Compactor, Roller,Vibratory, 25 Ton	Tier 4	0.0003	0.0033	0.00003	0.00003	0.1219	1.3059	2.9488	1.6258
Concrete Paver	Tier 4f	0.0003	0.0007	0.00003	0.00003	0.1695	0.3633	0.0182	0.0167
Concrete Pump	Tier 4f	0.0003	0.0007	0.00003	0.00003	0.1267	0.2715	0.0136	0.0125
Concrete Saw	OFFROAD2011 emission factor	0.0024	0.0123	0.00111	0.00102	0.0291	0.1495	0.0135	0.0125
Cure/Texture Rig	Tier 4f	0.0003	0.0007	0.00003	0.00003	0.0306	0.0655	0.0033	0.0030
Dozer, 200 HP	Tier 4f	0.0003	0.0007	0.00003	0.00003	0.2843	0.6092	2.9662	1.6418
Dozer, 300 HP	Tier 4f	0.0003	0.0007	0.00003	0.00003	0.2843	0.6092	2.9662	1.6418
FE Loader, W.M., 1.5 CY	Tier 4f	0.0003	0.0007	0.00003	0.00003	0.1133	0.2428	0.1325	0.0294
FE Loader, W.M., 4 CY	Tier 4f	0.0003	0.0007	0.00003	0.00003	0.2570	0.5508	0.1479	0.0436
Generator	Tier 4f	0.0003	0.0007	0.00003	0.00003	0.0531	0.1138	0.0057	0.0052
Grader, 30,000 lbs	Tier 4f	0.0003	0.0007	0.00003	0.00003	0.1549	0.3320	0.0166	0.0153
Heating Kettle, 115 Gallon	Tier 4	0.0003	0.0055	0.00003	0.00003	0.0362	0.6456	0.0039	0.0036
Hyd. Crane 25 tons	Tier 4f	0.0003	0.0007	0.00003	0.00003	0.0696	0.1491	0.0075	0.0069
Hyd. Excavator, 1 C.Y.	Tier 4f	0.0003	0.0007	0.00003	0.00003	0.1756	0.3763	0.0823	0.0269
Hyd. Hammer (1200 lbs)	Tier 4f	0.0003	0.0007	0.00003	0.00003	0.1307	0.2800	1.3440	0.1729
Paint Thermo. Striper, TM	Tier 4	0.0003	0.0055	0.00003	0.00003	0.0191	0.3416	0.0020	0.0019
Pavt. Rem. Bucket	Tier 4f	0.0003	0.0007	0.00003	0.00003	0.1756	0.3763	0.0188	0.0173
Pvmt. Profiler, 750 HP	Tier 4f	0.0003	0.0007	0.00003	0.00003	0.3276	0.7020	0.0351	0.0323
Roller, Pneum., Whl., 12 Ton	Tier 4	0.0003	0.0055	0.00003	0.00003	0.0561	1.0019	2.9418	1.6193
S.P. Crane, 4x4, 5 Ton	Tier 4f	0.0003	0.0007	0.00003	0.00003	0.0669	0.1434	0.0072	0.0066
Scraper, Towed, 10 C.Y.	Tier 4f	0.0003	0.0007	0.00003	0.00003	0.3518	0.7538	5.4885	0.8601
Tandem Roller, 10 Ton	Tier 4	0.0003	0.0055	0.00003	0.00003	0.0561	1.0019	2.9418	1.6193
Vibrator	OFFROAD2011 emission factor	0.0024	0.0123	0.00111	0.00102	0.0079	0.0404	0.0037	0.0034

On-Road On-Site Equipment	EMFAC2011 Category	EMFAC2011 Emission Factor (g/veh-mi) - 2015[3] ROG	NO_X	PM_{10}	$PM_{2.5}$	Fully Loaded Emission Factor (lb/day) - 2015[4] ROG	NO_X	PM_{10}	$PM_{2.5}$
Flatbed Truck	T7 single construction	0.4435	9.3213	0.2811	0.2228	0.0020	0.0411	0.0088	0.0008
Pickup Truck	LHD2 (light-heavy-duty truck)	1.1704	1.4329	0.0564	0.0284	0.0052	0.0063	0.0088	0.0007
Road Sweeper	T7 single construction	0.4435	9.3213	0.2811	0.2228	0.0049	0.1027	0.0219	0.0019
Transit Mixer	T7 single construction	0.4435	9.3213	0.2811	0.2228	0.0020	0.0411	0.0088	0.0008
Truck Tractor	T7 single construction	0.4435	9.3213	0.2811	0.2228	0.0020	0.0411	0.0088	0.0008
Water Truck	T7 single construction	0.4435	9.3213	0.2811	0.2228	0.0020	0.0411	0.0088	0.0008

Notes:

USEPA = U.S. Environmental Protection Agency; ROG = reactive organic gases; NO_X = nitrogen oxides; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter.

lb/hp-hr = pounds per horsepower-hour; lb/day = pounds per day; g/veh-mi = grams per vehicle-mile.

[1] For diesel equipment greater than 50 horsepower, Tier 4 (interim or final) emissions standards are assumed. OFFROAD2011 emission factors assumed for diesel equipment less than 50 horsepower.

[2] Fully loaded emission factors derived by multiplying the emission factor by equipment horsepower, load factor, and efficiency factor, assuming 10 hours per day. For PM10 and PM2.5, daily emissions account for fugitive dust and applicable reductions due to emissions control devices. See table above for assumed emission reductions due to emissions control devices.

[3] EMFAC2011 emission factors for ROG include running and idling emissions (and starting, diurnal, hot soak, running, and resting emissions for gasoline vehicles), assuming a speed of 20 miles per hour. EMFAC2011 emission factors for NOX include running and idling emissions (and starting emissions for gasoline vehicles), assumign a speed of 20 miles per hour. EMFAC2011 emission factors for PM10 include running, idling, break wear, and tire wear emissions (and starting emissions for gasoline vehicles), assuming a speed of 20 miles per hour.

[4] Fully loaded emission factors derived by converting EMFAC2011 emission factor to pounds and multiplying by efficiency factor.

Source: Ricondo & Associates, Inc., 2014; CARB OFFROAD2011; tiered emission standards from SCAQMD: www.aqmd.gov/ceqa/handbook/mitigation/offroad/TableII.xls.

Attachment B.1

Construction – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- Criteria Pollutants – On-Site Equipment Emissions
  - 2015 Off-Road On-Site Equipment Emissions
  - 2015 On-Road On-Site Equipment Emissions

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Criteria Pollutants - 2015 Off-Road On-Site Equipment Emissions

	Carbon Monoxide (lb/day)							
Day	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.00	3.53	238.87	157.46	27.45	12.79		5.43
2	0.00	3.53	238.87		28.26	12.79	27.73	5.43
3		3.53	238.87	152.54	24.04	12.15	27.73	5.43
4	0.00	3.53	238.87	131.10	24.04		33.15	0.00
5	0.00	3.53		131.10	26.01	11.34	33.15	0.00
6	0.00	3.53	238.87	123.54		13.32	33.15	
7	0.00		238.87	124.36	14.48	18.74	33.15	0.00
8	0.00	3.53	229.79	124.36	13.85	18.74		0.00
9	0.00	3.53	242.00		9.80	18.74	10.83	0.00
10		3.53	253.53	126.78	40.58	18.74	10.83	0.00
11	0.00	3.53	253.53	126.78	40.58		10.83	0.00
12	0.00	3.53		126.78	40.58	17.93	10.83	0.00
13	0.00	3.53	250.45	126.78		17.93	12.50	
14	0.00		250.45	128.76	38.95	17.93	12.50	0.00
15	0.00	3.53	134.25	128.76	38.95	15.96		0.00
16	0.00	3.53	134.25		38.95	35.47	18.61	0.00
17		3.53	131.79	125.80	14.94	24.94	18.61	0.00
18	3.53	3.53	131.79	125.80	14.94		18.61	0.00
19	3.53	3.53		125.80	14.94	24.94	18.61	0.00
20	3.53	3.53	149.00	129.58		24.94	18.61	
21	3.53		151.26	129.58	15.75	24.94	18.61	0.00
22	3.53	3.53	146.73	129.58	15.75	24.94		0.00
23	3.53	3.53	135.20		15.75	26.39	32.30	1.45
24		3.53	141.68	127.60	14.30	25.75	32.30	1.45
25	3.53	3.53	153.21	127.60	15.75		24.03	1.45
26	3.53	3.53		126.78	12.79	27.72	24.03	1.45
27	3.53	0.00	173.01	126.78	0.00	27.72	16.48	
28	3.53		172.52	29.07	12.79	27.72	5.43	0.00
29	3.53	238.05	169.81	29.07	12.79	27.72		0.00
30	3.53	238.87	169.81		12.79	27.72	5.43	0.00
31		-----	168.99	29.07	-----	30.51	-----	0.00
Max (lb/day)	**3.53**	**238.87**	**253.53**	**157.46**	**40.58**	**35.47**	**33.15**	**5.43**
Monthly (lb)	**42.34**	**558.06**	**5,176.25**	**3,071.24**	**579.82**	**588.52**	**508.01**	**22.08**
Quarter (lb)	**600.40**		**8,827.31**			**1,118.62**		
Total (lb)	**10,546.33**							

	Reactive Organic Gases (lb/day)							
Day	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.00	0.20	24.14	13.97	1.48	0.52		0.28
2	0.00	0.20	24.14		1.51	0.52	2.37	0.28
3		0.20	24.14	13.44	1.33	0.50	2.37	0.28
4	0.00	0.20	24.14	12.09	1.33		2.65	0.00
5	0.00	0.20		12.09	1.54	0.47	2.65	0.00
6	0.00	0.20	24.14	11.66		0.68	2.65	
7	0.00		24.14	11.64	0.84	0.96	2.65	0.00
8	0.00	0.20	23.27	11.64	0.76	0.96		0.00
9	0.00	0.20	24.49		0.59	0.96	0.49	0.00
10		0.20	25.20	11.80	3.10	0.96	0.49	0.00
11	0.00	0.20	25.20	11.80	3.10		0.49	0.00
12	0.00	0.20		11.80	3.10	0.93	0.49	0.00
13	0.00	0.20	24.85	11.80		0.93	0.73	
14	0.00		24.85	12.01	3.09	0.93	0.73	0.00
15	0.00	0.20	12.73	12.01	3.09	0.72		0.00
16	0.00	0.20	12.73		3.09	2.69	1.10	0.00
17		0.20	12.36	11.77	0.73	2.26	1.10	0.00
18	0.20	0.20	12.36	11.77	0.73		1.10	0.00
19	0.20	0.20		11.77	0.73	2.26	1.10	0.00
20	0.20	0.20	13.30	11.99		2.26	1.10	
21	0.20		13.60	11.99	0.76	2.26	1.10	0.00
22	0.20	0.20	13.19	11.99	0.76	2.26		0.00
23	0.20	0.20	12.49		0.76	2.32	1.94	0.06
24		0.20	12.75	11.78	0.70	2.29	1.94	0.06
25	0.20	0.20	13.46	11.78	0.76		1.38	0.06
26	0.20	0.20		11.80	0.52	2.50	1.38	0.06
27	0.20	0.00	14.73	11.80	0.00	2.50	0.96	
28	0.20		14.70	1.55	0.52	2.50	0.28	0.00
29	0.20	24.08	14.65	1.55	0.52	2.50		0.00
30	0.20	24.14	14.65		0.52	2.50	0.28	0.00
31		-----	14.67	1.55	-----	2.61	-----	0.00
Max (lb/day)	**0.20**	**24.14**	**25.20**	**13.97**	**3.10**	**2.69**	**2.65**	**0.28**
Monthly (lb)	**2.38**	**52.78**	**495.10**	**280.80**	**35.95**	**43.80**	**33.53**	**1.07**
Quarter (lb)	**55.16**		**811.85**			**78.41**		
Total (lb)	**945.42**							

Notes:

lb/day = pounds per day; black shaded cells represent max daily emissions.

Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014, based on sources and methodologies depicted in previous tables in this section.

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 Off-Road On-Site Equipment Emissions

	Nitrogen Oxides (lb/day)							
Day	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.00	0.42	81.61	44.88	3.21	1.99		0.61
2	0.00	0.42	81.61		3.28	1.99	6.62	0.61
3		0.42	81.61	46.92	3.77	1.08	6.62	0.61
4	0.00	0.42	81.61	44.03	3.77		7.23	0.00
5	0.00	0.42		44.03	4.31	1.00	7.23	0.00
6	0.00	0.42	81.61	37.86		1.55	7.23	
7	0.00		81.61	40.40	2.80	2.16	7.23	0.00
8	0.00	0.42	78.26	40.40	4.35	2.16		0.00
9	0.00	0.42	82.40		3.99	2.16	3.27	0.00
10		0.42	83.92	38.14	9.36	2.16	3.27	0.00
11	0.00	0.42	83.92	38.14	9.36		3.27	0.00
12	0.00	0.42		38.14	9.36	2.09	3.27	0.00
13	0.00	0.42	83.16	38.14		2.09	4.14	
14	0.00		83.16	38.69	6.75	2.09	4.14	0.00
15	0.00	0.42	42.48	38.69	6.75	1.54		0.00
16	0.00	0.42	42.48		6.75	6.64	9.33	0.00
17		0.42	40.18	38.14	2.47	5.71	9.33	0.00
18	0.42	0.42	40.18	38.14	2.47		9.33	0.00
19	0.42	0.42		38.14	2.47	5.71	9.33	0.00
20	0.42	0.42	42.20	41.23		5.71	9.33	
21	0.42		42.83	41.23	2.54	5.71	9.33	0.00
22	0.42	0.42	41.09	41.23	2.54	5.71		0.00
23	0.42	0.42	39.57		2.54	6.70	12.19	0.99
24		0.42	40.15	40.68	1.55	5.78	12.19	0.99
25	0.42	0.42	41.66	40.68	2.54		9.94	0.99
26	0.42	0.42		38.14	1.99	6.33	9.94	0.99
27	0.42	0.00	45.43	38.14	0.00	6.33	3.76	
28	0.42		46.42	3.35	1.99	6.33	0.61	0.00
29	0.42	81.49	48.93	3.35	1.99	6.33		0.00
30	0.42	81.61	48.93		1.99	6.33	0.61	0.00
31		-----	46.39	3.35	-----	7.24	-----	0.00
Max (lb/day)	**0.42**	**81.61**	**83.92**	**46.92**	**9.36**	**7.24**	**12.19**	**0.99**
Monthly (lb)	**5.10**	**172.87**	**1,633.42**	**934.28**	**104.91**	**110.62**	**168.71**	**5.78**
Quarter (lb)	**177.97**		**2,672.60**			**285.11**		
Total (lb)	**3,135.68**							

	Sulfur Oxides (lb/day)							
Day	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0000	0.0080	1.0955	0.6144	0.0619	0.0240		0.0113
2	0.0000	0.0080	1.0955		0.0634	0.0240	0.1084	0.0113
3		0.0080	1.0955	0.5968	0.0554	0.0229	0.1084	0.0113
4	0.0000	0.0080	1.0955	0.5435	0.0554		0.1197	0.0000
5	0.0000	0.0080		0.5435	0.0636	0.0214	0.1197	0.0000
6	0.0000	0.0080	1.0955	0.5240		0.0296	0.1197	
7	0.0000		1.0955	0.5245	0.0354	0.0409	0.1197	0.0000
8	0.0000	0.0080	1.0556	0.5245	0.0332	0.0409		0.0000
9	0.0000	0.0080	1.1116		0.0256	0.0409	0.0211	0.0000
10		0.0080	1.1398	0.5301	0.1400	0.0409	0.0211	0.0000
11	0.0000	0.0080	1.1398	0.5301	0.1400		0.0211	0.0000
12	0.0000	0.0080		0.5301	0.1400	0.0394	0.0211	0.0000
13	0.0000	0.0080	1.1237	0.5301		0.0394	0.0301	
14	0.0000		1.1237	0.5383	0.1381	0.0394	0.0301	0.0000
15	0.0000	0.0080	0.5742	0.5383	0.1381	0.0312		0.0000
16	0.0000	0.0080	0.5742		0.1381	0.1232	0.0469	0.0000
17		0.0080	0.5532	0.5290	0.0318	0.1033	0.0469	0.0000
18	0.0080	0.0080	0.5532	0.5290	0.0318		0.0469	0.0000
19	0.0080	0.0080		0.5290	0.0318	0.1033	0.0469	0.0000
20	0.0080	0.0080	0.5921	0.5388		0.1033	0.0469	
21	0.0080		0.6058	0.5388	0.0333	0.1033	0.0469	0.0000
22	0.0080	0.0080	0.5871	0.5388	0.0333	0.1033		0.0000
23	0.0080	0.0080	0.5589		0.0333	0.1060	0.0806	0.0026
24		0.0080	0.5712	0.5306	0.0307	0.1049	0.0806	0.0026
25	0.0080	0.0080	0.5993	0.5306	0.0333		0.0583	0.0026
26	0.0080	0.0080		0.5301	0.0240	0.1131	0.0583	0.0026
27	0.0080	0.0000	0.6499	0.5301	0.0000	0.1131	0.0388	
28	0.0080		0.6455	0.0650	0.0240	0.1131	0.0113	0.0000
29	0.0080	1.0931	0.6430	0.0650	0.0240	0.1131		0.0000
30	0.0080	1.0955	0.6430		0.0240	0.1131	0.0113	0.0000
31		-----	0.6425	0.0650	-----	0.1182	-----	0.0000
Max (lb/day)	**0.0080**	**1.0955**	**1.1398**	**0.6144**	**0.1400**	**0.1232**	**0.1197**	**0.0113**
Monthly (lb)	**0.0960**	**2.3726**	**22.2601**	**12.5878**	**1.5835**	**1.9692**	**1.4612**	**0.0445**
Quarter (lb)	**2.4687**		**36.4314**			**3.4749**		
Total (lb)	**42.3750**							

Notes:

lb/day = pounds per day; black shaded cells represent max daily emissions.

Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014, based on sources and methodologies depicted in previous tables in this section.

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 Off-Road On-Site Equipment Emissions

	Respirable Particulate Matter (lb/day)							
Day	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.00	1.49	75.27	72.94	9.28	0.06		2.97
2	0.00	1.49	75.27		9.29	0.06	0.98	2.97
3		1.49	75.27	72.88	9.27	0.05	0.98	2.97
4	0.00	1.49	75.27	54.49	9.27		3.94	0.00
5	0.00	1.49		54.49	9.30	0.05	3.94	0.00
6	0.00	1.49	75.27	42.71		0.08	3.94	
7	0.00		75.27	48.57	0.11	3.05	3.94	0.00
8	0.00	1.49	70.88	48.57	5.96	3.05		0.00
9	0.00	1.49	75.74		5.95	3.05	3.23	0.00
10		1.49	84.93	42.72	6.82	3.05	3.23	0.00
11	0.00	1.49	84.93	42.72	6.82		3.23	0.00
12	0.00	1.49		42.72	6.82	3.05	3.23	0.00
13	0.00	1.49	84.77	42.72		3.05	6.07	
14	0.00		84.77	42.75	0.95	3.05	6.07	0.00
15	0.00	1.49	47.54	42.75	0.95	3.01		0.00
16	0.00	1.49	47.54		0.95	0.89	17.85	0.00
17		1.49	52.02	42.72	0.08	0.84	17.85	0.00
18	1.49	1.49	52.02	42.72	0.08		17.85	0.00
19	1.49	1.49		42.72	0.08	0.84	17.85	0.00
20	1.49	1.49	61.24	48.62		0.84	17.85	
21	1.49		61.40	48.62	0.09	0.84	17.85	0.00
22	1.49	1.49	61.23	48.62	0.09	0.84		0.00
23	1.49	1.49	52.04		0.09	0.85	26.75	0.01
24		1.49	52.06	48.58	0.08	0.85	26.75	0.01
25	1.49	1.49	61.26	48.58	0.09		20.82	0.01
26	1.49	1.49		42.72	0.06	0.88	20.82	0.01
27	1.49	0.00	76.39	42.72	0.00	0.88	9.03	
28	1.49		82.13	9.29	0.06	0.88	2.97	0.00
29	1.49	75.27	88.00	9.29	0.06	0.88		0.00
30	1.49	75.27	88.00		0.06	0.88	2.97	0.00
31		-----	82.13	9.29	-----	1.01	-----	0.00
Max (lb/day)	**1.49**	**75.27**	**88.00**	**72.94**	**9.30**	**3.05**	**26.75**	**2.97**
Monthly (lb)	**17.87**	**184.79**	**1,902.69**	**1,135.54**	**82.63**	**36.88**	**259.99**	**8.92**
Quarter (lb)	**202.66**		**3,120.86**			**305.80**		
Total (lb)	**3,629.33**							

	Fine Particulate Matter (lb/day)							
Day	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.00	0.83	21.46	25.33	2.99	0.05		1.64
2	0.00	0.83	21.46		3.00	0.05	0.34	1.64
3		0.83	21.46	25.28	2.98	0.05	0.34	1.64
4	0.00	0.83	21.46	19.46	2.98		1.98	0.00
5	0.00	0.83		19.46	3.01	0.05	1.98	0.00
6	0.00	0.83	21.46	12.96		0.08	1.98	
7	0.00		21.46	16.18	0.10	1.72	1.98	0.00
8	0.00	0.83	19.72	16.18	3.31	1.72		0.00
9	0.00	0.83	21.81		3.30	1.72	1.70	0.00
10		0.83	24.73	12.97	3.63	1.72	1.70	0.00
11	0.00	0.83	24.73	12.97	3.63		1.70	0.00
12	0.00	0.83		12.97	3.63	1.72	1.70	0.00
13	0.00	0.83	24.67	12.97		1.72	3.32	
14	0.00		24.67	13.01	0.41	1.72	3.32	0.00
15	0.00	0.83	15.04	13.01	0.41	1.68		0.00
16	0.00	0.83	15.04		0.41	0.36	9.81	0.00
17		0.83	15.89	12.98	0.08	0.31	9.81	0.00
18	0.83	0.83	15.89	12.98	0.08		9.81	0.00
19	0.83	0.83		12.98	0.08	0.31	9.81	0.00
20	0.83	0.83	18.82	16.23		0.31	9.81	
21	0.83		18.87	16.23	0.08	0.31	9.81	0.00
22	0.83	0.83	18.81	16.23	0.08	0.31		0.00
23	0.83	0.83	15.90		0.08	0.32	14.73	0.01
24		0.83	15.93	16.19	0.07	0.32	14.73	0.01
25	0.83	0.83	18.84	16.19	0.08		11.45	0.01
26	0.83	0.83		12.97	0.05	0.35	11.45	0.01
27	0.83	0.00	25.03	12.97	0.00	0.35	4.95	
28	0.83		28.24	3.00	0.05	0.35	1.64	0.00
29	0.83	21.46	31.46	3.00	0.05	0.35		0.00
30	0.83	21.46	31.46		0.05	0.35	1.64	0.00
31		-----	28.24	3.00	-----	0.38	-----	0.00
Max (lb/day)	**0.83**	**21.46**	**31.46**	**25.33**	**3.63**	**1.72**	**14.73**	**1.64**
Monthly (lb)	**9.92**	**61.93**	**582.56**	**367.69**	**34.63**	**18.67**	**141.51**	**4.95**
Quarter (lb)	**71.84**		**984.88**			**165.13**		
Total (lb)	**1,221.85**							

Notes:

lb/day = pounds per day; black shaded cells represent max daily emissions.

Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014, based on sources and methodologies depicted in previous tables in this section.

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 On-Road On-Site Equipment Emissions

	Carbon Monoxide (lb/day)							
Day	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1	0.00	0.02	0.75	0.37	0.58	0.56		0.01
2	0.00	0.02	0.75		0.61	0.56	0.39	0.01
3		0.02	0.71	0.51	0.50	0.48	0.39	0.01
4	0.00	0.02	0.71	0.54	0.50		0.40	0.00
5	0.00	0.02		0.53	0.57	0.46	0.40	0.00
6	0.00	0.02	0.71	0.53		0.53	0.39	
7	0.00		0.71	0.51	0.55	0.54	0.39	0.00
8	0.00	0.02	0.71	0.51	0.43	0.54		0.00
9	0.00	0.02	0.72		0.29	0.54	0.24	0.00
10		0.02	0.73	0.62	0.69	0.57	0.25	0.00
11	0.00	0.02	0.73	0.64	0.72		0.25	0.00
12	0.00	0.02		0.64	0.73	0.56	0.24	0.00
13	0.00	0.02	0.76	0.64		0.54	0.23	
14	0.00		0.76	0.71	0.68	0.56	0.23	0.00
15	0.00	0.02	0.64	0.71	0.71	0.50		0.00
16	0.00	0.02	0.64		0.68	0.73	0.14	0.00
17		0.02	0.44	0.72	0.60	0.34	0.13	0.00
18	0.02	0.02	0.44	0.72	0.60		0.13	0.01
19	0.02	0.02		0.75	0.60	0.34	0.13	0.01
20	0.02	0.02	0.66	0.76		0.32	0.13	
21	0.02		0.67	0.76	0.60	0.32	0.13	0.01
22	0.02	0.02	0.57	0.76	0.60	0.32		0.01
23	0.02	0.02	0.56		0.58	0.42	0.16	0.12
24		0.02	0.81	0.72	0.47	0.32	0.20	0.12
25	0.02	0.02	0.77	0.72	0.57		0.18	0.12
26	0.02	0.02		0.71	0.57	0.36	0.18	0.12
27	0.02	0.05	0.81	0.71	0.00	0.36	0.15	
28	0.02		0.62	0.64	0.57	0.36	0.03	0.01
29	0.02	0.73	0.41	0.64	0.57	0.36		0.01
30	0.02	0.75	0.39		0.57	0.36	0.01	0.00
31		-----	0.38	0.64	-----	0.46	-----	0.00
Max (lb/day)	**0.02**	**0.75**	**0.81**	**0.76**	**0.73**	**0.73**	**0.40**	**0.12**
Monthly (lb)	**0.27**	**2.05**	**17.56**	**16.70**	**15.18**	**12.27**	**5.49**	**0.62**
Quarter (lb)	**2.33**		**49.44**			**18.38**		
Total (lb)	**70.15**							

	Reactive Organic Gases (lb/day)							
Day	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1	0.00	0.00	0.09	0.04	0.07	0.06		0.00
2	0.00	0.00	0.09		0.07	0.06	0.06	0.00
3		0.00	0.08	0.06	0.06	0.06	0.06	0.00
4	0.00	0.00	0.08	0.06	0.06		0.06	0.00
5	0.00	0.00		0.06	0.07	0.05	0.06	0.00
6	0.00	0.00	0.08	0.07		0.07	0.06	
7	0.00		0.08	0.06	0.07	0.07	0.06	0.00
8	0.00	0.00	0.08	0.06	0.06	0.07		0.00
9	0.00	0.00	0.09		0.04	0.07	0.03	0.00
10		0.00	0.09	0.07	0.10	0.07	0.03	0.00
11	0.00	0.00	0.09	0.08	0.11		0.03	0.00
12	0.00	0.00		0.08	0.11	0.07	0.03	0.00
13	0.00	0.00	0.09	0.08		0.07	0.03	
14	0.00		0.09	0.09	0.10	0.07	0.03	0.00
15	0.00	0.00	0.08	0.09	0.10	0.06		0.00
16	0.00	0.00	0.08		0.10	0.10	0.02	0.00
17		0.00	0.05	0.09	0.07	0.05	0.02	0.00
18	0.00	0.00	0.05	0.09	0.07		0.02	0.00
19	0.00	0.00		0.09	0.07	0.05	0.02	0.00
20	0.00	0.00	0.08	0.10		0.05	0.02	
21	0.00		0.08	0.10	0.07	0.05	0.02	0.00
22	0.00	0.00	0.07	0.10	0.07	0.05		0.00
23	0.00	0.00	0.07		0.07	0.06	0.02	0.01
24		0.00	0.10	0.08	0.05	0.05	0.03	0.01
25	0.00	0.00	0.09	0.08	0.07		0.02	0.01
26	0.00	0.00		0.08	0.07	0.06	0.02	0.01
27	0.00	0.01	0.10	0.08	0.00	0.06	0.02	
28	0.00		0.08	0.08	0.07	0.06	0.00	0.00
29	0.00	0.09	0.05	0.08	0.07	0.06		0.00
30	0.00	0.09	0.05		0.07	0.06	0.00	0.00
31		-----	0.05	0.08	-----	0.07	-----	0.00
Max (lb/day)	**0.00**	**0.09**	**0.10**	**0.10**	**0.11**	**0.10**	**0.06**	**0.01**
Monthly (lb)	**0.03**	**0.25**	**2.08**	**2.02**	**1.91**	**1.72**	**0.73**	**0.07**
Quarter (lb)	**0.28**		**6.02**			**2.51**		
Total (lb)	**8.81**							

Notes:

lb/day = pounds per day; black shaded cells represent max daily emissions.

Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014, based on sources and methodologies depicted in previous tables in this section.

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 On-Road On-Site Equipment Emissions

	Nitrogen Oxides (lb/day)							
Day	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1	0.00	0.02	0.51	0.29	0.39	0.37		0.00
2	0.00	0.02	0.51		0.42	0.37	0.63	0.00
3		0.02	0.51	0.32	0.30	0.34	0.63	0.00
4	0.00	0.02	0.51	0.37	0.30		0.63	0.00
5	0.00	0.02		0.37	0.55	0.34	0.63	0.00
6	0.00	0.02	0.51	0.51		0.59	0.63	
7	0.00		0.51	0.36	0.55	0.59	0.63	0.00
8	0.00	0.02	0.51	0.36	0.50	0.59		0.00
9	0.00	0.02	0.51		0.38	0.59	0.11	0.00
10		0.02	0.51	0.46	1.11	0.59	0.11	0.00
11	0.00	0.02	0.51	0.46	1.12		0.11	0.00
12	0.00	0.02		0.46	1.12	0.57	0.11	0.00
13	0.00	0.02	0.60	0.46		0.57	0.15	
14	0.00		0.60	0.71	1.09	0.57	0.15	0.00
15	0.00	0.02	0.50	0.71	1.09	0.32		0.00
16	0.00	0.02	0.50		1.09	0.89	0.10	0.00
17		0.02	0.28	0.71	0.38	0.59	0.10	0.00
18	0.02	0.02	0.28	0.71	0.38		0.10	0.00
19	0.02	0.02		0.72	0.38	0.59	0.10	0.00
20	0.02	0.02	0.44	0.72		0.58	0.10	
21	0.02		0.42	0.72	0.38	0.58	0.10	0.00
22	0.02	0.02	0.45	0.72	0.38	0.58		0.00
23	0.02	0.02	0.45		0.37	0.64	0.14	0.06
24		0.02	0.64	0.47	0.32	0.60	0.29	0.06
25	0.02	0.02	0.56	0.47	0.37		0.24	0.06
26	0.02	0.02		0.47	0.37	0.85	0.24	0.06
27	0.02	0.01	0.60	0.47	0.00	0.85	0.24	
28	0.02		0.52	0.44	0.37	0.85	0.00	0.00
29	0.02	0.49	0.33	0.44	0.37	0.85		0.00
30	0.02	0.51	0.29		0.37	0.85	0.00	0.00
31		-----	0.29	0.44	-----	0.90	-----	0.00
Max (lb/day)	**0.02**	**0.51**	**0.64**	**0.72**	**1.12**	**0.90**	**0.63**	**0.06**
Monthly (lb)	**0.28**	**1.54**	**12.85**	**13.33**	**14.44**	**16.61**	**6.27**	**0.24**
Quarter (lb)	**1.81**		**40.62**			**23.12**		
Total (lb)	**65.55**							

	Sulfur Oxides (lb/day)							
Day	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1	0.0000	0.0001	0.0015	0.0008	0.0012	0.0011		0.0000
2	0.0000	0.0001	0.0015		0.0012	0.0011	0.0014	0.0000
3		0.0001	0.0015	0.0010	0.0009	0.0010	0.0014	0.0000
4	0.0000	0.0001	0.0015	0.0011	0.0009		0.0014	0.0000
5	0.0000	0.0001		0.0011	0.0014	0.0010	0.0014	0.0000
6	0.0000	0.0001	0.0015	0.0013		0.0014	0.0014	
7	0.0000		0.0015	0.0010	0.0014	0.0014	0.0014	0.0000
8	0.0000	0.0001	0.0015	0.0010	0.0012	0.0014		0.0000
9	0.0000	0.0001	0.0015		0.0009	0.0014	0.0004	0.0000
10		0.0001	0.0015	0.0013	0.0025	0.0015	0.0004	0.0000
11	0.0000	0.0001	0.0015	0.0013	0.0025		0.0004	0.0000
12	0.0000	0.0001		0.0013	0.0025	0.0014	0.0004	0.0000
13	0.0000	0.0001	0.0016	0.0013		0.0014	0.0004	
14	0.0000		0.0016	0.0018	0.0024	0.0014	0.0004	0.0000
15	0.0000	0.0001	0.0014	0.0018	0.0024	0.0010		0.0000
16	0.0000	0.0001	0.0014		0.0024	0.0021	0.0003	0.0000
17		0.0001	0.0008	0.0018	0.0011	0.0013	0.0003	0.0000
18	0.0001	0.0001	0.0008	0.0018	0.0011		0.0003	0.0000
19	0.0001	0.0001		0.0018	0.0011	0.0013	0.0003	0.0000
20	0.0001	0.0001	0.0013	0.0019		0.0012	0.0003	
21	0.0001		0.0013	0.0019	0.0011	0.0012	0.0003	0.0000
22	0.0001	0.0001	0.0012	0.0019	0.0011	0.0012		0.0000
23	0.0001	0.0001	0.0012		0.0011	0.0014	0.0004	0.0002
24		0.0001	0.0018	0.0014	0.0009	0.0013	0.0006	0.0002
25	0.0001	0.0001	0.0016	0.0014	0.0011		0.0006	0.0002
26	0.0001	0.0001		0.0014	0.0011	0.0017	0.0006	0.0002
27	0.0001	0.0001	0.0017	0.0014	0.0000	0.0017	0.0005	
28	0.0001		0.0014	0.0013	0.0011	0.0017	0.0000	0.0000
29	0.0001	0.0014	0.0009	0.0013	0.0011	0.0017		0.0000
30	0.0001	0.0015	0.0008		0.0011	0.0017	0.0000	0.0000
31		-----	0.0008	0.0013	-----	0.0019	-----	0.0000
Max (lb/day)	**0.0001**	**0.0015**	**0.0018**	**0.0019**	**0.0025**	**0.0021**	**0.0014**	**0.0002**
Monthly (lb)	**0.0007**	**0.0043**	**0.0364**	**0.0365**	**0.0371**	**0.0382**	**0.0152**	**0.0009**
Quarter (lb)	**0.0050**		**0.1100**			**0.0543**		
Total (lb)	**0.1694**							

Notes:

lb/day = pounds per day; black shaded cells represent max daily emissions.

Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014, based on sources and methodologies depicted in previous tables in this section.

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 On-Road On-Site Equipment Emissions

	Respirable Particulate Matter (lb/day)							
Day	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1	0.00	0.01	0.21	0.11	0.16	0.15		0.00
2	0.00	0.01	0.21		0.17	0.15	0.18	0.00
3		0.01	0.20	0.14	0.13	0.13	0.18	0.00
4	0.00	0.01	0.20	0.15	0.13		0.18	0.00
5	0.00	0.01		0.15	0.19	0.13	0.18	0.00
6	0.00	0.01	0.20	0.17		0.19	0.18	
7	0.00		0.20	0.14	0.19	0.19	0.18	0.00
8	0.00	0.01	0.20	0.14	0.16	0.19		0.00
9	0.00	0.01	0.20		0.11	0.19	0.05	0.00
10		0.01	0.20	0.18	0.31	0.20	0.06	0.00
11	0.00	0.01	0.20	0.18	0.32		0.06	0.00
12	0.00	0.01		0.18	0.32	0.19	0.05	0.00
13	0.00	0.01	0.22	0.18		0.19	0.06	
14	0.00		0.22	0.24	0.31	0.19	0.06	0.00
15	0.00	0.01	0.19	0.24	0.31	0.13		0.00
16	0.00	0.01	0.19		0.31	0.28	0.04	0.00
17		0.01	0.12	0.24	0.16	0.16	0.04	0.00
18	0.01	0.01	0.12	0.24	0.16		0.04	0.00
19	0.01	0.01		0.25	0.16	0.16	0.04	0.00
20	0.01	0.01	0.18	0.25		0.16	0.04	
21	0.01		0.18	0.25	0.16	0.16	0.04	0.00
22	0.01	0.01	0.17	0.25	0.16	0.16		0.00
23	0.01	0.01	0.17		0.15	0.18	0.05	0.03
24		0.01	0.24	0.19	0.13	0.16	0.08	0.03
25	0.01	0.01	0.22	0.19	0.15		0.07	0.03
26	0.01	0.01		0.19	0.15	0.21	0.07	0.03
27	0.01	0.01	0.23	0.19	0.00	0.21	0.07	
28	0.01		0.19	0.18	0.15	0.21	0.00	0.00
29	0.01	0.20	0.12	0.18	0.15	0.21		0.00
30	0.01	0.21	0.11		0.15	0.21	0.00	0.00
31		-----	0.11	0.18	-----	0.24	-----	0.00
Max (lb/day)	**0.01**	**0.21**	**0.24**	**0.25**	**0.32**	**0.28**	**0.18**	**0.03**
Monthly (lb)	**0.09**	**0.59**	**5.00**	**4.97**	**4.96**	**4.96**	**2.00**	**0.13**
Quarter (lb)	**0.68**		**14.94**			**7.09**		
Total (lb)	**22.71**							

	Fine Particulate Matter (lb/day)							
Day	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1	0.00	0.00	0.02	0.01	0.01	0.01		0.00
2	0.00	0.00	0.02		0.01	0.01	0.02	0.00
3		0.00	0.02	0.01	0.01	0.01	0.02	0.00
4	0.00	0.00	0.02	0.01	0.01		0.02	0.00
5	0.00	0.00		0.01	0.02	0.01	0.02	0.00
6	0.00	0.00	0.02	0.01		0.02	0.02	
7	0.00		0.02	0.01	0.02	0.02	0.02	0.00
8	0.00	0.00	0.02	0.01	0.01	0.02		0.00
9	0.00	0.00	0.02		0.01	0.02	0.00	0.00
10		0.00	0.02	0.02	0.03	0.02	0.00	0.00
11	0.00	0.00	0.02	0.02	0.03		0.00	0.00
12	0.00	0.00		0.02	0.03	0.02	0.00	0.00
13	0.00	0.00	0.02	0.02		0.02	0.01	
14	0.00		0.02	0.02	0.03	0.02	0.01	0.00
15	0.00	0.00	0.02	0.02	0.03	0.01		0.00
16	0.00	0.00	0.02		0.03	0.02	0.00	0.00
17		0.00	0.01	0.02	0.01	0.01	0.00	0.00
18	0.00	0.00	0.01	0.02	0.01		0.00	0.00
19	0.00	0.00		0.02	0.01	0.01	0.00	0.00
20	0.00	0.00	0.02	0.02		0.01	0.00	
21	0.00		0.02	0.02	0.01	0.01	0.00	0.00
22	0.00	0.00	0.01	0.02	0.01	0.01		0.00
23	0.00	0.00	0.01		0.01	0.02	0.00	0.00
24		0.00	0.02	0.02	0.01	0.01	0.01	0.00
25	0.00	0.00	0.02	0.02	0.01		0.01	0.00
26	0.00	0.00		0.02	0.01	0.02	0.01	0.00
27	0.00	0.00	0.02	0.02	0.00	0.02	0.01	
28	0.00		0.02	0.02	0.01	0.02	0.00	0.00
29	0.00	0.02	0.01	0.02	0.01	0.02		0.00
30	0.00	0.02	0.01		0.01	0.02	0.00	0.00
31		-----	0.01	0.02	-----	0.02	-----	0.00
Max (lb/day)	**0.00**	**0.02**	**0.02**	**0.02**	**0.03**	**0.02**	**0.02**	**0.00**
Monthly (lb)	**0.01**	**0.05**	**0.43**	**0.42**	**0.42**	**0.43**	**0.17**	**0.01**
Quarter (lb)	**0.06**		**1.27**			**0.61**		
Total (lb)	**1.94**							

Notes:

lb/day = pounds per day; black shaded cells represent max daily emissions.

Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014, based on sources and methodologies depicted in previous tables in this section.

Attachment B.1

Construction – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- Criteria Pollutants – Construction Worker Vehicles
  - 2015 Construction Worker Vehicle Assumptions and Emission Factors
  - 2015 Construction Worker Vehicle Emissions

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 Construction Worker Vehicle Assumptions and Emission Factors

Day	Vehicle Miles Traveled[1]							
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	209	8,035	4,165	4,565	3,670		52
2	0	209	8,035		4,809	3,670	2,261	52
3		209	7,826	5,800	3,209	3,739	2,261	52
4	0	209	7,826	6,165	3,209		2,313	0
5	0	209		6,096	3,696	3,617	2,313	0
6	0	209	7,826	5,400		4,104	2,243	
7	0		7,826	5,522	3,635	4,157	2,243	0
8	0	209	7,617	5,522	3,583	4,157		0
9	0	209	7,896		2,365	4,157	1,061	0
10		209	7,957	6,304	5,774	4,226	1,130	0
11	0	209	7,957	6,374	5,843		1,130	0
12	0	209		6,374	5,913	4,122	1,061	0
13	0	209	7,957	6,374		4,052	1,078	
14	0		7,957	6,861	5,409	4,122	1,078	0
15	0	209	5,591	6,861	5,478	3,635		0
16	0	209	5,591		5,409	4,904	1,670	0
17		209	3,913	6,809	3,948	1,739	1,600	0
18	209	209	3,913	6,809	3,948		1,600	70
19	209	209		6,878	3,948	1,739	1,600	70
20	209	209	5,678	7,261		1,670	1,600	
21	209		5,643	7,261	4,000	1,670	1,600	70
22	209	209	5,400	7,261	4,000	1,670		70
23	209	209	5,339		3,930	1,774	1,826	243
24		209	7,357	6,843	3,757	1,774	1,896	243
25	209	209	7,278	6,843	3,861		1,722	243
26	209	209		6,652	3,739	2,191	1,722	243
27	209	278	7,583	6,652	0	2,191	957	
28	209		5,948	5,052	3,739	2,191	122	70
29	209	7,861	4,452	5,052	3,739	2,191		70
30	209	8,035	4,417		3,739	2,191	52	0
31		-----	4,226	5,052	-----	2,852	-----	0
Total Month	**2,504**	**20,974**	**177,043**	**162,243**	**109,243**	**82,174**	**38,139**	**1,548**
Quarter	**23,478**		**448,530**			**121,861**		
Total VMT	**593,870**							

Notes:

Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

[1] Vehicle miles traveled (VMT) equals the number of vehicles multiplied by an assumed roundtrip distance of 40 miles. An occupancy factor of 1.15 workers per vehicle is assumed.

Source: Ricondo & Associates, Inc., 2014; CARB EMFAC2011.

Assumptions and Emission Factors

EMFAC2011 Category	CO Emission Factors (g/mi) Running	Idle	Starting	Total
LDA (gasoline)	1.3536	2.6098	0.4524	4.4158
LDT1 (gasoline)	3.4456	7.1928	1.0483	11.6867
LDT2 (gasoline)	1.9025	3.5895	0.6122	6.1042
Combined Factor			g/mi -->	6.9347
			lb/mi -->	0.0153

Assumptions:
Region: South Coast
Season: Max of annual, summer, winter
Speed: Aggregated
Roundtrip distance: 40 miles
Fleet mix: 50% LDA, 30% LDT1, 20% LDT2

EMFAC2011 Category	ROG Emission Factors (g/mi) Running	Idle	Starting	Diurnal	Hot Soak	Run Loss	Rest Loss	Total
LDA (gasoline)	0.0363	0.1780	0.0358	0.0198	0.0310	0.0688	0.0156	0.3852
LDT1 (gasoline)	0.1001	0.4748	0.0810	0.0550	0.0684	0.2466	0.0387	1.0645
LDT2 (gasoline)	0.0466	0.2380	0.0456	0.0217	0.0328	0.1102	0.0177	0.5126
Combined Factor							g/mi -->	0.6145
							lb/mi -->	0.0014

EMFAC2011 Category	NO_X Emission Factors (g/mi) Running	Idle	Starting	Total	SO_X Emission Factors (g/mi) Running	Idle	Starting	Total
LDA (gasoline)	0.1088	0.1781	0.0299	0.3167	0.00380	0.00380	0.00014	0.00774
LDT1 (gasoline)	0.3111	0.5660	0.0591	0.9362	0.00438	0.00438	0.00017	0.00893
LDT2 (gasoline)	0.2030	0.3582	0.0575	0.6187	0.00516	0.00516	0.00018	0.01051
Combined Factor			g/mi -->	0.5630			g/mi -->	0.00865
			lb/mi -->	0.0012			lb/mi -->	0.00002

EMFAC2011 Category	PM_{10} Emission Factors (g/mi) Running	Idle	Starting	Tire Wear	Break Wea	Total
LDA (gasoline)	0.0020	0.0108	0.0005	0.0080	0.0367	0.0580
LDT1 (gasoline)	0.0048	0.0250	0.0010	0.0080	0.0367	0.0756
LDT2 (gasoline)	0.0021	0.0117	0.0005	0.0080	0.0367	0.0590
Combined Factor					g/mi -->	0.0635
					lb/mi -->	0.00014

EMFAC2011 Category	$PM_{2.5}$ Emission Factors (g/mi) Running	Idle	Starting	Tire Wear	Break Wea	Total
LDA (gasoline)	0.0018	0.0099	0.0005	0.0020	0.0157	0.0300
LDT1 (gasoline)	0.0044	0.0230	0.0009	0.0020	0.0157	0.0461
LDT2 (gasoline)	0.0019	0.0108	0.0004	0.0020	0.0157	0.0309
Combined Factor					g/mi -->	0.0350
					lb/mi -->	0.00008

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 Construction Worker Vehicle Emissions

	Carbon Monoxide (lb/day)							
Day	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.00	3.19	122.84	63.68	69.80	56.10		0.80
2	0.00	3.19	122.84		73.52	56.10	34.57	0.80
3		3.19	119.65	88.67	49.06	57.17	34.57	0.80
4	0.00	3.19	119.65	94.26	49.06		35.36	0.00
5	0.00	3.19		93.19	56.50	55.30	35.36	0.00
6	0.00	3.19	119.65	82.56		62.75	34.30	
7	0.00		119.65	84.42	55.57	63.55	34.30	0.00
8	0.00	3.19	116.46	84.42	54.77	63.55		0.00
9	0.00	3.19	120.71		36.16	63.55	16.22	0.00
10		3.19	121.64	96.38	88.27	64.61	17.28	0.00
11	0.00	3.19	121.64	97.45	89.34		17.28	0.00
12	0.00	3.19		97.45	90.40	63.02	16.22	0.00
13	0.00	3.19	121.64	97.45		61.95	16.48	
14	0.00		121.64	104.89	82.69	63.02	16.48	0.00
15	0.00	3.19	85.48	104.89	83.75	55.57		0.00
16	0.00	3.19	85.48		82.69	74.98	25.53	0.00
17		3.19	59.82	104.09	60.36	26.59	24.46	0.00
18	3.19	3.19	59.82	104.09	60.36		24.46	1.06
19	3.19	3.19		105.16	60.36	26.59	24.46	1.06
20	3.19	3.19	86.81	111.01		25.53	24.46	
21	3.19		86.28	111.01	61.15	25.53	24.46	1.06
22	3.19	3.19	82.56	111.01	61.15	25.53		1.06
23	3.19	3.19	81.63		60.09	27.12	27.92	3.72
24		3.19	112.47	104.63	57.43	27.12	28.98	3.72
25	3.19	3.19	111.27	104.63	59.03		26.32	3.72
26	3.19	3.19		101.70	57.17	33.50	26.32	3.72
27	3.19	4.25	115.93	101.70	0.00	33.50	14.62	
28	3.19		90.93	77.24	57.17	33.50	1.86	1.06
29	3.19	120.18	68.07	77.24	57.17	33.50		1.06
30	3.19	122.84	67.54		57.17	33.50	0.80	0.00
31		-----	64.61	77.24	-----	43.61	-----	0.00
Max (lb/day)	**3.19**	**122.84**	**122.84**	**111.01**	**90.40**	**74.98**	**35.36**	**3.72**
Monthly (lb)	**38.29**	**320.66**	**2,706.72**	**2,480.45**	**1,670.17**	**1,256.31**	**583.09**	**23.66**
Quarter (lb)	**358.95**		**6,857.34**			**1,863.07**		
Total (lb)	**9,079.36**							

	Reactive Organic Gases (lb/day)							
Day	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.00	0.28	10.88	5.64	6.18	4.97		0.07
2	0.00	0.28	10.88		6.51	4.97	3.06	0.07
3		0.28	10.60	7.86	4.35	5.07	3.06	0.07
4	0.00	0.28	10.60	8.35	4.35		3.13	0.00
5	0.00	0.28		8.26	5.01	4.90	3.13	0.00
6	0.00	0.28	10.60	7.32		5.56	3.04	
7	0.00		10.60	7.48	4.92	5.63	3.04	0.00
8	0.00	0.28	10.32	7.48	4.85	5.63		0.00
9	0.00	0.28	10.70		3.20	5.63	1.44	0.00
10		0.28	10.78	8.54	7.82	5.73	1.53	0.00
11	0.00	0.28	10.78	8.63	7.92		1.53	0.00
12	0.00	0.28		8.63	8.01	5.58	1.44	0.00
13	0.00	0.28	10.78	8.63		5.49	1.46	
14	0.00		10.78	9.29	7.33	5.58	1.46	0.00
15	0.00	0.28	7.57	9.29	7.42	4.92		0.00
16	0.00	0.28	7.57		7.33	6.64	2.26	0.00
17		0.28	5.30	9.22	5.35	2.36	2.17	0.00
18	0.28	0.28	5.30	9.22	5.35		2.17	0.09
19	0.28	0.28		9.32	5.35	2.36	2.17	0.09
20	0.28	0.28	7.69	9.84		2.26	2.17	
21	0.28		7.65	9.84	5.42	2.26	2.17	0.09
22	0.28	0.28	7.32	9.84	5.42	2.26		0.09
23	0.28	0.28	7.23		5.32	2.40	2.47	0.33
24		0.28	9.97	9.27	5.09	2.40	2.57	0.33
25	0.28	0.28	9.86	9.27	5.23		2.33	0.33
26	0.28	0.28		9.01	5.07	2.97	2.33	0.33
27	0.28	0.38	10.27	9.01	0.00	2.97	1.30	
28	0.28		8.06	6.84	5.07	2.97	0.16	0.09
29	0.28	10.65	6.03	6.84	5.07	2.97		0.09
30	0.28	10.88	5.98		5.07	2.97	0.07	0.00
31		-----	5.73	6.84	-----	3.86	-----	0.00
Max (lb/day)	**0.28**	**10.88**	**10.88**	**9.84**	**8.01**	**6.64**	**3.13**	**0.33**
Monthly (lb)	**3.39**	**28.41**	**239.84**	**219.79**	**147.99**	**111.32**	**51.67**	**2.10**
Quarter (lb)	**31.81**		**607.63**			**165.09**		
Total (lb)	**804.53**							

Notes:

lb/day = pounds per day; black shaded cells represent max daily emissions.

Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014; CARB EMFAC2011.

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 Construction Worker Vehicle Emissions

Day	Nitrogen Oxides (lb/day)							
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.00	0.26	9.97	5.17	5.67	4.55		0.06
2	0.00	0.26	9.97		5.97	4.55	2.81	0.06
3		0.26	9.71	7.20	3.98	4.64	2.81	0.06
4	0.00	0.26	9.71	7.65	3.98		2.87	0.00
5	0.00	0.26		7.57	4.59	4.49	2.87	0.00
6	0.00	0.26	9.71	6.70		5.09	2.78	
7	0.00		9.71	6.85	4.51	5.16	2.78	0.00
8	0.00	0.26	9.45	6.85	4.45	5.16		0.00
9	0.00	0.26	9.80		2.94	5.16	1.32	0.00
10		0.26	9.88	7.82	7.17	5.25	1.40	0.00
11	0.00	0.26	9.88	7.91	7.25		1.40	0.00
12	0.00	0.26		7.91	7.34	5.12	1.32	0.00
13	0.00	0.26	9.88	7.91		5.03	1.34	
14	0.00		9.88	8.52	6.71	5.12	1.34	0.00
15	0.00	0.26	6.94	8.52	6.80	4.51		0.00
16	0.00	0.26	6.94		6.71	6.09	2.07	0.00
17		0.26	4.86	8.45	4.90	2.16	1.99	0.00
18	0.26	0.26	4.86	8.45	4.90		1.99	0.09
19	0.26	0.26		8.54	4.90	2.16	1.99	0.09
20	0.26	0.26	7.05	9.01		2.07	1.99	
21	0.26		7.00	9.01	4.96	2.07	1.99	0.09
22	0.26	0.26	6.70	9.01	4.96	2.07		0.09
23	0.26	0.26	6.63		4.88	2.20	2.27	0.30
24		0.26	9.13	8.49	4.66	2.20	2.35	0.30
25	0.26	0.26	9.03	8.49	4.79		2.14	0.30
26	0.26	0.26		8.26	4.64	2.72	2.14	0.30
27	0.26	0.35	9.41	8.26	0.00	2.72	1.19	
28	0.26		7.38	6.27	4.64	2.72	0.15	0.09
29	0.26	9.76	5.53	6.27	4.64	2.72		0.09
30	0.26	9.97	5.48		4.64	2.72	0.06	0.00
31		-----	5.25	6.27	-----	3.54	-----	0.00
Max (lb/day)	**0.26**	**9.97**	**9.97**	**9.01**	**7.34**	**6.09**	**2.87**	**0.30**
Monthly (lb)	**3.11**	**26.03**	**219.74**	**201.37**	**135.59**	**101.99**	**47.34**	**1.92**
Quarter (lb)	**29.14**		**556.70**			**151.25**		
Total (lb)	**737.08**							

Day	Sulfur Oxides (lb/day)							
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0000	0.0040	0.1533	0.0794	0.0871	0.0700		0.0010
2	0.0000	0.0040	0.1533		0.0917	0.0700	0.0431	0.0010
3		0.0040	0.1493	0.1106	0.0612	0.0713	0.0431	0.0010
4	0.0000	0.0040	0.1493	0.1176	0.0612		0.0441	0.0000
5	0.0000	0.0040		0.1163	0.0705	0.0690	0.0441	0.0000
6	0.0000	0.0040	0.1493	0.1030		0.0783	0.0428	
7	0.0000		0.1493	0.1053	0.0693	0.0793	0.0428	0.0000
8	0.0000	0.0040	0.1453	0.1053	0.0683	0.0793		0.0000
9	0.0000	0.0040	0.1506		0.0451	0.0793	0.0202	0.0000
10		0.0040	0.1518	0.1202	0.1101	0.0806	0.0216	0.0000
11	0.0000	0.0040	0.1518	0.1216	0.1115		0.0216	0.0000
12	0.0000	0.0040		0.1216	0.1128	0.0786	0.0202	0.0000
13	0.0000	0.0040	0.1518	0.1216		0.0773	0.0206	
14	0.0000		0.1518	0.1309	0.1032	0.0786	0.0206	0.0000
15	0.0000	0.0040	0.1066	0.1309	0.1045	0.0693		0.0000
16	0.0000	0.0040	0.1066		0.1032	0.0935	0.0318	0.0000
17		0.0040	0.0746	0.1299	0.0753	0.0332	0.0305	0.0000
18	0.0040	0.0040	0.0746	0.1299	0.0753		0.0305	0.0013
19	0.0040	0.0040		0.1312	0.0753	0.0332	0.0305	0.0013
20	0.0040	0.0040	0.1083	0.1385		0.0318	0.0305	
21	0.0040		0.1076	0.1385	0.0763	0.0318	0.0305	0.0013
22	0.0040	0.0040	0.1030	0.1385	0.0763	0.0318		0.0013
23	0.0040	0.0040	0.1018		0.0750	0.0338	0.0348	0.0046
24		0.0040	0.1403	0.1305	0.0717	0.0338	0.0362	0.0046
25	0.0040	0.0040	0.1388	0.1305	0.0736		0.0328	0.0046
26	0.0040	0.0040		0.1269	0.0713	0.0418	0.0328	0.0046
27	0.0040	0.0053	0.1446	0.1269	0.0000	0.0418	0.0182	
28	0.0040		0.1134	0.0964	0.0713	0.0418	0.0023	0.0013
29	0.0040	0.1499	0.0849	0.0964	0.0713	0.0418		0.0013
30	0.0040	0.1533	0.0843		0.0713	0.0418	0.0010	0.0000
31		-----	0.0806	0.0964	-----	0.0544	-----	0.0000
Max (lb/day)	**0.0040**	**0.1533**	**0.1533**	**0.1385**	**0.1128**	**0.0935**	**0.0441**	**0.0046**
Monthly (lb)	**0.0478**	**0.4001**	**3.3769**	**3.0946**	**2.0837**	**1.5674**	**0.7275**	**0.0295**
Quarter (lb)	**0.4478**		**8.5551**			**2.3243**		
Total (lb)	**11.3273**							

Notes:

lb/day = pounds per day; black shaded cells represent max daily emissions.

Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014; CARB EMFAC2011.

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 Construction Worker Vehicle Emissions

Day	Respirable Particulate Matter (lb/day)							
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.00	0.17	6.44	3.34	3.66	2.94		0.04
2	0.00	0.17	6.44		3.85	2.94	1.81	0.04
3		0.17	6.27	4.65	2.57	3.00	1.81	0.04
4	0.00	0.17	6.27	4.94	2.57		1.85	0.00
5	0.00	0.17		4.88	2.96	2.90	1.85	0.00
6	0.00	0.17	6.27	4.33		3.29	1.80	
7	0.00		6.27	4.42	2.91	3.33	1.80	0.00
8	0.00	0.17	6.10	4.42	2.87	3.33		0.00
9	0.00	0.17	6.32		1.89	3.33	0.85	0.00
10		0.17	6.37	5.05	4.63	3.39	0.91	0.00
11	0.00	0.17	6.37	5.11	4.68		0.91	0.00
12	0.00	0.17		5.11	4.74	3.30	0.85	0.00
13	0.00	0.17	6.37	5.11		3.25	0.86	
14	0.00		6.37	5.50	4.33	3.30	0.86	0.00
15	0.00	0.17	4.48	5.50	4.39	2.91		0.00
16	0.00	0.17	4.48		4.33	3.93	1.34	0.00
17		0.17	3.13	5.45	3.16	1.39	1.28	0.00
18	0.17	0.17	3.13	5.45	3.16		1.28	0.06
19	0.17	0.17		5.51	3.16	1.39	1.28	0.06
20	0.17	0.17	4.55	5.82		1.34	1.28	
21	0.17		4.52	5.82	3.20	1.34	1.28	0.06
22	0.17	0.17	4.33	5.82	3.20	1.34		0.06
23	0.17	0.17	4.28		3.15	1.42	1.46	0.20
24		0.17	5.89	5.48	3.01	1.42	1.52	0.20
25	0.17	0.17	5.83	5.48	3.09		1.38	0.20
26	0.17	0.17		5.33	3.00	1.76	1.38	0.20
27	0.17	0.22	6.07	5.33	0.00	1.76	0.77	
28	0.17		4.76	4.05	3.00	1.76	0.10	0.06
29	0.17	6.30	3.57	4.05	3.00	1.76		0.06
30	0.17	6.44	3.54		3.00	1.76	0.04	0.00
31		-----	3.39	4.05	-----	2.28	-----	0.00
Max (lb/day)	**0.17**	**6.44**	**6.44**	**5.82**	**4.74**	**3.93**	**1.85**	**0.20**
Monthly (lb)	**2.01**	**16.80**	**141.82**	**129.97**	**87.51**	**65.83**	**30.55**	**1.24**
Quarter (lb)	**18.81**		**359.30**			**97.62**		
Total (lb)	**475.72**							

Day	Fine Particulate Matter (lb/day)							
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.00	0.05	1.92	1.00	1.09	0.88		0.01
2	0.00	0.05	1.92		1.15	0.88	0.54	0.01
3		0.05	1.87	1.39	0.77	0.90	0.54	0.01
4	0.00	0.05	1.87	1.48	0.77		0.55	0.00
5	0.00	0.05		1.46	0.88	0.87	0.55	0.00
6	0.00	0.05	1.87	1.29		0.98	0.54	
7	0.00		1.87	1.32	0.87	1.00	0.54	0.00
8	0.00	0.05	1.82	1.32	0.86	1.00		0.00
9	0.00	0.05	1.89		0.57	1.00	0.25	0.00
10		0.05	1.90	1.51	1.38	1.01	0.27	0.00
11	0.00	0.05	1.90	1.53	1.40		0.27	0.00
12	0.00	0.05		1.53	1.42	0.99	0.25	0.00
13	0.00	0.05	1.90	1.53		0.97	0.26	
14	0.00		1.90	1.64	1.29	0.99	0.26	0.00
15	0.00	0.05	1.34	1.64	1.31	0.87		0.00
16	0.00	0.05	1.34		1.29	1.17	0.40	0.00
17		0.05	0.94	1.63	0.95	0.42	0.38	0.00
18	0.05	0.05	0.94	1.63	0.95		0.38	0.02
19	0.05	0.05		1.65	0.95	0.42	0.38	0.02
20	0.05	0.05	1.36	1.74		0.40	0.38	
21	0.05		1.35	1.74	0.96	0.40	0.38	0.02
22	0.05	0.05	1.29	1.74	0.96	0.40		0.02
23	0.05	0.05	1.28		0.94	0.42	0.44	0.06
24		0.05	1.76	1.64	0.90	0.42	0.45	0.06
25	0.05	0.05	1.74	1.64	0.92		0.41	0.06
26	0.05	0.05		1.59	0.90	0.52	0.41	0.06
27	0.05	0.07	1.82	1.59	0.00	0.52	0.23	
28	0.05		1.42	1.21	0.90	0.52	0.03	0.02
29	0.05	1.88	1.07	1.21	0.90	0.52		0.02
30	0.05	1.92	1.06		0.90	0.52	0.01	0.00
31		-----	1.01	1.21	-----	0.68	-----	0.00
Max (lb/day)	**0.05**	**1.92**	**1.92**	**1.74**	**1.42**	**1.17**	**0.55**	**0.06**
Monthly (lb)	**0.60**	**5.02**	**42.38**	**38.84**	**26.15**	**19.67**	**9.13**	**0.37**
Quarter (lb)	**5.62**		**107.37**			**29.17**		
Total (lb)	**142.17**							

Notes:

lb/day = pounds per day; black shaded cells represent max daily emissions.

Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014; CARB EMFAC2011.

Attachment B.1

Construction – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- Criteria Pollutants – On-Road Off-Site Hauling Emissions
  - 2015 On-Road Off-Site Hauling Emission Factors
  - 2015 On-Road Off-Site Hauling Emissions

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 On-Road Off-Site Hauling Emission Factors

Assumptions:

Region: South Coast
Season: Max of annual, summer, winter
Speed: Aggregated
Travel distance: Varies by type of hauling trip (see Hauling Trip Data table)
Representative vehicles: Flatbed truck, haul truck, end dump truck, cement mixer
EMFAC2011 Category: T7 single construction (diesel)
Model Year: 2007 (compliance with LAX construction-related air quality control measures)
Exaust retrofit emissions control device: assumed reduction of PM_{10} and $PM_{2.5}$ by 85% (applied at time of emissions calculation)
Idle Time: 10 minutes per trip

	Running (g/mi)	Idle (g/trip)
Carbon Monoxide (CO) Emission Factors	1.3514	9.5792

	Running (g/mi)	Idle (g/trip)
Reactive Organic Compounds (ROG) Emission Factors	0.2604	1.3307

	Running (g/mi)	Idle (g/trip)
Nitrogen Oxides (NO_X) Emission Factors	6.4693	6.6074

	Running (g/mi)	Idle (g/trip)	Tire Wear (g/mi)	Break We (g/mi)	Rd. Dust (lb/mi)
Respirable Particulate Matter (PM_{10}) Emission Factors	0.0725	0.0219	0.0360	0.0617	0.0064

<-- See Fugitive Dust table for road dust factor

	Running (g/mi)	Idle (g/trip)	Tire Wear (g/mi)	Break We (g/mi)	Rd. Dust (lb/mi)
Sulfur Oxides (SO_X) Emission Factors	0.0168	0.0119			

	Running (g/mi)	Idle (g/trip)	Tire Wear (g/mi)	Break We (g/mi)	Rd. Dust (lb/mi)
Fine Particulate Matter ($PM_{2.5}$) Emission Factors	0.0667	0.0201	0.0090	0.0265	0.0016

<-- See Fugitive Dust table for road dust factor

Notes:
g/mi = grams per mile; g/trip = grams per trip; lb/mi = pounds per mile.

Source: Ricondo & Associates, Inc., 2014; CARB EMFAC2011; USEPA AP-42 (road dust emission factor calculation).

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 On-Road Off-Site Hauling Emissions

	Carbon Monoxide (lb/day)							
Day	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1	0.00	0.00	2.40	10.57	14.27	0.63		0.00
2	0.00	0.00	2.40		14.86	0.63	0.29	0.00
3		0.00	2.40	8.89	14.66	0.63	0.29	0.00
4	0.00	0.00	2.40	9.18	14.66		0.29	0.00
5	0.00	0.00		8.59	16.23	0.43	0.29	0.00
6	0.00	0.00	2.40	8.59		2.00	0.29	
7	0.00		2.40	4.19	16.23	2.00	0.29	0.00
8	0.00	0.00	2.15	4.19	7.17	2.00		0.00
9	0.00	0.00	2.46		7.17	2.00	0.29	0.00
10		0.00	2.46	7.39	7.17	2.00	0.29	0.00
11	0.00	0.00	2.46	7.39	7.17		0.29	0.00
12	0.00	0.00		7.39	7.17	2.19	0.29	0.00
13	0.00	0.00	9.83	7.39		2.19	2.05	
14	0.00		9.83	8.96	15.64	2.19	2.05	0.00
15	0.00	0.00	8.97	8.96	15.64	0.63		0.00
16	0.00	0.00	8.97		15.64	0.63	3.19	0.00
17		0.00	1.28	3.57	14.08	0.20	3.19	0.00
18	0.00	0.00	1.28	3.57	14.08		3.19	0.00
19	0.00	0.00		3.57	14.08	0.20	3.19	0.00
20	0.00	0.00	1.87	8.16		0.20	3.19	
21	0.00		1.67	8.16	14.27	0.20	3.19	0.00
22	0.00	0.00	11.50	8.16	14.27	0.20		0.00
23	0.00	0.00	11.50		14.27	0.00	3.19	0.00
24		0.00	11.50	6.60	14.27	0.00	3.19	0.00
25	0.00	0.00	1.67	6.60	14.27		3.19	0.00
26	0.00	0.00		15.65	0.63	1.57	3.19	0.00
27	0.00	0.00	4.99	15.65	0.00	1.57	2.05	
28	0.00		17.61	14.57	0.63	1.57	0.00	0.00
29	0.00	2.21	19.99	14.57	0.63	1.57		0.00
30	0.00	2.40	7.37		0.63	1.57	0.00	0.00
31		-----	10.57	14.57	-----	1.86	-----	0.00
Max (lb/day)	**0.00**	**2.40**	**19.99**	**15.65**	**16.23**	**2.19**	**3.19**	**0.00**
Monthly (lb)	**0.00**	**4.61**	**164.38**	**225.08**	**289.78**	**30.82**	**41.00**	**0.00**
Quarter (lb)	**4.61**		**679.23**			**71.82**		
Total (lb)	**755.67**							

	Reactive Organic Gases (lb/day)							
Day	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1	0.00	0.00	0.39	1.90	2.58	0.12		0.00
2	0.00	0.00	0.39		2.69	0.12	0.05	0.00
3		0.00	0.39	1.59	2.65	0.12	0.05	0.00
4	0.00	0.00	0.39	1.65	2.65		0.05	0.00
5	0.00	0.00		1.54	2.94	0.08	0.05	0.00
6	0.00	0.00	0.39	1.54		0.36	0.05	
7	0.00		0.39	0.75	2.94	0.36	0.05	0.00
8	0.00	0.00	0.35	0.75	1.32	0.36		0.00
9	0.00	0.00	0.40		1.32	0.36	0.05	0.00
10		0.00	0.40	1.32	1.32	0.36	0.05	0.00
11	0.00	0.00	0.40	1.32	1.32		0.05	0.00
12	0.00	0.00		1.32	1.32	0.40	0.05	0.00
13	0.00	0.00	1.76	1.32		0.40	0.38	
14	0.00		1.76	1.60	2.83	0.40	0.38	0.00
15	0.00	0.00	1.62	1.60	2.83	0.12		0.00
16	0.00	0.00	1.62		2.83	0.12	0.59	0.00
17		0.00	0.21	0.63	2.55	0.04	0.59	0.00
18	0.00	0.00	0.21	0.63	2.55		0.59	0.00
19	0.00	0.00		0.63	2.55	0.04	0.59	0.00
20	0.00	0.00	0.32	1.48		0.04	0.59	
21	0.00		0.28	1.48	2.58	0.04	0.59	0.00
22	0.00	0.00	2.10	1.48	2.58	0.04		0.00
23	0.00	0.00	2.10		2.58	0.00	0.59	0.00
24		0.00	2.10	1.19	2.58	0.00	0.59	0.00
25	0.00	0.00	0.28	1.19	2.58		0.59	0.00
26	0.00	0.00		2.81	0.12	0.28	0.59	0.00
27	0.00	0.00	0.89	2.81	0.00	0.28	0.38	
28	0.00		3.23	2.64	0.12	0.28	0.00	0.00
29	0.00	0.36	3.66	2.64	0.12	0.28		0.00
30	0.00	0.39	1.33		0.12	0.28	0.00	0.00
31		-----	1.90	2.64	-----	0.34	-----	0.00
Max (lb/day)	**0.00**	**0.39**	**3.66**	**2.81**	**2.94**	**0.40**	**0.59**	**0.00**
Monthly (lb)	**0.00**	**0.75**	**29.30**	**40.43**	**52.55**	**5.61**	**7.57**	**0.00**
Quarter (lb)	**0.75**		**122.28**			**13.17**		
Total (lb)	**136.21**							

Notes:

lb/day = pounds per day; black shaded cells represent max daily emissions.

Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014; CARB EMFAC2011.

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 On-Road Off-Site Hauling Emissions

	Nitrogen Oxides (lb/day)							
Day	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1	0.00	0.00	6.09	40.57	55.59	2.62		0.00
2	0.00	0.00	6.09		58.03	2.62	1.22	0.00
3		0.00	6.09	33.56	57.20	2.62	1.22	0.00
4	0.00	0.00	6.09	34.78	57.20		1.22	0.00
5	0.00	0.00		32.34	63.28	1.80	1.22	0.00
6	0.00	0.00	6.09	32.34		7.88	1.22	
7	0.00		6.09	15.54	63.28	7.88	1.22	0.00
8	0.00	0.00	5.49	15.54	29.45	7.88		0.00
9	0.00	0.00	6.22		29.45	7.88	1.22	0.00
10		0.00	6.22	27.33	29.45	7.88	1.22	0.00
11	0.00	0.00	6.22	27.33	29.45		1.22	0.00
12	0.00	0.00		27.33	29.45	8.70	1.22	0.00
13	0.00	0.00	36.97	27.33		8.70	8.55	
14	0.00		36.97	33.41	60.84	8.70	8.55	0.00
15	0.00	0.00	34.90	33.41	60.84	2.62		0.00
16	0.00	0.00	34.90		60.84	2.62	13.31	0.00
17		0.00	3.42	12.51	54.76	0.82	13.31	0.00
18	0.00	0.00	3.42	12.51	54.76		13.31	0.00
19	0.00	0.00		12.51	54.76	0.82	13.31	0.00
20	0.00	0.00	5.85	31.65		0.82	13.31	
21	0.00		5.03	31.65	55.59	0.82	13.31	0.00
22	0.00	0.00	46.02	31.65	55.59	0.82		0.00
23	0.00	0.00	46.02		55.59	0.00	13.31	0.00
24		0.00	46.02	25.57	55.59	0.00	13.31	0.00
25	0.00	0.00	5.03	25.57	55.59		13.31	0.00
26	0.00	0.00		59.40	2.62	6.08	13.31	0.00
27	0.00	0.00	18.85	59.40	0.00	6.08	8.55	
28	0.00		71.51	56.81	2.62	6.08	0.00	0.00
29	0.00	5.26	81.43	56.81	2.62	6.08		0.00
30	0.00	6.09	28.78		2.62	6.08	0.00	0.00
31		-----	40.57	56.81	-----	7.30	-----	0.00
Max (lb/day)	**0.00**	**6.09**	**81.43**	**59.40**	**63.28**	**8.70**	**13.31**	**0.00**
Monthly (lb)	**0.00**	**11.35**	**606.37**	**853.63**	**1,137.07**	**122.21**	**170.98**	**0.00**
Quarter (lb)	**11.35**		**2,597.07**			**293.19**		
Total (lb)	**2,901.61**							

	Sulfur Oxides (lb/day)							
Day	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1	0.0000	0.0000	0.0150	0.1037	0.1423	0.0067		0.0000
2	0.0000	0.0000	0.0150		0.1485	0.0067	0.0031	0.0000
3		0.0000	0.0150	0.0857	0.1464	0.0067	0.0031	0.0000
4	0.0000	0.0000	0.0150	0.0888	0.1464		0.0031	0.0000
5	0.0000	0.0000		0.0826	0.1620	0.0046	0.0031	0.0000
6	0.0000	0.0000	0.0150	0.0826		0.0202	0.0031	
7	0.0000		0.0150	0.0396	0.1620	0.0202	0.0031	0.0000
8	0.0000	0.0000	0.0136	0.0396	0.0756	0.0202		0.0000
9	0.0000	0.0000	0.0154		0.0756	0.0202	0.0031	0.0000
10		0.0000	0.0154	0.0697	0.0756	0.0202	0.0031	0.0000
11	0.0000	0.0000	0.0154	0.0697	0.0756		0.0031	0.0000
12	0.0000	0.0000		0.0697	0.0756	0.0223	0.0031	0.0000
13	0.0000	0.0000	0.0944	0.0697		0.0223	0.0220	
14	0.0000		0.0944	0.0852	0.1557	0.0223	0.0220	0.0000
15	0.0000	0.0000	0.0893	0.0852	0.1557	0.0067		0.0000
16	0.0000	0.0000	0.0893		0.1557	0.0067	0.0342	0.0000
17		0.0000	0.0085	0.0318	0.1401	0.0021	0.0342	0.0000
18	0.0000	0.0000	0.0085	0.0318	0.1401		0.0342	0.0000
19	0.0000	0.0000		0.0318	0.1401	0.0021	0.0342	0.0000
20	0.0000	0.0000	0.0147	0.0810		0.0021	0.0342	
21	0.0000		0.0126	0.0810	0.1423	0.0021	0.0342	0.0000
22	0.0000	0.0000	0.1180	0.0810	0.1423	0.0021		0.0000
23	0.0000	0.0000	0.1180		0.1423	0.0000	0.0342	0.0000
24		0.0000	0.1180	0.0654	0.1423	0.0000	0.0342	0.0000
25	0.0000	0.0000	0.0126	0.0654	0.1423		0.0342	0.0000
26	0.0000	0.0000		0.1518	0.0067	0.0155	0.0342	0.0000
27	0.0000	0.0000	0.0482	0.1518	0.0000	0.0155	0.0220	
28	0.0000		0.1835	0.1454	0.0067	0.0155	0.0000	0.0000
29	0.0000	0.0129	0.2090	0.1454	0.0067	0.0155		0.0000
30	0.0000	0.0150	0.0737		0.0067	0.0155	0.0000	0.0000
31		-----	0.1037	0.1454	-----	0.0187	-----	0.0000
Max (lb/day)	**0.0000**	**0.0150**	**0.2090**	**0.1518**	**0.1620**	**0.0223**	**0.0342**	**0.0000**
Monthly (lb)	**0.0000**	**0.0279**	**1.5462**	**2.1807**	**2.9113**	**0.3131**	**0.4394**	**0.0000**
Quarter (lb)	**0.0279**		**6.6382**			**0.7525**		
Total (lb)	**7.4187**							

Notes:

lb/day = pounds per day; black shaded cells represent max daily emissions.

Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014; CARB EMFAC2011.

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 On-Road Off-Site Hauling Emissions

	Respirable Particulate Matter (lb/day)							
Day	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1	0.00	0.00	2.41	18.08	24.85	1.19		0.00
2	0.00	0.00	2.41		25.96	1.19	0.55	0.00
3		0.00	2.41	14.91	25.59	1.19	0.55	0.00
4	0.00	0.00	2.41	15.46	25.59		0.55	0.00
5	0.00	0.00		14.35	28.30	0.82	0.55	0.00
6	0.00	0.00	2.41	14.35		3.53	0.55	
7	0.00		2.41	6.87	28.30	3.53	0.55	0.00
8	0.00	0.00	2.18	6.87	13.31	3.53		0.00
9	0.00	0.00	2.46		13.31	3.53	0.55	0.00
10		0.00	2.46	12.08	13.31	3.53	0.55	0.00
11	0.00	0.00	2.46	12.08	13.31		0.55	0.00
12	0.00	0.00		12.08	13.31	3.91	0.55	0.00
13	0.00	0.00	16.40	12.08		3.91	3.88	
14	0.00		16.40	14.79	27.20	3.91	3.88	0.00
15	0.00	0.00	15.60	14.79	27.20	1.19		0.00
16	0.00	0.00	15.60		27.20	1.19	6.04	0.00
17		0.00	1.38	5.46	24.48	0.37	6.04	0.00
18	0.00	0.00	1.38	5.46	24.48		6.04	0.00
19	0.00	0.00		5.46	24.48	0.37	6.04	0.00
20	0.00	0.00	2.48	14.14		0.37	6.04	
21	0.00		2.11	14.14	24.85	0.37	6.04	0.00
22	0.00	0.00	20.70	14.14	24.85	0.37		0.00
23	0.00	0.00	20.70		24.85	0.00	6.04	0.00
24		0.00	20.70	11.42	24.85	0.00	6.04	0.00
25	0.00	0.00	2.11	11.42	24.85		6.04	0.00
26	0.00	0.00		26.41	1.19	2.72	6.04	0.00
27	0.00	0.00	8.38	26.41	0.00	2.72	3.88	
28	0.00		32.25	25.41	1.19	2.72	0.00	0.00
29	0.00	2.03	36.75	25.41	1.19	2.72		0.00
30	0.00	2.41	12.88		1.19	2.72	0.00	0.00
31		-----	18.08	25.41	-----	3.27	-----	0.00
Max (lb/day)	**0.00**	**2.41**	**36.75**	**26.41**	**28.30**	**3.91**	**6.04**	**0.00**
Monthly (lb)	**0.00**	**4.44**	**267.86**	**379.46**	**509.21**	**54.85**	**77.53**	**0.00**
Quarter (lb)	**4.44**		**1,156.54**			**132.39**		
Total (lb)	**1,293.36**							

	Fine Particulate Matter (lb/day)							
Day	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1	0.00	0.00	0.61	4.55	6.26	0.30		0.00
2	0.00	0.00	0.61		6.53	0.30	0.14	0.00
3		0.00	0.61	3.75	6.44	0.30	0.14	0.00
4	0.00	0.00	0.61	3.89	6.44		0.14	0.00
5	0.00	0.00		3.61	7.12	0.21	0.14	0.00
6	0.00	0.00	0.61	3.61		0.89	0.14	
7	0.00		0.61	1.73	7.12	0.89	0.14	0.00
8	0.00	0.00	0.55	1.73	3.35	0.89		0.00
9	0.00	0.00	0.62		3.35	0.89	0.14	0.00
10		0.00	0.62	3.04	3.35	0.89	0.14	0.00
11	0.00	0.00	0.62	3.04	3.35		0.14	0.00
12	0.00	0.00		3.04	3.35	0.98	0.14	0.00
13	0.00	0.00	4.13	3.04		0.98	0.98	
14	0.00		4.13	3.72	6.85	0.98	0.98	0.00
15	0.00	0.00	3.93	3.72	6.85	0.30		0.00
16	0.00	0.00	3.93		6.85	0.30	1.52	0.00
17		0.00	0.35	1.37	6.16	0.09	1.52	0.00
18	0.00	0.00	0.35	1.37	6.16		1.52	0.00
19	0.00	0.00		1.37	6.16	0.09	1.52	0.00
20	0.00	0.00	0.62	3.56		0.09	1.52	
21	0.00		0.53	3.56	6.26	0.09	1.52	0.00
22	0.00	0.00	5.21	3.56	6.26	0.09		0.00
23	0.00	0.00	5.21		6.26	0.00	1.52	0.00
24		0.00	5.21	2.88	6.26	0.00	1.52	0.00
25	0.00	0.00	0.53	2.88	6.26		1.52	0.00
26	0.00	0.00		6.65	0.30	0.68	1.52	0.00
27	0.00	0.00	2.11	6.65	0.00	0.68	0.98	
28	0.00		8.12	6.40	0.30	0.68	0.00	0.00
29	0.00	0.51	9.25	6.40	0.30	0.68		0.00
30	0.00	0.61	3.24		0.30	0.68	0.00	0.00
31		-----	4.55	6.40	-----	0.82	-----	0.00
Max (lb/day)	**0.00**	**0.61**	**9.25**	**6.65**	**7.12**	**0.98**	**1.52**	**0.00**
Monthly (lb)	**0.00**	**1.12**	**67.43**	**95.53**	**128.19**	**13.81**	**19.52**	**0.00**
Quarter (lb)	**1.12**		**291.15**			**33.33**		
Total (lb)	**325.59**							

Notes:

lb/day = pounds per day; black shaded cells represent max daily emissions.

Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014; CARB EMFAC2011.

Attachment B.1

Construction – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- Criteria Pollutants – 2015 Pavement Crushing Emissions

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Criteria Pollutants - 2015 Pavement Crushing Emissions

Runway material to be crushed:	Cubic Feet	Pavement	Tons
Runway 6L-24R Keel Replacement	847,703	Concrete	61,458
Taxiway AA Pavement Rehab & Hold Bar Rotation	182,400	Concrete	13,224
Infield Vehicle Service Roads	30,011	Asphalt	2,176
North Perimeter Vehicle Service Road	32,354	Asphalt	2,346

Asphalt density (lbs/cf):	145
Concrete density (lbs/cf):	145

Sources: National Asphalt Association and Portland Cement Association

Average throughput for crusher:

Crushing of concrete:	175	tons/hour
Crushing of asphalt:	300	tons/hour

Source: HNTB Corporation, based on conversations with crushing contractors

Crusher Operating Hours (per Year)

Runway 6L-24R Keel Replacement	351
Taxiway AA Pavement Rehab & Hold Bar Rotation	76
Infield Vehicle Service Roads	7
North Perimeter Vehicle Service Road	8

Crusher Operating Emissions	
Ref. Model	CAT 325L
Fuel	Diesel
Horsepower	168
Load Factor	0.415
Usage Factor	0.459
Emissions Tier	Tier 4

Emission Factors (lb/hp-hr)	
CO	0.00716
ROG	0.00031
Nox	0.00551
Sox	0.00001
PM10	0.00003
PM2.5	0.00003

Fugitive Dust Emission Factors (lb/ton):

Source	$PM_{10}/PM_{2.5}$
Tertiary Crushing (controlled)	0.00054
Fines Crushing (controlled)	0.0012
Screening (controlled)	0.00074
Fines Screening (controlled)	0.0022
Conveyer Transfer Point (controlled)	0.000046
Total	0.004726 lb/ton

Source: AP-42 Table 11.19.2-2 Emission Factors For Crushed Stone Processing Operations

Emissions (lb/day)	CO	ROG	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Runway 6L-24R Keel Replacement	1.5494	0.0667	1.1916	0.0031	5.5928	5.5922
Taxiway AA Pavement Rehab & Hold Bar Rotation	1.2383	0.0533	0.9524	0.0024	4.4698	4.4693
Infield Vehicle Service Roads	0.2080	0.0090	0.1600	0.0004	1.2863	1.2862
North Perimeter Vehicle Service Road	0.2563	0.0110	0.1971	0.0005	1.5848	1.5847

Notes:

g/mi = grams per mile; g/trip = grams per trip; lb/mi = pounds per mile.

Source: Ricondo & Associates, Inc., 2014, based on methodologies included in AP-42 and data from HNTB for the LAX SAIP EIR and the sources referenced in the table.

Attachment B.1

Construction – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- Fugitive Dust Emission Factors

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Fugitive Dust Emission Factors

General

lb/VMT = pounds per vehicle mile traveled
lb/hr = pounds per hour
Haul truck capacity estimated based on Freightliner 120SD (Chassis weight: 17,400 lb, Gross Vehicle Weight Rating = 66,000 lb)
Soil weight = 2,700 lb/yd3 (Assumption: Loose, wet excavated earth. Weight varies with moisture content, compaction, etc.)
Source: Caterpillar Performance Handbook (Edition 30, October 1999)

Mitigation: watering three times daily (per SCAQMD Rule 403)
Potential modeled emissions reduction: 61% PM_{10} and 61% $PM_{2.5}$

Road Dust Emission Factors

Unpaved Roads
Applies to all on-road vehicles operating on the construction site.

Equation 1b from USEPA, AP-42, Fifth Edition, Volume I, Chapter 13.2.2 - Unpaved Roads, November 2006:
Particulate emissions (lb/VMT) = $(k (s / 12)^a \times (S / 30)^d) / (M / 0.5)^c) - C)$

Where:

k_{PM10} =	1.8	PM10 particle size multiplier (from AP-42 Table 13.2.2-2)
$k_{PM2.5}$ =	0.18	PM2.5 particle size multiplier (from AP-42 Table 13.2.2-2)
s =	4.3%	surface material silt content (%)
S =	15	mean vehicle speed (mph)
a =	1	empirical constant (from AP-42 Table 13.2.2-2)
d =	0.5	empirical constant (from AP-42 Table 13.2.2-2)
M =	0.5%	% surface material moisture content (from LAX West Aircraft Maintenance Area Project Draft EIR)
c =	0.2	empirical constant (from AP-42 Table 13.2.2-2)
C_{PM10} =	0.00047	emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear (from AP-42 Table 13.2.2-3)
$C_{PM2.5}$ =	0.00036	emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear (from AP-42 Table 13.2.2-3)

		Mitigation	
PM10 unpaved road factor (lb/VMT):	0.0110	61%	0.0043
PM2.5 unpaved road factor (lb/VMT):	0.0008	61%	0.0003

Multiply by speed (mph) to derive lb/hr:

		Mitigation	
PM10 unpaved road factor (lb/hr):	0.1648	61%	0.0643
PM2.5 unpaved road factor (lb/hr):	0.0118	61%	0.0046

Paved Roads
Applies to all on-road, off-site vehicles

Equation 1 from USEPA, AP-42, Fifth Edition, Volume I, Chapter 13.2.1 - Paved Roads, January 2011:
Particulate emissions (lb/VMT) = $k (sL)^{0.91} \times (W)^{1.02}$

Where:

k_{PM10} =	0.0022	PM10 particle size multiplier (from AP-42 Table 13.2.1-1)
$k_{PM2.5}$ =	0.00054	PM2.5 particle size multiplier (from AP-42 Table 13.2.1-1)
sL =	0.1	road surface silt loading in g/m^2 (from LAX West Aircraft Maintenance Area Project Draft EIR)
W =	[Varies]	average fleet vehicle weight (tons) (CARB uses 2.4 tons as a fleet average vehicle weight factor)

Vehicle	Weight (tons)	PM10 (lb/VMT)	PM2.5 (lb/VMT)
Employee vehicle	2.4	0.0007	0.0002
Haul truck	22.2	0.0064	0.0016

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Fugitive Dust Emission Factors

Material Handling/Drop Operations

Applies to construction equipment involved in excavation/loading/unloading operations.

Specified equation from USEPA, AP-42, Fifth Edition, Volume I, Chapter 13.2.4 - Aggregate Handling and Storage Piles, November 2006:

Particulate emissions (lb/ton) = $k\ (0.0032) \times (U / 5)^{1.3} / (M / 2)^{1.4}$

Where:

k_{PM10} =	0.35	PM10 particle size multiplier (from AP-42 Chapter 13.2.4)
$k_{PM2.5}$ =	0.053	PM2.5 particle size multiplier (from AP-42 Chapter 13.2.4)
u =	6.2	mean wind speed in mph (from EPA Tanks v4.0. avg. wind speed for Los Angeles County)
M =	12	% material moisture content (default value used in CalEEMod 2013.2.2)

Equipment Specs/Performance	Backhoe	Excavator	Loader
Soil Capacity (yd3)	1	1.5	7.8
Cycle Time (min)	0.5	0.8	2.2
Number of Cycles/hr	120	74	27
Bucket Fill Factor	90%	90%	90%
Volume Moved (yd3/hour)	108	100	190
PM10 Emissions (lb/ton)	0.00012	0.00012	0.00012
PM2.5 Emissions (lb/ton)	0.00002	0.00002	0.00002
Material Handling Rate (ton/hr)	146	135	256
Mitigation	61%	61%	61%
PM10 Emissions (lb/hr)	0.007	0.006	0.012
PM2.5 Emissions (lb/hr)	0.001	0.001	0.002

Soil weight = 2,700 lb/yd3 (Assumption: Loose, wet excavated earth. Weight varies with moisture content, compaction, etc.)
Source: Caterpillar Performance Handbook (Edition 30, October 1999)

Scraping

Scraper emissions based on USEPA, AP-42, Fifth Edition, Volume I, Chapter 13.2.3 - Heavy Construction Operations, January 1995, Table 13.2.3-1
Cycle time = load time (5 minutes) + maneuver and dump time (5 minutes) + travel time (10 minutes), per MARRS Services, 30 Jul 2002.

Equation: Scraper emissions (lb/hr) = k * TSP * rate

Where:

k_{PM10} =	0.35	PM10 particle size multiplier (from AP-42 Chapter 13.2.4)
$k_{PM2.5}$ =	0.053	PM2.5 particle size multiplier (from AP-42 Chapter 13.2.4)
TSP =	0.058	emission rate for removing topsoil in lb TSP/ton (from AP-42 Table 11.9-4)
rate =	[Varies]	excavation rate in tons/hr

Equipment Specs/Performance	Scraper
Soil Capacity (yd3)	17
Cycle Time (min)	20
Number of Cycles/hr	3
Volume Moved (yd3/hour)	51
Excavation rate (ton/hr)	68.9
Mitigation	61%
Scraping PM10 Emissions (lb/hr)	0.545
Scraping PM2.5 Emissions (lb/hr)	0.083

Soil weight = 2,700 lb/yd3 (Assumption: Loose, wet excavated earth. Weight varies with moisture content, compaction, etc.)
Source: Caterpillar Performance Handbook (Edition 30, October 1999)

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Fugitive Dust Emission Factors

Grading

Equation from USEPA, AP-42, Fifth Edition, Volume I, Chapter 11.9 - Western Surface Coal Mining, July 1998, Table 11.9-1

PM10 Emissions (lb/VMT) = 0.60 x 0.051 $(S)^2$

PM2.5 Emissions (lb/VMT) = 0.031 x 0.04 $(S)^{2.5}$

Where:

S = 7.1 mean vehicle speed in mph (AP-42 default value is 7.1 mph)

PM10 Emissions (lb/VMT)	1.54
PM2.5 Emissions (lb/VMT)	0.17
Mitigation	61%

Construction Components	Acres	VMT
Runway 6L-24R Keel Replacement	13.9005	9.5566
Taxiway AA Pavement Rehab & Hold Bar Rotation	2.6446	1.8182
Argo Ditch Construction	0.6789	0.4668
Infield Vehicle Service Roads	2.7672	1.9024
North Perimeter Vehicle Service Road	2.7672	1.9024

Source: CalEEMod

VMT = As/Wb x 43,560(sqft/acre) / 5,280(ft/mile)

Where:

As = varies acreage of grading site (acre)

Wb = 12 blade width (ft) CalEEMod default

Bulldozing

Equation from USEPA, AP-42, Fifth Edition, Volume I, Chapter 11.9 - Western Surface Coal Mining, July 1998, Table 11.9-1

Assumes overburden material (the earth between the topsoil and the coal seam (USEPA AP-42)

PM10 Emissions (lb/hr) = 0.75 x $(1.0\ (s)^{1.5} / M^{1.4})$

PM10 Emissions (lb/hr) = 0.105 x $(5.7\ (s)^{1.2} / M^{1.3})$

Where:

s = 6.9 % surface material silt content (value for overburden material from AP-42 Table 11.9-3)

M = 7.9 % material moisture content (value for overburden material from AP-42 Table 11.9-3)

Mitigation	61%
PM10 Emissions (lb/hr)	0.29
PM2.5 Emissions (lb/hr)	0.16

Compactors and Miscellaneous

Specified equation from USEPA, AP-42, Fifth Edition, Volume I, Chapter 13.2.4 - Aggregate Handling and Storage Piles, November 2006 (same as dozing):

Equation from USEPA, AP-42, Fifth Edition, Volume I, Chapter 11.9 - Western Surface Coal Mining, July 1998, Table 11.9-1

Assumes overburden material (the earth between the topsoil and the coal seam (USEPA AP-42)

PM10 Emissions (lb/hr) = 0.75 x $(1.0\ (s)^{1.5} / M^{1.4})$

PM10 Emissions (lb/hr) = 0.105 x $(5.7\ (s)^{1.2} / M^{1.3})$

Where:

s = 6.9 % surface material silt content (value for overburden material from AP-42 Table 11.9-3)

M = 7.9 % material moisture content (value for overburden material from AP-42 Table 11.9-3)

Mitigation	61%
PM10 Emissions (lb/hr)	0.29
PM2.5 Emissions (lb/hr)	0.16

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Fugitive Dust Emission Factors

Compilation and Application of Fugitive Dust Emission Factors to Construction Equipment

Off-Road Equipment	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)
Asphalt Paver, 130 HP	0.000	0.000
Backhoe Loader, 48 HP	0.012	0.002
Belt Placer	0.000	0.000
Compactor, Roller,Vibratory, 25 T	0.294	0.161
Concrete Paver	0.000	0.000
Concrete Pump	0.000	0.000
Concrete Saw	0.000	0.000
Cure/Texture Rig	0.000	0.000
Dozer, 200 HP	0.294	0.161
Dozer, 300 HP	0.294	0.161
FE Loader, W.M., 1.5 CY	0.012	0.002
FE Loader, W.M., 4 CY	0.012	0.002
Generator	0.000	0.000
Grader, 30,000 lbs	0.000	0.000
Heating Kettle, 115 Gallon	0.000	0.000
Hyd. Crane 25 tons	0.000	0.000
Hyd. Excavator, 1 C.Y.	0.006	0.001
Hyd. Hammer (1200 lbs)	0.133	0.016
Paint Thermo. Striper, TM	0.000	0.000
Pavt. Rem. Bucket	0.000	0.000
Pvmt. Profiler, 750 HP	0.000	0.000
Roller, Pneum., Whl., 12 Ton	0.294	0.161
S.P. Crane, 4x4, 5 Ton	0.000	0.000
Scraper, Towed, 10 C.Y.	0.545	0.083
Tandem Roller, 10 Ton	0.294	0.161
Vibrator	0.000	0.000

Fugitive Dust Emission Factors for On-Road Off-Site Vehicles

	PM_{10} lb/mi	$PM_{2.5}$ lb/mi
Employee vehicle	0.0007	0.0002
Haul truck	0.0064	0.0016

On-Road Equipment	PM_{10} (lb/mi)	$PM_{2.5}$ (lb/mi)
Flatbed Truck	0.0043	0.0003
Pickup Truck	0.0043	0.0003
Road Sweeper	0.0043	0.0003
Transit Mixer	0.0043	0.0003
Truck Tractor	0.0043	0.0003
Water Truck	0.0043	0.0003

Attachment B.1

Construction – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- Asphalt Paving and Painting Fugitive Emissions

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Asphalt Paving and Painting Fugitive Emissions

Asphalt Paving Emissions

Asphalt Paving Emission Factor (lb/acre) 2.62

	Area (sf)	Acres	ROG (lb)	Days	ROG (lb/day)
Infield Vehicle Service Roads	74,043	1.70	4.4535	4	1.11337336
North Perimeter Vehicle Service Road	87,957	2.02	5.2904	10	0.529038427
Total			**0.0049**		

Paint Emissions

Emission Factor (lb/sf) 0.002316
Calculation from Appendix A of the CalEEMod User's Guide, Feb 2011.

	Paint Area (sf)	ROG (lb)	Days	ROG (lb/day)
Runway 6L-24R Keel Replacement	25,000	57.8959	20	2.894793196
Taxiway AA Pavement Rehab	2,500	5.7896	20	0.28947932
Infield Vehicle Service Roads	616	1.4266	4	0.356638522
North Perimeter Vehicle Service Road	616	1.4266	4	0.356638522
Total		**66.5386**		

Notes:
lb = pounds; sf = square feet.

Source: Ricondo & Associates, Inc., 2014.

Attachment B.1

Construction – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- GHGs – 2015 Construction Emissions Summary

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Greenhouse Gases - 2015 Construction Emissions Summary

	Carbon Dioxide Equivalent (CO_{2e}) Emissions (lb/day)[1]							
Day	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1	0	1,519	126,015	81,160	36,238	15,392		1,336
2	0	1,519	126,015		37,853	15,392	17,806	1,336
3		1,519	125,302	82,691	31,474	15,509	17,806	1,336
4	0	1,519	125,302	78,781	31,474		19,142	0
5	0	1,519		77,896	35,538	14,741	19,142	0
6	0	1,519	125,302	73,857		18,805	18,904	
7	0		125,302	69,751	32,454	20,141	18,904	0
8	0	1,519	120,917	69,751	23,056	20,141		0
9	0	1,519	127,010		18,218	20,141	5,978	0
10		1,519	130,094	76,120	40,140	20,382	6,215	0
11	0	1,519	130,094	76,362	40,381		6,215	0
12	0	1,519		76,362	40,619	20,108	5,978	0
13	0	1,519	136,853	76,362		19,867	8,940	
14	0		136,853	80,426	47,076	20,108	8,940	0
15	0	1,519	79,599	80,426	47,318	16,044		0
16	0	1,519	79,599		47,076	28,536	13,669	0
17		1,519	64,026	73,829	30,887	15,479	13,432	0
18	1,519	1,519	64,026	73,829	30,887		13,432	238
19	1,519	1,519		74,070	30,887	15,479	13,432	238
20	1,519	1,519	74,530	81,307		15,238	13,432	
21	1,519		75,393	81,307	31,417	15,238	13,432	238
22	1,519	1,519	83,783	81,307	31,417	15,238		238
23	1,519	1,519	80,699		31,176	15,633	17,648	1,089
24		1,519	88,677	77,480	30,325	15,511	17,925	1,089
25	1,519	1,519	80,379	77,480	30,938		15,044	1,089
26	1,519	1,519		85,790	15,630	19,334	15,044	1,089
27	1,519	951	90,251	85,790	0	19,334	9,464	
28	1,519		98,564	38,497	15,630	19,334	1,573	238
29	1,519	124,974	95,853	38,497	15,630	19,334		238
30	1,519	126,015	81,745		15,630	19,334	1,336	0
31		-----	84,244	38,497	-----	22,363	-----	0
Max (lb/day)	**1,519**	**126,015**	**136,853**	**85,790**	**47,318**	**28,536**	**19,142**	**1,336**
Total (lb)	**18,229**	**286,879**	**2,756,425**	**1,907,624**	**819,368**	**492,156**	**312,831**	**9,787**
Quarter (lb)	**305,108**		**5,483,417**			**814,774**		
Short Tons	**3,302**							

CO_{2e} Emissions (metric tons per year)	**2,995**
30-year amortization -->	**99.84**

Notes:

lb/day = pounds per day; black shaded cells represent max daily emissions.

Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014; URS Corporation, 2013.

Attachment B.1

Construction – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- GHGs – 2015 Construction Crew Emissions Summary

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Greenhouse Gases - 2015 Construction Crew Emissions Summary

Crew	Quantity	Emissions (lb/day) CO_{2e}
2 Carp		241.4529
Carpenters	2	
Pickup Trucks, 3/4 Ton	0.5	7.6519
Employees	2	
Employee Vehicles	69.57	233.8011
2 Clab		237.6270
Common Laborers	2	
Pickup Trucks, 3/4 Ton	0.25	3.8259
Employees	2	
Employee Vehicles	69.57	233.8011
2 Rodmen		237.6270
Rodman	2	
Pickup Trucks, 3/4 Ton	0.25	3.8259
Employees	2	
Employee Vehicles	69.57	233.8011
B-6		528.4403
Laborers	2	
Equipment Oper (Light)	1	
Pickup Trucks, 3/4 Ton	0.25	3.8259
Backhoe Loader, 48 HP	1	173.9128
Employees	3	
Employee Vehicles	104.35	350.7016
B-10M		1,335.5788
Equipment Oper. (Med.)	1	
Laborers	0.5	
Pickup Trucks, 3/4 Ton	0.25	3.8259
Dozer, 300 HP	1	1,156.4021
Employees	1.5	
Employee Vehicles	52.17	175.3508
B-11A		1,394.0291
Laborers	1	
Equipment Oper. (Med.)	1	
Pickup Trucks, 3/4 Ton	0.25	3.8259
Dozer, 200 HP	1	1,156.4021
Employees	2	
Employee Vehicles	69.57	233.8011
B-12A		951.4907
Equipment Oper (Crane)	1	
Laborers	1	

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Greenhouse Gases - 2015 Construction Crew Emissions Summary

Crew	Quantity	Emissions (lb/day) CO_{2e}
Pickup Trucks, 3/4 Ton	0.25	3.8259
Hyd. Excavator, 1 C.Y.	1	713.8637
Employees	2	
Employee Vehicles	69.57	233.8011
B-21		549.0647
Labor Foreman	1	
Laborers	1	
Skilled Worker	1	
Equipment Oper (Crane)	0.5	
Pickup Trucks, 3/4 Ton	0.25	3.8259
S.P. Crane, 4x4, 5 Ton	0.5	136.0869
Employees	3.5	
Employee Vehicles	121.74	409.1518
B-25		2,157.7174
Labor Foreman	1	
Laborers	7	
Equipment Oper (Med.)	3	
Asphalt Paver, 130 HP	1	411.5987
Pickup Trucks, 3/4 Ton	0.25	3.8259
Tandem Roller, 10 Ton	1	228.1935
Roller, Pneum., Whl., 12 Ton	1	228.1935
Employees	11	
Employee Vehicles	382.61	1,285.9058
B-26A		3,103.9602
Labor Foreman	1	
Laborers	6	
Equipment Oper (Med.)	2	
Rodman	1	
Cement Finisher	1	
Grader, 30,000 lbs	1	629.7939
Pickup Trucks, 3/4 Ton	0.25	3.8259
Concrete Paver	1	689.3326
Belt Placer	1	355.2630
Cure/Texture Rig	1	124.5409
Concrete Saw	1	15.2981
Employees	11	
Employee Vehicles	382.61	1,285.9058
B-33B		3,084.2077
Equipment Oper. (Med.)	1.25	
Laborers	0.5	
Dozer, 300 HP	1.25	1,445.5026

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Greenhouse Gases - 2015 Construction Crew Emissions Summary

Crew	Quantity	Emissions (lb/day) CO_{2e}
Pickup Trucks, 3/4 Ton	0.25	3.8259
Scraper, Towed, 10 C.Y.	1	1,430.3032
Employees	1.75	
Employee Vehicles	60.87	204.5759
B-34C		131.8480
Truck Driver (heavy)	1	
Truck Tractor, 6x4, 380 H.P.	1	11.1216
Dump Trailer, 16.5 CY	1	0.0000
Pickup Trucks, 3/4 Ton	0.25	3.8259
Employees	1	
Employee Vehicles	34.78	116.9005
B-36C		2,881.0479
Labor Foreman	1	
Equipment Oper (Med.)	3	
Truck Driver (heavy)	1	
Grader, 30,000 lbs	1	629.7939
Dozer, 300 HP	1	1,156.4021
Compactor, Roller,Vibratory, 25 Ton	1	495.4018
Truck Tractor, 6x4, 450 HP	1	11.1216
Pickup Trucks, 3/4 Ton	0.25	3.8259
Water Tank Trailer, 5000 Gal	1	0.0000
Employees	5	
Employee Vehicles	173.91	584.5026
B-38		3,051.8279
Labor Foreman (outside)	1	
Laborers	2	
Equipment Oper. (Light)	1	
Equipment Oper. (Med.)	1	
Backhoe Loader, 48 HP	1	173.9128
Pickup Trucks, 3/4 Ton	0.25	3.8259
Hyd. Hammer (1200 lbs)	1	531.1596
FE Loader, W.M., 4 CY	1	1,044.5633
Pavt. Rem. Bucket	1	713.8637
Employees	5	
Employee Vehicles	173.91	584.5026
B-45		276.5525
Equipment Oper (Med.)	1	
Truck Driver (heavy)	1	
Dist. Tanker, 3000 Gallon	1	27.8039
Truck Tractor, 6x4, 380 H.P.	1	11.1216
Pickup Trucks, 3/4 Ton	0.25	3.8259

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Greenhouse Gases - 2015 Construction Crew Emissions Summary

Crew	Quantity	Emissions (lb/day) CO_{2e}
Employees	2	
Employee Vehicles	69.57	233.8011
B-71		2,642.7209
Labor Foreman	1	
Laborers	3	
Equipment Oper (Med.)	3	
Pvmt. Profiler, 750 HP	1	1,332.2363
Pickup Trucks, 3/4 Ton	0.25	3.8259
Road Sweeper, S.P., 8' wide	1	27.8039
FE Loader, W.M., 1.5 CY	1	460.5511
Employees	7	
Employee Vehicles	243.48	818.3037
B-79		851.1083
Labor Foreman	1	
Laborers	3	
Truck Driver (light)	1	
Paint Thermo. Striper, TM	1	77.8405
Heating Kettle, 115 Gallon	1	147.0362
Flatbed Truck, Gas, 3 Ton	1	11.1216
Pickup Trucks, 3/4 Ton	2	30.6075
Employees	5	
Employee Vehicles	173.91	584.5026
B-89		260.2207
Equipment Oper (Light)	1	
Truck Driver (light)	1	
Flatbed Truck, Gas, 3 Ton	1	11.1216
Concrete Saw	1	15.2981
Water Tank, 65 Gal	1	0.0000
Employees	2	
Employee Vehicles	69.57	233.8011
Electrical (Estimated)		967.6033
Electrician Foreman	1	
Electrician	3	
Helpers	2	
Equipment Oper (Crane)	1	
S.P. Crane, 4x4, 5 Ton	0.5	136.0869
Flatbed Truck	0.5	5.5608
Pickup Trucks, 3/4 Ton	0.5	7.6519
Cable Pulling Rig	0.5	0.0000
Tensioning Rig	0.5	0.0000
Cable Trailer	1	0.0000

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Greenhouse Gases - 2015 Construction Crew Emissions Summary

Crew	Quantity	Emissions (lb/day) CO_{2e}
Employees	7	
Employee Vehicles	243.48	818.3037
Foundation (Estimated)		2,458.3693
Carpenter Foreman	1	
Carpenters	6	
Rodmen	2	
Laborers	2	
Truck Driver (heavy)	3	
Truckmixer, 10 CY	6	66.7294
Concrete Pump	1	515.1314
Generator	1	215.7187
Vibrator	4	16.5306
Pickup Trucks, 3/4 Ton	0.5	7.6519
Employees	14	
Employee Vehicles	486.96	1,636.6074
Setup (Estimated)		822.1030
Labor	4	
Equipment Oper (Crane)	1	
Hyd. Crane 25 tons	0.25	70.7652
Grader, 30,000 lbs	0.25	157.4485
Flatbed Truck, Gas, 3 Ton	0.5	5.5608
Pickup Trucks, 3/4 Ton	0.25	3.8259
Employees	5	
Employee Vehicles	173.91	584.5026

Notes:

Quantities for employee vehicles is vehicle miles traveled (VMT), calculated as the number of employees divided by a carpool factor of 1.15 employees per vehicle and multiplied by a roundtrip distance of 40 miles.

Emissions quantified using data and methodologies persented in this appendix and associated attachments.

Sources: Ricondo & Associates, 2014; URS Corporation, 2012 and MARRS Services, Inc., 2012 (crew equipment, employees, and quantities).

Attachment B.1

Construction – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- GHGs – On-Site Equipment Emission Factors

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Greenhouse Gases - On-Site Equipment Emission Factors

Off-Road On-Site Equipment	OFFROAD2007 Category	OFFROAD2007 Emission Factor (lb/hp-hr) - 2015[1]	Fully Loaded Emission Factor (lb/day) - 2015[2]
		CO_{2e}	CO_{2e}
Asphalt Paver, 130 HP	Pavers	1.2552	411.5987
Backhoe Loader, 48 HP	Tractors/Loaders/Backhoes	1.2555	173.9128
Belt Placer	Paving Equipment	1.2551	355.2630
Compactor, Roller,Vibratory, 25 Ton	Rollers	1.2545	495.4018
Concrete Paver	Pavers	1.2550	689.3326
Concrete Pump	Paving Equipment	1.2551	515.1314
Concrete Saw	Concrete/Industrial Saws	1.2558	15.2981
Cure/Texture Rig	Paving Equipment	1.2571	124.5409
Dozer, 200 HP	Rubber Tired Dozers	1.2555	1,156.4021
Dozer, 300 HP	Rubber Tired Dozers	1.2555	1,156.4021
FE Loader, W.M., 1.5 CY	Tractors/Loaders/Backhoes	1.2544	460.5511
FE Loader, W.M., 4 CY	Tractors/Loaders/Backhoes	1.2543	1,044.5633
Generator	Generator Sets	1.2540	215.7187
Grader, 30,000 lbs	Graders	1.2546	629.7939
Heating Kettle, 115 Gallon	Other Construction Equipment	1.2553	147.0362
Hyd. Crane 25 tons	Cranes	1.2556	283.0608
Hyd. Excavator, 1 C.Y.	Excavators	1.2546	713.8637
Hyd. Hammer (1200 lbs)	Crushing/Proc. Equipment	1.2545	531.1596
Paint Thermo. Striper, TM	Surfacing Equipment	1.2560	77.8405
Pavt. Rem. Bucket	Excavators	1.2546	713.8637
Pvmt. Profiler, 750 HP	Paving Equipment	1.2551	1,332.2363
Roller, Pneum., Whl., 12 Ton	Rollers	1.2553	228.1935
S.P. Crane, 4x4, 5 Ton	Cranes	1.2556	272.1738
Scraper, Towed, 10 C.Y.	Scrapers	1.2550	1,430.3032
Tandem Roller, 10 Ton	Rollers	1.2553	228.1935
Vibrator	Plate Compactors	1.2556	4.1327

On-Road On-Site Equipment	EMFAC2011 Category	EMFAC2011 Emission Factor (g/veh-mi) - 2015[3]	Fully Loaded Emission Factor (lb/day) - 2015[4]
		CO_{2e}	CO_{2e}
Flatbed Truck	T7 single construction	1.3604	11.1216
Pickup Truck	LHD2 (light-heavy-duty truck)	11.9438	15.3037
Road Sweeper	T7 single construction	1.3604	27.8039
Transit Mixer	T7 single construction	1.3604	11.1216
Truck Tractor	T7 single construction	1.3604	11.1216
Water Truck	T7 single construction	1.3604	11.1216

Notes:

CO2e = carbon dioxide equivalent; lb/hp-hr = pounds per horsepower-hour; lb/day = pounds per day; g/veh-mi = grams per vehicle-mile.

[1] Emission factors as derived from OFFROAD2007. OFFROAD2007 provides emission factors for carbon dioxide (CO_2) and methane (CH_4). The CO_{2e} emission factor was calculated by adding the CO_2 emission factor to the product of the CH_4 emission factor and its global warming potential factor of 21.

[2] Fully loaded emission factors in pounds per day derived by multiplying OFFROAD2007 emission factor by equipment horsepower, load factor, and efficiency factor, assuming 10 hours per day.

[3] CO_2 emission factors obtained from EMFAC2011 and used in this analysis assume Pavley-I and Low Carbon Fuel Standard (LCFS) benefits. Emission factors for CH_4 and nitrous oxide (N_2O) were derived in accordance with CARB guidance. The emission factors for CO_2, CH_4, and N_2O include running and idling emissions for both gasoline and diesel vehicles. For gasoline vehicles, starting emissions are also included, as are evaporative emissions (diurnal, hot soak, running, resting) for the CH_4 emission factor. Factors were derived in g/mile and converted to g/hr assuming an on-site speed of 20 mph. An emission factor for CO_{2e} was calculated by adding the CO2 emission factor to the product of the CH_4 emission factor and its global warming potential of 21, and to the product of the N_2O emission factor and its global warming potential of 310.

[4] Fully loaded emission factors in pounds per day derived by converting EMFAC2011 emission factor to pounds and multiplying by efficiency factor and miles traveled per day per vehicle.

Source: Ricondo & Associates, 2014; CARB OFFROAD2007; CARB EMFAC2011.

Attachment B.1

Construction – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- GHGs – 2015 On-Site Equipment Emissions

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Greenhouse Gases - 2015 On-Site Equipment Emissions

	Carbon Dioxide Equivalent (CO2e) -- Off-Road On-Site Emissions (lb/day)							
Day	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	806	97,144	56,285	5,960	2,130		1,156
2	0	806	97,144		6,096	2,130	9,635	1,156
3		806	97,144	54,138	5,369	2,041	9,635	1,156
4	0	806	97,144	48,659	5,369		10,791	0
5	0	806		48,659	6,116	1,905	10,791	0
6	0	806	97,144	46,923		2,653	10,791	
7	0		97,144	46,884	3,240	3,809	10,791	0
8	0	806	93,611	46,884	2,976	3,809		0
9	0	806	98,579		2,296	3,809	2,001	0
10		806	101,455	47,467	12,485	3,809	2,001	0
11	0	806	101,455	47,467	12,485		2,001	0
12	0	806		47,467	12,485	3,673	2,001	0
13	0	806	100,027	47,467		3,673	2,953	
14	0		100,027	48,214	12,388	3,673	2,953	0
15	0	806	51,300	48,214	12,388	2,926		0
16	0	806	51,300		12,388	10,958	4,464	0
17		806	49,820	47,307	2,901	9,189	4,464	0
18	806	806	49,820	47,307	2,901		4,464	0
19	806	806		47,307	2,901	9,189	4,464	0
20	806	806	53,648	48,175		9,189	4,464	
21	806		54,847	48,175	3,037	9,189	4,464	0
22	806	806	53,195	48,175	3,037	9,189		0
23	806	806	50,319		3,037	9,414	7,902	225
24		806	51,408	47,428	2,812	9,325	7,902	225
25	806	806	54,284	47,428	3,037		5,620	225
26	806	806		47,467	2,130	10,072	5,620	225
27	806	0	59,441	47,467	0	10,072	3,884	
28	806		59,342	6,232	2,130	10,072	1,156	0
29	806	96,915	59,122	6,232	2,130	10,072		0
30	806	97,144	59,122		2,130	10,072	1,156	0
31		-----	59,161	6,232	-----	10,518	-----	0
Max (lb/day)	**806**	**97,144**	**101,455**	**56,285**	**12,485**	**10,958**	**10,791**	**1,156**
Monthly (lb)	**9,677**	**212,607**	**1,994,144**	**1,129,661**	**144,224**	**176,560**	**136,367**	**4,369**
Quarter (lb)	**222,284**		**3,268,028**			**317,296**		
Total (lb)	**3,807,608**							

	Carbon Dioxide Equivalent (CO2e) -- On-Road On-Site Emissions (lb/day)							
Day	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	11	316	164	244	233		4
2	0	11	316		257	233	249	4
3		11	304	208	203	204	249	4
4	0	11	304	227	203		253	0
5	0	11		223	277	200	253	0
6	0	11	304	258		275	249	
7	0		304	217	273	278	249	0
8	0	11	304	217	229	278		0
9	0	11	308		163	278	87	0
10		11	312	268	440	286	91	0
11	0	11	312	276	448		91	0
12	0	11		276	452	281	87	0
13	0	11	338	276		273	95	
14	0		338	350	433	281	95	0
15	0	11	285	350	441	206		0
16	0	11	285		433	398	61	0
17		11	180	356	246	227	57	0
18	11	11	180	356	246		57	4
19	11	11		364	246	227	57	4
20	11	11	276	368		219	57	
21	11		274	368	246	219	57	4
22	11	11	255	368	246	219		4
23	11	11	251		238	257	75	46
24		11	361	297	197	225	118	46
25	11	11	331	297	235		103	46
26	11	11		295	236	291	103	46
27	11	15	353	295	0	291	96	
28	11		283	270	236	291	8	4
29	11	306	185	270	236	291		4
30	11	316	170		236	291	4	0
31		-----	168	270	-----	329	-----	0
Max (lb/day)	**11**	**316**	**361**	**368**	**452**	**398**	**253**	**46**
Monthly (lb)	**136**	**897**	**7,597**	**7,485**	**7,342**	**7,082**	**2,900**	**217**
Quarter (lb)	**1,033**		**22,424**			**10,199**		
Total (lb)	**33,656**							

Notes:

lb/day = pounds per day; black shaded cells represent max daily emissions.

Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014, based on sources and methodologies depicted in previous tables in this section.

Attachment B.1

Construction – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- GHGs – 2015 Construction Worker Vehicle Emissions

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Greenhouse Gases - 2015 Construction Worker Vehicle Emissions

Day	Carbon Dioxide Equivalent (CO_{2e}) Emissions (lb/day)							
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	701	27,004	13,999	15,343	12,333		175
2	0	701	27,004		16,161	12,333	7,599	175
3		701	26,303	19,493	10,784	12,567	7,599	175
4	0	701	26,303	20,721	10,784		7,774	0
5	0	701		20,487	12,421	12,158	7,774	0
6	0	701	26,303	18,149		13,794	7,540	
7	0		26,303	18,558	12,216	13,970	7,540	0
8	0	701	25,601	18,558	12,041	13,970		0
9	0	701	26,536		7,949	13,970	3,565	0
10		701	26,741	21,188	19,405	14,203	3,799	0
11	0	701	26,741	21,422	19,639		3,799	0
12	0	701		21,422	19,873	13,853	3,565	0
13	0	701	26,741	21,422		13,619	3,624	
14	0		26,741	23,059	18,178	13,853	3,624	0
15	0	701	18,792	23,059	18,412	12,216		0
16	0	701	18,792		18,178	16,483	5,611	0
17		701	13,151	22,883	13,268	5,845	5,377	0
18	701	701	13,151	22,883	13,268		5,377	234
19	701	701		23,117	13,268	5,845	5,377	234
20	701	701	19,084	24,403		5,611	5,377	
21	701		18,967	24,403	13,444	5,611	5,377	234
22	701	701	18,149	24,403	13,444	5,611		234
23	701	701	17,944		13,210	5,962	6,137	818
24		701	24,724	23,000	12,625	5,962	6,371	818
25	701	701	24,461	23,000	12,976		5,787	818
26	701	701		22,357	12,567	7,365	5,787	818
27	701	935	25,484	22,357	0	7,365	3,215	
28	701		19,990	16,980	12,567	7,365	409	234
29	701	26,420	14,963	16,980	12,567	7,365		234
30	701	27,004	14,846		12,567	7,365	175	0
31		-----	14,203	16,980	-----	9,586	-----	0
Max (lb/day)	**701**	**27,004**	**27,004**	**24,403**	**19,873**	**16,483**	**7,774**	**818**
Monthly (lb)	**8,417**	**70,491**	**595,024**	**545,283**	**367,155**	**276,177**	**128,181**	**5,202**
Quarter (lb)	**78,908**		**1,507,462**			**409,561**		
Total (lb)	**1,995,930**							

Notes:
lb/day = pounds per day; black shaded cells represent max daily emissions.
Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014; CARB EMFAC2011.

Assumptions and Emission Factors

Assumptions:

Region: South Coast
Season: Max of annual, summer, winter
Speed: Aggregated
Roundtrip distance: 40 miles
Fleet mix: 50% LDA, 30% LDT1, 20% LDT2
CO_2 emissions assume Pavley-I and Low Carbon Fuel Standard benefits

EMFAC2011 Category	Emission Factors (g/mi)			
	CO_2	CH_4	N_2O	CO_{2e}
LDA (gasoline)	1331.3003	0.0199	0.0132	1335.8034
LDT1 (gasoline)	1572.7589	0.0516	0.0389	1585.9164
LDT2 (gasoline)	1895.4473	0.0268	0.0257	1903.9882
Combined Factor			g/mi -->	1524.4742
			lb/mi -->	3.3609

Methodology:

CO_2 emission factors generated directly by EMFAC2011.
Per CARB guidance, EMFAC2011-LDV was used to calculate CH_4.
Per CARB guidance, N_2O emissions equal 4.16% of NO_X for gasoline vehicles.
All emission factors account for emissions from start, running, and idle.
CO_{2e} emission factors calculated by adding the product of each emission factor and its global warming potential:

$CO_2 = 1$
$CH_4 = 21$
$N_2O = 310$
$CO_{2e} = (CO_2 \times 1)+(CH_4 \times 21)+(N_2O \times 310)$

Attachment B.1

Construction – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- GHGs – 2015 On-Road Off-Site Hauling Emissions

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Greenhouse Gases - 2015 On-Road Off-Site Hauling Emissions

	Carbon Dioxide Equivalent (CO_{2e}) Emissions (lb/day)							
Day	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1	0	0	1,551	10,712	14,691	697		0
2	0	0	1,551		15,338	697	324	0
3		0	1,551	8,851	15,119	697	324	0
4	0	0	1,551	9,175	15,119		324	0
5	0	0		8,528	16,725	478	324	0
6	0	0	1,551	8,528		2,084	324	
7	0		1,551	4,092	16,725	2,084	324	0
8	0	0	1,400	4,092	7,809	2,084		0
9	0	0	1,586		7,809	2,084	324	0
10		0	1,586	7,197	7,809	2,084	324	0
11	0	0	1,586	7,197	7,809		324	0
12	0	0		7,197	7,809	2,302	324	0
13	0	0	9,747	7,197		2,302	2,269	
14	0		9,747	8,803	16,078	2,302	2,269	0
15	0	0	9,222	8,803	16,078	697		0
16	0	0	9,222		16,078	697	3,534	0
17		0	875	3,282	14,472	219	3,534	0
18	0	0	875	3,282	14,472		3,534	0
19	0	0		3,282	14,472	219	3,534	0
20	0	0	1,522	8,361		219	3,534	
21	0		1,304	8,361	14,691	219	3,534	0
22	0	0	12,184	8,361	14,691	219		0
23	0	0	12,184		14,691	0	3,534	0
24		0	12,184	6,755	14,691	0	3,534	0
25	0	0	1,304	6,755	14,691		3,534	0
26	0	0		15,671	697	1,606	3,534	0
27	0	0	4,973	15,671	0	1,606	2,269	
28	0		18,949	15,014	697	1,606	0	0
29	0	1,332	21,583	15,014	697	1,606		0
30	0	1,551	7,607		697	1,606	0	0
31		-----	10,712	15,014	-----	1,929	-----	0
Max (lb/day)	**0**	**1,551**	**21,583**	**15,671**	**16,725**	**2,302**	**3,534**	**0**
Monthly (lb)	**0**	**2,884**	**159,660**	**225,196**	**300,648**	**32,336**	**45,382**	**0**
Quarter (lb)	**2,884**		**685,504**			**77,718**		
Total (lb)	**766,105**							

Notes:
lb/day = pounds per day; g/mi = grams per mile; lb/mi = pounds per mile; VMT = vehicle miles traveled; gal = gallon.
CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide
Shaded cells represent maximum daily emissions.
Workdays assume a 6-day-per-week workweek; blank cells represent Sundays (no work assumed).

Source: Ricondo & Associates, Inc., 2014; CARB EMFAC2011.

Assumptions and Emission Factors

Assumptions:
Region: South Coast
Season: Max of annual, summer, winter
Speed: Aggregated
Travel distance: Varies by type of hauling trip (see Hauling Trip Data table)
Representative vehicles: Flatbed truck, haul truck, end dump truck, cement mixer
EMFAC2011 Category: T7 single construction (diesel)
Model Year: 2007 (compliance with LAX construction-related air quality control measures)
Idle Time: 10 minutes per trip
CO_2 emissions assume Pavley-I and Low Carbon Fuel Standard benefits

CO_2 Emission Factors		CH_4 Emission Factors		N_2O	CO_{2e} Emission Factors	
Running (g/mi)	**Idle (g/trip)**	**Running (g/mi)**	**Idle (g/trip)**	**Total (g/mi)**	**Running (g/mi)**	**Idle (g/trip)**
1,712.2173	1,211.1568	0.0121	0.0618	0.0586	1,730.6417	1,212.4548

Methodology:
CO_2 emission factors generated directly by EMFAC2011.
Per CARB guidance, CH_4 for heavy-duty vehicles is euqal to 0.0408 x TOG
Per CARB guidance, the N_2O emission factor is 0.3316 grams/gal x gal/mile of the equipment
EMFAC2011 was used to derive a factor for N_2O using this methodology:

N2O factor (g/gal) --> 0.3316

	VMT		**N_2O**
gal/day	**(mi/day)**	**gal/VMT**	**(g/mi)**
2,412.16	13,646.36	0.18	0.0586

Source: From EMFAC2011 assuming a T-7 single construction vehicle at aggregated speed.

CO_{2e} emission factors calculated by adding the product of each emission factor and its global warming potential:

CO_2 = 1
CH_4 = 21
N_2O = 310

$CO_{2e} = (CO_2 \times 1)+(CH_4 \times 21)+(N_2O \times 310)$

Attachment B.1

Construction – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- GHGs – 2015 Pavement Crushing Emissions

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Greenhouse Gases - 2015 Pavement Crushing Emissions

Runway material to be crushed:	Cubic Feet	Pavement	Tons
Runway 6L-24R Keel Replacement	847,703	Concrete	61,458
Taxiway AA Pavement Rehab & Hold Bar Rotation	182,400	Concrete	13,224
Infield Vehicle Service Roads	30,011	Asphalt	2,176
North Perimeter Vehicle Service Road	32,354	Asphalt	2,346

Asphalt density (lbs/cf):	145
Concrete density (lbs/cf):	145

Sources: National Asphalt Association and Portland Cement Association

Average throughput for crusher:

Crushing of concrete:	175	tons/hour
Crushing of asphalt:	300	tons/hour

Source: HNTB Corporation, based on conversations with crushing contractors

Crusher Operating Hours (per Year)

Runway 6L-24R Keel Replacement	351
Taxiway AA Pavement Rehab & Hold Bar Rotation	76
Infield Vehicle Service Roads	7
North Perimeter Vehicle Service Road	8

Crusher Operating Emissions

Ref. Model	CAT 325L
Fuel	Diesel
Horsepower	168
Load Factor	0.415
Usage Factor	0.459
Emissions Tier	Tier 4

Emission Factors (lb/hp-hr)

CO2e	1.25523

Emissions (lb/day)	CO_{2e}
Runway 6L-24R Keel Replacement	246.4204
Taxiway AA Pavement Rehab & Hold Bar Rotation	196.9397
Infield Vehicle Service Roads	33.0778
North Perimeter Vehicle Service Road	40.7546

Notes:

g/mi = grams per mile; g/trip = grams per trip; lb/mi = pounds per mile.

Source: Ricondo & Associates, Inc., 2014, based on methodologies included in AP-42 and data from HNTB for the LAX SAIP EIR and the sources referenced in the table.

Attachment B.2

Operations – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- 2015 Aircraft Fleet Mix, Engine Assignments and Annual Operations
- Criteria Pollutants – EDMS Inventory Outputs
    - 2015 Normal Operations
    - 2015 Runway Closure Period
    - 2015 Shortened Runway Period
- GHG – EDMS Inventory Outputs
    - 2015 Normal Operations
    - 2015 Runway Closure Period
    - 2015 Shortened Runway Period
- GHGs – Aircraft Emissions

Attachment B.2

Operations – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- 2015 Aircraft Fleet Mix, Engine Assignments and Annual Operations

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
LAX 2015 Fleet Mix, Engine Assignments, and Annual Operations

EDMS Aircraft	Aircraft Code	EDMS Engine	Weight Class	Annual Operations
A300B4-200	A300B4-2	CF6-50C2	H	1,353
A300F4-600	A300F4-6	CF6-80C2A5F	H	1,353
A310-200	A310-2	CF6-80A3	L	676
A319-100	A319-1	V2527M-A5	L	29,108
A320-200	A320-2	V2527-A5	L	59,565
A321-200	A321-1	V2533-A5	L	10,153
A330-200	A330-2	Trent 772	H	3,384
A340-300	A340-3	CFM56-5C4	H	2,707
A340-500	A340-5	Trent 553-61	H	676
A340-600	A340-6	Trent 556-61	H	2,706
A380-800	A380-8	GP7270	H	4,737
B737-300	B737-3	CFM56-3-B1	L	17,600
B737-400	B737-4	CFM56-3C-1	L	6,769
B737-700	B737-7	CFM56-7B22	L	58,894
B737-800	B737-8	CFM56-7B26	L	72,433
B737-900	B737-9	CFM56-7B27	L	18,277
B747-200	B747-2	JT9D-7F	H	676
B747-400	B747-4	CF6-80C2B1F	H	12,184
B747-800	B747-8I	GEnx-2B67	H	2,368
B757-200	B757-2	PW2037	L	48,739
B757-300	B757-3	RB211-535E4B	L	21,660
B767-200	B767-2	CF6-80A2	H	7,445
B767-300	B767-3	CF6-80C2B7F	H	17,600
B777-200	B777-2	PW4090	H	13,200
B777-300	B777-3	GE90-115B	H	12,861
B787-800	B787-8	GEnx-1B64	H	1,690
Beechjet 400	BEECH400	JT15D-5, -5A, -5B	S	1,482
Bombardier Challenger 300	CL300	AE3007A1	L	803
Bombardier Challenger 600	CL600	ALF 502L-2	L	3,309
Bombardier CRJ-100	CRJ1	CF34-3A1	L	42,125
Bombardier CRJ700	CRJ7	CF34-8C1	L	50,093
Bombardier CRJ-900	CRJ9	CF34-8C5	L	11,507
Bombardier Q400	DHC8Q-4	PW150A	L	6,769
CITATION V	CNA560	JT15D-5, -5A, -5B	S	2,285
Convair CV-580	CV580	501D22A	L	339
DC10-10	DC10-1	CF6-6D	H	2,030
DC-8-7	DC8-7	CFM56-2C	H	676
Embraer EMB120 Brasilia	EMB120	PW118B	S	33,292
Embraer ERJ 135/140	ERJ140	AE3007A1/3	L	803
Embraer ERJ-145LR	ERJ145-LR	AE3007A1	L	678
Embraer ERJ190	ERJ190	CF34-10E5A1	L	3,384
Falcon 2000EX	FAL2000EX	PW308C	S	803
Gulfstream III	GULF2-B	F113-RR-100	L	803
Gulfstream IV	GULF4-SP	TAY Mk611-8	L	4,823
Hawker HS 125-700	HS125-7	TFE731-3	S	1,702
King Air 200	BEECH200	PT6A-42	S	1,080
L-100 HERCULES	MIL-C130	501D22A	S	850
Learjet 35/36	LEAR35	TFE731-2-2B	S	3,214
MD-11	MD11	CF6-80C2D1F	H	2,707
MD-80	MD83	JT8D-219	L	8,121
Raytheon Beech 1900-D	BEECH1900-D	PT6A-67D	S	6,488
Grand Total				**618,978**

Attachment B.2

Operations – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- Criteria Pollutants – EDMS Inventory Outputs
  - 2015 Normal Operations
  - 2015 Runway Closure Period
  - 2015 Shortened Runway Period

Emissions Inventory Summary

(Short Tons per Year)

2015 Normal Ops - Los Angeles Intl 2015

Category	CO	VOC	NOx	SOx	PM-10	PM-2.5
Aircraft	3,074.713	504.947	3,429.920	329.479	47.000	47.000
GSE	0.000	0.000	0.000	0.000	0.000	0.000
APUs	119.140	10.016	126.046	16.827	16.616	16.616
Parking Facilities	N/A	N/A	N/A	N/A	N/A	N/A
Roadways	N/A	N/A	N/A	N/A	N/A	N/A
Stationary Sources	N/A	N/A	N/A	N/A	N/A	N/A
Training Fires	N/A	N/A	N/A	N/A	N/A	N/A
Grand Total	3,193.853	514.963	3,555.966	346.307	63.615	63.615

Emissions Inventory Summary

(Short Tons per Year)

2015 Runway Closure - Los Angeles Intl 2015

Category	CO	VOC	NOx	SOx	PM-10	PM-2.5
Aircraft	3,159.576	515.741	3,445.037	334.100	47.639	47.639
GSE	0.000	0.000	0.000	0.000	0.000	0.000
APUs	119.140	10.016	126.046	16.827	16.616	16.616
Parking Facilities	N/A	N/A	N/A	N/A	N/A	N/A
Roadways	N/A	N/A	N/A	N/A	N/A	N/A
Stationary Sources	N/A	N/A	N/A	N/A	N/A	N/A
Training Fires	N/A	N/A	N/A	N/A	N/A	N/A
Grand Total	3,278.717	525.757	3,571.083	350.927	64.255	64.255

Emissions Inventory Summary

(Short Tons per Year)

2015 Shortened Runway - Los Angeles Intl 2015

Category	CO	VOC	NOx	SOx	PM-10	PM-2.5
Aircraft	3,099.351	508.081	3,434.309	330.821	47.185	47.185
GSE	0.000	0.000	0.000	0.000	0.000	0.000
APUs	119.140	10.016	126.046	16.827	16.616	16.616
Parking Facilities	N/A	N/A	N/A	N/A	N/A	N/A
Roadways	N/A	N/A	N/A	N/A	N/A	N/A
Stationary Sources	N/A	N/A	N/A	N/A	N/A	N/A
Training Fires	N/A	N/A	N/A	N/A	N/A	N/A
Grand Total	3,218.491	518.097	3,560.355	347.648	63.801	63.801

Attachment B.2

Operations – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- GHG – EDMS Inventory Outputs
  - 2015 Normal Operations
  - 2015 Runway Closure Period
  - 2015 Shortened Runway Period

Emissions Inventory Summary

(Metric Tons per Year)

2015 Normal Ops - Los Angeles Intl 2015

Category	CO2	Fuel Consumption
Aircraft	729,895.995	231,345.799
GSE	N/A	N/A
APUs	N/A	N/A
Parking Facilities	N/A	N/A
Roadways	N/A	N/A
Stationary Sources	N/A	N/A
Training Fires	N/A	N/A
Grand Total	729,895.995	231,345.799

Emissions Inventory Summary

(Metric Tons per Year)

2015 Runway Closure - Los Angeles Intl 2015

Category	CO2	Fuel Consumption
Aircraft	740,132.060	234,590.193
GSE	N/A	N/A
APUs	N/A	N/A
Parking Facilities	N/A	N/A
Roadways	N/A	N/A
Stationary Sources	N/A	N/A
Training Fires	N/A	N/A
Grand Total	740,132.060	234,590.193

Emissions Inventory Summary

(Metric Tons per Year)

2015 Shortened Runway - Los Angeles Intl 2015

Category	CO2	Fuel Consumption
Aircraft	732,867.756	232,287.720
GSE	N/A	N/A
APUs	N/A	N/A
Parking Facilities	N/A	N/A
Roadways	N/A	N/A
Stationary Sources	N/A	N/A
Training Fires	N/A	N/A
Grand Total	732,867.756	232,287.720

Attachment B.2
Operations – Criteria Pollutant and Greenhouse Gas Emissions Calculations

- GHGs – Aircraft Emissions

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Aircraft GHG Calculations

Source		Emission/Conversion Factors		Global Warming Potentials [3]	
Airport Cooperative Research Program [1]	CO2	21.095	lbs/gal	CO2	1
US Energy Information Administration [2]	CH4	0.27	g/gal	CH4	21
US Energy Information Administration [2]	N2O	0.31	g/gal	N2O	310
Airport Cooperative Research Program [1]	Jet fuel	6.84	lbs/gal		
Airport Cooperative Research Program [1]	Conversion	0.0004536	metric tons/lb		
	Conversion	1000000	g/metric ton		

Source	Units	2015 Normal Ops Inventory	2015 Runway Closure Inventory	2015 Shortened Runway Inventory
EDMS Output	Fuel Use (lbs)	510,030,181	517,182,847	512,106,762
Calculated conversion	Fuel Use (gallons)	74,565,816	75,611,527	74,869,410
EDMS Output	CO2 (metric tons)	729,896	740,132	732,868
Calculated based on fuel use	CH4 (metric tons)	20.13	20.42	20.21
Calculated based on fuel use	N2O (metric tons)	23.12	23.44	23.21
Total		737,484.56	747,827.05	740,487.22

	Days	Annual Metric Tons	Annualized Emissions
Normal Ops	183	737,484.56	369752.5
Shortened Runway	60	740,487.22	121723.9
Runway Closure	122	747,827.05	249958.6
		2015 Annual:	741435.1
		Difference:	3950.53

NOTES:

[1] Airport Cooperative Research Program, Transportation Research Board, "Guidebook on Preparing Airport Greenhouse Gas Emissions Inventories," 2009.

[2] US Energy Information Administration, "Voluntary Reporting of Greenhouse Gases Program Fuel Emission Coefficients," January 31, 2011, available: http://www.eia.gov/oiaf/1605/coefficients.html#tbl7.

[3] California and International convention is to use the GWPs from the IPCC Second Assessment Report to maintain the global GHG "currency."

Attachment B.3
Localized Significance Thresholds (LST) Dispersion Modeling

- Aircraft Operations during Construction – Runway Use Percentages
    - 2015 Normal Operations
    - 2015 Runway Closure Period
- Aircraft Operations during Construction – Daily and Monthly Temporal Factors
- Construction Activity – Peak Monthly Emissions Rates
    - CO
    - NO_X
    - SO_2
    - PM_{10}
    - $PM_{2.5}$
- Construction Activity – Monthly Temporal Factors
    - CO
    - NO_X
    - SO_2
    - PM_{10}
    - $PM_{2.5}$
- Construction Activity – Hourly/Daily Temporal Factors
    - On-Site Construction Equipment
    - Construction Employee Trips
    - Hauling Trips
- Receptor Locations
- Output Files Summaries
    - CO
    - NO_2
    - SO_2
    - PM_{10}
    - $PM_{2.5}$

Attachment B.3
Localized Significance Thresholds (LST) Dispersion Modeling

- Aircraft Operations during Construction – Runway Use Percentages
    - 2015 Normal Operations
    - 2015 Runway Closure Period

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
2015 Normal Operations Runway Use

Count of AC_OP_TYPE		AC_OP_TYPE		
AC Category	RWY	ARR	DEP	Grand Total
H	24L	2.99%	22.56%	12.73%
H	24R	54.48%	0.00%	27.34%
H	25L	39.55%	7.52%	23.60%
H	25R	2.99%	69.92%	36.33%
L	24L	3.69%	52.78%	28.19%
L	24R	54.83%	0.71%	27.83%
L	25L	39.63%	0.29%	20.00%
L	25R	1.85%	46.22%	23.99%
S	24L	5.56%	35.62%	20.69%
S	24R	41.67%	2.74%	22.07%
S	25L	51.39%	6.85%	28.97%
S	25R	1.39%	54.79%	28.28%
Grand Total		**100.00%**	**100.00%**	**100.00%**

Count of AC_OP_TYPE		AC_OP_TYPE		
AC Category	RWY	ARR	DEP	Grand Total
H	24L	4	30	34
H	24R	73		73
H	25L	53	10	63
H	25R	4	93	97
L	24L	26	370	396
L	24R	386	5	391
L	25L	279	2	281
L	25R	13	324	337
S	24L	4	26	30
S	24R	30	2	32
S	25L	37	5	42
S	25R	1	40	41
Grand Total		**910**	**907**	**1817**

Count of AC_OP_TYPE	AC_OP_TYPE		
RWY	ARR	DEP	Grand Total
24L	34	426	460
24R	489	7	496
25L	369	17	386
25R	18	457	475
Grand Total	**910**	**907**	**1817**

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
2015 Runway Closure Period Runway Use

Count of AC_OP_TYPE		AC_OP_TYPE		
AC Category	RWY	ARR	DEP	Grand Total
H	24L	35.07%	21.80%	28.46%
H	25L	58.21%	7.52%	32.96%
H	25R	6.72%	70.68%	38.58%
L	24L	35.65%	49.07%	42.35%
L	25L	55.54%	0.14%	27.90%
L	25R	8.81%	50.78%	29.75%
S	24L	31.94%	38.36%	35.17%
S	25L	55.56%	2.74%	28.97%
S	25R	12.50%	58.90%	35.86%
Grand Total		**100.00%**	**100.00%**	**100.00%**

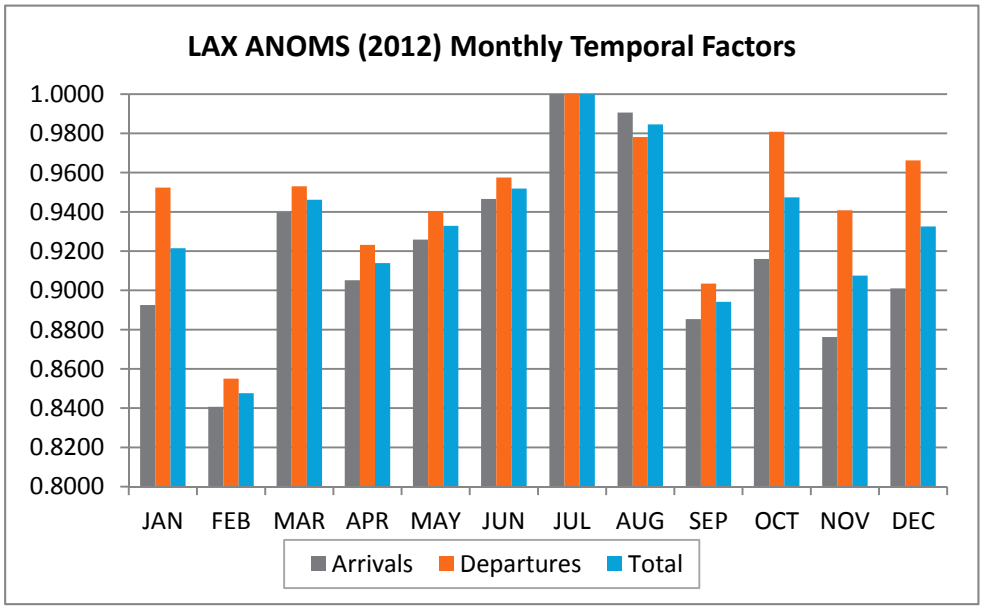
Count of AC_OP_TYPE		AC_OP_TYPE		
AC Category	RWY	ARR	DEP	Grand Total
H	24L	47	29	76
H	25L	78	10	88
H	25R	9	94	103
L	24L	251	344	595
L	25L	391	1	392
L	25R	62	356	418
S	24L	23	28	51
S	25L	40	2	42
S	25R	9	43	52
Grand Total		**910**	**907**	**1817**

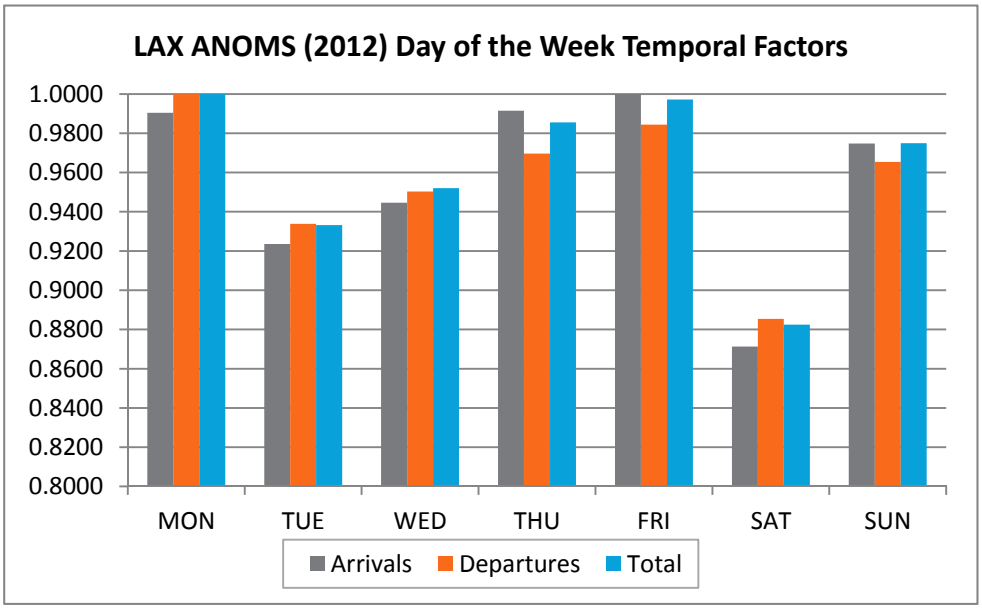
Count of AC_OP_TYPE	AC_OP_TYPE		
RWY	ARR	DEP	Grand Total
24L	321	401	722
25L	509	13	522
25R	80	493	573
Grand Total	**910**	**907**	**1817**

Attachment B.3
Localized Significance Thresholds (LST) Dispersion Modeling

- Aircraft Operations during Construction – Daily and Monthly Temporal Factors

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Aircraft Operations during Construction: Monthly and Day of the Week Temporal Factors





Attachment B.3
Localized Significance Thresholds (LST) Dispersion Modeling

- Construction Activity – Peak Monthly Emissions Rates
  - CO
  - NO_X
  - SO_2
  - PM_{10}
  - $PM_{2.5}$

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Emission Rates by Dispersion Source

Carbon Monoxide (CO)

	2015 Maximum Emissions (lbs/day)												
Dispersion Sources	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Max
RWY_rehab	0.0	0.0	0.0	0.0	0.0	105.2	116.7	126.5	28.0	34.6	25.2	0.0	126.5
TaxiwayAA	0.0	0.0	0.0	0.0	0.0	121.4	132.9	3.8	24.5	0.0	0.0	0.0	132.9
HoldBar_Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.6	0.0	0.0	1.6
HoldBar_Y	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	1.6
ArgoDitch	0.0	0.0	0.0	0.0	0.0	0.8	19.9	8.3	2.1	7.6	6.6	5.4	19.9
InfieldDemo_A	0.0	0.0	0.0	0.0	0.0	3.3	3.3	0.0	0.0	0.0	0.0	0.0	3.3
InfieldDemo_B	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	0.0	0.0	0.0	0.0	1.3
InfieldDemo_C	0.0	0.0	0.0	0.0	0.0	5.3	5.3	0.0	0.0	0.0	0.0	0.0	5.3
InfieldDemo_D	0.0	0.0	0.0	0.0	0.0	2.2	2.2	0.0	0.0	0.0	0.0	0.0	2.2
Infield_Relo	0.0	0.0	0.0	0.0	0.0	0.0	8.3	8.3	1.6	0.0	0.0	0.0	8.3
NorthVSR_Demo	0.0	0.0	0.0	0.0	0.0	0.0	23.1	23.1	0.0	0.0	0.0	0.0	23.1
NorthVSR_Relo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	27.0	1.6	27.0
StagingArea_A	0.0	0.0	0.0	0.0	2.8	2.8	16.0	5.3	4.5	0.5	2.6	0.0	16.0
StagingArea_B	0.0	0.0	0.0	0.0	0.7	0.7	4.0	1.3	1.1	0.1	0.6	0.0	4.0
StagingArea_C	0.0	0.0	0.0	0.0	0.0	0.0	5.4	13.6	15.2	1.6	0.0	0.0	15.2
EmpParking_A	0.0	0.0	0.0	0.0	2.6	98.3	98.3	88.8	72.3	60.0	28.3	3.0	98.3
EmpParking_B	0.0	0.0	0.0	0.0	0.6	24.6	24.6	22.2	18.1	15.0	7.1	0.7	24.6

Nitrogen Oxides (NO_x)

	2015 Maximum Emissions (lbs/day)												
Dispersion Sources	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Max
RWY_rehab	0.0	0.0	0.0	0.0	0.0	36.5	38.0	40.9	4.3	6.5	6.3	0.0	40.9
TaxiwayAA	0.0	0.0	0.0	0.0	0.0	41.4	42.9	3.1	5.3	0.0	0.0	0.0	42.9
HoldBar_Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0
HoldBar_Y	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0
ArgoDitch	0.0	0.0	0.0	0.0	0.0	0.1	3.9	2.3	0.8	1.4	1.4	0.6	3.9
InfieldDemo_A	0.0	0.0	0.0	0.0	0.0	1.1	1.1	0.0	0.0	0.0	0.0	0.0	1.1
InfieldDemo_B	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4
InfieldDemo_C	0.0	0.0	0.0	0.0	0.0	1.8	1.8	0.0	0.0	0.0	0.0	0.0	1.8
InfieldDemo_D	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.7
Infield_Relo	0.0	0.0	0.0	0.0	0.0	0.0	2.3	6.2	1.0	0.0	0.0	0.0	6.2
NorthVSR_Demo	0.0	0.0	0.0	0.0	0.0	0.0	4.1	3.0	0.0	0.0	0.0	0.0	4.1
NorthVSR_Relo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	11.9	1.0	11.9
StagingArea_A	0.0	0.0	0.0	0.0	0.4	4.9	65.1	20.5	18.7	2.1	10.7	0.0	65.1
StagingArea_B	0.0	0.0	0.0	0.0	0.1	1.2	16.3	5.1	4.7	0.5	2.7	0.0	16.3
StagingArea_C	0.0	0.0	0.0	0.0	0.0	0.0	20.9	53.0	59.0	6.1	0.0	0.0	59.0
EmpParking_A	0.0	0.0	0.0	0.0	0.2	8.0	8.0	7.2	5.9	4.9	2.3	0.2	8.0
EmpParking_B	0.0	0.0	0.0	0.0	0.1	2.0	2.0	1.8	1.5	1.2	0.6	0.1	2.0

Sulfur Dioxide (SO_2)

	2015 Maximum Emissions (lbs/day)												
Dispersion Sources	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Max
RWY_rehab	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.1	0.1	0.1	0.0	0.5
TaxiwayAA	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.0	0.1	0.0	0.0	0.0	0.6
HoldBar_Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HoldBar_Y	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ArgoDitch	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
InfieldDemo_A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
InfieldDemo_B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
InfieldDemo_C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
InfieldDemo_D	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Infield_Relo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NorthVSR_Demo	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1
NorthVSR_Relo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
StagingArea_A	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2
StagingArea_B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
StagingArea_C	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.0	0.0	0.0	0.2
EmpParking_A	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
EmpParking_B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Respirable Particulate Matter (PM_{10})

	2015 Maximum Emissions (lbs/day)												
Dispersion Sources	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Max
RWY_rehab	0.0	0.0	0.0	0.0	0.0	33.6	42.9	48.9	9.6	1.1	1.0	0.0	48.9
TaxiwayAA	0.0	0.0	0.0	0.0	0.0	37.3	46.6	5.9	1.0	0.0	0.0	0.0	46.6
HoldBar_Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HoldBar_Y	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ArgoDitch	0.0	0.0	0.0	0.0	0.0	0.0	15.2	5.9	0.1	3.1	3.1	3.0	15.2
InfieldDemo_A	0.0	0.0	0.0	0.0	0.0	1.2	2.5	0.0	0.0	0.0	0.0	0.0	2.5
InfieldDemo_B	0.0	0.0	0.0	0.0	0.0	0.5	1.0	0.0	0.0	0.0	0.0	0.0	1.0
InfieldDemo_C	0.0	0.0	0.0	0.0	0.0	2.0	4.1	0.0	0.0	0.0	0.0	0.0	4.1
InfieldDemo_D	0.0	0.0	0.0	0.0	0.0	0.8	1.7	0.0	0.0	0.0	0.0	0.0	1.7
Infield_Relo	0.0	0.0	0.0	0.0	0.0	0.0	5.9	11.8	0.0	0.0	0.0	0.0	11.8
NorthVSR_Demo	0.0	0.0	0.0	0.0	0.0	0.0	18.6	18.6	0.0	0.0	0.0	0.0	18.6
NorthVSR_Relo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	23.9	0.0	23.9
StagingArea_A	0.0	0.0	0.0	0.0	1.2	1.9	29.4	9.1	8.5	1.0	4.8	0.0	29.4
StagingArea_B	0.0	0.0	0.0	0.0	0.3	0.5	7.4	2.3	2.1	0.2	1.2	0.0	7.4
StagingArea_C	0.0	0.0	0.0	0.0	0.0	0.0	9.3	23.7	26.4	2.7	0.0	0.0	26.4
EmpParking_A	0.0	0.0	0.0	0.0	0.1	5.1	5.1	4.7	3.8	3.1	1.5	0.2	5.1
EmpParking_B	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.2	0.9	0.8	0.4	0.0	1.3

Fine Particulate Matter ($PM_{2.5}$)

	2015 Maximum Emissions (lbs/day)												
Dispersion Sources	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Max
RWY_rehab	0.0	0.0	0.0	0.0	0.0	10.0	12.9	16.2	3.3	0.4	0.3	0.0	16.2
TaxiwayAA	0.0	0.0	0.0	0.0	0.0	9.7	12.6	3.2	0.3	0.0	0.0	0.0	12.6
HoldBar_Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HoldBar_Y	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ArgoDitch	0.0	0.0	0.0	0.0	0.0	0.0	6.2	3.3	0.0	1.7	1.7	1.6	6.2
InfieldDemo_A	0.0	0.0	0.0	0.0	0.0	0.5	0.8	0.0	0.0	0.0	0.0	0.0	0.8
InfieldDemo_B	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.3
InfieldDemo_C	0.0	0.0	0.0	0.0	0.0	0.8	1.3	0.0	0.0	0.0	0.0	0.0	1.3
InfieldDemo_D	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.0	0.0	0.0	0.0	0.0	0.5
Infield_Relo	0.0	0.0	0.0	0.0	0.0	0.0	3.3	6.5	0.0	0.0	0.0	0.0	6.5
NorthVSR_Demo	0.0	0.0	0.0	0.0	0.0	0.0	5.8	5.8	0.0	0.0	0.0	0.0	5.8
NorthVSR_Relo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.1	0.0	13.1
StagingArea_A	0.0	0.0	0.0	0.0	0.7	0.7	7.4	2.3	2.1	0.2	1.2	0.0	7.4
StagingArea_B	0.0	0.0	0.0	0.0	0.2	0.2	1.9	0.6	0.5	0.1	0.3	0.0	1.9
StagingArea_C	0.0	0.0	0.0	0.0	0.0	0.0	2.3	6.0	6.6	0.7	0.0	0.0	6.6
EmpParking_A	0.0	0.0	0.0	0.0	0.0	1.5	1.5	1.4	1.1	0.9	0.4	0.0	1.5
EmpParking_B	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.3	0.3	0.2	0.1	0.0	0.4

Attachment B.3
Localized Significance Thresholds (LST) Dispersion Modeling

- Construction Activity – Monthly Temporal Factors
    - CO
    - NO_X
    - SO_2
    - PM_{10}
    - $PM_{2.5}$

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Construction Activity Dispersion Monthly Temporal Factors

Carbon Monoxide (CO)

	2015 Monthly Temporal Factors											
Dispersion Sources	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
RWY_rehab	0%	0%	0%	0%	0%	83%	92%	100%	22%	27%	20%	0%
TaxiwayAA	0%	0%	0%	0%	0%	91%	100%	3%	18%	0%	0%	0%
HoldBar_Z	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%
HoldBar_Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	1%	0%
ArgoDitch	0%	0%	0%	0%	0%	4%	100%	42%	11%	38%	33%	27%
InfieldDemo_A	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%
InfieldDemo_B	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%
InfieldDemo_C	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%
InfieldDemo_D	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%
Infield_Relo	0%	0%	0%	0%	0%	0%	100%	100%	19%	0%	0%	0%
NorthVSR_Demo	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%
NorthVSR_Relo	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%	100%	6%
StagingArea_A	0%	0%	0%	0%	18%	18%	100%	33%	28%	3%	16%	0%
StagingArea_B	0%	0%	0%	0%	18%	18%	100%	33%	28%	3%	16%	0%
StagingArea_C	0%	0%	0%	0%	0%	0%	35%	90%	100%	10%	0%	0%
EmpParking_A	0%	0%	0%	0%	3%	100%	100%	90%	74%	61%	29%	3%
EmpParking_B	0%	0%	0%	0%	3%	100%	100%	90%	74%	61%	29%	3%

Nitrogen Oxides (NO_x)

	2015 Monthly Temporal Factors											
Dispersion Sources	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
RWY_rehab	0%	0%	0%	0%	0%	89%	93%	100%	11%	16%	15%	0%
TaxiwayAA	0%	0%	0%	0%	0%	96%	100%	7%	12%	0%	0%	0%
HoldBar_Z	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%
HoldBar_Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
ArgoDitch	0%	0%	0%	0%	0%	4%	100%	60%	21%	37%	36%	16%
InfieldDemo_A	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%
InfieldDemo_B	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%
InfieldDemo_C	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%
InfieldDemo_D	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%
Infield_Relo	0%	0%	0%	0%	0%	0%	37%	100%	17%	0%	0%	0%
NorthVSR_Demo	0%	0%	0%	0%	0%	0%	100%	73%	0%	0%	0%	0%
NorthVSR_Relo	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	100%	9%
StagingArea_A	0%	0%	0%	0%	1%	7%	100%	31%	29%	3%	16%	0%
StagingArea_B	0%	0%	0%	0%	1%	7%	100%	31%	29%	3%	16%	0%
StagingArea_C	0%	0%	0%	0%	0%	0%	35%	90%	100%	10%	0%	0%
EmpParking_A	0%	0%	0%	0%	3%	100%	100%	90%	74%	61%	29%	3%
EmpParking_B	0%	0%	0%	0%	3%	100%	100%	90%	74%	61%	29%	3%

Sulfur Dioxide (SO_2)

	2015 Monthly Temporal Factors											
Dispersion Sources	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
RWY_rehab	0%	0%	0%	0%	0%	91%	96%	100%	12%	23%	20%	0%
TaxiwayAA	0%	0%	0%	0%	0%	95%	100%	2%	18%	0%	0%	0%
HoldBar_Z	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%
HoldBar_Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
ArgoDitch	0%	0%	0%	0%	0%	5%	100%	44%	17%	40%	26%	22%
InfieldDemo_A	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%
InfieldDemo_B	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%
InfieldDemo_C	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%
InfieldDemo_D	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%
Infield_Relo	0%	0%	0%	0%	0%	0%	100%	100%	13%	0%	0%	0%
NorthVSR_Demo	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%
NorthVSR_Relo	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	100%	4%
StagingArea_A	0%	0%	0%	0%	4%	7%	100%	31%	29%	3%	16%	0%
StagingArea_B	0%	0%	0%	0%	4%	7%	100%	31%	29%	3%	16%	0%
StagingArea_C	0%	0%	0%	0%	0%	0%	35%	90%	100%	10%	0%	0%
EmpParking_A	0%	0%	0%	0%	3%	100%	100%	90%	74%	61%	29%	3%
EmpParking_B	0%	0%	0%	0%	3%	100%	100%	90%	74%	61%	29%	3%

Respirable Particulate Matter (PM_{10})

	2015 Monthly Temporal Factors											
Dispersion Sources	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
RWY_rehab	0%	0%	0%	0%	0%	69%	88%	100%	20%	2%	2%	0%
TaxiwayAA	0%	0%	0%	0%	0%	80%	100%	13%	2%	0%	0%	0%
HoldBar_Z	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%
HoldBar_Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	7%	0%
ArgoDitch	0%	0%	0%	0%	0%	0%	100%	39%	1%	20%	20%	20%
InfieldDemo_A	0%	0%	0%	0%	0%	49%	100%	0%	0%	0%	0%	0%
InfieldDemo_B	0%	0%	0%	0%	0%	49%	100%	0%	0%	0%	0%	0%
InfieldDemo_C	0%	0%	0%	0%	0%	49%	100%	0%	0%	0%	0%	0%
InfieldDemo_D	0%	0%	0%	0%	0%	49%	100%	0%	0%	0%	0%	0%
Infield_Relo	0%	0%	0%	0%	0%	0%	50%	100%	0%	0%	0%	0%
NorthVSR_Demo	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%
NorthVSR_Relo	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	100%	0%
StagingArea_A	0%	0%	0%	0%	4%	7%	100%	31%	29%	3%	16%	0%
StagingArea_B	0%	0%	0%	0%	4%	7%	100%	31%	29%	3%	16%	0%
StagingArea_C	0%	0%	0%	0%	0%	0%	35%	90%	100%	10%	0%	0%
EmpParking_A	0%	0%	0%	0%	3%	100%	100%	90%	74%	61%	29%	3%
EmpParking_B	0%	0%	0%	0%	3%	100%	100%	90%	74%	61%	29%	3%

Fine Particulate Matter ($PM_{2.5}$)

	2015 Monthly Temporal Factors											
Dispersion Sources	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
RWY_rehab	0%	0%	0%	0%	0%	62%	80%	100%	20%	2%	2%	0%
TaxiwayAA	0%	0%	0%	0%	0%	77%	100%	26%	3%	0%	0%	0%
HoldBar_Z	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%
HoldBar_Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	2%	0%
ArgoDitch	0%	0%	0%	0%	0%	0%	100%	53%	1%	27%	27%	26%
InfieldDemo_A	0%	0%	0%	0%	0%	61%	100%	0%	0%	0%	0%	0%
InfieldDemo_B	0%	0%	0%	0%	0%	61%	100%	0%	0%	0%	0%	0%
InfieldDemo_C	0%	0%	0%	0%	0%	61%	100%	0%	0%	0%	0%	0%
InfieldDemo_D	0%	0%	0%	0%	0%	61%	100%	0%	0%	0%	0%	0%
Infield_Relo	0%	0%	0%	0%	0%	0%	51%	100%	0%	0%	0%	0%
NorthVSR_Demo	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%
NorthVSR_Relo	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
StagingArea_A	0%	0%	0%	0%	9%	9%	100%	31%	29%	3%	16%	0%
StagingArea_B	0%	0%	0%	0%	9%	9%	100%	31%	29%	3%	16%	0%
StagingArea_C	0%	0%	0%	0%	0%	0%	35%	90%	100%	10%	0%	0%
EmpParking_A	0%	0%	0%	0%	3%	100%	100%	90%	74%	61%	29%	3%
EmpParking_B	0%	0%	0%	0%	3%	100%	100%	90%	74%	61%	29%	3%

Attachment B.3
Localized Significance Thresholds (LST) Dispersion Modeling

- Construction Activity – Hourly/Daily Temporal Factors
    - On-Site Construction Equipment
    - Construction Employee Trips
    - Hauling Trips

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements
Construction Activity Dispersion Daily/Hourly Temporal Factors

Temporal Factors for On-Site Construction Equipment							
End Hr.	Mon	Tues	Wed	Thr	Fri	Sat	Sun
1:00	0%	0%	0%	0%	0%	0%	0%
2:00	0%	0%	0%	0%	0%	0%	0%
3:00	0%	0%	0%	0%	0%	0%	0%
4:00	0%	0%	0%	0%	0%	0%	0%
5:00	0%	0%	0%	0%	0%	0%	0%
6:00	100%	100%	100%	100%	100%	100%	0%
7:00	100%	100%	100%	100%	100%	100%	0%
8:00	100%	100%	100%	100%	100%	100%	0%
9:00	100%	100%	100%	100%	100%	100%	0%
10:00	100%	100%	100%	100%	100%	100%	0%
11:00	100%	100%	100%	100%	100%	100%	0%
12:00	100%	100%	100%	100%	100%	100%	0%
13:00	100%	100%	100%	100%	100%	100%	0%
14:00	100%	100%	100%	100%	100%	100%	0%
15:00	100%	100%	100%	100%	100%	100%	0%
16:00	0%	0%	0%	0%	0%	0%	0%
17:00	0%	0%	0%	0%	0%	0%	0%
18:00	0%	0%	0%	0%	0%	0%	0%
19:00	0%	0%	0%	0%	0%	0%	0%
20:00	0%	0%	0%	0%	0%	0%	0%
21:00	0%	0%	0%	0%	0%	0%	0%
22:00	0%	0%	0%	0%	0%	0%	0%
23:00	0%	0%	0%	0%	0%	0%	0%
24:00	0%	0%	0%	0%	0%	0%	0%

Temporal Factors for Construction Employee Trips							
End Hr.	Mon	Tues	Wed	Thr	Fri	Sat	Sun
1:00	0%	0%	0%	0%	0%	0%	0%
2:00	0%	0%	0%	0%	0%	0%	0%
3:00	0%	0%	0%	0%	0%	0%	0%
4:00	0%	0%	0%	0%	0%	0%	0%
5:00	100%	100%	100%	100%	100%	100%	0%
6:00	0%	0%	0%	0%	0%	0%	0%
7:00	0%	0%	0%	0%	0%	0%	0%
8:00	0%	0%	0%	0%	0%	0%	0%
9:00	0%	0%	0%	0%	0%	0%	0%
10:00	0%	0%	0%	0%	0%	0%	0%
11:00	0%	0%	0%	0%	0%	0%	0%
12:00	0%	0%	0%	0%	0%	0%	0%
13:00	0%	0%	0%	0%	0%	0%	0%
14:00	0%	0%	0%	0%	0%	0%	0%
15:00	0%	0%	0%	0%	0%	0%	0%
16:00	100%	100%	100%	100%	100%	100%	0%
17:00	0%	0%	0%	0%	0%	0%	0%
18:00	0%	0%	0%	0%	0%	0%	0%
19:00	0%	0%	0%	0%	0%	0%	0%
20:00	0%	0%	0%	0%	0%	0%	0%
21:00	0%	0%	0%	0%	0%	0%	0%
22:00	0%	0%	0%	0%	0%	0%	0%
23:00	0%	0%	0%	0%	0%	0%	0%
24:00	0%	0%	0%	0%	0%	0%	0%

Temporal Factors for Hauling Trips							
End Hr.	Mon	Tues	Wed	Thr	Fri	Sat	Sun
1:00	0%	0%	0%	0%	0%	0%	0%
2:00	0%	0%	0%	0%	0%	0%	0%
3:00	0%	0%	0%	0%	0%	0%	0%
4:00	0%	0%	0%	0%	0%	0%	0%
5:00	100%	100%	100%	100%	100%	100%	0%
6:00	100%	100%	100%	100%	100%	100%	0%
7:00	0%	0%	0%	0%	0%	0%	0%
8:00	0%	0%	0%	0%	0%	0%	0%
9:00	100%	100%	100%	100%	100%	100%	0%
10:00	100%	100%	100%	100%	100%	100%	0%
11:00	100%	100%	100%	100%	100%	100%	0%
12:00	100%	100%	100%	100%	100%	100%	0%
13:00	100%	100%	100%	100%	100%	100%	0%
14:00	100%	100%	100%	100%	100%	100%	0%
15:00	100%	100%	100%	100%	100%	100%	0%
16:00	100%	100%	100%	100%	100%	100%	0%
17:00	0%	0%	0%	0%	0%	0%	0%
18:00	0%	0%	0%	0%	0%	0%	0%
19:00	0%	0%	0%	0%	0%	0%	0%
20:00	0%	0%	0%	0%	0%	0%	0%
21:00	0%	0%	0%	0%	0%	0%	0%
22:00	0%	0%	0%	0%	0%	0%	0%
23:00	0%	0%	0%	0%	0%	0%	0%
24:00	0%	0%	0%	0%	0%	0%	0%

Attachment B.3
Localized Significance Thresholds (LST) Dispersion Modeling

- Receptor Locations

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Dispersion Receptor Coordinates

		UTM Meters		
Receptor ID	**Type**	**X**	**Y [1]**	**Coordinates**
Receptor_1	Recreational	367379	755396	367379, 755396
Receptor_2	Recreational	367340	755485	367340, 755485
Receptor_3	Recreational	367301	755573	367301, 755573
Receptor_4	Recreational	367263	755661	367263, 755661
Receptor_5	Recreational	367224	755749	367224, 755749
Receptor_6	Recreational	367186	755838	367186, 755838
Receptor_7	Recreational	367147	755926	367147, 755926
Receptor_8	Recreational	367109	756014	367109, 756014
Receptor_9	Recreational	367070	756103	367070, 756103
Receptor_10	Recreational	367032	756191	367032, 756191
Receptor_11	Recreational	366993	756279	366993, 756279
Receptor_12	Recreational	366954	756367	366954, 756367
Receptor_13	Recreational	366916	756456	366916, 756456
Receptor_14	Recreational	366877	756544	366877, 756544
Receptor_15	Recreational	366839	756632	366839, 756632
Receptor_16	Recreational	366800	756720	366800, 756720
Receptor_17	Recreational	366762	756809	366762, 756809
Receptor_18	Recreational	366723	756897	366723, 756897
Receptor_19	Recreational	366685	756985	366685, 756985
Receptor_20	Recreational	366646	757074	366646, 757074
Receptor_21	Recreational	366607	757162	366607, 757162
Receptor_22	Recreational	366569	757250	366569, 757250
Receptor_23	Recreational	366530	757338	366530, 757338
Receptor_24	Recreational	366492	757427	366492, 757427
Receptor_25	Recreational	366453	757515	366453, 757515
Receptor_26	Recreational	366415	757603	366415, 757603
Receptor_27	Recreational	366376	757692	366376, 757692
Receptor_28	Residential	366338	757780	366338, 757780
Receptor_29	Residential	366402	757746	366402, 757746
Receptor_30	Residential	366467	757713	366467, 757713
Receptor_31	Residential	366531	757679	366531, 757679
Receptor_32	Residential	366567	757773	366567, 757773
Receptor_33	Residential	366625	757758	366625, 757758
Receptor_34	Residential	366682	757744	366682, 757744
Receptor_35	Residential	366768	757788	366768, 757788
Receptor_36	Residential	366854	757833	366854, 757833
Receptor_37	Residential	366941	757877	366941, 757877
Receptor_38	Residential	367027	757922	367027, 757922
Receptor_39	Residential	367113	757966	367113, 757966
Receptor_40	Residential	367192	757916	367192, 757916
Receptor_41	Residential	367264	757916	367264, 757916
Receptor_42	Residential	367335	757916	367335, 757916
Receptor_43	Residential	367343	757966	367343, 757966

Note:
1 3,000,000 m should be added to the Y (m) location values to get full UTM Northing (m) coordinate in 1984 WGS.

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Dispersion Receptor Coordinates

		UTM Meters		
Receptor ID	**Type**	**X**	**Y [1]**	**Coordinates**
Receptor_44	Residential	367404	757995	367404, 757995
Receptor_45	Residential	367465	758024	367465, 758024
Receptor_46	School	367504	757948	367504, 757948
Receptor_47	School	367544	757873	367544, 757873
Receptor_48	School	367587	757909	367587, 757909
Receptor_49	School	367623	757866	367623, 757866
Receptor_50	School	367694	757866	367694, 757866
Receptor_51	School	367716	757927	367716, 757927
Receptor_52	School	367737	757988	367737, 757988
Receptor_53	School	367727	758067	367727, 758067
Receptor_54	School	367716	758146	367716, 758146
Receptor_55	Residential	367673	758189	367673, 758189
Receptor_56	School	367723	758254	367723, 758254
Receptor_57	School	367784	758221	367784, 758221
Receptor_58	School	367845	758189	367845, 758189
Receptor_59	Residential	367816	758096	367816, 758096
Receptor_60	Residential	367898	758066	367898, 758066
Receptor_61	Residential	367980	758035	367980, 758035
Receptor_62	Residential	368062	758005	368062, 758005
Receptor_63	Residential	368144	757975	368144, 757975
Receptor_64	Residential	368226	757945	368226, 757945
Receptor_65	Residential	368301	757943	368301, 757943
Receptor_66	Residential	368376	757941	368376, 757941
Receptor_67	Residential	368452	757940	368452, 757940
Receptor_68	Residential	368527	757938	368527, 757938
Receptor_69	Residential	368563	757880	368563, 757880
Receptor_70	Residential	368636	757926	368636, 757926
Receptor_71	Residential	368709	757971	368709, 757971
Receptor_72	Residential	368782	758017	368782, 758017
Receptor_73	Residential	368855	758062	368855, 758062
Receptor_74	Residential	368928	758108	368928, 758108
Receptor_75	Residential	369001	758153	369001, 758153
Receptor_76	Residential	369058	758074	369058, 758074
Receptor_77	Residential	369102	758103	369102, 758103
Receptor_78	Residential	369145	758132	369145, 758132
Receptor_79	Residential	369200	758065	369200, 758065
Receptor_80	Residential	369255	757998	369255, 757998
Receptor_81	Residential	369310	757931	369310, 757931
Receptor_82	Residential	369356	757981	369356, 757981
Receptor_83	Residential	369403	758031	369403, 758031
Receptor_84	Recreational	369336	758100	369336, 758100
Receptor_85	Recreational	369269	758170	369269, 758170
Receptor_86	Recreational	369202	758239	369202, 758239

Note:
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Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Dispersion Receptor Coordinates

		UTM Meters		
Receptor ID	**Type**	**X**	**Y** [1]	**Coordinates**
Receptor_87	Recreational	369264	758285	369264, 758285
Receptor_88	Recreational	369326	758330	369326, 758330
Receptor_89	Recreational	369389	758376	369389, 758376
Receptor_90	Recreational	369389	758462	369389, 758462
Receptor_91	Recreational	369389	758548	369389, 758548
Receptor_92	Residential	369389	758634	369389, 758634
Receptor_93	Residential	369469	758630	369469, 758630
Receptor_94	Residential	369549	758625	369549, 758625
Receptor_95	Residential	369630	758621	369630, 758621
Receptor_96	Residential	369710	758617	369710, 758617
Receptor_97	Residential	369791	758613	369791, 758613
Receptor_98	Residential	369791	758514	369791, 758514
Receptor_99	Residential	369791	758416	369791, 758416
Receptor_100	Residential	369791	758318	369791, 758318
Receptor_101	Residential	369881	758318	369881, 758318
Receptor_102	Residential	369972	758318	369972, 758318
Receptor_103	Residential	370062	758318	370062, 758318
Receptor_104	Residential	370153	758318	370153, 758318
Receptor_105	Residential	370243	758318	370243, 758318
Receptor_106	School	370247	758254	370247, 758254
Receptor_107	School	370250	758189	370250, 758189
Receptor_108	School	370308	758196	370308, 758196
Receptor_109	School	370361	758236	370361, 758236
Receptor_110	School	370415	758275	370415, 758275
Receptor_111	Residential	370408	758347	370408, 758347
Receptor_112	Residential	370490	758344	370490, 758344
Receptor_113	Residential	370572	758341	370572, 758341
Receptor_114	Residential	370654	758338	370654, 758338
Receptor_115	Residential	370735	758335	370735, 758335
Receptor_116	Residential	370817	758333	370817, 758333
Receptor_117	Offsite Worker	370814	758243	370814, 758243
Receptor_118	Offsite Worker	370810	758153	370810, 758153
Receptor_119	Offsite Worker	370807	758063	370807, 758063
Receptor_120	Offsite Worker	370803	757974	370803, 757974
Receptor_121	Offsite Worker	370835	757927	370835, 757927
Receptor_122	Offsite Worker	370868	757880	370868, 757880
Receptor_123	Offsite Worker	370921	757884	370921, 757884
Receptor_124	Offsite Worker	370975	757887	370975, 757887
Receptor_125	Offsite Worker	370975	757794	370975, 757794
Receptor_126	Offsite Worker	371026	757794	371026, 757794
Receptor_127	Offsite Worker	371076	757877	371076, 757877
Receptor_128	Offsite Worker	371126	757959	371126, 757959
Receptor_129	Offsite Worker	371119	758031	371119, 758031

Note:
1 3,000,000 m should be added to the Y (m) location values to get full UTM Northing (m) coordinate in 1984 WGS.

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Dispersion Receptor Coordinates

		UTM Meters		
Receptor ID	**Type**	**X**	**Y** [1]	**Coordinates**
Receptor_130	Residential	371183	758027	371183, 758027
Receptor_131	Residential	371248	758024	371248, 758024
Receptor_132	Residential	371326	758075	371326, 758075
Receptor_133	Residential	371404	758127	371404, 758127
Receptor_134	Residential	371481	758178	371481, 758178
Receptor_135	Residential	371559	758230	371559, 758230
Receptor_136	Residential	371637	758281	371637, 758281
Receptor_137	Residential	371715	758333	371715, 758333
Receptor_138	Residential	371769	758261	371769, 758261
Receptor_139	Residential	371822	758189	371822, 758189
Receptor_140	Residential	371894	758160	371894, 758160
Receptor_141	Residential	371894	758081	371894, 758081
Receptor_142	Residential	371959	758074	371959, 758074
Receptor_143	Offsite Worker	371953	757977	371953, 757977
Receptor_144	Offsite Worker	371948	757880	371948, 757880
Receptor_145	Offsite Worker	371943	757783	371943, 757783
Receptor_146	Offsite Worker	372016	757794	372016, 757794
Receptor_147	Offsite Worker	372102	757791	372102, 757791
Receptor_148	Offsite Worker	372178	757760	372178, 757760
Receptor_149	Offsite Worker	372177	757670	372177, 757670
Receptor_150	Offsite Worker	372176	757579	372176, 757579
Receptor_151	Offsite Worker	372174	757489	372174, 757489
Receptor_152	Offsite Worker	372173	757398	372173, 757398
Receptor_153	Offsite Worker	372171	757308	372171, 757308
Receptor_154	Offsite Worker	372055	757309	372055, 757309
Receptor_155	Residential	372055	757363	372055, 757363
Receptor_156	Offsite Worker	372055	757416	372055, 757416
Receptor_157	Offsite Worker	371952	757442	371952, 757442
Receptor_158	Offsite Worker	371950	757345	371950, 757345
Receptor_159	Offsite Worker	371864	757344	371864, 757344
Receptor_160	Offsite Worker	371790	757347	371790, 757347
Receptor_161	Offsite Worker	371708	757356	371708, 757356
Receptor_162	Offsite Worker	371615	757356	371615, 757356
Receptor_163	Offsite Worker	371523	757356	371523, 757356
Receptor_164	Offsite Worker	371430	757356	371430, 757356
Receptor_165	Offsite Worker	371338	757356	371338, 757356
Receptor_166	Offsite Worker	371245	757356	371245, 757356
Receptor_167	Offsite Worker	371153	757356	371153, 757356
Receptor_168	Offsite Worker	371061	757356	371061, 757356
Receptor_169	Offsite Worker	371005	757357	371005, 757357
Receptor_170	Offsite Worker	370998	757293	370998, 757293
Receptor_171	Offsite Worker	370998	757194	370998, 757194
Receptor_172	Offsite Worker	370998	757096	370998, 757096

Note:
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Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Dispersion Receptor Coordinates

		UTM Meters		
Receptor ID	**Type**	**X**	**Y** [1]	**Coordinates**
Receptor_173	Offsite Worker	370998	756998	370998, 756998
Receptor_174	Offsite Worker	371057	756997	371057, 756997
Receptor_175	Offsite Worker	371153	756997	371153, 756997
Receptor_176	Offsite Worker	371249	756997	371249, 756997
Receptor_177	Offsite Worker	371345	756997	371345, 756997
Receptor_178	Offsite Worker	371440	756997	371440, 756997
Receptor_179	Offsite Worker	371536	756997	371536, 756997
Receptor_180	Offsite Worker	371632	756997	371632, 756997
Receptor_181	Offsite Worker	371728	756997	371728, 756997
Receptor_182	Offsite Worker	371824	756997	371824, 756997
Receptor_183	Offsite Worker	371920	756997	371920, 756997
Receptor_184	Offsite Worker	372016	756997	372016, 756997
Receptor_185	Offsite Worker	372111	756997	372111, 756997
Receptor_186	Offsite Worker	372207	756997	372207, 756997
Receptor_187	Offsite Worker	372303	756997	372303, 756997
Receptor_188	Offsite Worker	372399	756997	372399, 756997
Receptor_189	Offsite Worker	372495	756997	372495, 756997
Receptor_190	Offsite Worker	372591	756997	372591, 756997
Receptor_191	Offsite Worker	372610	757063	372610, 757063
Receptor_192	Offsite Worker	372612	757132	372612, 757132
Receptor_193	Offsite Worker	372614	757201	372614, 757201
Receptor_194	Offsite Worker	372616	757270	372616, 757270
Receptor_195	Offsite Worker	372627	757351	372627, 757351
Receptor_196	Offsite Worker	372651	757422	372651, 757422
Receptor_197	Offsite Worker	372676	757494	372676, 757494
Receptor_198	Offsite Worker	372704	757569	372704, 757569
Receptor_199	Offsite Worker	372733	757645	372733, 757645
Receptor_200	Offsite Worker	372746	757702	372746, 757702
Receptor_201	Offsite Worker	372746	757768	372746, 757768
Receptor_202	Offsite Worker	372807	757781	372807, 757781
Receptor_203	Offsite Worker	372901	757782	372901, 757782
Receptor_204	Offsite Worker	372994	757783	372994, 757783
Receptor_205	Offsite Worker	373087	757783	373087, 757783
Receptor_206	Offsite Worker	373180	757784	373180, 757784
Receptor_207	Offsite Worker	373274	757785	373274, 757785
Receptor_208	Offsite Worker	373367	757786	373367, 757786
Receptor_209	Offsite Worker	373418	757742	373418, 757742
Receptor_210	Offsite Worker	373418	757653	373418, 757653
Receptor_211	Offsite Worker	373419	757564	373419, 757564
Receptor_212	Offsite Worker	373419	757475	373419, 757475
Receptor_213	Offsite Worker	373420	757386	373420, 757386
Receptor_214	Offsite Worker	373420	757297	373420, 757297
Receptor_215	Offsite Worker	373421	757207	373421, 757207

Note:
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Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Dispersion Receptor Coordinates

		UTM Meters		
Receptor ID	**Type**	**X**	**Y** [1]	**Coordinates**
Receptor_216	Offsite Worker	373421	757118	373421, 757118
Receptor_217	Offsite Worker	373292	757117	373292, 757117
Receptor_218	Offsite Worker	373213	757118	373213, 757118
Receptor_219	Offsite Worker	373158	757066	373158, 757066
Receptor_220	Offsite Worker	373084	757026	373084, 757026
Receptor_221	Offsite Worker	373009	757011	373009, 757011
Receptor_222	Offsite Worker	372922	757009	372922, 757009
Receptor_223	Offsite Worker	372835	757007	372835, 757007
Receptor_224	Offsite Worker	372747	757006	372747, 757006
Receptor_225	Offsite Worker	372660	757004	372660, 757004
Receptor_226	Offsite Worker	372651	757063	372651, 757063
Receptor_227	Offsite Worker	372629	756931	372629, 756931
Receptor_228	Offsite Worker	372631	756857	372631, 756857
Receptor_229	Offsite Worker	372634	756783	372634, 756783
Receptor_230	Offsite Worker	372702	756778	372702, 756778
Receptor_231	Offsite Worker	372756	756775	372756, 756775
Receptor_232	Offsite Worker	372729	756712	372729, 756712
Receptor_233	Offsite Worker	372703	756650	372703, 756650
Receptor_234	Offsite Worker	372677	756588	372677, 756588
Receptor_235	Offsite Worker	372619	756588	372619, 756588
Receptor_236	Offsite Worker	372622	756509	372622, 756509
Receptor_237	Offsite Worker	372700	756511	372700, 756511
Receptor_238	Offsite Worker	372789	756510	372789, 756510
Receptor_239	Offsite Worker	372871	756509	372871, 756509
Receptor_240	Offsite Worker	372871	756437	372871, 756437
Receptor_241	Offsite Worker	372970	756437	372970, 756437
Receptor_242	Offsite Worker	373069	756437	373069, 756437
Receptor_243	Offsite Worker	373168	756437	373168, 756437
Receptor_244	Offsite Worker	373267	756437	373267, 756437
Receptor_245	Offsite Worker	373412	756437	373412, 756437
Receptor_246	Offsite Worker	373409	756339	373409, 756339
Receptor_247	Offsite Worker	373406	756240	373406, 756240
Receptor_248	Offsite Worker	373403	756142	373403, 756142
Receptor_249	Offsite Worker	373400	756042	373400, 756042
Receptor_250	Offsite Worker	373397	755944	373397, 755944
Receptor_251	Offsite Worker	373393	755846	373393, 755846
Receptor_252	Offsite Worker	373390	755747	373390, 755747
Receptor_253	Offsite Worker	373309	755744	373309, 755744
Receptor_254	Offsite Worker	373229	755743	373229, 755743
Receptor_255	Offsite Worker	373143	755741	373143, 755741
Receptor_256	Offsite Worker	373143	755823	373143, 755823
Receptor_257	Offsite Worker	373143	755906	373143, 755906
Receptor_258	Offsite Worker	373065	755906	373065, 755906

Note:
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Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Dispersion Receptor Coordinates

		UTM Meters		
Receptor ID	**Type**	**X**	**Y** [1]	**Coordinates**
Receptor_259	Offsite Worker	373065	755827	373065, 755827
Receptor_260	Offsite Worker	373068	755733	373068, 755733
Receptor_261	Offsite Worker	373007	755733	373007, 755733
Receptor_262	Offsite Worker	372941	755733	372941, 755733
Receptor_263	Offsite Worker	372941	755636	372941, 755636
Receptor_264	Offsite Worker	372941	755539	372941, 755539
Receptor_265	Offsite Worker	372941	755442	372941, 755442
Receptor_266	Offsite Worker	372913	755342	372913, 755342
Receptor_267	Offsite Worker	372817	755346	372817, 755346
Receptor_268	Offsite Worker	372720	755349	372720, 755349
Receptor_269	Offsite Worker	372624	755352	372624, 755352
Receptor_270	Offsite Worker	372527	755349	372527, 755349
Receptor_271	Offsite Worker	372431	755353	372431, 755353
Receptor_272	Offsite Worker	372334	755356	372334, 755356
Receptor_273	Offsite Worker	372237	755359	372237, 755359
Receptor_274	Offsite Worker	372141	755362	372141, 755362
Receptor_275	Offsite Worker	372044	755366	372044, 755366
Receptor_276	Offsite Worker	371948	755369	371948, 755369
Receptor_277	Offsite Worker	371851	755372	371851, 755372
Receptor_278	Offsite Worker	371755	755375	371755, 755375
Receptor_279	Offsite Worker	371658	755378	371658, 755378
Receptor_280	Offsite Worker	371562	755382	371562, 755382
Receptor_281	Offsite Worker	371465	755385	371465, 755385
Receptor_282	Offsite Worker	371368	755388	371368, 755388
Receptor_283	Offsite Worker	371272	755391	371272, 755391
Receptor_284	Offsite Worker	371175	755395	371175, 755395
Receptor_285	Offsite Worker	371079	755398	371079, 755398
Receptor_286	Offsite Worker	371042	755478	371042, 755478
Receptor_287	Offsite Worker	371009	755538	371009, 755538
Receptor_288	Offsite Worker	370975	755597	370975, 755597
Receptor_289	Offsite Worker	370925	755597	370925, 755597
Receptor_290	Offsite Worker	370860	755547	370860, 755547
Receptor_291	Offsite Worker	370796	755497	370796, 755497
Receptor_292	Offsite Worker	370733	755428	370733, 755428
Receptor_293	Offsite Worker	370634	755428	370634, 755428
Receptor_294	Offsite Worker	370536	755428	370536, 755428
Receptor_295	Offsite Worker	370437	755428	370437, 755428
Receptor_296	Offsite Worker	370338	755427	370338, 755427
Receptor_297	Residential	370239	755427	370239, 755427
Receptor_298	Residential	370138	755427	370138, 755427
Receptor_299	Residential	370040	755427	370040, 755427
Receptor_300	Residential	369941	755426	369941, 755426
Receptor_301	Residential	369842	755426	369842, 755426

Note:
1 3,000,000 m should be added to the Y (m) location values to get full UTM Northing (m) coordinate in 1984 WGS.

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Dispersion Receptor Coordinates

		UTM Meters		
Receptor ID	**Type**	**X**	**Y** [1]	**Coordinates**
Receptor_302	School	369741	755435	369741, 755435
Receptor_303	School	369643	755434	369643, 755434
Receptor_304	Residential	369544	755434	369544, 755434
Receptor_305	Residential	369445	755434	369445, 755434
Receptor_306	Residential	369346	755434	369346, 755434
Receptor_307	Offsite Worker	369249	755442	369249, 755442
Receptor_308	Offsite Worker	369151	755442	369151, 755442
Receptor_309	Offsite Worker	369052	755442	369052, 755442
Receptor_310	Residential	368953	755441	368953, 755441
Receptor_311	Residential	368854	755441	368854, 755441
Receptor_312	Residential	368755	755441	368755, 755441
Receptor_313	Residential	368657	755441	368657, 755441
Receptor_314	Residential	368558	755440	368558, 755440
Receptor_315	Residential	368459	755440	368459, 755440
Receptor_316	Residential	368360	755440	368360, 755440
Receptor_317	Residential	368262	755439	368262, 755439
Receptor_318	Residential	368186	755427	368186, 755427
Receptor_319	Residential	368111	755414	368111, 755414
Receptor_320	Offsite Worker	368035	755402	368035, 755402
Receptor_321	Offsite Worker	367960	755389	367960, 755389
Receptor_322	Offsite Worker	367863	755390	367863, 755390
Receptor_323	Offsite Worker	367766	755392	367766, 755392
Receptor_324	Offsite Worker	367669	755393	367669, 755393
Receptor_325	Offsite Worker	367572	755394	367572, 755394
Receptor_326	Offsite Worker	367475	755395	367475, 755395
Receptor_327	On-Site Occupational	370400	756850	370400, 756850

Note:
1 3,000,000 m should be added to the Y (m) location values to get full UTM Northing (m) coordinate in 1984 WGS.

Attachment B.3
Localized Significance Thresholds (LST) Dispersion Modeling

- Output Files Summaries
  - CO
  - NO_2
  - SO_2
  - PM_{10}
  - $PM_{2.5}$

	Carbon Monoxide (CO) 1-Hr							Carbon Monoxide (CO) 8-Hr						
	Max Conc. (ug/m3)		Runway Closure Incremental Difference					Max Conc. (ug/m3)		Runway Closure Incremental Difference				
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_1	1,054	1,259	205	4,104	4,309	23,000	No	395	414	19	2,884	2,903	10,000	No
Receptor_2	1,127	1,320	193	4,104	4,297	23,000	No	389	447	58	2,884	2,942	10,000	No
Receptor_3	1,168	1,327	159	4,104	4,263	23,000	No	411	478	67	2,884	2,951	10,000	No
Receptor_4	1,167	1,352	186	4,104	4,290	23,000	No	435	504	68	2,884	2,953	10,000	No
Receptor_5	1,114	1,409	295	4,104	4,399	23,000	No	454	521	67	2,884	2,951	10,000	No
Receptor_6	1,153	1,394	241	4,104	4,345	23,000	No	466	528	62	2,884	2,946	10,000	No
Receptor_7	1,145	1,301	156	4,104	4,260	23,000	No	469	521	52	2,884	2,937	10,000	No
Receptor_8	1,085	1,292	208	4,104	4,312	23,000	No	464	503	39	2,884	2,924	10,000	No
Receptor_9	1,084	1,277	193	4,104	4,297	23,000	No	451	476	25	2,884	2,909	10,000	No
Receptor_10	1,137	1,221	84	4,104	4,188	23,000	No	435	445	10	2,884	2,895	10,000	No
Receptor_11	1,217	1,291	74	4,104	4,178	23,000	No	415	418	3	2,884	2,887	10,000	No
Receptor_12	1,249	1,312	63	4,104	4,167	23,000	No	396	401	5	2,884	2,889	10,000	No
Receptor_13	1,240	1,292	52	4,104	4,156	23,000	No	377	380	3	2,884	2,888	10,000	No
Receptor_14	1,200	1,241	41	4,104	4,145	23,000	No	358	360	2	2,884	2,886	10,000	No
Receptor_15	1,153	1,174	21	4,104	4,125	23,000	No	339	343	4	2,884	2,888	10,000	No
Receptor_16	1,146	1,173	26	4,104	4,130	23,000	No	318	329	11	2,884	2,896	10,000	No
Receptor_17	1,143	1,179	36	4,104	4,140	23,000	No	296	318	22	2,884	2,906	10,000	No
Receptor_18	1,136	1,166	30	4,104	4,134	23,000	No	293	309	15	2,884	2,900	10,000	No
Receptor_19	1,122	1,140	18	4,104	4,122	23,000	No	290	308	17	2,884	2,902	10,000	No
Receptor_20	1,098	1,106	8	4,104	4,112	23,000	No	284	322	38	2,884	2,922	10,000	No
Receptor_21	1,070	1,073	3	4,104	4,107	23,000	No	274	331	57	2,884	2,941	10,000	No
Receptor_22	1,067	1,076	9	4,104	4,113	23,000	No	267	337	70	2,884	2,954	10,000	No
Receptor_23	1,033	1,071	38	4,104	4,142	23,000	No	280	340	60	2,884	2,944	10,000	No
Receptor_24	1,014	1,060	46	4,104	4,150	23,000	No	293	342	49	2,884	2,933	10,000	No
Receptor_25	989	1,043	54	4,104	4,158	23,000	No	305	342	38	2,884	2,922	10,000	No
Receptor_26	955	1,021	66	4,104	4,170	23,000	No	315	341	26	2,884	2,910	10,000	No
Receptor_27	933	994	61	4,104	4,165	23,000	No	323	338	15	2,884	2,899	10,000	No
Receptor_28	902	962	60	4,104	4,164	23,000	No	329	333	5	2,884	2,889	10,000	No
Receptor_29	924	982	58	4,104	4,162	23,000	No	334	340	6	2,884	2,890	10,000	No
Receptor_30	946	1,002	56	4,104	4,160	23,000	No	341	348	7	2,884	2,891	10,000	No
Receptor_31	969	1,023	55	4,104	4,159	23,000	No	347	355	9	2,884	2,893	10,000	No
Receptor_32	945	1,013	68	4,104	4,172	23,000	No	363	356	(7)	2,884	2,884	10,000	No
Receptor_33	963	1,029	67	4,104	4,171	23,000	No	371	362	(9)	2,884	2,884	10,000	No
Receptor_34	980	1,046	66	4,104	4,170	23,000	No	380	369	(11)	2,884	2,884	10,000	No
Receptor_35	1,002	1,070	67	4,104	4,171	23,000	No	397	374	(24)	2,884	2,884	10,000	No
Receptor_36	1,045	1,086	42	4,104	4,146	23,000	No	411	375	(36)	2,884	2,884	10,000	No
Receptor_37	1,076	1,094	19	4,104	4,123	23,000	No	419	373	(46)	2,884	2,884	10,000	No
Receptor_38	1,148	1,091	(57)	4,104	4,104	23,000	No	421	368	(53)	2,884	2,884	10,000	No
Receptor_39	1,235	1,075	(160)	4,104	4,104	23,000	No	428	358	(70)	2,884	2,884	10,000	No
Receptor_40	1,275	1,117	(158)	4,104	4,104	23,000	No	448	375	(73)	2,884	2,884	10,000	No
Receptor_41	1,347	1,124	(223)	4,104	4,104	23,000	No	465	377	(88)	2,884	2,884	10,000	No
Receptor_42	1,419	1,130	(289)	4,104	4,104	23,000	No	481	378	(103)	2,884	2,884	10,000	No
Receptor_43	1,446	1,083	(363)	4,104	4,104	23,000	No	475	359	(116)	2,884	2,884	10,000	No
Receptor_44	1,497	1,081	(416)	4,104	4,104	23,000	No	479	362	(117)	2,884	2,884	10,000	No
Receptor_45	1,524	1,148	(376)	4,104	4,104	23,000	No	480	366	(114)	2,884	2,884	10,000	No
Receptor_46	1,581	1,151	(430)	4,104	4,104	23,000	No	508	382	(127)	2,884	2,884	10,000	No
Receptor_47	1,623	1,180	(443)	4,104	4,104	23,000	No	538	397	(140)	2,884	2,884	10,000	No
Receptor_48	1,658	1,218	(441)	4,104	4,104	23,000	No	535	399	(136)	2,884	2,884	10,000	No
Receptor_49	1,704	1,234	(469)	4,104	4,104	23,000	No	557	411	(146)	2,884	2,884	10,000	No
Receptor_50	1,766	1,316	(450)	4,104	4,104	23,000	No	572	423	(149)	2,884	2,884	10,000	No
Receptor_51	1,722	1,359	(364)	4,104	4,104	23,000	No	547	413	(135)	2,884	2,884	10,000	No
Receptor_52	1,728	1,374	(353)	4,104	4,104	23,000	No	519	399	(120)	2,884	2,884	10,000	No
Receptor_53	1,669	1,341	(328)	4,104	4,104	23,000	No	479	375	(103)	2,884	2,884	10,000	No
Receptor_54	1,592	1,292	(300)	4,104	4,104	23,000	No	440	351	(89)	2,884	2,884	10,000	No
Receptor_55	1,544	1,256	(287)	4,104	4,104	23,000	No	422	339	(83)	2,884	2,884	10,000	No
Receptor_56	1,463	1,206	(258)	4,104	4,104	23,000	No	389	319	(70)	2,884	2,884	10,000	No
Receptor_57	1,488	1,226	(262)	4,104	4,104	23,000	No	400	328	(72)	2,884	2,884	10,000	No
Receptor_58	1,510	1,244	(266)	4,104	4,104	23,000	No	411	337	(74)	2,884	2,884	10,000	No
Receptor_59	1,655	1,341	(314)	4,104	4,104	23,000	No	461	368	(94)	2,884	2,884	10,000	No
Receptor_60	1,687	1,368	(319)	4,104	4,104	23,000	No	474	379	(96)	2,884	2,884	10,000	No
Receptor_61	1,712	1,392	(320)	4,104	4,104	23,000	No	489	392	(98)	2,884	2,884	10,000	No
Receptor_62	1,800	1,481	(319)	4,104	4,104	23,000	No	506	406	(99)	2,884	2,884	10,000	No
Receptor_63	1,908	1,555	(353)	4,104	4,104	23,000	No	525	424	(101)	2,884	2,884	10,000	No
Receptor_64	1,988	1,680	(308)	4,104	4,104	23,000	No	547	443	(103)	2,884	2,884	10,000	No
Receptor_65	1,971	1,742	(229)	4,104	4,104	23,000	No	548	452	(96)	2,884	2,884	10,000	No
Receptor_66	1,941	1,742	(199)	4,104	4,104	23,000	No	599	459	(141)	2,884	2,884	10,000	No
Receptor_67	1,929	1,825	(105)	4,104	4,104	23,000	No	667	488	(179)	2,884	2,884	10,000	No
Receptor_68	2,017	1,941	(76)	4,104	4,104	23,000	No	724	528	(196)	2,884	2,884	10,000	No
Receptor_69	2,153	2,052	(100)	4,104	4,104	23,000	No	792	569	(223)	2,884	2,884	10,000	No
Receptor_70	2,218	1,968	(250)	4,104	4,104	23,000	No	781	586	(195)	2,884	2,884	10,000	No
Receptor_71	2,092	1,780	(312)	4,104	4,104	23,000	No	739	586	(153)	2,884	2,884	10,000	No
Receptor_72	2,086	1,719	(368)	4,104	4,104	23,000	No	662	565	(98)	2,884	2,884	10,000	No
Receptor_73	1,865	1,727	(138)	4,104	4,104	23,000	No	576	534	(42)	2,884	2,884	10,000	No
Receptor_74	1,647	1,606	(41)	4,104	4,104	23,000	No	523	504	(19)	2,884	2,884	10,000	No
Receptor_75	1,580	1,438	(142)	4,104	4,104	23,000	No	503	479	(25)	2,884	2,884	10,000	No
Receptor_76	1,701	1,559	(142)	4,104	4,104	23,000	No	529	509	(20)	2,884	2,884	10,000	No
Receptor_77	1,639	1,514	(124)	4,104	4,104	23,000	No	506	495	(11)	2,884	2,884	10,000	No
Receptor_78	1,569	1,455	(114)	4,104	4,104	23,000	No	486	482	(3)	2,884	2,884	10,000	No
Receptor_79	1,563	1,454	(109)	4,104	4,104	23,000	No	500	511	11	2,884	2,895	10,000	No
Receptor_80	1,533	1,519	(13)	4,104	4,104	23,000	No	539	545	6	2,884	2,890	10,000	No
Receptor_81	1,485	1,589	104	4,104	4,208	23,000	No	591	584	(6)	2,884	2,884	10,000	No
Receptor_82	1,375	1,530	154	4,104	4,258	23,000	No	562	555	(7)	2,884	2,884	10,000	No
Receptor_83	1,318	1,469	151	4,104	4,255	23,000	No	535	528	(8)	2,884	2,884	10,000	No
Receptor_84	1,330	1,371	41	4,104	4,145	23,000	No	489	498	9	2,884	2,893	10,000	No

	Carbon Monoxide (CO) 1-Hr							Carbon Monoxide (CO) 8-Hr						
	Max Conc. (ug/m3)		Runway Closure Incremental Difference					Max Conc. (ug/m3)		Runway Closure Incremental Difference				
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_85	1,386	1,331	(55)	4,104	4,104	23,000	No	457	468	12	2,884	2,896	10,000	No
Receptor_86	1,419	1,316	(103)	4,104	4,104	23,000	No	440	442	1	2,884	2,885	10,000	No
Receptor_87	1,321	1,239	(82)	4,104	4,104	23,000	No	419	436	18	2,884	2,902	10,000	No
Receptor_88	1,226	1,209	(17)	4,104	4,104	23,000	No	403	430	27	2,884	2,911	10,000	No
Receptor_89	1,136	1,180	44	4,104	4,148	23,000	No	391	422	31	2,884	2,915	10,000	No
Receptor_90	1,105	1,134	29	4,104	4,133	23,000	No	368	401	33	2,884	2,917	10,000	No
Receptor_91	1,075	1,091	15	4,104	4,119	23,000	No	352	381	29	2,884	2,914	10,000	No
Receptor_92	1,047	1,050	3	4,104	4,107	23,000	No	337	363	26	2,884	2,910	10,000	No
Receptor_93	983	1,049	66	4,104	4,170	23,000	No	335	368	33	2,884	2,917	10,000	No
Receptor_94	939	1,045	106	4,104	4,210	23,000	No	334	373	40	2,884	2,924	10,000	No
Receptor_95	930	1,040	109	4,104	4,213	23,000	No	333	378	45	2,884	2,930	10,000	No
Receptor_96	915	1,067	152	4,104	4,256	23,000	No	332	382	50	2,884	2,934	10,000	No
Receptor_97	894	1,107	213	4,104	4,317	23,000	No	332	384	52	2,884	2,936	10,000	No
Receptor_98	931	1,151	220	4,104	4,324	23,000	No	351	403	52	2,884	2,936	10,000	No
Receptor_99	980	1,200	220	4,104	4,324	23,000	No	382	424	42	2,884	2,926	10,000	No
Receptor_100	1,038	1,256	218	4,104	4,322	23,000	No	413	447	34	2,884	2,918	10,000	No
Receptor_101	1,007	1,311	305	4,104	4,409	23,000	No	410	449	39	2,884	2,923	10,000	No
Receptor_102	1,055	1,352	298	4,104	4,402	23,000	No	406	458	52	2,884	2,937	10,000	No
Receptor_103	1,088	1,369	281	4,104	4,385	23,000	No	402	473	71	2,884	2,955	10,000	No
Receptor_104	1,093	1,361	269	4,104	4,373	23,000	No	409	484	75	2,884	2,959	10,000	No
Receptor_105	1,078	1,330	253	4,104	4,357	23,000	No	416	488	72	2,884	2,957	10,000	No
Receptor_106	1,114	1,375	262	4,104	4,366	23,000	No	438	516	78	2,884	2,962	10,000	No
Receptor_107	1,154	1,426	272	4,104	4,376	23,000	No	463	548	84	2,884	2,968	10,000	No
Receptor_108	1,132	1,383	250	4,104	4,354	23,000	No	466	542	76	2,884	2,960	10,000	No
Receptor_109	1,100	1,299	200	4,104	4,304	23,000	No	455	518	63	2,884	2,948	10,000	No
Receptor_110	1,061	1,203	142	4,104	4,246	23,000	No	444	494	50	2,884	2,934	10,000	No
Receptor_111	1,024	1,162	138	4,104	4,242	23,000	No	417	466	49	2,884	2,933	10,000	No
Receptor_112	997	1,174	177	4,104	4,281	23,000	No	423	455	32	2,884	2,916	10,000	No
Receptor_113	988	1,183	194	4,104	4,298	23,000	No	424	454	30	2,884	2,914	10,000	No
Receptor_114	973	1,161	188	4,104	4,292	23,000	No	419	447	29	2,884	2,913	10,000	No
Receptor_115	987	1,156	169	4,104	4,273	23,000	No	407	432	25	2,884	2,909	10,000	No
Receptor_116	998	1,179	181	4,104	4,285	23,000	No	392	413	21	2,884	2,905	10,000	No
Receptor_117	1,080	1,252	172	4,104	4,276	23,000	No	417	438	21	2,884	2,906	10,000	No
Receptor_118	1,179	1,329	150	4,104	4,254	23,000	No	447	477	30	2,884	2,914	10,000	No
Receptor_119	1,300	1,405	105	4,104	4,209	23,000	No	478	517	40	2,884	2,924	10,000	No
Receptor_120	1,440	1,473	33	4,104	4,137	23,000	No	510	559	50	2,884	2,934	10,000	No
Receptor_121	1,502	1,457	(46)	4,104	4,104	23,000	No	517	575	58	2,884	2,942	10,000	No
Receptor_122	1,551	1,485	(65)	4,104	4,104	23,000	No	522	581	59	2,884	2,943	10,000	No
Receptor_123	1,491	1,425	(66)	4,104	4,104	23,000	No	507	571	64	2,884	2,949	10,000	No
Receptor_124	1,411	1,362	(49)	4,104	4,104	23,000	No	493	561	68	2,884	2,952	10,000	No
Receptor_125	1,473	1,552	80	4,104	4,184	23,000	No	555	594	40	2,884	2,924	10,000	No
Receptor_126	1,447	1,512	66	4,104	4,170	23,000	No	547	570	24	2,884	2,908	10,000	No
Receptor_127	1,317	1,369	52	4,104	4,156	23,000	No	481	538	56	2,884	2,941	10,000	No
Receptor_128	1,240	1,229	(11)	4,104	4,104	23,000	No	440	503	63	2,884	2,947	10,000	No
Receptor_129	1,233	1,203	(31)	4,104	4,104	23,000	No	428	479	51	2,884	2,935	10,000	No
Receptor_130	1,169	1,158	(11)	4,104	4,104	23,000	No	418	472	54	2,884	2,938	10,000	No
Receptor_131	1,143	1,135	(8)	4,104	4,104	23,000	No	408	462	55	2,884	2,939	10,000	No
Receptor_132	1,087	1,078	(9)	4,104	4,104	23,000	No	389	437	49	2,884	2,933	10,000	No
Receptor_133	1,037	1,027	(10)	4,104	4,104	23,000	No	372	415	43	2,884	2,927	10,000	No
Receptor_134	993	982	(10)	4,104	4,104	23,000	No	357	395	37	2,884	2,921	10,000	No
Receptor_135	952	941	(11)	4,104	4,104	23,000	No	344	376	32	2,884	2,916	10,000	No
Receptor_136	916	903	(12)	4,104	4,104	23,000	No	332	359	27	2,884	2,911	10,000	No
Receptor_137	882	869	(13)	4,104	4,104	23,000	No	320	343	23	2,884	2,907	10,000	No
Receptor_138	871	865	(5)	4,104	4,104	23,000	No	320	343	24	2,884	2,908	10,000	No
Receptor_139	870	879	9	4,104	4,113	23,000	No	315	340	25	2,884	2,909	10,000	No
Receptor_140	858	853	(5)	4,104	4,104	23,000	No	311	332	21	2,884	2,905	10,000	No
Receptor_141	856	841	(15)	4,104	4,104	23,000	No	332	339	8	2,884	2,892	10,000	No
Receptor_142	826	844	19	4,104	4,123	23,000	No	330	335	5	2,884	2,889	10,000	No
Receptor_143	790	881	91	4,104	4,195	23,000	No	352	345	(8)	2,884	2,884	10,000	No
Receptor_144	782	924	142	4,104	4,246	23,000	No	372	371	(1)	2,884	2,884	10,000	No
Receptor_145	856	967	111	4,104	4,215	23,000	No	386	401	15	2,884	2,899	10,000	No
Receptor_146	829	951	122	4,104	4,226	23,000	No	378	396	17	2,884	2,902	10,000	No
Receptor_147	811	926	114	4,104	4,218	23,000	No	372	394	22	2,884	2,906	10,000	No
Receptor_148	810	892	82	4,104	4,186	23,000	No	367	397	30	2,884	2,914	10,000	No
Receptor_149	832	875	43	4,104	4,147	23,000	No	372	414	42	2,884	2,926	10,000	No
Receptor_150	830	885	56	4,104	4,160	23,000	No	377	426	49	2,884	2,933	10,000	No
Receptor_151	861	976	114	4,104	4,218	23,000	No	382	432	50	2,884	2,934	10,000	No
Receptor_152	878	1,122	243	4,104	4,347	23,000	No	383	434	51	2,884	2,935	10,000	No
Receptor_153	958	1,269	311	4,104	4,415	23,000	No	383	435	52	2,884	2,936	10,000	No
Receptor_154	942	1,224	282	4,104	4,386	23,000	No	398	452	54	2,884	2,938	10,000	No
Receptor_155	923	1,126	203	4,104	4,307	23,000	No	398	451	53	2,884	2,938	10,000	No
Receptor_156	909	1,032	123	4,104	4,227	23,000	No	398	450	53	2,884	2,937	10,000	No
Receptor_157	913	977	64	4,104	4,168	23,000	No	409	464	55	2,884	2,939	10,000	No
Receptor_158	959	1,100	142	4,104	4,246	23,000	No	411	467	56	2,884	2,940	10,000	No
Receptor_159	977	1,049	72	4,104	4,176	23,000	No	422	480	58	2,884	2,942	10,000	No
Receptor_160	983	1,101	118	4,104	4,222	23,000	No	430	490	60	2,884	2,944	10,000	No
Receptor_161	971	1,181	210	4,104	4,314	23,000	No	438	500	62	2,884	2,946	10,000	No
Receptor_162	971	1,246	275	4,104	4,379	23,000	No	446	510	64	2,884	2,948	10,000	No
Receptor_163	984	1,279	295	4,104	4,399	23,000	No	453	517	64	2,884	2,949	10,000	No
Receptor_164	1,043	1,281	238	4,104	4,342	23,000	No	459	523	63	2,884	2,948	10,000	No
Receptor_165	1,119	1,282	163	4,104	4,267	23,000	No	467	528	61	2,884	2,945	10,000	No
Receptor_166	1,224	1,389	165	4,104	4,269	23,000	No	476	533	57	2,884	2,941	10,000	No
Receptor_167	1,352	1,515	163	4,104	4,267	23,000	No	490	541	52	2,884	2,936	10,000	No
Receptor_168	1,510	1,667	157	4,104	4,261	23,000	No	509	555	46	2,884	2,930	10,000	No

	Carbon Monoxide (CO) 1-Hr							Carbon Monoxide (CO) 8-Hr						
	Max Conc. (ug/m3)		Runway Closure Incremental Difference					Max Conc. (ug/m3)		Runway Closure Incremental Difference				
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_169	1,620	1,774	154	4,104	4,258	23,000	No	527	568	41	2,884	2,925	10,000	No
Receptor_170	1,879	1,816	(63)	4,104	4,104	23,000	No	525	543	18	2,884	2,903	10,000	No
Receptor_171	1,907	1,738	(169)	4,104	4,104	23,000	No	540	561	21	2,884	2,905	10,000	No
Receptor_172	1,635	1,556	(80)	4,104	4,104	23,000	No	528	574	45	2,884	2,929	10,000	No
Receptor_173	1,347	1,726	379	4,104	4,483	23,000	No	543	634	90	2,884	2,975	10,000	No
Receptor_174	1,364	1,761	397	4,104	4,501	23,000	No	536	629	93	2,884	2,977	10,000	No
Receptor_175	1,368	1,792	425	4,104	4,529	23,000	No	537	637	101	2,884	2,985	10,000	No
Receptor_176	1,369	1,742	373	4,104	4,477	23,000	No	536	634	99	2,884	2,983	10,000	No
Receptor_177	1,359	1,605	246	4,104	4,350	23,000	No	529	622	93	2,884	2,978	10,000	No
Receptor_178	1,319	1,620	301	4,104	4,405	23,000	No	517	606	90	2,884	2,974	10,000	No
Receptor_179	1,306	1,692	385	4,104	4,489	23,000	No	507	588	81	2,884	2,965	10,000	No
Receptor_180	1,314	1,740	426	4,104	4,530	23,000	No	492	565	73	2,884	2,957	10,000	No
Receptor_181	1,303	1,765	462	4,104	4,566	23,000	No	475	543	68	2,884	2,952	10,000	No
Receptor_182	1,285	1,772	487	4,104	4,591	23,000	No	483	521	38	2,884	2,922	10,000	No
Receptor_183	1,258	1,766	508	4,104	4,612	23,000	No	487	513	26	2,884	2,910	10,000	No
Receptor_184	1,224	1,752	528	4,104	4,632	23,000	No	487	519	33	2,884	2,917	10,000	No
Receptor_185	1,185	1,736	551	4,104	4,655	23,000	No	484	525	41	2,884	2,925	10,000	No
Receptor_186	1,143	1,719	576	4,104	4,680	23,000	No	479	525	46	2,884	2,931	10,000	No
Receptor_187	1,134	1,704	570	4,104	4,674	23,000	No	473	522	49	2,884	2,933	10,000	No
Receptor_188	1,140	1,692	552	4,104	4,656	23,000	No	466	507	41	2,884	2,925	10,000	No
Receptor_189	1,143	1,683	540	4,104	4,644	23,000	No	459	482	23	2,884	2,907	10,000	No
Receptor_190	1,144	1,679	535	4,104	4,639	23,000	No	453	484	31	2,884	2,916	10,000	No
Receptor_191	1,053	1,586	532	4,104	4,636	23,000	No	433	454	21	2,884	2,905	10,000	No
Receptor_192	966	1,505	538	4,104	4,642	23,000	No	414	429	15	2,884	2,900	10,000	No
Receptor_193	955	1,432	476	4,104	4,580	23,000	No	394	410	17	2,884	2,901	10,000	No
Receptor_194	939	1,362	423	4,104	4,527	23,000	No	373	397	24	2,884	2,908	10,000	No
Receptor_195	908	1,280	371	4,104	4,475	23,000	No	348	386	38	2,884	2,922	10,000	No
Receptor_196	874	1,207	333	4,104	4,437	23,000	No	330	378	48	2,884	2,932	10,000	No
Receptor_197	835	1,133	298	4,104	4,402	23,000	No	326	371	46	2,884	2,930	10,000	No
Receptor_198	793	1,057	264	4,104	4,368	23,000	No	321	365	44	2,884	2,928	10,000	No
Receptor_199	751	981	230	4,104	4,334	23,000	No	316	358	42	2,884	2,927	10,000	No
Receptor_200	720	922	203	4,104	4,307	23,000	No	312	353	41	2,884	2,926	10,000	No
Receptor_201	698	853	155	4,104	4,259	23,000	No	308	349	40	2,884	2,924	10,000	No
Receptor_202	685	859	174	4,104	4,278	23,000	No	302	342	40	2,884	2,924	10,000	No
Receptor_203	692	884	192	4,104	4,296	23,000	No	295	334	40	2,884	2,924	10,000	No
Receptor_204	697	906	209	4,104	4,313	23,000	No	287	327	39	2,884	2,924	10,000	No
Receptor_205	701	925	224	4,104	4,328	23,000	No	280	320	40	2,884	2,924	10,000	No
Receptor_206	702	940	238	4,104	4,342	23,000	No	273	313	40	2,884	2,924	10,000	No
Receptor_207	700	953	252	4,104	4,356	23,000	No	267	307	39	2,884	2,924	10,000	No
Receptor_208	697	962	265	4,104	4,369	23,000	No	263	300	38	2,884	2,922	10,000	No
Receptor_209	705	997	292	4,104	4,396	23,000	No	271	300	29	2,884	2,913	10,000	No
Receptor_210	723	1,056	333	4,104	4,437	23,000	No	287	306	19	2,884	2,903	10,000	No
Receptor_211	736	1,114	378	4,104	4,482	23,000	No	302	312	10	2,884	2,894	10,000	No
Receptor_212	744	1,172	427	4,104	4,531	23,000	No	318	322	4	2,884	2,888	10,000	No
Receptor_213	768	1,229	461	4,104	4,565	23,000	No	333	340	8	2,884	2,892	10,000	No
Receptor_214	843	1,282	438	4,104	4,542	23,000	No	347	358	11	2,884	2,895	10,000	No
Receptor_215	921	1,321	399	4,104	4,503	23,000	No	362	376	14	2,884	2,898	10,000	No
Receptor_216	997	1,327	329	4,104	4,433	23,000	No	376	392	17	2,884	2,901	10,000	No
Receptor_217	1,005	1,427	422	4,104	4,526	23,000	No	386	403	17	2,884	2,901	10,000	No
Receptor_218	1,005	1,467	462	4,104	4,566	23,000	No	390	407	17	2,884	2,901	10,000	No
Receptor_219	1,060	1,534	474	4,104	4,578	23,000	No	405	424	19	2,884	2,903	10,000	No
Receptor_220	1,107	1,607	500	4,104	4,604	23,000	No	419	440	20	2,884	2,905	10,000	No
Receptor_221	1,126	1,652	526	4,104	4,630	23,000	No	427	452	25	2,884	2,909	10,000	No
Receptor_222	1,128	1,667	538	4,104	4,642	23,000	No	431	470	38	2,884	2,923	10,000	No
Receptor_223	1,131	1,669	538	4,104	4,642	23,000	No	436	480	44	2,884	2,928	10,000	No
Receptor_224	1,132	1,666	534	4,104	4,638	23,000	No	440	482	42	2,884	2,926	10,000	No
Receptor_225	1,135	1,667	532	4,104	4,636	23,000	No	446	482	36	2,884	2,920	10,000	No
Receptor_226	1,055	1,584	528	4,104	4,632	23,000	No	431	454	24	2,884	2,908	10,000	No
Receptor_227	1,236	1,796	559	4,104	4,663	23,000	No	470	524	53	2,884	2,938	10,000	No
Receptor_228	1,353	1,974	620	4,104	4,724	23,000	No	499	579	80	2,884	2,965	10,000	No
Receptor_229	1,504	2,231	727	4,104	4,831	23,000	No	541	651	111	2,884	2,995	10,000	No
Receptor_230	1,523	2,272	749	4,104	4,853	23,000	No	546	651	105	2,884	2,990	10,000	No
Receptor_231	1,535	2,275	740	4,104	4,844	23,000	No	548	637	89	2,884	2,973	10,000	No
Receptor_232	1,776	2,544	768	4,104	4,872	23,000	No	606	705	98	2,884	2,982	10,000	No
Receptor_233	2,140	2,878	738	4,104	4,842	23,000	No	683	825	142	2,884	3,026	10,000	No
Receptor_234	2,618	3,562	944	4,104	5,048	23,000	No	796	988	191	2,884	3,075	10,000	No
Receptor_235	2,681	3,636	955	4,104	5,059	23,000	No	812	1,003	191	2,884	3,075	10,000	No
Receptor_236	3,507	4,725	1,218	4,104	5,322	23,000	No	988	1,258	269	2,884	3,154	10,000	No
Receptor_237	3,158	3,927	768	4,104	4,872	23,000	No	854	1,085	231	2,884	3,115	10,000	No
Receptor_238	2,837	3,421	584	4,104	4,688	23,000	No	740	916	176	2,884	3,060	10,000	No
Receptor_239	2,573	3,078	505	4,104	4,609	23,000	No	675	793	117	2,884	3,002	10,000	No
Receptor_240	2,730	3,038	308	4,104	4,412	23,000	No	650	807	157	2,884	3,041	10,000	No
Receptor_241	2,380	2,643	264	4,104	4,368	23,000	No	576	714	139	2,884	3,023	10,000	No
Receptor_242	2,117	2,347	230	4,104	4,334	23,000	No	518	643	126	2,884	3,010	10,000	No
Receptor_243	1,911	2,115	204	4,104	4,308	23,000	No	472	587	115	2,884	2,999	10,000	No
Receptor_244	1,744	1,927	183	4,104	4,287	23,000	No	433	540	107	2,884	2,991	10,000	No
Receptor_245	1,549	1,707	158	4,104	4,262	23,000	No	387	484	97	2,884	2,981	10,000	No
Receptor_246	1,430	1,506	75	4,104	4,179	23,000	No	372	428	56	2,884	2,940	10,000	No
Receptor_247	1,406	1,449	42	4,104	4,146	23,000	No	354	411	57	2,884	2,941	10,000	No
Receptor_248	1,409	1,557	148	4,104	4,252	23,000	No	356	442	86	2,884	2,970	10,000	No
Receptor_249	1,365	1,508	143	4,104	4,247	23,000	No	352	439	88	2,884	2,972	10,000	No
Receptor_250	1,250	1,420	170	4,104	4,274	23,000	No	333	416	83	2,884	2,967	10,000	No
Receptor_251	1,120	1,443	324	4,104	4,428	23,000	No	309	384	75	2,884	2,959	10,000	No
Receptor_252	1,036	1,418	382	4,104	4,486	23,000	No	282	349	67	2,884	2,951	10,000	No

	Carbon Monoxide (CO) 1-Hr							Carbon Monoxide (CO) 8-Hr						
	Max Conc. (ug/m3)		Runway Closure Incremental Difference					Max Conc. (ug/m3)		Runway Closure Incremental Difference				
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_253	1,044	1,449	405	4,104	4,509	23,000	No	285	351	66	2,884	2,950	10,000	No
Receptor_254	1,060	1,478	418	4,104	4,522	23,000	No	288	354	65	2,884	2,950	10,000	No
Receptor_255	1,084	1,508	424	4,104	4,528	23,000	No	292	356	64	2,884	2,949	10,000	No
Receptor_256	1,140	1,556	416	4,104	4,520	23,000	No	318	390	72	2,884	2,957	10,000	No
Receptor_257	1,239	1,623	385	4,104	4,489	23,000	No	344	426	83	2,884	2,967	10,000	No
Receptor_258	1,250	1,657	406	4,104	4,510	23,000	No	350	432	82	2,884	2,967	10,000	No
Receptor_259	1,158	1,586	429	4,104	4,533	23,000	No	325	397	72	2,884	2,956	10,000	No
Receptor_260	1,104	1,534	429	4,104	4,533	23,000	No	292	355	63	2,884	2,947	10,000	No
Receptor_261	1,123	1,560	437	4,104	4,541	23,000	No	295	357	62	2,884	2,946	10,000	No
Receptor_262	1,145	1,592	447	4,104	4,551	23,000	No	299	360	61	2,884	2,945	10,000	No
Receptor_263	1,121	1,554	433	4,104	4,537	23,000	No	261	316	55	2,884	2,939	10,000	No
Receptor_264	1,064	1,496	432	4,104	4,536	23,000	No	256	299	43	2,884	2,928	10,000	No
Receptor_265	998	1,417	419	4,104	4,523	23,000	No	249	285	36	2,884	2,921	10,000	No
Receptor_266	980	1,317	336	4,104	4,440	23,000	No	241	280	39	2,884	2,924	10,000	No
Receptor_267	1,000	1,323	323	4,104	4,427	23,000	No	256	289	33	2,884	2,917	10,000	No
Receptor_268	1,018	1,325	307	4,104	4,411	23,000	No	275	297	22	2,884	2,906	10,000	No
Receptor_269	1,034	1,323	289	4,104	4,393	23,000	No	291	304	13	2,884	2,897	10,000	No
Receptor_270	1,049	1,311	262	4,104	4,366	23,000	No	302	311	9	2,884	2,893	10,000	No
Receptor_271	1,070	1,308	239	4,104	4,343	23,000	No	306	318	12	2,884	2,896	10,000	No
Receptor_272	1,089	1,304	215	4,104	4,319	23,000	No	309	327	18	2,884	2,902	10,000	No
Receptor_273	1,109	1,296	187	4,104	4,291	23,000	No	314	337	23	2,884	2,907	10,000	No
Receptor_274	1,138	1,286	147	4,104	4,251	23,000	No	322	349	26	2,884	2,911	10,000	No
Receptor_275	1,165	1,274	109	4,104	4,213	23,000	No	331	361	30	2,884	2,914	10,000	No
Receptor_276	1,188	1,258	70	4,104	4,174	23,000	No	340	374	34	2,884	2,918	10,000	No
Receptor_277	1,211	1,261	49	4,104	4,153	23,000	No	349	387	38	2,884	2,922	10,000	No
Receptor_278	1,241	1,283	43	4,104	4,147	23,000	No	359	401	42	2,884	2,926	10,000	No
Receptor_279	1,268	1,310	41	4,104	4,145	23,000	No	370	414	44	2,884	2,928	10,000	No
Receptor_280	1,297	1,340	43	4,104	4,147	23,000	No	382	427	45	2,884	2,929	10,000	No
Receptor_281	1,329	1,371	42	4,104	4,146	23,000	No	402	440	38	2,884	2,922	10,000	No
Receptor_282	1,369	1,402	33	4,104	4,137	23,000	No	421	453	32	2,884	2,916	10,000	No
Receptor_283	1,416	1,433	17	4,104	4,121	23,000	No	438	465	27	2,884	2,911	10,000	No
Receptor_284	1,471	1,484	14	4,104	4,118	23,000	No	459	477	18	2,884	2,903	10,000	No
Receptor_285	1,536	1,534	(2)	4,104	4,104	23,000	No	488	488	0	2,884	2,885	10,000	No
Receptor_286	1,594	1,718	124	4,104	4,228	23,000	No	538	531	(7)	2,884	2,884	10,000	No
Receptor_287	1,639	1,869	229	4,104	4,333	23,000	No	573	563	(10)	2,884	2,884	10,000	No
Receptor_288	1,692	1,979	287	4,104	4,391	23,000	No	609	597	(12)	2,884	2,884	10,000	No
Receptor_289	1,741	2,050	309	4,104	4,413	23,000	No	620	615	(6)	2,884	2,884	10,000	No
Receptor_290	1,806	2,063	257	4,104	4,361	23,000	No	613	606	(8)	2,884	2,884	10,000	No
Receptor_291	1,887	1,975	89	4,104	4,193	23,000	No	604	583	(21)	2,884	2,884	10,000	No
Receptor_292	1,869	1,831	(39)	4,104	4,104	23,000	No	562	561	(1)	2,884	2,884	10,000	No
Receptor_293	1,935	1,963	28	4,104	4,132	23,000	No	568	599	31	2,884	2,915	10,000	No
Receptor_294	1,974	2,242	268	4,104	4,372	23,000	No	561	634	73	2,884	2,957	10,000	No
Receptor_295	2,070	2,356	286	4,104	4,390	23,000	No	556	657	101	2,884	2,985	10,000	No
Receptor_296	2,037	2,283	246	4,104	4,350	23,000	No	559	679	119	2,884	3,004	10,000	No
Receptor_297	1,932	2,326	394	4,104	4,498	23,000	No	558	699	141	2,884	3,026	10,000	No
Receptor_298	1,955	2,267	313	4,104	4,417	23,000	No	590	713	123	2,884	3,008	10,000	No
Receptor_299	1,964	2,191	226	4,104	4,330	23,000	No	607	715	108	2,884	2,992	10,000	No
Receptor_300	1,949	2,299	350	4,104	4,454	23,000	No	632	765	133	2,884	3,018	10,000	No
Receptor_301	1,989	2,231	241	4,104	4,345	23,000	No	655	813	157	2,884	3,041	10,000	No
Receptor_302	2,111	1,975	(136)	4,104	4,104	23,000	No	702	844	142	2,884	3,027	10,000	No
Receptor_303	2,176	2,013	(163)	4,104	4,104	23,000	No	738	880	143	2,884	3,027	10,000	No
Receptor_304	2,094	2,148	55	4,104	4,159	23,000	No	749	900	150	2,884	3,034	10,000	No
Receptor_305	1,850	2,259	408	4,104	4,512	23,000	No	734	877	142	2,884	3,027	10,000	No
Receptor_306	1,907	2,238	331	4,104	4,435	23,000	No	716	827	111	2,884	2,995	10,000	No
Receptor_307	2,231	2,228	(3)	4,104	4,104	23,000	No	716	798	82	2,884	2,966	10,000	No
Receptor_308	2,395	2,078	(317)	4,104	4,104	23,000	No	711	758	47	2,884	2,931	10,000	No
Receptor_309	2,211	1,950	(260)	4,104	4,104	23,000	No	693	739	46	2,884	2,930	10,000	No
Receptor_310	1,944	1,973	28	4,104	4,132	23,000	No	730	746	16	2,884	2,901	10,000	No
Receptor_311	1,952	1,783	(169)	4,104	4,104	23,000	No	733	742	9	2,884	2,893	10,000	No
Receptor_312	1,900	1,809	(92)	4,104	4,104	23,000	No	695	717	22	2,884	2,906	10,000	No
Receptor_313	1,614	1,770	156	4,104	4,260	23,000	No	683	713	29	2,884	2,914	10,000	No
Receptor_314	1,444	1,701	257	4,104	4,361	23,000	No	661	685	23	2,884	2,908	10,000	No
Receptor_315	1,394	1,645	250	4,104	4,354	23,000	No	626	640	14	2,884	2,898	10,000	No
Receptor_316	1,354	1,618	264	4,104	4,368	23,000	No	602	621	19	2,884	2,903	10,000	No
Receptor_317	1,317	1,579	262	4,104	4,366	23,000	No	577	598	22	2,884	2,906	10,000	No
Receptor_318	1,280	1,529	249	4,104	4,353	23,000	No	555	578	22	2,884	2,907	10,000	No
Receptor_319	1,245	1,481	236	4,104	4,340	23,000	No	537	558	22	2,884	2,906	10,000	No
Receptor_320	1,211	1,439	227	4,104	4,331	23,000	No	520	540	20	2,884	2,904	10,000	No
Receptor_321	1,179	1,396	217	4,104	4,321	23,000	No	505	523	18	2,884	2,903	10,000	No
Receptor_322	1,146	1,351	205	4,104	4,309	23,000	No	486	504	18	2,884	2,902	10,000	No
Receptor_323	1,114	1,300	187	4,104	4,291	23,000	No	465	486	21	2,884	2,905	10,000	No
Receptor_324	1,082	1,295	213	4,104	4,317	23,000	No	442	466	24	2,884	2,908	10,000	No
Receptor_325	1,070	1,289	219	4,104	4,323	23,000	No	424	445	21	2,884	2,905	10,000	No
Receptor_326	1,063	1,276	213	4,104	4,317	23,000	No	410	422	13	2,884	2,897	10,000	No
Receptor_327	1,409	1,774	364	4,104	4,468	23,000	No	639	687	48	2,884	2,932	10,000	No
Maximum	3,507	4,725	1,218	4,104	5,322	23,000	No	988	1,258	269	2,884	3,154	10,000	No

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	Max Conc. (ug/m3)					Runway Closure Incremental Difference				
Receptor ID	Normal Ops	Runway Closure (year 1)	Runway Closure (year 2)	Runway Closure (year 3)	Closure 3 Year Average	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_1	144	142	144	144	144	(1)	113	113	188	No
Receptor_2	142	146	142	142	143	1	113	114	188	No
Receptor_3	143	145	143	143	144	1	113	113	188	No
Receptor_4	142	145	142	142	143	1	113	114	188	No
Receptor_5	147	145	147	147	146	(1)	113	113	188	No
Receptor_6	140	148	140	140	143	3	113	115	188	No
Receptor_7	142	144	142	142	142	1	113	114	188	No
Receptor_8	142	145	142	142	143	1	113	114	188	No
Receptor_9	143	142	143	143	142	(0)	113	113	188	No
Receptor_10	144	142	144	144	143	(0)	113	113	188	No
Receptor_11	142	144	142	142	143	1	113	113	188	No
Receptor_12	145	147	145	145	145	1	113	114	188	No
Receptor_13	144	147	144	144	145	1	113	114	188	No
Receptor_14	144	145	144	144	144	0	113	113	188	No
Receptor_15	143	142	143	143	143	(0)	113	113	188	No
Receptor_16	143	141	143	143	142	(1)	113	113	188	No
Receptor_17	142	139	142	142	141	(1)	113	113	188	No
Receptor_18	141	139	141	141	140	(1)	113	113	188	No
Receptor_19	145	138	145	145	143	(2)	113	113	188	No
Receptor_20	145	140	145	145	143	(2)	113	113	188	No
Receptor_21	143	139	143	143	142	(1)	113	113	188	No
Receptor_22	141	139	141	141	140	(1)	113	113	188	No
Receptor_23	143	140	143	143	142	(1)	113	113	188	No
Receptor_24	143	141	143	143	142	(1)	113	113	188	No
Receptor_25	141	140	141	141	141	(0)	113	113	188	No
Receptor_26	139	138	139	139	139	(0)	113	113	188	No
Receptor_27	135	135	135	135	135	0	113	113	188	No
Receptor_28	135	133	135	135	134	(1)	113	113	188	No
Receptor_29	137	134	137	137	136	(1)	113	113	188	No
Receptor_30	138	135	138	138	137	(1)	113	113	188	No
Receptor_31	138	137	138	138	138	(0)	113	113	188	No
Receptor_32	136	137	136	136	136	0	113	113	188	No
Receptor_33	140	138	140	140	139	(0)	113	113	188	No
Receptor_34	143	139	143	143	142	(1)	113	113	188	No
Receptor_35	141	143	141	141	142	0	113	113	188	No
Receptor_36	142	143	142	142	142	0	113	113	188	No
Receptor_37	147	143	147	147	145	(1)	113	113	188	No
Receptor_38	151	143	151	151	149	(3)	113	113	188	No
Receptor_39	151	144	151	151	149	(2)	113	113	188	No
Receptor_40	155	146	155	155	152	(3)	113	113	188	No
Receptor_41	155	147	155	155	152	(3)	113	113	188	No
Receptor_42	155	148	155	155	153	(3)	113	113	188	No
Receptor_43	155	148	155	155	152	(2)	113	113	188	No
Receptor_44	157	149	157	157	154	(3)	113	113	188	No
Receptor_45	157	150	157	157	155	(2)	113	113	188	No
Receptor_46	160	151	160	160	157	(3)	113	113	188	No
Receptor_47	162	153	162	162	159	(3)	113	113	188	No
Receptor_48	163	153	163	163	160	(3)	113	113	188	No
Receptor_49	166	154	166	166	162	(4)	113	113	188	No
Receptor_50	167	156	167	167	163	(4)	113	113	188	No
Receptor_51	164	157	164	164	161	(2)	113	113	188	No
Receptor_52	164	157	164	164	162	(2)	113	113	188	No
Receptor_53	162	157	162	162	160	(2)	113	113	188	No
Receptor_54	161	157	161	161	159	(1)	113	113	188	No
Receptor_55	160	155	160	160	158	(1)	113	113	188	No
Receptor_56	159	153	159	159	157	(2)	113	113	188	No
Receptor_57	160	155	160	160	159	(2)	113	113	188	No
Receptor_58	162	157	162	162	160	(2)	113	113	188	No
Receptor_59	163	159	163	163	161	(1)	113	113	188	No
Receptor_60	165	161	165	165	163	(1)	113	113	188	No
Receptor_61	167	162	167	167	166	(2)	113	113	188	No
Receptor_62	169	165	169	169	168	(1)	113	113	188	No
Receptor_63	171	167	171	171	170	(1)	113	113	188	No
Receptor_64	175	169	175	175	173	(2)	113	113	188	No
Receptor_65	177	170	177	177	175	(2)	113	113	188	No
Receptor_66	179	172	179	179	177	(2)	113	113	188	No
Receptor_67	180	174	180	180	178	(2)	113	113	188	No
Receptor_68	178	177	178	178	177	(0)	113	113	188	No
Receptor_69	183	179	183	183	182	(1)	113	113	188	No
Receptor_70	181	180	181	181	181	(0)	113	113	188	No
Receptor_71	183	179	183	183	182	(1)	113	113	188	No
Receptor_72	185	181	185	185	184	(1)	113	113	188	No
Receptor_73	187	181	187	187	185	(2)	113	113	188	No
Receptor_74	186	181	186	186	184	(2)	113	113	188	No
Receptor_75	183	179	183	183	182	(1)	113	113	188	No
Receptor_76	192	188	192	192	190	(1)	113	113	188	No
Receptor_77	190	185	190	190	188	(2)	113	113	188	No
Receptor_78	186	183	186	186	185	(1)	113	113	188	No
Receptor_79	196	190	196	196	194	(2)	113	113	188	No
Receptor_80	205	199	205	205	203	(2)	113	113	188	No
Receptor_81	216	206	216	216	213	(3)	113	113	188	No
Receptor_82	207	202	207	207	205	(1)	113	113	188	No
Receptor_83	199	200	199	199	200	0	113	113	188	No
Receptor_84	188	185	188	188	187	(1)	113	113	188	No
Receptor_85	179	179	179	179	179	0	113	113	188	No

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	Max Conc. (ug/m3)					Runway Closure Incremental Difference				
Receptor ID	Normal Ops	Runway Closure (year 1)	Runway Closure (year 2)	Runway Closure (year 3)	Closure 3 Year Average	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_86	169	175	169	169	171	2	113	115	188	No
Receptor_87	170	176	170	170	172	2	113	115	188	No
Receptor_88	167	167	167	167	167	0	113	113	188	No
Receptor_89	166	164	166	166	165	(1)	113	113	188	No
Receptor_90	162	156	162	162	160	(2)	113	113	188	No
Receptor_91	159	153	159	159	157	(2)	113	113	188	No
Receptor_92	155	151	155	155	153	(1)	113	113	188	No
Receptor_93	155	154	155	155	155	(1)	113	113	188	No
Receptor_94	157	155	157	157	156	(1)	113	113	188	No
Receptor_95	159	155	159	159	157	(1)	113	113	188	No
Receptor_96	160	153	160	160	157	(2)	113	113	188	No
Receptor_97	161	151	161	161	158	(3)	113	113	188	No
Receptor_98	166	156	166	166	163	(4)	113	113	188	No
Receptor_99	170	166	170	170	169	(1)	113	113	188	No
Receptor_100	178	173	178	178	176	(2)	113	113	188	No
Receptor_101	179	173	179	179	177	(2)	113	113	188	No
Receptor_102	180	169	180	180	176	(4)	113	113	188	No
Receptor_103	180	174	180	180	178	(2)	113	113	188	No
Receptor_104	183	178	183	183	181	(2)	113	113	188	No
Receptor_105	180	180	180	180	180	(0)	113	113	188	No
Receptor_106	187	186	187	187	187	(0)	113	113	188	No
Receptor_107	196	193	196	196	195	(1)	113	113	188	No
Receptor_108	194	191	194	194	193	(1)	113	113	188	No
Receptor_109	190	178	190	190	186	(4)	113	113	188	No
Receptor_110	181	174	181	181	179	(2)	113	113	188	No
Receptor_111	175	172	175	175	174	(1)	113	113	188	No
Receptor_112	177	175	177	177	176	(1)	113	113	188	No
Receptor_113	179	181	179	179	179	1	113	114	188	No
Receptor_114	176	174	176	176	175	(1)	113	113	188	No
Receptor_115	178	170	178	178	176	(3)	113	113	188	No
Receptor_116	179	172	179	179	176	(2)	113	113	188	No
Receptor_117	190	182	190	190	187	(3)	113	113	188	No
Receptor_118	201	189	201	201	197	(4)	113	113	188	No
Receptor_119	212	204	212	212	209	(3)	113	113	188	No
Receptor_120	227	215	227	227	223	(4)	113	113	188	No
Receptor_121	233	221	233	233	229	(4)	113	113	188	No
Receptor_122	239	222	239	239	233	(5)	113	113	188	No
Receptor_123	236	210	236	236	227	(9)	113	113	188	No
Receptor_124	229	206	229	229	222	(8)	113	113	188	No
Receptor_125	249	221	249	249	240	(9)	113	113	188	No
Receptor_126	240	211	240	240	230	(10)	113	113	188	No
Receptor_127	223	200	223	223	215	(8)	113	113	188	No
Receptor_128	205	191	205	205	200	(5)	113	113	188	No
Receptor_129	194	182	194	194	190	(4)	113	113	188	No
Receptor_130	192	181	192	192	188	(3)	113	113	188	No
Receptor_131	189	180	189	189	186	(3)	113	113	188	No
Receptor_132	182	174	182	182	179	(3)	113	113	188	No
Receptor_133	176	168	176	176	173	(3)	113	113	188	No
Receptor_134	171	163	171	171	168	(3)	113	113	188	No
Receptor_135	166	159	166	166	164	(3)	113	113	188	No
Receptor_136	163	155	163	163	160	(3)	113	113	188	No
Receptor_137	159	153	159	159	157	(2)	113	113	188	No
Receptor_138	162	158	162	162	161	(1)	113	113	188	No
Receptor_139	163	161	163	163	162	(1)	113	113	188	No
Receptor_140	159	158	159	159	159	(0)	113	113	188	No
Receptor_141	162	156	162	162	160	(2)	113	113	188	No
Receptor_142	160	154	160	160	158	(2)	113	113	188	No
Receptor_143	157	155	157	157	156	(1)	113	113	188	No
Receptor_144	158	159	158	158	158	1	113	113	188	No
Receptor_145	161	164	161	161	162	1	113	114	188	No
Receptor_146	159	162	159	159	160	1	113	114	188	No
Receptor_147	159	162	159	159	160	1	113	114	188	No
Receptor_148	161	164	161	161	162	1	113	114	188	No
Receptor_149	165	167	165	165	166	1	113	114	188	No
Receptor_150	170	173	170	170	171	1	113	114	188	No
Receptor_151	174	180	174	174	176	2	113	115	188	No
Receptor_152	182	190	182	182	185	3	113	115	188	No
Receptor_153	191	198	191	191	193	2	113	115	188	No
Receptor_154	181	196	181	181	186	5	113	118	188	No
Receptor_155	178	188	178	178	181	3	113	116	188	No
Receptor_156	175	184	175	175	178	3	113	116	188	No
Receptor_157	169	185	169	169	175	5	113	118	188	No
Receptor_158	173	195	173	173	180	7	113	120	188	No
Receptor_159	175	185	175	175	178	4	113	116	188	No
Receptor_160	177	189	177	177	181	4	113	117	188	No
Receptor_161	178	180	178	178	179	1	113	114	188	No
Receptor_162	176	181	176	176	178	1	113	114	188	No
Receptor_163	179	179	179	179	179	0	113	113	188	No
Receptor_164	181	177	181	181	180	(1)	113	113	188	No
Receptor_165	186	185	186	186	186	(0)	113	113	188	No
Receptor_166	195	189	195	195	193	(2)	113	113	188	No
Receptor_167	202	198	202	202	201	(1)	113	113	188	No
Receptor_168	211	208	211	211	210	(1)	113	113	188	No
Receptor_169	220	217	220	220	219	(1)	113	113	188	No
Receptor_170	228	217	228	228	225	(4)	113	113	188	No

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	Max Conc. (ug/m3)					Runway Closure Incremental Difference				
Receptor ID	Normal Ops	Runway Closure (year 1)	Runway Closure (year 2)	Runway Closure (year 3)	Closure 3 Year Average	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_171	210	201	210	210	207	(3)	113	113	188	No
Receptor_172	196	204	196	196	198	3	113	115	188	No
Receptor_173	190	200	190	190	193	3	113	116	188	No
Receptor_174	188	198	188	188	191	3	113	116	188	No
Receptor_175	186	196	186	186	189	3	113	116	188	No
Receptor_176	188	198	188	188	191	3	113	116	188	No
Receptor_177	190	202	190	190	194	4	113	117	188	No
Receptor_178	186	208	186	186	193	7	113	120	188	No
Receptor_179	185	208	185	185	193	8	113	121	188	No
Receptor_180	189	207	189	189	195	6	113	119	188	No
Receptor_181	201	212	201	201	205	3	113	116	188	No
Receptor_182	207	223	207	207	212	5	113	118	188	No
Receptor_183	211	226	211	211	216	5	113	118	188	No
Receptor_184	215	232	215	215	221	5	113	118	188	No
Receptor_185	225	248	225	225	233	7	113	120	188	No
Receptor_186	230	243	230	230	234	4	113	117	188	No
Receptor_187	238	248	238	238	241	3	113	116	188	No
Receptor_188	244	260	244	244	249	5	113	118	188	No
Receptor_189	235	246	235	235	238	4	113	116	188	No
Receptor_190	243	254	243	243	247	3	113	116	188	No
Receptor_191	228	237	228	228	231	3	113	116	188	No
Receptor_192	211	219	211	211	214	3	113	115	188	No
Receptor_193	198	209	198	198	201	4	113	116	188	No
Receptor_194	191	201	191	191	195	3	113	116	188	No
Receptor_195	185	194	185	185	188	3	113	116	188	No
Receptor_196	181	189	181	181	183	3	113	115	188	No
Receptor_197	177	182	177	177	179	2	113	115	188	No
Receptor_198	173	176	173	173	174	1	113	114	188	No
Receptor_199	168	173	168	168	170	2	113	114	188	No
Receptor_200	165	170	165	165	167	2	113	114	188	No
Receptor_201	161	165	161	161	162	1	113	114	188	No
Receptor_202	159	166	159	159	162	2	113	115	188	No
Receptor_203	156	160	156	156	157	1	113	114	188	No
Receptor_204	158	162	158	158	159	1	113	114	188	No
Receptor_205	156	160	156	156	157	1	113	114	188	No
Receptor_206	154	161	154	154	156	2	113	115	188	No
Receptor_207	151	159	151	151	154	3	113	116	188	No
Receptor_208	152	161	152	152	155	3	113	116	188	No
Receptor_209	155	166	155	155	158	4	113	117	188	No
Receptor_210	158	177	158	158	164	6	113	119	188	No
Receptor_211	163	188	163	163	171	9	113	121	188	No
Receptor_212	169	193	169	169	177	8	113	121	188	No
Receptor_213	175	190	175	175	180	5	113	118	188	No
Receptor_214	180	193	180	180	184	4	113	117	188	No
Receptor_215	189	203	189	189	194	4	113	117	188	No
Receptor_216	196	213	196	196	202	6	113	118	188	No
Receptor_217	203	219	203	203	209	5	113	118	188	No
Receptor_218	200	220	200	200	207	7	113	120	188	No
Receptor_219	209	231	209	209	217	7	113	120	188	No
Receptor_220	219	243	219	219	227	8	113	121	188	No
Receptor_221	224	252	224	224	234	9	113	122	188	No
Receptor_222	229	265	229	229	241	12	113	125	188	No
Receptor_223	229	263	229	229	240	12	113	124	188	No
Receptor_224	238	260	238	238	245	7	113	120	188	No
Receptor_225	241	251	241	241	245	3	113	116	188	No
Receptor_226	234	241	234	234	236	2	113	115	188	No
Receptor_227	265	277	265	265	269	4	113	117	188	No
Receptor_228	279	309	279	279	289	10	113	123	188	No
Receptor_229	320	352	320	320	330	11	113	124	188	No
Receptor_230	312	359	312	312	328	15	113	128	188	No
Receptor_231	313	352	313	313	326	13	113	126	188	No
Receptor_232	340	391	340	340	357	17	113	130	188	No
Receptor_233	392	435	392	392	406	14	113	127	188	No
Receptor_234	453	504	453	453	470	17	113	130	188	No
Receptor_235	482	551	482	482	505	23	113	136	188	No
Receptor_236	602	651	602	602	618	16	113	129	188	No
Receptor_237	588	598	588	588	591	3	113	116	188	No
Receptor_238	514	549	514	514	526	12	113	124	188	No
Receptor_239	438	483	438	438	453	15	113	128	188	No
Receptor_240	438	498	438	438	458	20	113	133	188	No
Receptor_241	382	442	382	382	402	20	113	133	188	No
Receptor_242	338	389	338	338	355	17	113	130	188	No
Receptor_243	305	347	305	305	319	14	113	127	188	No
Receptor_244	284	318	284	284	295	11	113	124	188	No
Receptor_245	254	290	254	254	266	12	113	125	188	No
Receptor_246	271	285	271	271	276	5	113	118	188	No
Receptor_247	258	272	258	258	262	5	113	118	188	No
Receptor_248	270	267	270	270	269	(1)	113	113	188	No
Receptor_249	284	269	284	284	279	(5)	113	113	188	No
Receptor_250	260	277	260	260	265	6	113	119	188	No
Receptor_251	255	248	255	255	253	(2)	113	113	188	No
Receptor_252	237	231	237	237	235	(2)	113	113	188	No
Receptor_253	236	238	236	236	236	1	113	114	188	No
Receptor_254	239	243	239	239	240	1	113	114	188	No
Receptor_255	239	250	239	239	243	4	113	116	188	No

Nitrogen Dioxide (NO_2) 1-Hr (NAAQS)

	Max Conc. (ug/m3)					Runway Closure Incremental Difference				
Receptor ID	Normal Ops	Runway Closure (year 1)	Runway Closure (year 2)	Runway Closure (year 3)	Closure 3 Year Average	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_256	261	267	261	261	263	2	113	115	188	No
Receptor_257	290	282	290	290	287	(3)	113	113	188	No
Receptor_258	290	290	290	290	290	0	113	113	188	No
Receptor_259	263	275	263	263	267	4	113	117	188	No
Receptor_260	233	260	233	233	242	9	113	122	188	No
Receptor_261	237	261	237	237	245	8	113	121	188	No
Receptor_262	239	260	239	239	246	7	113	120	188	No
Receptor_263	232	242	232	232	235	3	113	116	188	No
Receptor_264	214	227	214	214	218	4	113	117	188	No
Receptor_265	197	210	197	197	201	4	113	117	188	No
Receptor_266	191	193	191	191	192	1	113	114	188	No
Receptor_267	191	199	191	191	193	3	113	115	188	No
Receptor_268	192	204	192	192	196	4	113	117	188	No
Receptor_269	193	209	193	193	198	5	113	118	188	No
Receptor_270	186	206	186	186	193	7	113	119	188	No
Receptor_271	183	201	183	183	189	6	113	119	188	No
Receptor_272	186	195	186	186	189	3	113	116	188	No
Receptor_273	188	194	188	188	190	2	113	115	188	No
Receptor_274	197	197	197	197	197	(0)	113	113	188	No
Receptor_275	205	199	205	205	203	(2)	113	113	188	No
Receptor_276	207	207	207	207	207	(0)	113	113	188	No
Receptor_277	199	212	199	199	203	4	113	117	188	No
Receptor_278	205	210	205	205	207	2	113	115	188	No
Receptor_279	210	211	210	210	210	0	113	113	188	No
Receptor_280	206	206	206	206	206	0	113	113	188	No
Receptor_281	204	205	204	204	204	0	113	113	188	No
Receptor_282	202	212	202	202	205	3	113	116	188	No
Receptor_283	206	227	206	206	213	7	113	120	188	No
Receptor_284	212	218	212	212	214	2	113	115	188	No
Receptor_285	213	216	213	213	214	1	113	114	188	No
Receptor_286	221	235	221	221	225	5	113	117	188	No
Receptor_287	236	251	236	236	241	5	113	118	188	No
Receptor_288	246	254	246	246	249	2	113	115	188	No
Receptor_289	244	249	244	244	245	2	113	114	188	No
Receptor_290	234	239	234	234	236	2	113	114	188	No
Receptor_291	226	231	226	226	227	2	113	114	188	No
Receptor_292	215	223	215	215	218	2	113	115	188	No
Receptor_293	213	215	213	213	213	1	113	114	188	No
Receptor_294	206	208	206	206	207	1	113	113	188	No
Receptor_295	206	204	206	206	206	(1)	113	113	188	No
Receptor_296	203	203	203	203	203	(0)	113	113	188	No
Receptor_297	203	205	203	203	204	0	113	113	188	No
Receptor_298	199	201	199	199	200	1	113	114	188	No
Receptor_299	204	200	204	204	203	(1)	113	113	188	No
Receptor_300	205	197	205	205	203	(3)	113	113	188	No
Receptor_301	202	194	202	202	200	(3)	113	113	188	No
Receptor_302	205	197	205	205	202	(3)	113	113	188	No
Receptor_303	206	198	206	206	203	(3)	113	113	188	No
Receptor_304	204	193	204	204	201	(4)	113	113	188	No
Receptor_305	201	191	201	201	197	(3)	113	113	188	No
Receptor_306	198	188	198	198	194	(3)	113	113	188	No
Receptor_307	199	184	199	199	194	(5)	113	113	188	No
Receptor_308	193	180	193	193	189	(4)	113	113	188	No
Receptor_309	191	177	191	191	187	(5)	113	113	188	No
Receptor_310	189	175	189	189	184	(5)	113	113	188	No
Receptor_311	185	174	185	185	181	(4)	113	113	188	No
Receptor_312	181	173	181	181	178	(3)	113	113	188	No
Receptor_313	178	171	178	178	176	(2)	113	113	188	No
Receptor_314	176	169	176	176	173	(2)	113	113	188	No
Receptor_315	171	168	171	171	170	(1)	113	113	188	No
Receptor_316	167	164	167	167	166	(1)	113	113	188	No
Receptor_317	162	161	162	162	162	(0)	113	113	188	No
Receptor_318	159	159	159	159	159	(0)	113	113	188	No
Receptor_319	157	157	157	157	157	(0)	113	113	188	No
Receptor_320	156	155	156	156	155	(0)	113	113	188	No
Receptor_321	154	153	154	154	154	(1)	113	113	188	No
Receptor_322	154	151	154	154	153	(1)	113	113	188	No
Receptor_323	152	149	152	152	151	(1)	113	113	188	No
Receptor_324	150	147	150	150	149	(1)	113	113	188	No
Receptor_325	149	146	149	149	148	(1)	113	113	188	No
Receptor_326	146	144	146	146	146	(1)	113	113	188	No
Receptor_327	201	202	201	201	201	0	113	113	188	No
Maximum	602				618	23	113	136	188	No

	Nitrogen Dioxide (NO2) 1-Hr (CAAQS)							Nitrogen Dioxide (NO_2) Annual						
	Max Conc. (ug/m3)		Runway Closure Incremental Difference					Max Conc. (ug/m3)		Runway Closure Incremental Difference				
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_1	201	189	(11)	184	184	339	No	11	11	0	26	26	57	No
Receptor_2	203	191	(12)	184	184	339	No	11	11	0	26	26	57	No
Receptor_3	201	188	(13)	184	184	339	No	11	11	0	26	26	57	No
Receptor_4	195	181	(14)	184	184	339	No	11	11	(0)	26	26	57	No
Receptor_5	185	183	(2)	184	184	339	No	11	11	(0)	26	26	57	No
Receptor_6	173	189	16	184	200	339	No	11	11	(0)	26	26	57	No
Receptor_7	169	190	21	184	205	339	No	11	11	(0)	26	26	57	No
Receptor_8	168	189	21	184	205	339	No	11	10	(0)	26	26	57	No
Receptor_9	164	192	28	184	212	339	No	10	10	(0)	26	26	57	No
Receptor_10	164	191	28	184	212	339	No	10	10	(0)	26	26	57	No
Receptor_11	169	198	29	184	214	339	No	10	10	(0)	26	26	57	No
Receptor_12	171	201	30	184	215	339	No	9	9	(0)	26	26	57	No
Receptor_13	171	202	31	184	216	339	No	9	9	(0)	26	26	57	No
Receptor_14	169	200	31	184	216	339	No	8	8	(0)	26	26	57	No
Receptor_15	166	197	31	184	215	339	No	8	8	(0)	26	26	57	No
Receptor_16	164	192	28	184	212	339	No	7	7	(0)	26	26	57	No
Receptor_17	160	186	26	184	211	339	No	7	7	(0)	26	26	57	No
Receptor_18	160	180	20	184	204	339	No	6	6	(0)	26	26	57	No
Receptor_19	158	179	21	184	205	339	No	6	6	(0)	26	26	57	No
Receptor_20	158	179	21	184	205	339	No	6	5	(0)	26	26	57	No
Receptor_21	158	177	19	184	203	339	No	5	5	(0)	26	26	57	No
Receptor_22	159	176	16	184	201	339	No	5	5	(0)	26	26	57	No
Receptor_23	160	174	14	184	198	339	No	5	5	(0)	26	26	57	No
Receptor_24	161	172	12	184	196	339	No	4	4	(0)	26	26	57	No
Receptor_25	161	170	9	184	194	339	No	4	4	(0)	26	26	57	No
Receptor_26	160	167	7	184	191	339	No	4	4	0	26	26	57	No
Receptor_27	162	163	2	184	186	339	No	4	4	0	26	26	57	No
Receptor_28	164	159	(6)	184	184	339	No	4	4	0	26	26	57	No
Receptor_29	165	161	(4)	184	184	339	No	4	4	0	26	26	57	No
Receptor_30	166	164	(2)	184	184	339	No	4	4	0	26	26	57	No
Receptor_31	166	166	(0)	184	184	339	No	4	4	0	26	26	57	No
Receptor_32	172	161	(11)	184	184	339	No	4	4	0	26	26	57	No
Receptor_33	174	163	(11)	184	184	339	No	4	4	0	26	26	57	No
Receptor_34	175	164	(11)	184	184	339	No	4	4	0	26	26	57	No
Receptor_35	180	162	(18)	184	184	339	No	4	4	0	26	26	57	No
Receptor_36	183	160	(23)	184	184	339	No	4	4	0	26	26	57	No
Receptor_37	185	160	(25)	184	184	339	No	4	4	0	26	26	57	No
Receptor_38	186	163	(22)	184	184	339	No	4	4	0	26	26	57	No
Receptor_39	185	169	(16)	184	184	339	No	4	4	0	26	26	57	No
Receptor_40	190	171	(19)	184	184	339	No	4	5	0	26	26	57	No
Receptor_41	191	174	(17)	184	184	339	No	5	5	0	26	26	57	No
Receptor_42	193	177	(15)	184	184	339	No	5	5	0	26	26	57	No
Receptor_43	188	179	(9)	184	184	339	No	5	5	0	26	26	57	No
Receptor_44	186	182	(4)	184	184	339	No	5	5	0	26	26	57	No
Receptor_45	183	185	1	184	186	339	No	5	5	0	26	26	57	No
Receptor_46	192	185	(7)	184	184	339	No	5	5	0	26	26	57	No
Receptor_47	200	185	(15)	184	184	339	No	5	5	0	26	26	57	No
Receptor_48	197	188	(9)	184	184	339	No	5	5	0	26	26	57	No
Receptor_49	203	189	(14)	184	184	339	No	6	6	0	26	26	57	No
Receptor_50	204	192	(12)	184	184	339	No	6	6	0	26	26	57	No
Receptor_51	197	193	(4)	184	184	339	No	6	6	0	26	26	57	No
Receptor_52	189	193	4	184	189	339	No	5	6	0	26	26	57	No
Receptor_53	186	192	7	184	191	339	No	5	5	0	26	26	57	No
Receptor_54	183	190	8	184	192	339	No	5	5	0	26	26	57	No
Receptor_55	181	189	8	184	192	339	No	5	5	0	26	26	57	No
Receptor_56	179	188	9	184	193	339	No	5	5	(0)	26	26	57	No
Receptor_57	181	190	9	184	193	339	No	5	5	(0)	26	26	57	No
Receptor_58	183	192	9	184	193	339	No	5	5	(0)	26	26	57	No
Receptor_59	186	194	8	184	192	339	No	5	5	0	26	26	57	No
Receptor_60	189	196	8	184	192	339	No	6	6	(0)	26	26	57	No
Receptor_61	191	199	8	184	192	339	No	6	6	(0)	26	26	57	No
Receptor_62	194	202	8	184	192	339	No	7	7	(0)	26	26	57	No
Receptor_63	198	205	8	184	192	339	No	7	7	(0)	26	26	57	No
Receptor_64	201	209	8	184	192	339	No	8	8	(0)	26	26	57	No
Receptor_65	203	211	9	184	193	339	No	8	8	(0)	26	26	57	No
Receptor_66	205	214	9	184	193	339	No	9	9	(0)	26	26	57	No
Receptor_67	207	217	10	184	194	339	No	10	9	(0)	26	26	57	No
Receptor_68	209	219	10	184	194	339	No	10	10	(1)	26	26	57	No
Receptor_69	214	224	10	184	194	339	No	11	11	(1)	26	26	57	No
Receptor_70	213	223	10	184	194	339	No	12	11	(1)	26	26	57	No
Receptor_71	212	222	10	184	194	339	No	12	11	(1)	26	26	57	No
Receptor_72	210	218	9	184	193	339	No	12	11	(1)	26	26	57	No
Receptor_73	205	213	7	184	192	339	No	12	11	(1)	26	26	57	No
Receptor_74	203	208	5	184	189	339	No	12	11	(1)	26	26	57	No
Receptor_75	204	209	5	184	189	339	No	12	11	(1)	26	26	57	No
Receptor_76	208	212	4	184	188	339	No	14	13	(1)	26	26	57	No
Receptor_77	209	213	4	184	189	339	No	14	13	(1)	26	26	57	No
Receptor_78	210	215	4	184	189	339	No	14	13	(1)	26	26	57	No
Receptor_79	214	218	3	184	188	339	No	16	14	(2)	26	26	57	No
Receptor_80	222	221	(2)	184	184	339	No	18	16	(2)	26	26	57	No
Receptor_81	234	234	1	184	185	339	No	21	18	(3)	26	26	57	No
Receptor_82	229	226	(4)	184	184	339	No	20	18	(3)	26	26	57	No
Receptor_83	225	227	1	184	186	339	No	19	17	(2)	26	26	57	No
Receptor_84	219	222	3	184	187	339	No	17	15	(2)	26	26	57	No
Receptor_85	213	217	4	184	188	339	No	14	13	(1)	26	26	57	No

	Nitrogen Dioxide (NO2) 1-Hr (CAAQS)							Nitrogen Dioxide (NO_2) Annual						
	Max Conc. (ug/m3)		Runway Closure Incremental Difference					Max Conc. (ug/m3)		Runway Closure Incremental Difference				
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_86	208	213	5	184	189	339	No	13	12	(1)	26	26	57	No
Receptor_87	206	212	6	184	190	339	No	13	12	(1)	26	26	57	No
Receptor_88	202	211	9	184	193	339	No	12	12	(1)	26	26	57	No
Receptor_89	195	211	17	184	201	339	No	12	11	(1)	26	26	57	No
Receptor_90	184	207	23	184	207	339	No	11	11	(1)	26	26	57	No
Receptor_91	180	201	21	184	205	339	No	11	10	(1)	26	26	57	No
Receptor_92	175	194	19	184	204	339	No	10	9	(1)	26	26	57	No
Receptor_93	172	191	18	184	202	339	No	10	10	(1)	26	26	57	No
Receptor_94	172	186	13	184	198	339	No	11	10	(1)	26	26	57	No
Receptor_95	172	183	11	184	196	339	No	11	11	(1)	26	26	57	No
Receptor_96	173	185	11	184	196	339	No	12	11	(1)	26	26	57	No
Receptor_97	178	186	8	184	192	339	No	12	12	(1)	26	26	57	No
Receptor_98	180	188	8	184	193	339	No	13	13	(1)	26	26	57	No
Receptor_99	188	191	3	184	187	339	No	15	14	(1)	26	26	57	No
Receptor_100	199	206	7	184	192	339	No	16	15	(1)	26	26	57	No
Receptor_101	200	196	(4)	184	184	339	No	17	16	(1)	26	26	57	No
Receptor_102	215	201	(14)	184	184	339	No	18	16	(1)	26	26	57	No
Receptor_103	221	205	(16)	184	184	339	No	18	17	(1)	26	26	57	No
Receptor_104	208	210	2	184	186	339	No	19	18	(1)	26	26	57	No
Receptor_105	206	215	9	184	193	339	No	20	19	(1)	26	26	57	No
Receptor_106	215	219	4	184	188	339	No	21	20	(1)	26	26	57	No
Receptor_107	226	223	(2)	184	184	339	No	23	22	(1)	26	26	57	No
Receptor_108	223	226	3	184	187	339	No	23	22	(1)	26	26	57	No
Receptor_109	216	229	13	184	197	339	No	23	21	(1)	26	26	57	No
Receptor_110	209	236	27	184	211	339	No	22	21	(1)	26	26	57	No
Receptor_111	202	222	20	184	204	339	No	20	19	(1)	26	26	57	No
Receptor_112	210	232	22	184	207	339	No	21	20	(1)	26	26	57	No
Receptor_113	219	224	5	184	189	339	No	21	20	(1)	26	26	57	No
Receptor_114	227	210	(17)	184	184	339	No	22	21	(1)	26	26	57	No
Receptor_115	228	206	(22)	184	184	339	No	22	21	(1)	26	26	57	No
Receptor_116	221	212	(9)	184	184	339	No	22	22	(1)	26	26	57	No
Receptor_117	237	225	(13)	184	184	339	No	24	24	(0)	26	26	57	No
Receptor_118	266	236	(30)	184	184	339	No	27	27	(0)	26	26	57	No
Receptor_119	302	255	(47)	184	184	339	No	30	29	(0)	26	26	57	No
Receptor_120	340	277	(63)	184	184	339	No	33	32	(1)	26	26	57	No
Receptor_121	342	283	(59)	184	184	339	No	35	34	(1)	26	26	57	No
Receptor_122	318	279	(38)	184	184	339	No	36	36	(1)	26	26	57	No
Receptor_123	308	262	(46)	184	184	339	No	35	34	(1)	26	26	57	No
Receptor_124	294	247	(46)	184	184	339	No	34	33	(0)	26	26	57	No
Receptor_125	282	261	(22)	184	184	339	No	35	35	0	26	26	57	No
Receptor_126	266	246	(21)	184	184	339	No	33	34	0	26	27	57	No
Receptor_127	257	234	(23)	184	184	339	No	31	31	(0)	26	26	57	No
Receptor_128	254	217	(37)	184	184	339	No	29	29	(0)	26	26	57	No
Receptor_129	252	216	(37)	184	184	339	No	28	28	(0)	26	26	57	No
Receptor_130	243	205	(38)	184	184	339	No	27	27	(0)	26	26	57	No
Receptor_131	231	200	(31)	184	184	339	No	27	27	0	26	26	57	No
Receptor_132	220	190	(30)	184	184	339	No	25	26	0	26	26	57	No
Receptor_133	210	182	(28)	184	184	339	No	24	24	0	26	27	57	No
Receptor_134	202	179	(23)	184	184	339	No	23	23	0	26	27	57	No
Receptor_135	195	176	(19)	184	184	339	No	22	23	0	26	27	57	No
Receptor_136	189	176	(13)	184	184	339	No	22	22	0	26	27	57	No
Receptor_137	183	175	(8)	184	184	339	No	21	21	0	26	27	57	No
Receptor_138	177	175	(1)	184	184	339	No	21	21	0	26	27	57	No
Receptor_139	175	181	6	184	190	339	No	21	22	0	26	27	57	No
Receptor_140	171	186	15	184	199	339	No	21	22	1	26	27	57	No
Receptor_141	174	190	16	184	200	339	No	22	22	1	26	27	57	No
Receptor_142	174	193	19	184	203	339	No	21	22	1	26	27	57	No
Receptor_143	178	198	20	184	204	339	No	22	22	1	26	27	57	No
Receptor_144	178	204	25	184	210	339	No	22	23	1	26	27	57	No
Receptor_145	181	209	28	184	212	339	No	22	23	1	26	28	57	No
Receptor_146	183	214	30	184	215	339	No	22	23	1	26	28	57	No
Receptor_147	187	218	31	184	215	339	No	21	23	1	26	28	57	No
Receptor_148	189	222	33	184	217	339	No	21	23	1	26	28	57	No
Receptor_149	197	232	35	184	219	339	No	22	23	1	26	28	57	No
Receptor_150	206	242	36	184	221	339	No	22	24	2	26	28	57	No
Receptor_151	216	254	38	184	222	339	No	23	24	2	26	28	57	No
Receptor_152	227	266	40	184	224	339	No	23	25	2	26	28	57	No
Receptor_153	238	283	45	184	229	339	No	24	26	2	26	28	57	No
Receptor_154	224	264	40	184	224	339	No	24	26	2	26	28	57	No
Receptor_155	219	258	39	184	224	339	No	24	26	2	26	28	57	No
Receptor_156	213	253	39	184	223	339	No	23	25	2	26	28	57	No
Receptor_157	212	231	18	184	203	339	No	23	25	2	26	28	57	No
Receptor_158	237	236	(1)	184	184	339	No	24	26	2	26	28	57	No
Receptor_159	245	245	0	184	184	339	No	24	26	2	26	28	57	No
Receptor_160	241	252	12	184	196	339	No	24	26	2	26	28	57	No
Receptor_161	230	250	20	184	204	339	No	25	26	2	26	28	57	No
Receptor_162	215	240	25	184	209	339	No	25	26	2	26	28	57	No
Receptor_163	211	229	18	184	202	339	No	25	27	2	26	28	57	No
Receptor_164	221	227	6	184	190	339	No	25	27	2	26	28	57	No
Receptor_165	233	239	6	184	190	339	No	26	27	2	26	28	57	No
Receptor_166	248	253	5	184	189	339	No	26	28	2	26	28	57	No
Receptor_167	266	270	3	184	188	339	No	27	29	2	26	28	57	No
Receptor_168	286	288	1	184	186	339	No	28	30	2	26	28	57	No
Receptor_169	300	300	(0)	184	184	339	No	29	30	2	26	28	57	No
Receptor_170	277	277	(0)	184	184	339	No	28	30	2	26	28	57	No

	Nitrogen Dioxide (NO2) 1-Hr (CAAQS)							Nitrogen Dioxide (NO_2) Annual						
	Max Conc. (ug/m3)		Runway Closure Incremental Difference					Max Conc. (ug/m3)		Runway Closure Incremental Difference				
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_171	248	271	23	184	207	339	No	28	30	2	26	28	57	No
Receptor_172	233	277	44	184	229	339	No	28	30	2	26	28	57	No
Receptor_173	222	290	68	184	252	339	No	30	32	2	26	28	57	No
Receptor_174	227	288	61	184	245	339	No	30	32	2	26	28	57	No
Receptor_175	235	298	63	184	247	339	No	29	32	2	26	28	57	No
Receptor_176	244	310	66	184	250	339	No	29	31	2	26	28	57	No
Receptor_177	252	320	69	184	253	339	No	29	31	2	26	28	57	No
Receptor_178	257	326	69	184	253	339	No	29	31	2	26	29	57	No
Receptor_179	258	324	66	184	250	339	No	29	31	2	26	29	57	No
Receptor_180	256	310	54	184	238	339	No	29	31	2	26	29	57	No
Receptor_181	269	289	20	184	204	339	No	29	31	2	26	29	57	No
Receptor_182	279	307	28	184	212	339	No	29	31	2	26	29	57	No
Receptor_183	300	331	31	184	215	339	No	29	31	2	26	29	57	No
Receptor_184	328	343	15	184	200	339	No	29	32	3	26	29	57	No
Receptor_185	328	322	(6)	184	184	339	No	29	32	3	26	29	57	No
Receptor_186	300	366	66	184	250	339	No	29	32	3	26	29	57	No
Receptor_187	316	379	62	184	247	339	No	30	32	3	26	29	57	No
Receptor_188	347	345	(2)	184	184	339	No	30	32	3	26	29	57	No
Receptor_189	373	341	(32)	184	184	339	No	30	33	3	26	29	57	No
Receptor_190	334	365	31	184	216	339	No	29	32	3	26	29	57	No
Receptor_191	310	338	28	184	212	339	No	28	30	3	26	29	57	No
Receptor_192	295	316	21	184	205	339	No	26	29	2	26	29	57	No
Receptor_193	282	296	14	184	198	339	No	25	27	2	26	29	57	No
Receptor_194	272	279	7	184	191	339	No	24	26	2	26	28	57	No
Receptor_195	258	262	4	184	188	339	No	23	25	2	26	28	57	No
Receptor_196	243	250	7	184	192	339	No	22	24	2	26	28	57	No
Receptor_197	232	239	8	184	192	339	No	22	23	2	26	28	57	No
Receptor_198	222	230	8	184	192	339	No	21	22	2	26	28	57	No
Receptor_199	212	220	8	184	192	339	No	20	22	1	26	28	57	No
Receptor_200	207	214	7	184	191	339	No	20	21	1	26	28	57	No
Receptor_201	203	208	5	184	189	339	No	19	21	1	26	28	57	No
Receptor_202	195	205	10	184	194	339	No	19	20	1	26	28	57	No
Receptor_203	197	197	(0)	184	184	339	No	19	20	1	26	28	57	No
Receptor_204	202	199	(2)	184	184	339	No	18	20	1	26	28	57	No
Receptor_205	201	203	2	184	186	339	No	18	19	1	26	28	57	No
Receptor_206	200	205	4	184	189	339	No	18	19	1	26	28	57	No
Receptor_207	205	200	(5)	184	184	339	No	17	19	1	26	28	57	No
Receptor_208	208	198	(10)	184	184	339	No	17	18	1	26	28	57	No
Receptor_209	211	200	(11)	184	184	339	No	17	18	1	26	28	57	No
Receptor_210	217	212	(5)	184	184	339	No	17	19	1	26	28	57	No
Receptor_211	221	222	1	184	185	339	No	18	19	2	26	28	57	No
Receptor_212	223	228	6	184	190	339	No	18	20	2	26	28	57	No
Receptor_213	220	229	9	184	193	339	No	19	21	2	26	28	57	No
Receptor_214	215	242	27	184	211	339	No	19	21	2	26	28	57	No
Receptor_215	225	255	30	184	214	339	No	20	22	2	26	28	57	No
Receptor_216	245	285	40	184	224	339	No	20	22	2	26	28	57	No
Receptor_217	241	275	34	184	218	339	No	22	24	2	26	28	57	No
Receptor_218	251	280	28	184	212	339	No	22	24	2	26	28	57	No
Receptor_219	265	294	29	184	214	339	No	23	26	2	26	29	57	No
Receptor_220	288	307	18	184	203	339	No	25	27	2	26	29	57	No
Receptor_221	315	331	16	184	200	339	No	26	28	3	26	29	57	No
Receptor_222	337	339	2	184	186	339	No	27	29	3	26	29	57	No
Receptor_223	343	328	(15)	184	184	339	No	28	30	3	26	29	57	No
Receptor_224	331	343	12	184	196	339	No	28	31	3	26	29	57	No
Receptor_225	314	341	26	184	210	339	No	29	32	3	26	29	57	No
Receptor_226	296	329	33	184	217	339	No	28	30	3	26	29	57	No
Receptor_227	344	377	33	184	217	339	No	31	34	3	26	29	57	No
Receptor_228	383	415	32	184	216	339	No	34	38	4	26	30	57	No
Receptor_229	449	465	16	184	200	339	No	38	42	4	26	30	57	No
Receptor_230	471	457	(14)	184	184	339	No	37	41	4	26	30	57	No
Receptor_231	462	475	13	184	197	339	No	37	41	4	26	30	57	No
Receptor_232	509	536	26	184	211	339	No	41	46	5	26	31	57	No
Receptor_233	564	606	42	184	227	339	No	46	52	5	26	32	57	No
Receptor_234	624	700	76	184	260	339	No	53	59	6	26	33	57	No
Receptor_235	715	742	27	184	211	339	No	55	62	7	26	33	57	No
Receptor_236	797	1,011	214	184	399	339	Yes	64	72	8	26	34	57	No
Receptor_237	790	955	165	184	349	339	Yes	56	62	7	26	33	57	No
Receptor_238	711	777	65	184	250	339	No	45	51	5	26	32	57	No
Receptor_239	652	724	71	184	255	339	No	37	42	4	26	31	57	No
Receptor_240	626	753	127	184	311	339	No	33	37	4	26	30	57	No
Receptor_241	521	627	106	184	290	339	No	27	30	3	26	29	57	No
Receptor_242	454	556	101	184	286	339	No	22	25	3	26	29	57	No
Receptor_243	401	498	97	184	281	339	No	19	21	2	26	28	57	No
Receptor_244	360	452	92	184	276	339	No	17	19	2	26	28	57	No
Receptor_245	322	399	77	184	261	339	No	14	16	2	26	28	57	No
Receptor_246	336	364	28	184	213	339	No	12	14	1	26	28	57	No
Receptor_247	360	357	(3)	184	184	339	No	10	12	1	26	27	57	No
Receptor_248	405	384	(21)	184	184	339	No	9	10	1	26	27	57	No
Receptor_249	387	357	(30)	184	184	339	No	8	9	1	26	27	57	No
Receptor_250	343	351	8	184	192	339	No	7	8	1	26	27	57	No
Receptor_251	297	340	43	184	227	339	No	6	7	1	26	27	57	No
Receptor_252	271	312	41	184	226	339	No	6	6	1	26	27	57	No
Receptor_253	299	314	14	184	199	339	No	6	7	1	26	27	57	No
Receptor_254	322	332	10	184	194	339	No	6	7	1	26	27	57	No
Receptor_255	339	347	8	184	192	339	No	6	7	1	26	27	57	No

	Nitrogen Dioxide (NO2) 1-Hr (CAAQS)							Nitrogen Dioxide (NO_2) Annual						
	Max Conc. (ug/m3)		Runway Closure Incremental Difference					Max Conc. (ug/m3)		Runway Closure Incremental Difference				
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_256	348	362	14	184	198	339	No	7	8	1	26	27	57	No
Receptor_257	334	381	47	184	231	339	No	8	9	1	26	27	57	No
Receptor_258	378	395	18	184	202	339	No	8	9	1	26	27	57	No
Receptor_259	371	384	13	184	197	339	No	7	8	1	26	27	57	No
Receptor_260	342	345	4	184	188	339	No	7	8	1	26	27	57	No
Receptor_261	340	340	(0)	184	184	339	No	7	8	1	26	27	57	No
Receptor_262	335	358	23	184	207	339	No	7	9	1	26	28	57	No
Receptor_263	302	332	30	184	214	339	No	7	8	2	26	28	57	No
Receptor_264	279	305	26	184	210	339	No	6	8	1	26	28	57	No
Receptor_265	258	284	26	184	210	339	No	6	7	1	26	28	57	No
Receptor_266	236	264	28	184	212	339	No	5	6	1	26	27	57	No
Receptor_267	232	261	29	184	213	339	No	6	7	1	26	27	57	No
Receptor_268	239	266	27	184	212	339	No	6	7	1	26	27	57	No
Receptor_269	236	311	75	184	259	339	No	6	7	1	26	27	57	No
Receptor_270	222	320	97	184	282	339	No	7	7	1	26	27	57	No
Receptor_271	215	301	86	184	271	339	No	7	8	1	26	27	57	No
Receptor_272	212	298	86	184	270	339	No	8	9	1	26	27	57	No
Receptor_273	211	291	80	184	264	339	No	9	9	1	26	27	57	No
Receptor_274	225	272	47	184	232	339	No	9	10	1	26	27	57	No
Receptor_275	241	251	9	184	193	339	No	10	11	1	26	27	57	No
Receptor_276	247	257	10	184	195	339	No	11	12	1	26	27	57	No
Receptor_277	249	301	53	184	237	339	No	12	14	1	26	28	57	No
Receptor_278	243	321	78	184	262	339	No	13	15	1	26	28	57	No
Receptor_279	236	319	82	184	267	339	No	14	16	1	26	28	57	No
Receptor_280	243	303	60	184	244	339	No	15	17	1	26	28	57	No
Receptor_281	247	289	42	184	227	339	No	16	18	2	26	28	57	No
Receptor_282	248	289	41	184	225	339	No	17	19	2	26	28	57	No
Receptor_283	252	282	30	184	214	339	No	18	19	2	26	28	57	No
Receptor_284	249	271	21	184	206	339	No	18	20	2	26	28	57	No
Receptor_285	248	274	26	184	211	339	No	19	20	2	26	28	57	No
Receptor_286	272	292	20	184	204	339	No	21	23	2	26	28	57	No
Receptor_287	284	299	16	184	200	339	No	22	24	2	26	28	57	No
Receptor_288	297	304	6	184	191	339	No	24	26	2	26	29	57	No
Receptor_289	296	298	1	184	186	339	No	24	26	2	26	29	57	No
Receptor_290	285	285	0	184	185	339	No	23	25	2	26	28	57	No
Receptor_291	275	275	(0)	184	184	339	No	21	23	2	26	28	57	No
Receptor_292	262	263	1	184	186	339	No	20	22	2	26	28	57	No
Receptor_293	262	258	(4)	184	184	339	No	20	22	2	26	28	57	No
Receptor_294	260	257	(2)	184	184	339	No	20	22	2	26	28	57	No
Receptor_295	256	255	(1)	184	184	339	No	20	22	2	26	28	57	No
Receptor_296	253	251	(2)	184	184	339	No	20	22	2	26	28	57	No
Receptor_297	249	247	(2)	184	184	339	No	20	22	2	26	28	57	No
Receptor_298	245	242	(4)	184	184	339	No	20	22	2	26	28	57	No
Receptor_299	242	239	(3)	184	184	339	No	20	22	2	26	28	57	No
Receptor_300	237	238	1	184	185	339	No	20	21	1	26	28	57	No
Receptor_301	233	243	10	184	194	339	No	20	21	1	26	28	57	No
Receptor_302	232	249	17	184	201	339	No	20	21	1	26	28	57	No
Receptor_303	237	252	15	184	199	339	No	20	21	1	26	28	57	No
Receptor_304	233	254	21	184	205	339	No	19	21	1	26	27	57	No
Receptor_305	226	255	29	184	214	339	No	19	20	1	26	27	57	No
Receptor_306	224	256	32	184	217	339	No	19	20	1	26	27	57	No
Receptor_307	221	257	36	184	220	339	No	19	20	1	26	27	57	No
Receptor_308	217	255	37	184	222	339	No	19	19	1	26	27	57	No
Receptor_309	213	252	39	184	223	339	No	18	19	1	26	27	57	No
Receptor_310	210	248	38	184	222	339	No	18	19	1	26	27	57	No
Receptor_311	213	243	30	184	214	339	No	17	18	1	26	27	57	No
Receptor_312	216	237	21	184	205	339	No	17	17	1	26	27	57	No
Receptor_313	218	230	12	184	196	339	No	16	17	1	26	27	57	No
Receptor_314	219	223	3	184	187	339	No	16	16	1	26	27	57	No
Receptor_315	220	217	(3)	184	184	339	No	15	16	1	26	27	57	No
Receptor_316	221	212	(9)	184	184	339	No	15	15	0	26	27	57	No
Receptor_317	220	207	(13)	184	184	339	No	14	15	0	26	27	57	No
Receptor_318	218	204	(14)	184	184	339	No	14	14	0	26	27	57	No
Receptor_319	215	202	(14)	184	184	339	No	14	14	0	26	27	57	No
Receptor_320	213	199	(13)	184	184	339	No	13	14	0	26	27	57	No
Receptor_321	210	197	(13)	184	184	339	No	13	13	0	26	27	57	No
Receptor_322	209	197	(13)	184	184	339	No	13	13	0	26	27	57	No
Receptor_323	208	196	(13)	184	184	339	No	12	13	0	26	27	57	No
Receptor_324	207	195	(12)	184	184	339	No	12	12	0	26	27	57	No
Receptor_325	205	193	(12)	184	184	339	No	12	12	0	26	26	57	No
Receptor_326	203	191	(12)	184	184	339	No	12	12	0	26	26	57	No
Receptor_327	240	286	46	184	231	339	No	33	35	2	26	28	57	No
Maximum	797	1,011	214	184	399	339	Yes	64	72	8	26	34	57	No

	Sulfur Dioxide (SO_2) 1-Hr (NAAQS)							Sulfur Dioxide (SO_2) 1-Hr (CAAQS)						
	Max Conc. (ug/m3)		Runway Closure Incremental Difference					Max Conc. (ug/m3)		Runway Closure Incremental Difference				
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_1	51	58	7	21	28	196	No	57	65	8	68	76	655	No
Receptor_2	50	60	9	21	30	196	No	60	67	7	68	75	655	No
Receptor_3	52	61	10	21	30	196	No	61	69	8	68	76	655	No
Receptor_4	53	62	10	21	30	196	No	60	72	12	68	80	655	No
Receptor_5	55	63	8	21	29	196	No	62	73	11	68	78	655	No
Receptor_6	56	61	5	21	26	196	No	65	72	7	68	75	655	No
Receptor_7	56	62	6	21	27	196	No	66	71	5	68	73	655	No
Receptor_8	53	65	11	21	32	196	No	63	70	7	68	75	655	No
Receptor_9	55	63	8	21	29	196	No	61	69	8	68	76	655	No
Receptor_10	52	61	9	21	30	196	No	61	69	8	68	76	655	No
Receptor_11	51	59	8	21	29	196	No	65	71	6	68	74	655	No
Receptor_12	50	59	9	21	29	196	No	66	72	6	68	74	655	No
Receptor_13	52	59	7	21	28	196	No	65	72	6	68	74	655	No
Receptor_14	54	57	4	21	25	196	No	64	69	6	68	73	655	No
Receptor_15	53	55	2	21	23	196	No	62	67	6	68	74	655	No
Receptor_16	51	52	1	21	22	196	No	58	69	11	68	79	655	No
Receptor_17	49	50	1	21	22	196	No	57	70	13	68	81	655	No
Receptor_18	49	50	1	21	22	196	No	59	70	11	68	79	655	No
Receptor_19	49	49	0	21	21	196	No	58	69	11	68	79	655	No
Receptor_20	49	48	(2)	21	21	196	No	57	67	10	68	78	655	No
Receptor_21	48	47	(1)	21	21	196	No	57	65	8	68	75	655	No
Receptor_22	48	47	(1)	21	21	196	No	58	63	6	68	73	655	No
Receptor_23	47	47	(1)	21	21	196	No	56	61	5	68	73	655	No
Receptor_24	47	46	(0)	21	21	196	No	53	60	6	68	74	655	No
Receptor_25	47	46	(1)	21	21	196	No	53	58	4	68	72	655	No
Receptor_26	46	46	0	21	21	196	No	54	55	1	68	69	655	No
Receptor_27	44	44	(0)	21	21	196	No	54	51	(3)	68	68	655	No
Receptor_28	44	42	(2)	21	21	196	No	54	48	(6)	68	68	655	No
Receptor_29	45	43	(2)	21	21	196	No	55	50	(6)	68	68	655	No
Receptor_30	46	44	(1)	21	21	196	No	56	52	(4)	68	68	655	No
Receptor_31	47	46	(1)	21	21	196	No	57	54	(3)	68	68	655	No
Receptor_32	48	45	(3)	21	21	196	No	59	52	(7)	68	68	655	No
Receptor_33	49	46	(3)	21	21	196	No	60	52	(7)	68	68	655	No
Receptor_34	50	48	(3)	21	21	196	No	61	53	(8)	68	68	655	No
Receptor_35	52	49	(3)	21	21	196	No	63	55	(8)	68	68	655	No
Receptor_36	53	49	(4)	21	21	196	No	63	56	(8)	68	68	655	No
Receptor_37	54	52	(2)	21	21	196	No	64	57	(7)	68	68	655	No
Receptor_38	55	53	(3)	21	21	196	No	66	57	(9)	68	68	655	No
Receptor_39	59	54	(5)	21	21	196	No	67	57	(10)	68	68	655	No
Receptor_40	62	56	(6)	21	21	196	No	70	59	(11)	68	68	655	No
Receptor_41	63	58	(5)	21	21	196	No	73	60	(13)	68	68	655	No
Receptor_42	66	59	(7)	21	21	196	No	77	62	(15)	68	68	655	No
Receptor_43	65	57	(8)	21	21	196	No	77	62	(15)	68	68	655	No
Receptor_44	67	58	(9)	21	21	196	No	78	64	(15)	68	68	655	No
Receptor_45	69	57	(12)	21	21	196	No	79	64	(14)	68	68	655	No
Receptor_46	71	60	(11)	21	21	196	No	83	67	(17)	68	68	655	No
Receptor_47	73	64	(10)	21	21	196	No	88	69	(19)	68	68	655	No
Receptor_48	77	63	(14)	21	21	196	No	88	70	(19)	68	68	655	No
Receptor_49	79	65	(13)	21	21	196	No	92	71	(20)	68	68	655	No
Receptor_50	85	66	(19)	21	21	196	No	94	75	(19)	68	68	655	No
Receptor_51	79	64	(14)	21	21	196	No	93	79	(14)	68	68	655	No
Receptor_52	73	65	(9)	21	21	196	No	91	80	(11)	68	68	655	No
Receptor_53	72	62	(10)	21	21	196	No	88	78	(9)	68	68	655	No
Receptor_54	69	60	(10)	21	21	196	No	84	75	(9)	68	68	655	No
Receptor_55	67	58	(9)	21	21	196	No	81	72	(8)	68	68	655	No
Receptor_56	66	58	(7)	21	21	196	No	78	70	(8)	68	68	655	No
Receptor_57	68	62	(6)	21	21	196	No	80	72	(8)	68	68	655	No
Receptor_58	70	63	(7)	21	21	196	No	83	74	(9)	68	68	655	No
Receptor_59	74	63	(11)	21	21	196	No	89	79	(9)	68	68	655	No
Receptor_60	78	69	(9)	21	21	196	No	92	82	(10)	68	68	655	No
Receptor_61	81	72	(9)	21	21	196	No	97	85	(12)	68	68	655	No
Receptor_62	87	75	(12)	21	21	196	No	105	87	(19)	68	68	655	No
Receptor_63	89	79	(10)	21	21	196	No	113	95	(18)	68	68	655	No
Receptor_64	92	81	(11)	21	21	196	No	120	105	(15)	68	68	655	No
Receptor_65	94	79	(16)	21	21	196	No	120	109	(11)	68	68	655	No
Receptor_66	97	79	(18)	21	21	196	No	118	110	(7)	68	68	655	No
Receptor_67	99	80	(19)	21	21	196	No	115	107	(8)	68	68	655	No
Receptor_68	110	81	(28)	21	21	196	No	124	109	(15)	68	68	655	No
Receptor_69	118	86	(32)	21	21	196	No	137	116	(20)	68	68	655	No
Receptor_70	111	90	(21)	21	21	196	No	142	111	(31)	68	68	655	No
Receptor_71	103	85	(17)	21	21	196	No	133	100	(33)	68	68	655	No
Receptor_72	96	82	(13)	21	21	196	No	129	91	(38)	68	68	655	No
Receptor_73	92	79	(13)	21	21	196	No	116	89	(27)	68	68	655	No
Receptor_74	86	77	(9)	21	21	196	No	103	86	(17)	68	68	655	No
Receptor_75	79	75	(4)	21	21	196	No	97	82	(15)	68	68	655	No
Receptor_76	82	80	(2)	21	21	196	No	105	89	(16)	68	68	655	No
Receptor_77	79	77	(2)	21	21	196	No	100	86	(14)	68	68	655	No
Receptor_78	76	76	0	21	21	196	No	96	83	(13)	68	68	655	No
Receptor_79	79	82	3	21	24	196	No	97	87	(10)	68	68	655	No
Receptor_80	84	86	2	21	23	196	No	97	92	(5)	68	68	655	No
Receptor_81	93	92	(1)	21	21	196	No	99	99	0	68	68	655	No
Receptor_82	87	89	2	21	22	196	No	94	95	1	68	69	655	No
Receptor_83	84	84	1	21	22	196	No	89	91	1	68	69	655	No
Receptor_84	77	80	3	21	24	196	No	85	85	0	68	68	655	No
Receptor_85	71	75	4	21	24	196	No	86	81	(5)	68	68	655	No

	Sulfur Dioxide (SO_2) 1-Hr (NAAQS)							Sulfur Dioxide (SO_2) 1-Hr (CAAQS)						
	Max Conc. (ug/m3)		Runway Closure Incremental Difference					Max Conc. (ug/m3)		Runway Closure Incremental Difference				
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_86	68	71	3	21	24	196	No	86	76	(9)	68	68	655	No
Receptor_87	66	69	3	21	24	196	No	80	75	(5)	68	68	655	No
Receptor_88	64	66	2	21	23	196	No	75	73	(2)	68	68	655	No
Receptor_89	64	65	2	21	23	196	No	71	72	1	68	69	655	No
Receptor_90	61	63	2	21	23	196	No	67	68	1	68	69	655	No
Receptor_91	58	60	2	21	23	196	No	65	65	1	68	68	655	No
Receptor_92	56	57	1	21	22	196	No	62	62	0	68	68	655	No
Receptor_93	57	58	1	21	22	196	No	62	63	1	68	69	655	No
Receptor_94	58	60	2	21	23	196	No	64	64	0	68	68	655	No
Receptor_95	58	62	4	21	25	196	No	65	65	(0)	68	68	655	No
Receptor_96	59	64	5	21	26	196	No	66	65	(1)	68	68	655	No
Receptor_97	59	65	6	21	27	196	No	66	67	1	68	68	655	No
Receptor_98	63	69	6	21	27	196	No	71	71	(0)	68	68	655	No
Receptor_99	67	73	7	21	28	196	No	76	75	(0)	68	68	655	No
Receptor_100	72	78	7	21	27	196	No	81	80	(1)	68	68	655	No
Receptor_101	73	78	6	21	27	196	No	82	84	2	68	70	655	No
Receptor_102	76	77	1	21	22	196	No	82	88	6	68	74	655	No
Receptor_103	77	78	2	21	23	196	No	81	91	9	68	77	655	No
Receptor_104	75	79	4	21	25	196	No	86	94	8	68	76	655	No
Receptor_105	76	77	1	21	22	196	No	89	96	7	68	75	655	No
Receptor_106	82	81	(1)	21	21	196	No	94	101	7	68	75	655	No
Receptor_107	86	87	1	21	22	196	No	100	107	7	68	74	655	No
Receptor_108	85	85	1	21	21	196	No	102	108	6	68	74	655	No
Receptor_109	82	84	3	21	23	196	No	100	104	4	68	72	655	No
Receptor_110	80	82	2	21	22	196	No	96	97	0	68	68	655	No
Receptor_111	76	77	1	21	22	196	No	91	92	1	68	69	655	No
Receptor_112	77	77	(0)	21	21	196	No	88	86	(1)	68	68	655	No
Receptor_113	76	77	1	21	22	196	No	87	88	1	68	69	655	No
Receptor_114	75	77	2	21	23	196	No	85	88	2	68	70	655	No
Receptor_115	75	76	0	21	21	196	No	85	88	3	68	71	655	No
Receptor_116	76	76	(0)	21	21	196	No	82	87	5	68	73	655	No
Receptor_117	85	83	(2)	21	21	196	No	93	93	(1)	68	68	655	No
Receptor_118	90	88	(2)	21	21	196	No	108	101	(7)	68	68	655	No
Receptor_119	100	96	(5)	21	21	196	No	126	113	(13)	68	68	655	No
Receptor_120	116	103	(13)	21	21	196	No	145	124	(21)	68	68	655	No
Receptor_121	122	105	(17)	21	21	196	No	149	132	(17)	68	68	655	No
Receptor_122	125	111	(14)	21	21	196	No	146	134	(12)	68	68	655	No
Receptor_123	117	103	(14)	21	21	196	No	142	125	(17)	68	68	655	No
Receptor_124	111	101	(10)	21	21	196	No	135	120	(15)	68	68	655	No
Receptor_125	117	112	(5)	21	21	196	No	138	137	(1)	68	68	655	No
Receptor_126	111	105	(6)	21	21	196	No	129	129	0	68	68	655	No
Receptor_127	101	96	(4)	21	21	196	No	120	117	(4)	68	68	655	No
Receptor_128	95	87	(7)	21	21	196	No	112	102	(10)	68	68	655	No
Receptor_129	91	81	(10)	21	21	196	No	109	96	(13)	68	68	655	No
Receptor_130	88	79	(9)	21	21	196	No	105	91	(14)	68	68	655	No
Receptor_131	84	78	(6)	21	21	196	No	99	90	(9)	68	68	655	No
Receptor_132	78	72	(5)	21	21	196	No	92	83	(9)	68	68	655	No
Receptor_133	72	67	(5)	21	21	196	No	86	76	(9)	68	68	655	No
Receptor_134	67	63	(4)	21	21	196	No	80	71	(9)	68	68	655	No
Receptor_135	63	59	(4)	21	21	196	No	75	67	(9)	68	68	655	No
Receptor_136	60	56	(3)	21	21	196	No	71	63	(8)	68	68	655	No
Receptor_137	57	54	(3)	21	21	196	No	67	60	(7)	68	68	655	No
Receptor_138	58	53	(5)	21	21	196	No	64	61	(3)	68	68	655	No
Receptor_139	56	52	(4)	21	21	196	No	64	61	(4)	68	68	655	No
Receptor_140	54	50	(3)	21	21	196	No	61	57	(4)	68	68	655	No
Receptor_141	55	50	(5)	21	21	196	No	59	57	(2)	68	68	655	No
Receptor_142	53	48	(6)	21	21	196	No	57	56	(1)	68	68	655	No
Receptor_143	52	50	(3)	21	21	196	No	58	59	1	68	69	655	No
Receptor_144	50	50	0	21	21	196	No	56	65	8	68	76	655	No
Receptor_145	51	51	1	21	22	196	No	57	66	9	68	76	655	No
Receptor_146	48	49	1	21	22	196	No	55	63	8	68	76	655	No
Receptor_147	46	48	3	21	24	196	No	53	59	6	68	74	655	No
Receptor_148	45	48	3	21	23	196	No	52	55	3	68	70	655	No
Receptor_149	46	49	4	21	25	196	No	53	59	7	68	74	655	No
Receptor_150	46	51	5	21	26	196	No	53	64	11	68	79	655	No
Receptor_151	47	54	7	21	28	196	No	57	70	13	68	81	655	No
Receptor_152	49	58	9	21	30	196	No	61	76	15	68	83	655	No
Receptor_153	55	63	8	21	29	196	No	65	82	17	68	85	655	No
Receptor_154	53	61	8	21	29	196	No	60	77	17	68	85	655	No
Receptor_155	53	59	7	21	28	196	No	57	74	17	68	85	655	No
Receptor_156	50	57	7	21	28	196	No	55	71	16	68	84	655	No
Receptor_157	51	56	5	21	26	196	No	56	65	10	68	77	655	No
Receptor_158	54	59	5	21	26	196	No	60	69	10	68	78	655	No
Receptor_159	54	60	6	21	27	196	No	64	68	4	68	72	655	No
Receptor_160	56	61	4	21	25	196	No	67	69	2	68	70	655	No
Receptor_161	60	64	4	21	25	196	No	71	72	1	68	69	655	No
Receptor_162	62	67	4	21	25	196	No	77	76	(1)	68	68	655	No
Receptor_163	67	70	3	21	24	196	No	84	78	(5)	68	68	655	No
Receptor_164	73	73	(0)	21	21	196	No	91	83	(8)	68	68	655	No
Receptor_165	80	78	(2)	21	21	196	No	100	91	(9)	68	68	655	No
Receptor_166	88	86	(2)	21	21	196	No	110	101	(9)	68	68	655	No
Receptor_167	95	95	(0)	21	21	196	No	122	113	(10)	68	68	655	No
Receptor_168	103	103	0	21	21	196	No	137	126	(10)	68	68	655	No
Receptor_169	108	111	2	21	23	196	No	147	136	(11)	68	68	655	No
Receptor_170	108	108	(0)	21	21	196	No	147	139	(9)	68	68	655	No

	Sulfur Dioxide (SO_2) 1-Hr (NAAQS)							Sulfur Dioxide (SO_2) 1-Hr (CAAQS)						
	Max Conc. (ug/m3)		Runway Closure Incremental Difference					Max Conc. (ug/m3)		Runway Closure Incremental Difference				
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_171	97	101	5	21	26	196	No	133	129	(4)	68	68	655	No
Receptor_172	94	93	(1)	21	21	196	No	110	113	4	68	72	655	No
Receptor_173	93	97	4	21	25	196	No	102	114	12	68	80	655	No
Receptor_174	88	97	9	21	30	196	No	97	117	20	68	88	655	No
Receptor_175	85	94	9	21	30	196	No	93	118	25	68	93	655	No
Receptor_176	79	86	7	21	28	196	No	89	114	24	68	92	655	No
Receptor_177	75	85	10	21	31	196	No	87	104	17	68	85	655	No
Receptor_178	73	84	12	21	32	196	No	86	93	7	68	75	655	No
Receptor_179	71	81	11	21	32	196	No	87	90	3	68	71	655	No
Receptor_180	69	82	13	21	34	196	No	87	93	7	68	75	655	No
Receptor_181	70	81	11	21	32	196	No	87	93	6	68	74	655	No
Receptor_182	70	85	15	21	36	196	No	89	98	9	68	77	655	No
Receptor_183	72	84	11	21	32	196	No	90	104	14	68	82	655	No
Receptor_184	76	87	11	21	31	196	No	97	103	6	68	74	655	No
Receptor_185	75	87	12	21	33	196	No	95	105	10	68	78	655	No
Receptor_186	79	88	9	21	30	196	No	92	115	23	68	91	655	No
Receptor_187	81	95	14	21	35	196	No	101	120	19	68	87	655	No
Receptor_188	74	89	15	21	36	196	No	113	105	(8)	68	68	655	No
Receptor_189	78	92	14	21	34	196	No	117	118	1	68	69	655	No
Receptor_190	81	92	11	21	32	196	No	104	119	15	68	83	655	No
Receptor_191	74	84	10	21	31	196	No	95	108	13	68	81	655	No
Receptor_192	67	76	10	21	30	196	No	87	99	12	68	80	655	No
Receptor_193	60	70	9	21	30	196	No	80	92	12	68	80	655	No
Receptor_194	55	64	9	21	30	196	No	74	85	11	68	79	655	No
Receptor_195	51	59	8	21	29	196	No	68	78	10	68	78	655	No
Receptor_196	49	56	7	21	28	196	No	64	73	9	68	77	655	No
Receptor_197	46	53	7	21	28	196	No	60	68	8	68	76	655	No
Receptor_198	43	49	7	21	28	196	No	57	63	6	68	74	655	No
Receptor_199	40	47	7	21	28	196	No	54	59	5	68	73	655	No
Receptor_200	39	45	6	21	27	196	No	52	57	5	68	73	655	No
Receptor_201	38	44	6	21	27	196	No	49	54	5	68	73	655	No
Receptor_202	37	43	6	21	27	196	No	49	52	3	68	71	655	No
Receptor_203	38	44	6	21	27	196	No	47	49	2	68	70	655	No
Receptor_204	37	43	6	21	27	196	No	41	50	9	68	76	655	No
Receptor_205	36	44	8	21	29	196	No	43	50	8	68	76	655	No
Receptor_206	34	42	8	21	29	196	No	44	49	5	68	73	655	No
Receptor_207	35	43	8	21	29	196	No	44	50	6	68	74	655	No
Receptor_208	35	45	10	21	31	196	No	44	52	8	68	76	655	No
Receptor_209	36	47	11	21	32	196	No	44	53	10	68	78	655	No
Receptor_210	39	51	12	21	33	196	No	45	56	11	68	79	655	No
Receptor_211	42	53	12	21	33	196	No	46	59	13	68	81	655	No
Receptor_212	45	57	12	21	33	196	No	48	60	12	68	80	655	No
Receptor_213	50	59	10	21	31	196	No	52	66	13	68	81	655	No
Receptor_214	53	63	10	21	30	196	No	58	74	16	68	84	655	No
Receptor_215	59	64	5	21	26	196	No	64	83	20	68	87	655	No
Receptor_216	62	69	6	21	27	196	No	70	93	22	68	90	655	No
Receptor_217	65	72	7	21	27	196	No	71	93	23	68	91	655	No
Receptor_218	65	79	13	21	34	196	No	71	92	21	68	88	655	No
Receptor_219	69	84	15	21	36	196	No	77	99	22	68	90	655	No
Receptor_220	74	89	15	21	36	196	No	81	104	23	68	91	655	No
Receptor_221	75	92	17	21	38	196	No	82	104	22	68	90	655	No
Receptor_222	73	100	27	21	48	196	No	86	108	22	68	89	655	No
Receptor_223	72	96	24	21	45	196	No	92	108	16	68	84	655	No
Receptor_224	77	98	21	21	42	196	No	92	108	16	68	83	655	No
Receptor_225	80	95	15	21	36	196	No	98	109	11	68	79	655	No
Receptor_226	75	85	10	21	31	196	No	93	101	8	68	76	655	No
Receptor_227	88	106	19	21	39	196	No	110	122	12	68	80	655	No
Receptor_228	100	125	24	21	45	196	No	118	138	20	68	88	655	No
Receptor_229	116	147	31	21	52	196	No	136	158	23	68	90	655	No
Receptor_230	107	150	42	21	63	196	No	135	164	29	68	97	655	No
Receptor_231	111	151	40	21	61	196	No	127	164	37	68	105	655	No
Receptor_232	131	169	38	21	59	196	No	147	191	43	68	111	655	No
Receptor_233	155	188	33	21	54	196	No	176	231	55	68	122	655	No
Receptor_234	188	216	29	21	50	196	No	213	285	72	68	140	655	No
Receptor_235	189	248	59	21	80	196	No	217	284	67	68	135	655	No
Receptor_236	250	294	43	21	64	196	No	289	387	98	68	166	655	No
Receptor_237	236	272	35	21	56	196	No	275	336	61	68	129	655	No
Receptor_238	193	249	55	21	76	196	No	248	304	56	68	124	655	No
Receptor_239	167	228	61	21	82	196	No	221	274	53	68	121	655	No
Receptor_240	197	243	46	21	67	196	No	249	296	47	68	114	655	No
Receptor_241	175	202	27	21	48	196	No	214	248	34	68	102	655	No
Receptor_242	157	176	19	21	40	196	No	187	217	30	68	98	655	No
Receptor_243	142	156	14	21	35	196	No	165	194	29	68	96	655	No
Receptor_244	129	140	11	21	32	196	No	147	175	27	68	95	655	No
Receptor_245	114	124	10	21	31	196	No	128	152	24	68	92	655	No
Receptor_246	118	117	(1)	21	21	196	No	142	147	5	68	73	655	No
Receptor_247	104	112	7	21	28	196	No	137	148	11	68	79	655	No
Receptor_248	106	108	3	21	23	196	No	125	137	12	68	80	655	No
Receptor_249	100	120	20	21	41	196	No	123	126	3	68	71	655	No
Receptor_250	95	105	10	21	31	196	No	116	119	3	68	71	655	No
Receptor_251	81	88	8	21	28	196	No	101	116	15	68	82	655	No
Receptor_252	75	80	5	21	26	196	No	86	105	19	68	87	655	No
Receptor_253	77	83	7	21	27	196	No	85	105	20	68	88	655	No
Receptor_254	78	87	10	21	30	196	No	88	106	18	68	86	655	No
Receptor_255	79	88	9	21	30	196	No	95	105	11	68	78	655	No

	Sulfur Dioxide (SO_2) 1-Hr (NAAQS)							Sulfur Dioxide (SO_2) 1-Hr (CAAQS)						
	Max Conc. (ug/m3)		Runway Closure Incremental Difference					Max Conc. (ug/m3)		Runway Closure Incremental Difference				
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_256	85	98	13	21	34	196	No	97	119	22	68	90	655	No
Receptor_257	94	104	10	21	31	196	No	113	137	23	68	91	655	No
Receptor_258	100	110	11	21	32	196	No	113	138	25	68	93	655	No
Receptor_259	88	100	12	21	32	196	No	106	119	14	68	82	655	No
Receptor_260	78	89	11	21	32	196	No	97	105	7	68	75	655	No
Receptor_261	79	91	13	21	33	196	No	98	105	7	68	75	655	No
Receptor_262	80	92	12	21	33	196	No	99	114	15	68	83	655	No
Receptor_263	72	84	12	21	33	196	No	89	105	17	68	85	655	No
Receptor_264	67	77	10	21	31	196	No	81	96	15	68	83	655	No
Receptor_265	63	69	7	21	27	196	No	76	88	13	68	80	655	No
Receptor_266	60	65	5	21	26	196	No	71	82	10	68	78	655	No
Receptor_267	60	66	7	21	28	196	No	73	82	10	68	78	655	No
Receptor_268	59	68	9	21	30	196	No	74	83	9	68	77	655	No
Receptor_269	60	69	9	21	30	196	No	74	82	8	68	76	655	No
Receptor_270	61	69	8	21	29	196	No	75	84	9	68	77	655	No
Receptor_271	62	70	8	21	29	196	No	76	83	7	68	75	655	No
Receptor_272	63	71	8	21	29	196	No	77	81	5	68	72	655	No
Receptor_273	62	72	10	21	30	196	No	77	83	5	68	73	655	No
Receptor_274	63	73	9	21	30	196	No	78	84	6	68	74	655	No
Receptor_275	63	73	10	21	31	196	No	79	86	7	68	75	655	No
Receptor_276	65	76	11	21	32	196	No	79	87	8	68	76	655	No
Receptor_277	67	77	11	21	31	196	No	81	88	8	68	75	655	No
Receptor_278	68	79	10	21	31	196	No	82	89	6	68	74	655	No
Receptor_279	70	80	9	21	30	196	No	84	90	5	68	73	655	No
Receptor_280	72	81	9	21	30	196	No	86	90	4	68	72	655	No
Receptor_281	72	82	10	21	31	196	No	88	91	3	68	71	655	No
Receptor_282	72	78	6	21	27	196	No	90	92	2	68	70	655	No
Receptor_283	73	78	5	21	26	196	No	92	93	1	68	69	655	No
Receptor_284	74	80	6	21	27	196	No	94	94	(1)	68	68	655	No
Receptor_285	77	83	6	21	27	196	No	97	95	(2)	68	68	655	No
Receptor_286	82	89	7	21	28	196	No	103	103	0	68	68	655	No
Receptor_287	88	94	6	21	27	196	No	108	110	3	68	70	655	No
Receptor_288	93	101	7	21	28	196	No	114	119	5	68	73	655	No
Receptor_289	95	103	9	21	29	196	No	115	120	4	68	72	655	No
Receptor_290	92	102	10	21	31	196	No	115	115	(0)	68	68	655	No
Receptor_291	91	98	8	21	29	196	No	114	112	(2)	68	68	655	No
Receptor_292	90	97	8	21	28	196	No	113	104	(9)	68	68	655	No
Receptor_293	98	97	(1)	21	21	196	No	117	116	(1)	68	68	655	No
Receptor_294	97	106	9	21	29	196	No	118	128	10	68	78	655	No
Receptor_295	99	111	12	21	33	196	No	127	133	6	68	74	655	No
Receptor_296	102	114	12	21	33	196	No	126	142	16	68	83	655	No
Receptor_297	101	116	15	21	36	196	No	117	142	25	68	93	655	No
Receptor_298	103	114	12	21	32	196	No	116	136	20	68	87	655	No
Receptor_299	103	115	12	21	33	196	No	115	135	20	68	88	655	No
Receptor_300	108	120	12	21	33	196	No	110	139	30	68	97	655	No
Receptor_301	104	122	18	21	39	196	No	116	134	18	68	86	655	No
Receptor_302	112	121	9	21	30	196	No	123	141	17	68	85	655	No
Receptor_303	113	126	13	21	34	196	No	124	143	19	68	87	655	No
Receptor_304	105	123	19	21	39	196	No	119	133	14	68	82	655	No
Receptor_305	99	112	13	21	34	196	No	109	134	25	68	93	655	No
Receptor_306	97	109	13	21	34	196	No	103	131	28	68	96	655	No
Receptor_307	93	103	11	21	32	196	No	110	124	14	68	82	655	No
Receptor_308	94	105	10	21	31	196	No	117	119	3	68	70	655	No
Receptor_309	93	103	10	21	31	196	No	109	118	9	68	76	655	No
Receptor_310	93	99	6	21	27	196	No	110	114	5	68	73	655	No
Receptor_311	95	95	1	21	22	196	No	101	114	12	68	80	655	No
Receptor_312	92	95	4	21	25	196	No	100	114	13	68	81	655	No
Receptor_313	83	92	9	21	30	196	No	96	112	16	68	84	655	No
Receptor_314	77	89	12	21	33	196	No	91	110	19	68	87	655	No
Receptor_315	75	86	11	21	32	196	No	86	107	21	68	89	655	No
Receptor_316	72	84	12	21	33	196	No	80	104	24	68	92	655	No
Receptor_317	70	82	13	21	33	196	No	76	101	25	68	93	655	No
Receptor_318	67	78	11	21	32	196	No	74	98	24	68	91	655	No
Receptor_319	65	75	10	21	31	196	No	72	94	22	68	90	655	No
Receptor_320	64	72	9	21	29	196	No	70	91	21	68	89	655	No
Receptor_321	62	69	7	21	28	196	No	68	88	20	68	88	655	No
Receptor_322	61	67	6	21	27	196	No	65	84	19	68	87	655	No
Receptor_323	60	66	6	21	27	196	No	63	80	17	68	85	655	No
Receptor_324	58	65	6	21	27	196	No	62	76	14	68	82	655	No
Receptor_325	56	62	7	21	28	196	No	60	72	12	68	80	655	No
Receptor_326	53	60	7	21	28	196	No	59	68	10	68	78	655	No
Receptor_327	93	105	13	21	33	196	No	113	126	13	68	81	655	No
Maximum	250	294	61	21	82	196	No	289	387	98	68	166	655	No

	Sulfur Dioxide (SO_2) 3-Hr							Sulfur Dioxide (SO_2) 24-Hr						
	Max Conc. (ug/m3)		Runway Closure Incremental Difference					Max Conc. (ug/m3)		Runway Closure Incremental Difference				
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_1	40	49	10	39	49	1,300	No	11	13	1	16	17	105	No
Receptor_2	43	50	7	39	46	1,300	No	12	14	1	16	17	105	No
Receptor_3	46	52	6	39	45	1,300	No	13	14	1	16	17	105	No
Receptor_4	48	54	7	39	46	1,300	No	13	15	1	16	17	105	No
Receptor_5	47	55	8	39	47	1,300	No	13	15	1	16	17	105	No
Receptor_6	46	54	9	39	48	1,300	No	14	15	1	16	17	105	No
Receptor_7	45	52	6	39	45	1,300	No	13	14	1	16	17	105	No
Receptor_8	43	48	5	39	44	1,300	No	13	14	1	16	16	105	No
Receptor_9	40	44	4	39	44	1,300	No	13	14	1	16	17	105	No
Receptor_10	37	41	4	39	43	1,300	No	12	13	1	16	17	105	No
Receptor_11	37	39	2	39	41	1,300	No	12	13	1	16	17	105	No
Receptor_12	37	39	1	39	41	1,300	No	12	13	1	16	17	105	No
Receptor_13	37	40	2	39	41	1,300	No	12	13	1	16	17	105	No
Receptor_14	37	40	3	39	42	1,300	No	11	12	1	16	17	105	No
Receptor_15	35	40	4	39	43	1,300	No	11	12	1	16	16	105	No
Receptor_16	34	41	7	39	46	1,300	No	11	12	0	16	16	105	No
Receptor_17	36	43	8	39	47	1,300	No	11	11	(0)	16	16	105	No
Receptor_18	37	44	8	39	47	1,300	No	11	10	(1)	16	16	105	No
Receptor_19	37	45	8	39	47	1,300	No	11	10	(1)	16	16	105	No
Receptor_20	37	45	8	39	47	1,300	No	10	9	(1)	16	16	105	No
Receptor_21	37	45	8	39	47	1,300	No	9	8	(1)	16	16	105	No
Receptor_22	37	44	7	39	46	1,300	No	8	8	(0)	16	16	105	No
Receptor_23	36	43	7	39	46	1,300	No	7	8	0	16	16	105	No
Receptor_24	36	42	6	39	45	1,300	No	7	7	1	16	16	105	No
Receptor_25	36	41	5	39	44	1,300	No	7	7	0	16	16	105	No
Receptor_26	35	40	4	39	44	1,300	No	7	7	0	16	16	105	No
Receptor_27	34	38	4	39	43	1,300	No	7	7	(0)	16	16	105	No
Receptor_28	35	36	1	39	40	1,300	No	7	7	(0)	16	16	105	No
Receptor_29	35	37	2	39	41	1,300	No	7	7	(0)	16	16	105	No
Receptor_30	36	38	2	39	41	1,300	No	7	7	(0)	16	16	105	No
Receptor_31	37	39	3	39	42	1,300	No	8	7	(0)	16	16	105	No
Receptor_32	39	37	(2)	39	39	1,300	No	8	8	(0)	16	16	105	No
Receptor_33	40	38	(2)	39	39	1,300	No	8	8	(0)	16	16	105	No
Receptor_34	41	39	(2)	39	39	1,300	No	8	8	(0)	16	16	105	No
Receptor_35	44	40	(4)	39	39	1,300	No	9	8	(1)	16	16	105	No
Receptor_36	46	41	(5)	39	39	1,300	No	9	8	(1)	16	16	105	No
Receptor_37	48	41	(6)	39	39	1,300	No	10	8	(1)	16	16	105	No
Receptor_38	49	42	(7)	39	39	1,300	No	10	8	(1)	16	16	105	No
Receptor_39	49	41	(8)	39	39	1,300	No	10	8	(1)	16	16	105	No
Receptor_40	52	43	(8)	39	39	1,300	No	10	9	(2)	16	16	105	No
Receptor_41	53	44	(9)	39	39	1,300	No	11	9	(2)	16	16	105	No
Receptor_42	53	45	(9)	39	39	1,300	No	11	9	(2)	16	16	105	No
Receptor_43	51	43	(8)	39	39	1,300	No	11	9	(2)	16	16	105	No
Receptor_44	50	42	(8)	39	39	1,300	No	11	9	(2)	16	16	105	No
Receptor_45	48	41	(8)	39	39	1,300	No	11	9	(2)	16	16	105	No
Receptor_46	53	44	(9)	39	39	1,300	No	12	9	(2)	16	16	105	No
Receptor_47	57	47	(10)	39	39	1,300	No	12	10	(2)	16	16	105	No
Receptor_48	55	46	(9)	39	39	1,300	No	12	10	(3)	16	16	105	No
Receptor_49	58	48	(10)	39	39	1,300	No	13	10	(3)	16	16	105	No
Receptor_50	58	48	(10)	39	39	1,300	No	13	10	(3)	16	16	105	No
Receptor_51	54	45	(8)	39	39	1,300	No	13	10	(3)	16	16	105	No
Receptor_52	51	45	(6)	39	39	1,300	No	12	10	(3)	16	16	105	No
Receptor_53	51	44	(6)	39	39	1,300	No	12	9	(2)	16	16	105	No
Receptor_54	49	43	(6)	39	39	1,300	No	11	9	(2)	16	16	105	No
Receptor_55	48	42	(6)	39	39	1,300	No	10	8	(2)	16	16	105	No
Receptor_56	47	42	(5)	39	39	1,300	No	10	8	(2)	16	16	105	No
Receptor_57	48	43	(5)	39	39	1,300	No	10	8	(2)	16	16	105	No
Receptor_58	49	45	(4)	39	39	1,300	No	11	9	(2)	16	16	105	No
Receptor_59	52	45	(7)	39	39	1,300	No	11	9	(2)	16	16	105	No
Receptor_60	54	48	(6)	39	39	1,300	No	12	10	(2)	16	16	105	No
Receptor_61	56	51	(5)	39	39	1,300	No	12	10	(2)	16	16	105	No
Receptor_62	59	53	(6)	39	39	1,300	No	13	10	(3)	16	16	105	No
Receptor_63	62	56	(7)	39	39	1,300	No	13	11	(3)	16	16	105	No
Receptor_64	65	60	(6)	39	39	1,300	No	14	11	(3)	16	16	105	No
Receptor_65	69	64	(5)	39	39	1,300	No	14	12	(3)	16	16	105	No
Receptor_66	73	66	(7)	39	39	1,300	No	14	12	(2)	16	16	105	No
Receptor_67	75	67	(8)	39	39	1,300	No	16	12	(3)	16	16	105	No
Receptor_68	81	65	(15)	39	39	1,300	No	17	13	(4)	16	16	105	No
Receptor_69	88	70	(18)	39	39	1,300	No	18	14	(4)	16	16	105	No
Receptor_70	85	69	(16)	39	39	1,300	No	18	14	(4)	16	16	105	No
Receptor_71	78	67	(11)	39	39	1,300	No	18	14	(3)	16	16	105	No
Receptor_72	71	66	(6)	39	39	1,300	No	16	14	(2)	16	16	105	No
Receptor_73	66	62	(4)	39	39	1,300	No	15	13	(1)	16	16	105	No
Receptor_74	61	61	(1)	39	39	1,300	No	13	13	(0)	16	16	105	No
Receptor_75	58	60	2	39	41	1,300	No	12	12	(0)	16	16	105	No
Receptor_76	60	64	4	39	43	1,300	No	13	13	(0)	16	16	105	No
Receptor_77	57	64	7	39	46	1,300	No	13	13	0	16	16	105	No
Receptor_78	56	63	8	39	47	1,300	No	13	13	0	16	16	105	No
Receptor_79	59	67	8	39	47	1,300	No	14	14	(0)	16	16	105	No
Receptor_80	64	71	8	39	47	1,300	No	15	15	(0)	16	16	105	No
Receptor_81	69	76	7	39	46	1,300	No	17	16	(0)	16	16	105	No
Receptor_82	67	74	7	39	46	1,300	No	16	15	(0)	16	16	105	No
Receptor_83	66	72	6	39	45	1,300	No	15	15	(0)	16	16	105	No
Receptor_84	61	67	7	39	46	1,300	No	14	13	(0)	16	16	105	No
Receptor_85	56	63	7	39	46	1,300	No	12	12	0	16	16	105	No

	Sulfur Dioxide (SO_2) 3-Hr							Sulfur Dioxide (SO_2) 24-Hr						
	Max Conc. (ug/m3)		Runway Closure Incremental Difference					Max Conc. (ug/m3)		Runway Closure Incremental Difference				
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_86	53	60	7	39	46	1,300	No	11	12	0	16	16	105	No
Receptor_87	52	58	6	39	46	1,300	No	11	11	0	16	16	105	No
Receptor_88	51	57	6	39	45	1,300	No	11	11	0	16	16	105	No
Receptor_89	49	54	5	39	44	1,300	No	11	11	0	16	16	105	No
Receptor_90	46	51	5	39	44	1,300	No	10	10	0	16	16	105	No
Receptor_91	44	47	3	39	42	1,300	No	10	10	0	16	16	105	No
Receptor_92	43	45	2	39	42	1,300	No	9	9	0	16	16	105	No
Receptor_93	44	46	2	39	41	1,300	No	9	10	0	16	16	105	No
Receptor_94	45	47	2	39	41	1,300	No	9	10	0	16	16	105	No
Receptor_95	45	47	2	39	41	1,300	No	9	10	1	16	16	105	No
Receptor_96	46	47	1	39	41	1,300	No	9	10	1	16	16	105	No
Receptor_97	46	47	1	39	40	1,300	No	9	10	1	16	16	105	No
Receptor_98	48	50	1	39	40	1,300	No	10	11	1	16	16	105	No
Receptor_99	51	52	1	39	41	1,300	No	11	12	1	16	16	105	No
Receptor_100	54	55	2	39	41	1,300	No	12	13	1	16	16	105	No
Receptor_101	54	55	1	39	40	1,300	No	12	13	1	16	16	105	No
Receptor_102	54	57	2	39	41	1,300	No	12	12	0	16	16	105	No
Receptor_103	54	59	5	39	44	1,300	No	12	12	(0)	16	16	105	No
Receptor_104	55	60	5	39	44	1,300	No	13	12	(0)	16	16	105	No
Receptor_105	56	60	5	39	44	1,300	No	13	12	(1)	16	16	105	No
Receptor_106	59	64	5	39	44	1,300	No	14	13	(1)	16	16	105	No
Receptor_107	63	67	5	39	44	1,300	No	15	14	(1)	16	16	105	No
Receptor_108	64	67	3	39	42	1,300	No	15	14	(2)	16	16	105	No
Receptor_109	63	63	(0)	39	39	1,300	No	15	13	(2)	16	16	105	No
Receptor_110	62	62	0	39	39	1,300	No	15	13	(2)	16	16	105	No
Receptor_111	58	58	0	39	39	1,300	No	14	12	(2)	16	16	105	No
Receptor_112	57	61	3	39	42	1,300	No	14	12	(2)	16	16	105	No
Receptor_113	59	62	2	39	41	1,300	No	13	12	(1)	16	16	105	No
Receptor_114	60	61	1	39	41	1,300	No	13	12	(0)	16	16	105	No
Receptor_115	59	60	1	39	41	1,300	No	12	12	0	16	16	105	No
Receptor_116	57	58	1	39	40	1,300	No	12	12	0	16	16	105	No
Receptor_117	62	61	(1)	39	39	1,300	No	13	13	0	16	16	105	No
Receptor_118	67	65	(2)	39	39	1,300	No	14	14	0	16	16	105	No
Receptor_119	74	72	(1)	39	39	1,300	No	15	15	0	16	16	105	No
Receptor_120	81	82	1	39	40	1,300	No	17	17	0	16	16	105	No
Receptor_121	82	86	4	39	43	1,300	No	17	17	(0)	16	16	105	No
Receptor_122	85	87	2	39	41	1,300	No	19	18	(0)	16	16	105	No
Receptor_123	83	82	(2)	39	39	1,300	No	18	18	(0)	16	16	105	No
Receptor_124	81	77	(5)	39	39	1,300	No	17	17	0	16	16	105	No
Receptor_125	84	79	(5)	39	39	1,300	No	20	19	(1)	16	16	105	No
Receptor_126	79	75	(4)	39	39	1,300	No	19	18	(1)	16	16	105	No
Receptor_127	76	70	(6)	39	39	1,300	No	17	16	(1)	16	16	105	No
Receptor_128	71	65	(7)	39	39	1,300	No	15	15	(0)	16	16	105	No
Receptor_129	68	64	(3)	39	39	1,300	No	14	14	0	16	16	105	No
Receptor_130	66	61	(5)	39	39	1,300	No	13	14	0	16	16	105	No
Receptor_131	64	58	(7)	39	39	1,300	No	13	13	(0)	16	16	105	No
Receptor_132	60	54	(6)	39	39	1,300	No	12	12	(0)	16	16	105	No
Receptor_133	57	51	(6)	39	39	1,300	No	12	11	(0)	16	16	105	No
Receptor_134	53	48	(5)	39	39	1,300	No	11	11	(0)	16	16	105	No
Receptor_135	50	46	(5)	39	39	1,300	No	10	10	(0)	16	16	105	No
Receptor_136	48	44	(4)	39	39	1,300	No	10	10	(0)	16	16	105	No
Receptor_137	45	42	(4)	39	39	1,300	No	9	9	0	16	16	105	No
Receptor_138	46	41	(5)	39	39	1,300	No	9	9	(0)	16	16	105	No
Receptor_139	43	40	(4)	39	39	1,300	No	9	9	(0)	16	16	105	No
Receptor_140	40	40	(0)	39	39	1,300	No	9	9	(0)	16	16	105	No
Receptor_141	39	41	2	39	41	1,300	No	10	10	(0)	16	16	105	No
Receptor_142	38	41	3	39	43	1,300	No	10	10	(0)	16	16	105	No
Receptor_143	38	42	3	39	43	1,300	No	10	10	0	16	16	105	No
Receptor_144	38	41	4	39	43	1,300	No	11	11	1	16	16	105	No
Receptor_145	39	42	3	39	43	1,300	No	11	11	1	16	17	105	No
Receptor_146	38	42	3	39	42	1,300	No	10	11	1	16	16	105	No
Receptor_147	38	41	3	39	42	1,300	No	10	11	1	16	16	105	No
Receptor_148	38	41	3	39	42	1,300	No	10	11	1	16	16	105	No
Receptor_149	39	42	3	39	42	1,300	No	10	10	1	16	16	105	No
Receptor_150	39	42	3	39	42	1,300	No	9	11	1	16	17	105	No
Receptor_151	39	44	5	39	45	1,300	No	9	11	2	16	17	105	No
Receptor_152	40	48	7	39	46	1,300	No	10	11	1	16	17	105	No
Receptor_153	43	52	9	39	48	1,300	No	10	11	1	16	17	105	No
Receptor_154	44	51	7	39	46	1,300	No	10	11	1	16	17	105	No
Receptor_155	42	48	6	39	46	1,300	No	10	11	1	16	17	105	No
Receptor_156	40	46	6	39	45	1,300	No	9	11	2	16	17	105	No
Receptor_157	40	46	6	39	45	1,300	No	10	12	2	16	17	105	No
Receptor_158	42	48	6	39	45	1,300	No	10	12	2	16	17	105	No
Receptor_159	44	50	7	39	46	1,300	No	10	12	2	16	18	105	No
Receptor_160	45	52	7	39	46	1,300	No	10	12	2	16	18	105	No
Receptor_161	47	54	6	39	45	1,300	No	10	12	2	16	18	105	No
Receptor_162	50	56	6	39	45	1,300	No	11	13	2	16	17	105	No
Receptor_163	52	58	6	39	45	1,300	No	12	13	1	16	17	105	No
Receptor_164	54	60	6	39	45	1,300	No	12	13	1	16	16	105	No
Receptor_165	58	61	3	39	42	1,300	No	13	14	1	16	16	105	No
Receptor_166	63	63	0	39	39	1,300	No	14	15	1	16	16	105	No
Receptor_167	68	66	(2)	39	39	1,300	No	16	17	1	16	17	105	No
Receptor_168	74	71	(3)	39	39	1,300	No	18	18	1	16	17	105	No
Receptor_169	78	76	(2)	39	39	1,300	No	19	20	1	16	17	105	No
Receptor_170	75	74	(1)	39	39	1,300	No	18	18	1	16	16	105	No

	Sulfur Dioxide (SO_2) 3-Hr							Sulfur Dioxide (SO_2) 24-Hr						
	Max Conc. (ug/m3)		Runway Closure Incremental Difference					Max Conc. (ug/m3)		Runway Closure Incremental Difference				
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_171	67	74	7	39	46	1,300	No	17	18	1	16	17	105	No
Receptor_172	64	75	11	39	50	1,300	No	17	18	1	16	16	105	No
Receptor_173	67	77	10	39	49	1,300	No	17	18	1	16	17	105	No
Receptor_174	66	78	12	39	51	1,300	No	17	18	1	16	17	105	No
Receptor_175	65	77	11	39	50	1,300	No	16	18	1	16	17	105	No
Receptor_176	63	74	10	39	49	1,300	No	16	17	1	16	17	105	No
Receptor_177	62	70	9	39	48	1,300	No	15	16	1	16	17	105	No
Receptor_178	62	68	7	39	46	1,300	No	14	15	1	16	17	105	No
Receptor_179	61	67	6	39	45	1,300	No	13	15	1	16	17	105	No
Receptor_180	59	65	6	39	46	1,300	No	13	14	1	16	17	105	No
Receptor_181	57	66	9	39	48	1,300	No	12	14	2	16	17	105	No
Receptor_182	55	67	12	39	51	1,300	No	12	14	2	16	18	105	No
Receptor_183	55	66	11	39	50	1,300	No	12	14	2	16	18	105	No
Receptor_184	55	65	10	39	49	1,300	No	13	14	2	16	17	105	No
Receptor_185	54	71	16	39	55	1,300	No	13	14	1	16	17	105	No
Receptor_186	57	76	19	39	58	1,300	No	14	15	1	16	17	105	No
Receptor_187	61	75	14	39	53	1,300	No	14	16	2	16	17	105	No
Receptor_188	64	69	5	39	44	1,300	No	13	15	2	16	18	105	No
Receptor_189	67	75	8	39	47	1,300	No	14	16	2	16	18	105	No
Receptor_190	70	72	2	39	41	1,300	No	14	16	2	16	18	105	No
Receptor_191	63	66	3	39	42	1,300	No	13	15	2	16	18	105	No
Receptor_192	58	60	3	39	42	1,300	No	12	13	2	16	18	105	No
Receptor_193	53	57	4	39	43	1,300	No	11	13	2	16	18	105	No
Receptor_194	49	53	4	39	43	1,300	No	10	12	2	16	17	105	No
Receptor_195	45	49	4	39	43	1,300	No	9	11	2	16	17	105	No
Receptor_196	42	46	4	39	43	1,300	No	9	10	1	16	17	105	No
Receptor_197	39	44	5	39	44	1,300	No	9	10	1	16	17	105	No
Receptor_198	37	42	5	39	44	1,300	No	8	9	1	16	17	105	No
Receptor_199	35	40	5	39	44	1,300	No	8	9	1	16	17	105	No
Receptor_200	33	39	5	39	45	1,300	No	8	9	1	16	17	105	No
Receptor_201	32	37	5	39	44	1,300	No	8	9	1	16	17	105	No
Receptor_202	31	37	6	39	45	1,300	No	8	9	1	16	17	105	No
Receptor_203	31	38	7	39	46	1,300	No	8	9	1	16	17	105	No
Receptor_204	31	38	7	39	47	1,300	No	7	8	1	16	17	105	No
Receptor_205	31	39	8	39	47	1,300	No	7	8	1	16	17	105	No
Receptor_206	30	39	9	39	48	1,300	No	7	8	1	16	17	105	No
Receptor_207	30	39	9	39	48	1,300	No	7	8	1	16	17	105	No
Receptor_208	30	38	8	39	47	1,300	No	7	8	1	16	17	105	No
Receptor_209	31	39	8	39	47	1,300	No	7	8	1	16	17	105	No
Receptor_210	32	40	8	39	47	1,300	No	7	9	1	16	17	105	No
Receptor_211	34	42	8	39	47	1,300	No	8	9	2	16	17	105	No
Receptor_212	37	43	7	39	46	1,300	No	8	10	2	16	17	105	No
Receptor_213	40	44	5	39	44	1,300	No	8	10	2	16	18	105	No
Receptor_214	43	45	2	39	41	1,300	No	9	11	2	16	18	105	No
Receptor_215	46	47	0	39	39	1,300	No	9	11	2	16	17	105	No
Receptor_216	49	51	3	39	42	1,300	No	10	12	2	16	18	105	No
Receptor_217	51	52	1	39	40	1,300	No	10	12	2	16	18	105	No
Receptor_218	51	56	5	39	44	1,300	No	10	13	2	16	18	105	No
Receptor_219	54	60	6	39	45	1,300	No	11	14	3	16	18	105	No
Receptor_220	57	66	9	39	48	1,300	No	12	15	3	16	18	105	No
Receptor_221	57	72	15	39	54	1,300	No	12	15	3	16	19	105	No
Receptor_222	56	76	21	39	60	1,300	No	12	15	3	16	18	105	No
Receptor_223	54	78	24	39	64	1,300	No	13	15	2	16	18	105	No
Receptor_224	55	77	23	39	62	1,300	No	13	15	1	16	17	105	No
Receptor_225	65	74	9	39	48	1,300	No	14	15	2	16	17	105	No
Receptor_226	62	67	6	39	45	1,300	No	13	14	2	16	17	105	No
Receptor_227	74	82	8	39	47	1,300	No	15	17	2	16	17	105	No
Receptor_228	81	95	14	39	53	1,300	No	17	19	1	16	17	105	No
Receptor_229	88	113	25	39	64	1,300	No	20	21	1	16	17	105	No
Receptor_230	79	115	37	39	76	1,300	No	20	22	3	16	18	105	No
Receptor_231	82	113	31	39	70	1,300	No	19	23	3	16	19	105	No
Receptor_232	95	127	33	39	72	1,300	No	23	26	3	16	19	105	No
Receptor_233	110	144	34	39	73	1,300	No	27	30	3	16	19	105	No
Receptor_234	133	162	29	39	68	1,300	No	32	35	3	16	18	105	No
Receptor_235	132	184	52	39	91	1,300	No	34	37	3	16	18	105	No
Receptor_236	180	210	30	39	69	1,300	No	44	46	2	16	18	105	No
Receptor_237	169	202	32	39	72	1,300	No	39	43	4	16	20	105	No
Receptor_238	153	187	34	39	73	1,300	No	32	39	7	16	23	105	No
Receptor_239	141	169	28	39	67	1,300	No	28	35	7	16	23	105	No
Receptor_240	152	163	11	39	50	1,300	No	28	36	8	16	23	105	No
Receptor_241	128	134	6	39	45	1,300	No	23	30	6	16	22	105	No
Receptor_242	111	119	9	39	48	1,300	No	20	25	5	16	21	105	No
Receptor_243	99	108	9	39	48	1,300	No	18	22	4	16	19	105	No
Receptor_244	90	98	8	39	47	1,300	No	16	19	3	16	18	105	No
Receptor_245	79	86	7	39	46	1,300	No	14	16	2	16	18	105	No
Receptor_246	72	90	18	39	57	1,300	No	13	15	2	16	17	105	No
Receptor_247	71	82	11	39	51	1,300	No	13	15	2	16	18	105	No
Receptor_248	78	88	10	39	49	1,300	No	12	14	2	16	18	105	No
Receptor_249	73	83	10	39	49	1,300	No	11	13	2	16	18	105	No
Receptor_250	62	71	9	39	48	1,300	No	9	12	2	16	18	105	No
Receptor_251	55	59	4	39	43	1,300	No	8	11	2	16	18	105	No
Receptor_252	52	53	2	39	41	1,300	No	8	9	2	16	17	105	No
Receptor_253	53	55	2	39	41	1,300	No	8	10	2	16	17	105	No
Receptor_254	54	59	4	39	44	1,300	No	8	10	2	16	17	105	No
Receptor_255	55	63	8	39	47	1,300	No	9	11	2	16	17	105	No

	Sulfur Dioxide (SO_2) 3-Hr							Sulfur Dioxide (SO_2) 24-Hr						
	Max Conc. (ug/m3)		Runway Closure Incremental Difference					Max Conc. (ug/m3)		Runway Closure Incremental Difference				
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_256	60	63	4	39	43	1,300	No	9	12	2	16	18	105	No
Receptor_257	64	68	4	39	43	1,300	No	10	13	3	16	18	105	No
Receptor_258	66	69	3	39	42	1,300	No	11	14	3	16	18	105	No
Receptor_259	61	69	8	39	47	1,300	No	10	12	2	16	18	105	No
Receptor_260	55	67	11	39	51	1,300	No	9	11	2	16	18	105	No
Receptor_261	56	69	13	39	52	1,300	No	10	12	2	16	18	105	No
Receptor_262	56	71	15	39	54	1,300	No	10	12	2	16	18	105	No
Receptor_263	52	67	15	39	54	1,300	No	9	11	2	16	18	105	No
Receptor_264	49	63	14	39	53	1,300	No	8	10	2	16	18	105	No
Receptor_265	46	60	14	39	53	1,300	No	8	10	2	16	18	105	No
Receptor_266	43	56	13	39	53	1,300	No	7	9	2	16	17	105	No
Receptor_267	43	57	14	39	53	1,300	No	8	9	1	16	17	105	No
Receptor_268	43	57	14	39	53	1,300	No	9	9	1	16	17	105	No
Receptor_269	46	57	11	39	50	1,300	No	9	10	1	16	16	105	No
Receptor_270	49	57	8	39	47	1,300	No	9	10	1	16	17	105	No
Receptor_271	50	57	7	39	46	1,300	No	9	10	1	16	16	105	No
Receptor_272	50	57	7	39	46	1,300	No	9	10	1	16	16	105	No
Receptor_273	50	58	8	39	47	1,300	No	9	10	1	16	17	105	No
Receptor_274	50	58	8	39	47	1,300	No	9	10	1	16	16	105	No
Receptor_275	54	59	5	39	44	1,300	No	10	10	1	16	16	105	No
Receptor_276	55	61	6	39	45	1,300	No	11	12	1	16	16	105	No
Receptor_277	55	66	10	39	50	1,300	No	13	13	1	16	16	105	No
Receptor_278	54	68	14	39	53	1,300	No	13	14	1	16	16	105	No
Receptor_279	53	69	16	39	55	1,300	No	13	14	1	16	17	105	No
Receptor_280	52	68	16	39	55	1,300	No	13	14	1	16	17	105	No
Receptor_281	55	67	12	39	52	1,300	No	13	14	1	16	16	105	No
Receptor_282	57	66	9	39	48	1,300	No	14	15	1	16	16	105	No
Receptor_283	59	65	6	39	45	1,300	No	15	16	1	16	17	105	No
Receptor_284	61	66	5	39	44	1,300	No	16	17	1	16	17	105	No
Receptor_285	63	67	3	39	43	1,300	No	16	18	1	16	17	105	No
Receptor_286	69	74	5	39	44	1,300	No	18	20	2	16	17	105	No
Receptor_287	73	79	6	39	45	1,300	No	20	21	2	16	17	105	No
Receptor_288	77	84	6	39	46	1,300	No	22	23	1	16	17	105	No
Receptor_289	79	86	7	39	46	1,300	No	22	23	1	16	17	105	No
Receptor_290	78	84	6	39	45	1,300	No	21	22	1	16	17	105	No
Receptor_291	77	79	2	39	41	1,300	No	20	21	2	16	17	105	No
Receptor_292	70	70	0	39	39	1,300	No	18	20	2	16	18	105	No
Receptor_293	72	71	(1)	39	39	1,300	No	18	20	2	16	18	105	No
Receptor_294	75	79	4	39	44	1,300	No	19	21	2	16	17	105	No
Receptor_295	76	87	11	39	50	1,300	No	19	22	2	16	18	105	No
Receptor_296	74	90	16	39	55	1,300	No	20	22	2	16	18	105	No
Receptor_297	80	90	10	39	49	1,300	No	20	22	2	16	18	105	No
Receptor_298	86	88	2	39	42	1,300	No	20	22	2	16	18	105	No
Receptor_299	91	92	2	39	41	1,300	No	20	22	2	16	18	105	No
Receptor_300	94	97	3	39	43	1,300	No	19	22	3	16	18	105	No
Receptor_301	95	100	5	39	44	1,300	No	20	23	3	16	19	105	No
Receptor_302	93	99	6	39	45	1,300	No	20	24	4	16	19	105	No
Receptor_303	85	92	7	39	46	1,300	No	21	24	4	16	19	105	No
Receptor_304	77	90	12	39	51	1,300	No	21	24	3	16	19	105	No
Receptor_305	76	89	14	39	53	1,300	No	22	24	3	16	18	105	No
Receptor_306	77	92	15	39	54	1,300	No	22	25	3	16	18	105	No
Receptor_307	80	92	12	39	51	1,300	No	23	25	2	16	18	105	No
Receptor_308	77	89	13	39	52	1,300	No	22	24	2	16	18	105	No
Receptor_309	72	85	13	39	52	1,300	No	22	24	2	16	18	105	No
Receptor_310	70	80	10	39	49	1,300	No	21	23	1	16	17	105	No
Receptor_311	71	78	7	39	46	1,300	No	21	22	1	16	17	105	No
Receptor_312	72	77	5	39	44	1,300	No	19	21	1	16	17	105	No
Receptor_313	71	75	4	39	43	1,300	No	19	20	1	16	17	105	No
Receptor_314	68	73	5	39	44	1,300	No	18	19	1	16	17	105	No
Receptor_315	65	70	6	39	45	1,300	No	18	19	1	16	17	105	No
Receptor_316	61	68	6	39	45	1,300	No	17	18	1	16	17	105	No
Receptor_317	58	66	7	39	46	1,300	No	16	17	1	16	17	105	No
Receptor_318	56	64	8	39	47	1,300	No	15	16	1	16	17	105	No
Receptor_319	53	62	9	39	48	1,300	No	15	16	1	16	16	105	No
Receptor_320	51	60	9	39	48	1,300	No	14	15	1	16	17	105	No
Receptor_321	49	58	10	39	49	1,300	No	13	15	1	16	17	105	No
Receptor_322	46	57	11	39	50	1,300	No	13	14	1	16	17	105	No
Receptor_323	45	56	11	39	50	1,300	No	13	14	1	16	17	105	No
Receptor_324	43	54	11	39	50	1,300	No	12	14	2	16	17	105	No
Receptor_325	42	53	10	39	50	1,300	No	12	13	2	16	17	105	No
Receptor_326	41	51	10	39	49	1,300	No	12	13	2	16	17	105	No
Receptor_327	72	86	13	39	52	1,300	No	19	22	3	16	18	105	No
Maximum	180	210	52	39	91	1,300	No	44	46	8	16	23	105	No

Sulfur Dioxide (SO_2) Annual

	Max Conc. (ug/m3)		Runway Closure Incremental Difference				
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_1	2	3	0	3	3	80	No
Receptor_2	2	3	0	3	3	80	No
Receptor_3	2	2	0	3	3	80	No
Receptor_4	2	2	(0)	3	3	80	No
Receptor_5	2	2	(0)	3	3	80	No
Receptor_6	2	2	(0)	3	3	80	No
Receptor_7	2	2	(0)	3	3	80	No
Receptor_8	2	2	(0)	3	3	80	No
Receptor_9	2	2	(0)	3	3	80	No
Receptor_10	2	2	(0)	3	3	80	No
Receptor_11	2	2	(0)	3	3	80	No
Receptor_12	2	2	(0)	3	3	80	No
Receptor_13	2	2	(0)	3	3	80	No
Receptor_14	2	2	(0)	3	3	80	No
Receptor_15	2	2	(0)	3	3	80	No
Receptor_16	2	1	(0)	3	3	80	No
Receptor_17	1	1	(0)	3	3	80	No
Receptor_18	1	1	(0)	3	3	80	No
Receptor_19	1	1	(0)	3	3	80	No
Receptor_20	1	1	(0)	3	3	80	No
Receptor_21	1	1	(0)	3	3	80	No
Receptor_22	1	1	(0)	3	3	80	No
Receptor_23	1	1	(0)	3	3	80	No
Receptor_24	1	1	(0)	3	3	80	No
Receptor_25	1	1	(0)	3	3	80	No
Receptor_26	1	1	(0)	3	3	80	No
Receptor_27	1	1	(0)	3	3	80	No
Receptor_28	1	1	(0)	3	3	80	No
Receptor_29	1	1	(0)	3	3	80	No
Receptor_30	1	1	(0)	3	3	80	No
Receptor_31	1	1	(0)	3	3	80	No
Receptor_32	1	1	(0)	3	3	80	No
Receptor_33	1	1	(0)	3	3	80	No
Receptor_34	1	1	(0)	3	3	80	No
Receptor_35	1	1	(0)	3	3	80	No
Receptor_36	1	1	(0)	3	3	80	No
Receptor_37	1	1	(0)	3	3	80	No
Receptor_38	1	1	(0)	3	3	80	No
Receptor_39	1	1	(0)	3	3	80	No
Receptor_40	1	1	(0)	3	3	80	No
Receptor_41	1	1	(0)	3	3	80	No
Receptor_42	1	1	(0)	3	3	80	No
Receptor_43	1	1	(0)	3	3	80	No
Receptor_44	1	1	(0)	3	3	80	No
Receptor_45	1	1	(0)	3	3	80	No
Receptor_46	1	1	(0)	3	3	80	No
Receptor_47	1	1	(0)	3	3	80	No
Receptor_48	1	1	(0)	3	3	80	No
Receptor_49	1	1	(0)	3	3	80	No
Receptor_50	1	1	(0)	3	3	80	No
Receptor_51	1	1	(0)	3	3	80	No
Receptor_52	1	1	(0)	3	3	80	No
Receptor_53	1	1	(0)	3	3	80	No
Receptor_54	1	1	(0)	3	3	80	No
Receptor_55	1	1	(0)	3	3	80	No
Receptor_56	1	1	(0)	3	3	80	No
Receptor_57	1	1	(0)	3	3	80	No
Receptor_58	1	1	(0)	3	3	80	No
Receptor_59	1	1	(0)	3	3	80	No
Receptor_60	1	1	(0)	3	3	80	No
Receptor_61	1	1	(0)	3	3	80	No
Receptor_62	2	1	(0)	3	3	80	No
Receptor_63	2	1	(0)	3	3	80	No
Receptor_64	2	2	(0)	3	3	80	No
Receptor_65	2	2	(0)	3	3	80	No
Receptor_66	2	2	(0)	3	3	80	No
Receptor_67	3	2	(0)	3	3	80	No
Receptor_68	3	2	(1)	3	3	80	No
Receptor_69	3	2	(1)	3	3	80	No
Receptor_70	3	3	(1)	3	3	80	No
Receptor_71	3	3	(1)	3	3	80	No
Receptor_72	3	3	(1)	3	3	80	No
Receptor_73	3	3	(1)	3	3	80	No
Receptor_74	3	3	(1)	3	3	80	No
Receptor_75	3	3	(1)	3	3	80	No
Receptor_76	4	3	(1)	3	3	80	No
Receptor_77	4	3	(1)	3	3	80	No
Receptor_78	4	3	(1)	3	3	80	No
Receptor_79	4	3	(1)	3	3	80	No
Receptor_80	5	4	(1)	3	3	80	No
Receptor_81	6	5	(1)	3	3	80	No
Receptor_82	6	4	(1)	3	3	80	No
Receptor_83	5	4	(1)	3	3	80	No
Receptor_84	4	4	(1)	3	3	80	No
Receptor_85	4	3	(1)	3	3	80	No

Sulfur Dioxide (SO_2) Annual

	Max Conc. (ug/m3)		Runway Closure Incremental Difference				
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_86	3	3	(1)	3	3	80	No
Receptor_87	3	3	(0)	3	3	80	No
Receptor_88	3	3	(0)	3	3	80	No
Receptor_89	3	3	(0)	3	3	80	No
Receptor_90	3	2	(0)	3	3	80	No
Receptor_91	3	2	(0)	3	3	80	No
Receptor_92	2	2	(0)	3	3	80	No
Receptor_93	2	2	(0)	3	3	80	No
Receptor_94	3	2	(0)	3	3	80	No
Receptor_95	3	2	(0)	3	3	80	No
Receptor_96	3	2	(0)	3	3	80	No
Receptor_97	3	3	(0)	3	3	80	No
Receptor_98	3	3	(0)	3	3	80	No
Receptor_99	4	3	(0)	3	3	80	No
Receptor_100	4	4	(1)	3	3	80	No
Receptor_101	4	4	(1)	3	3	80	No
Receptor_102	4	4	(1)	3	3	80	No
Receptor_103	5	4	(1)	3	3	80	No
Receptor_104	5	4	(1)	3	3	80	No
Receptor_105	5	4	(1)	3	3	80	No
Receptor_106	5	5	(1)	3	3	80	No
Receptor_107	6	5	(1)	3	3	80	No
Receptor_108	6	5	(1)	3	3	80	No
Receptor_109	6	5	(1)	3	3	80	No
Receptor_110	5	5	(1)	3	3	80	No
Receptor_111	5	4	(0)	3	3	80	No
Receptor_112	5	4	(0)	3	3	80	No
Receptor_113	5	5	(0)	3	3	80	No
Receptor_114	5	5	(0)	3	3	80	No
Receptor_115	5	5	(0)	3	3	80	No
Receptor_116	5	5	(0)	3	3	80	No
Receptor_117	6	5	(0)	3	3	80	No
Receptor_118	6	6	(0)	3	3	80	No
Receptor_119	7	7	(0)	3	3	80	No
Receptor_120	8	7	(0)	3	3	80	No
Receptor_121	8	8	(0)	3	3	80	No
Receptor_122	8	8	(0)	3	3	80	No
Receptor_123	8	8	(0)	3	3	80	No
Receptor_124	8	7	(0)	3	3	80	No
Receptor_125	8	8	0	3	3	80	No
Receptor_126	7	8	0	3	3	80	No
Receptor_127	7	7	0	3	3	80	No
Receptor_128	6	6	(0)	3	3	80	No
Receptor_129	6	6	(0)	3	3	80	No
Receptor_130	6	6	(0)	3	3	80	No
Receptor_131	6	6	0	3	3	80	No
Receptor_132	5	5	0	3	3	80	No
Receptor_133	5	5	0	3	3	80	No
Receptor_134	5	5	0	3	3	80	No
Receptor_135	4	4	0	3	3	80	No
Receptor_136	4	4	0	3	3	80	No
Receptor_137	4	4	0	3	3	80	No
Receptor_138	4	4	0	3	3	80	No
Receptor_139	4	4	0	3	3	80	No
Receptor_140	4	4	0	3	3	80	No
Receptor_141	4	4	0	3	3	80	No
Receptor_142	4	4	0	3	3	80	No
Receptor_143	4	4	0	3	3	80	No
Receptor_144	4	4	0	3	3	80	No
Receptor_145	4	4	0	3	3	80	No
Receptor_146	4	4	0	3	3	80	No
Receptor_147	4	4	0	3	3	80	No
Receptor_148	4	4	0	3	3	80	No
Receptor_149	4	4	0	3	3	80	No
Receptor_150	4	4	0	3	3	80	No
Receptor_151	4	5	0	3	3	80	No
Receptor_152	4	5	1	3	3	80	No
Receptor_153	5	5	1	3	3	80	No
Receptor_154	5	5	1	3	3	80	No
Receptor_155	5	5	1	3	3	80	No
Receptor_156	4	5	1	3	3	80	No
Receptor_157	4	5	1	3	3	80	No
Receptor_158	5	5	1	3	3	80	No
Receptor_159	5	5	1	3	3	80	No
Receptor_160	5	5	1	3	3	80	No
Receptor_161	5	5	1	3	3	80	No
Receptor_162	5	6	1	3	3	80	No
Receptor_163	5	6	1	3	3	80	No
Receptor_164	5	6	0	3	3	80	No
Receptor_165	6	6	0	3	3	80	No
Receptor_166	6	6	0	3	3	80	No
Receptor_167	6	7	0	3	3	80	No
Receptor_168	7	7	0	3	3	80	No
Receptor_169	7	8	0	3	3	80	No
Receptor_170	7	8	0	3	3	80	No

Sulfur Dioxide (SO_2) Annual

	Max Conc. (ug/m3)		Runway Closure Incremental Difference				
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_171	7	7	0	3	3	80	No
Receptor_172	7	7	0	3	3	80	No
Receptor_173	7	8	1	3	3	80	No
Receptor_174	7	8	1	3	3	80	No
Receptor_175	7	8	1	3	3	80	No
Receptor_176	7	8	1	3	3	80	No
Receptor_177	7	8	1	3	3	80	No
Receptor_178	7	7	1	3	3	80	No
Receptor_179	6	7	1	3	3	80	No
Receptor_180	6	7	1	3	3	80	No
Receptor_181	6	7	1	3	3	80	No
Receptor_182	6	7	1	3	3	80	No
Receptor_183	6	7	1	3	3	80	No
Receptor_184	6	7	1	3	3	80	No
Receptor_185	6	7	1	3	3	80	No
Receptor_186	6	7	1	3	3	80	No
Receptor_187	6	7	1	3	3	80	No
Receptor_188	6	7	1	3	3	80	No
Receptor_189	6	7	1	3	3	80	No
Receptor_190	6	6	1	3	3	80	No
Receptor_191	5	6	1	3	3	80	No
Receptor_192	5	5	1	3	3	80	No
Receptor_193	4	5	1	3	3	80	No
Receptor_194	4	5	1	3	3	80	No
Receptor_195	4	5	1	3	3	80	No
Receptor_196	4	4	0	3	3	80	No
Receptor_197	4	4	0	3	3	80	No
Receptor_198	3	4	0	3	3	80	No
Receptor_199	3	4	0	3	3	80	No
Receptor_200	3	4	0	3	3	80	No
Receptor_201	3	3	0	3	3	80	No
Receptor_202	3	3	0	3	3	80	No
Receptor_203	3	3	0	3	3	80	No
Receptor_204	3	3	0	3	3	80	No
Receptor_205	3	3	0	3	3	80	No
Receptor_206	3	3	0	3	3	80	No
Receptor_207	3	3	0	3	3	80	No
Receptor_208	3	3	0	3	3	80	No
Receptor_209	3	3	0	3	3	80	No
Receptor_210	3	3	0	3	3	80	No
Receptor_211	3	3	0	3	3	80	No
Receptor_212	3	3	0	3	3	80	No
Receptor_213	3	3	0	3	3	80	No
Receptor_214	3	3	0	3	3	80	No
Receptor_215	3	4	0	3	3	80	No
Receptor_216	3	4	0	3	3	80	No
Receptor_217	4	4	0	3	3	80	No
Receptor_218	4	4	0	3	3	80	No
Receptor_219	4	4	0	3	3	80	No
Receptor_220	4	5	1	3	3	80	No
Receptor_221	5	5	1	3	3	80	No
Receptor_222	5	5	1	3	3	80	No
Receptor_223	5	6	1	3	3	80	No
Receptor_224	5	6	1	3	3	80	No
Receptor_225	5	6	1	3	3	80	No
Receptor_226	5	6	1	3	3	80	No
Receptor_227	6	7	1	3	3	80	No
Receptor_228	7	8	1	3	4	80	No
Receptor_229	8	9	1	3	4	80	No
Receptor_230	7	8	1	3	4	80	No
Receptor_231	7	8	1	3	4	80	No
Receptor_232	8	9	1	3	4	80	No
Receptor_233	9	11	1	3	4	80	No
Receptor_234	11	13	1	3	4	80	No
Receptor_235	12	14	2	3	4	80	No
Receptor_236	15	17	2	3	5	80	No
Receptor_237	12	14	2	3	4	80	No
Receptor_238	10	11	1	3	4	80	No
Receptor_239	8	9	1	3	4	80	No
Receptor_240	8	9	1	3	4	80	No
Receptor_241	6	7	1	3	3	80	No
Receptor_242	5	6	1	3	3	80	No
Receptor_243	4	5	1	3	3	80	No
Receptor_244	4	4	0	3	3	80	No
Receptor_245	3	4	0	3	3	80	No
Receptor_246	3	3	0	3	3	80	No
Receptor_247	3	3	0	3	3	80	No
Receptor_248	2	3	0	3	3	80	No
Receptor_249	2	2	0	3	3	80	No
Receptor_250	2	2	0	3	3	80	No
Receptor_251	2	2	0	3	3	80	No
Receptor_252	2	2	0	3	3	80	No
Receptor_253	2	2	0	3	3	80	No
Receptor_254	2	2	0	3	3	80	No
Receptor_255	2	2	0	3	3	80	No

Sulfur Dioxide (SO_2) Annual

	Max Conc. (ug/m3)		Runway Closure Incremental Difference				
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Ambient	Total	Threshold	Exceeds?
Receptor_256	2	2	0	3	3	80	No
Receptor_257	2	3	0	3	3	80	No
Receptor_258	2	3	0	3	3	80	No
Receptor_259	2	2	0	3	3	80	No
Receptor_260	2	2	0	3	3	80	No
Receptor_261	2	2	0	3	3	80	No
Receptor_262	2	2	0	3	3	80	No
Receptor_263	2	2	0	3	3	80	No
Receptor_264	2	2	0	3	3	80	No
Receptor_265	2	2	0	3	3	80	No
Receptor_266	1	2	0	3	3	80	No
Receptor_267	1	2	0	3	3	80	No
Receptor_268	2	2	0	3	3	80	No
Receptor_269	2	2	0	3	3	80	No
Receptor_270	2	2	0	3	3	80	No
Receptor_271	2	2	0	3	3	80	No
Receptor_272	2	2	0	3	3	80	No
Receptor_273	2	2	0	3	3	80	No
Receptor_274	2	3	0	3	3	80	No
Receptor_275	3	3	0	3	3	80	No
Receptor_276	3	3	0	3	3	80	No
Receptor_277	3	4	0	3	3	80	No
Receptor_278	3	4	0	3	3	80	No
Receptor_279	4	4	0	3	3	80	No
Receptor_280	4	5	1	3	3	80	No
Receptor_281	4	5	1	3	3	80	No
Receptor_282	4	5	1	3	3	80	No
Receptor_283	5	5	1	3	3	80	No
Receptor_284	5	5	1	3	3	80	No
Receptor_285	5	6	1	3	3	80	No
Receptor_286	6	6	1	3	3	80	No
Receptor_287	6	7	1	3	3	80	No
Receptor_288	7	8	1	3	4	80	No
Receptor_289	7	8	1	3	4	80	No
Receptor_290	6	7	1	3	3	80	No
Receptor_291	6	7	1	3	3	80	No
Receptor_292	5	6	1	3	3	80	No
Receptor_293	5	6	1	3	3	80	No
Receptor_294	5	6	1	3	3	80	No
Receptor_295	6	6	1	3	3	80	No
Receptor_296	6	6	1	3	3	80	No
Receptor_297	6	6	1	3	3	80	No
Receptor_298	6	7	1	3	3	80	No
Receptor_299	6	7	1	3	3	80	No
Receptor_300	6	7	1	3	3	80	No
Receptor_301	6	7	1	3	3	80	No
Receptor_302	6	7	1	3	3	80	No
Receptor_303	6	7	1	3	3	80	No
Receptor_304	6	7	1	3	3	80	No
Receptor_305	6	7	1	3	3	80	No
Receptor_306	6	7	1	3	3	80	No
Receptor_307	6	7	1	3	3	80	No
Receptor_308	6	7	0	3	3	80	No
Receptor_309	6	6	0	3	3	80	No
Receptor_310	6	6	0	3	3	80	No
Receptor_311	6	6	0	3	3	80	No
Receptor_312	5	6	0	3	3	80	No
Receptor_313	5	5	0	3	3	80	No
Receptor_314	5	5	0	3	3	80	No
Receptor_315	5	5	0	3	3	80	No
Receptor_316	4	4	0	3	3	80	No
Receptor_317	4	4	0	3	3	80	No
Receptor_318	4	4	0	3	3	80	No
Receptor_319	4	4	0	3	3	80	No
Receptor_320	3	4	0	3	3	80	No
Receptor_321	3	3	0	3	3	80	No
Receptor_322	3	3	0	3	3	80	No
Receptor_323	3	3	0	3	3	80	No
Receptor_324	3	3	0	3	3	80	No
Receptor_325	3	3	0	3	3	80	No
Receptor_326	3	3	0	3	3	80	No
Receptor_327	9	9	1	3	3	80	No
Maximum	15	17	2	3	5	80	No

	Respirable Particulate Matter (PM_{10}) 24-Hr					Respirable Particulate Matter (PM_{10}) Annual				
	Max Conc. (ug/m3)		Rwy Closure Incr. Difference			Max Conc. (ug/m3)		Rwy Closure Incr. Difference		
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Threshold	Exceeds?
Receptor_1	2	2	0.17	2.50	No	0	0	(0.00)	1.00	No
Receptor_2	2	3	0.16	2.50	No	0	0	(0.01)	1.00	No
Receptor_3	2	3	0.12	2.50	No	0	0	(0.01)	1.00	No
Receptor_4	3	3	0.10	2.50	No	0	0	(0.01)	1.00	No
Receptor_5	3	3	0.07	2.50	No	0	0	(0.01)	1.00	No
Receptor_6	3	3	0.04	2.50	No	0	0	(0.01)	1.00	No
Receptor_7	3	3	(0.01)	2.50	No	0	0	(0.01)	1.00	No
Receptor_8	3	3	(0.07)	2.50	No	0	0	(0.01)	1.00	No
Receptor_9	3	3	(0.12)	2.50	No	0	0	(0.01)	1.00	No
Receptor_10	3	3	(0.05)	2.50	No	0	0	(0.01)	1.00	No
Receptor_11	3	3	(0.05)	2.50	No	0	0	(0.01)	1.00	No
Receptor_12	3	3	(0.07)	2.50	No	0	0	(0.01)	1.00	No
Receptor_13	3	3	0.03	2.50	No	0	0	(0.01)	1.00	No
Receptor_14	3	3	0.10	2.50	No	0	0	(0.01)	1.00	No
Receptor_15	2	3	0.11	2.50	No	0	0	(0.01)	1.00	No
Receptor_16	2	2	0.09	2.50	No	0	0	(0.00)	1.00	No
Receptor_17	2	2	0.01	2.50	No	0	0	(0.00)	1.00	No
Receptor_18	2	2	(0.06)	2.50	No	0	0	0.00	1.00	No
Receptor_19	2	2	(0.12)	2.50	No	0	0	0.00	1.00	No
Receptor_20	2	2	0.07	2.50	No	0	0	0.01	1.00	No
Receptor_21	2	2	0.22	2.50	No	0	0	0.01	1.00	No
Receptor_22	2	2	0.09	2.50	No	0	0	0.01	1.00	No
Receptor_23	2	2	(0.04)	2.50	No	0	0	0.01	1.00	No
Receptor_24	2	2	(0.15)	2.50	No	0	0	0.01	1.00	No
Receptor_25	2	2	(0.23)	2.50	No	0	0	0.01	1.00	No
Receptor_26	2	2	(0.28)	2.50	No	0	0	0.01	1.00	No
Receptor_27	2	2	(0.32)	2.50	No	0	0	0.01	1.00	No
Receptor_28	2	2	(0.34)	2.50	No	0	0	0.01	1.00	No
Receptor_29	2	2	(0.34)	2.50	No	0	0	0.01	1.00	No
Receptor_30	2	2	(0.34)	2.50	No	0	0	0.01	1.00	No
Receptor_31	2	2	(0.34)	2.50	No	0	0	0.02	1.00	No
Receptor_32	2	2	(0.36)	2.50	No	0	0	0.02	1.00	No
Receptor_33	2	2	(0.37)	2.50	No	0	0	0.02	1.00	No
Receptor_34	2	2	(0.38)	2.50	No	0	0	0.02	1.00	No
Receptor_35	2	2	(0.40)	2.50	No	0	0	0.03	1.00	No
Receptor_36	2	2	(0.42)	2.50	No	0	0	0.04	1.00	No
Receptor_37	2	2	(0.44)	2.50	No	0	0	0.05	1.00	No
Receptor_38	2	2	(0.44)	2.50	No	0	0	0.05	1.00	No
Receptor_39	2	2	(0.43)	2.50	No	0	0	0.06	1.00	No
Receptor_40	3	2	(0.47)	2.50	No	0	0	0.08	1.00	No
Receptor_41	3	2	(0.48)	2.50	No	0	0	0.09	1.00	No
Receptor_42	3	2	(0.48)	2.50	No	0	0	0.10	1.00	No
Receptor_43	3	2	(0.44)	2.50	No	0	0	0.08	1.00	No
Receptor_44	2	2	(0.42)	2.50	No	0	0	0.08	1.00	No
Receptor_45	2	2	(0.38)	2.50	No	0	0	0.07	1.00	No
Receptor_46	3	2	(0.46)	2.50	No	0	0	0.10	1.00	No
Receptor_47	3	2	(0.54)	2.50	No	0	0	0.15	1.00	No
Receptor_48	3	2	(0.49)	2.50	No	0	0	0.12	1.00	No
Receptor_49	3	2	(0.54)	2.50	No	0	0	0.16	1.00	No
Receptor_50	3	2	(0.54)	2.50	No	0	0	0.16	1.00	No
Receptor_51	3	2	(0.45)	2.50	No	0	0	0.12	1.00	No
Receptor_52	3	2	(0.46)	2.50	No	0	0	0.09	1.00	No
Receptor_53	2	2	(0.47)	2.50	No	0	0	0.07	1.00	No
Receptor_54	2	2	(0.43)	2.50	No	0	0	0.06	1.00	No
Receptor_55	2	2	(0.40)	2.50	No	0	0	0.05	1.00	No
Receptor_56	2	2	(0.37)	2.50	No	0	0	0.04	1.00	No
Receptor_57	2	2	(0.38)	2.50	No	0	0	0.05	1.00	No
Receptor_58	2	2	(0.39)	2.50	No	0	0	0.05	1.00	No
Receptor_59	2	2	(0.45)	2.50	No	0	0	0.07	1.00	No
Receptor_60	2	2	(0.46)	2.50	No	0	0	0.07	1.00	No
Receptor_61	3	2	(0.47)	2.50	No	0	0	0.08	1.00	No
Receptor_62	3	2	(0.48)	2.50	No	0	0	0.09	1.00	No
Receptor_63	3	2	(0.47)	2.50	No	0	0	0.11	1.00	No
Receptor_64	3	2	(0.41)	2.50	No	0	0	0.13	1.00	No
Receptor_65	3	3	(0.32)	2.50	No	0	0	0.13	1.00	No
Receptor_66	3	3	(0.14)	2.50	No	0	0	0.13	1.00	No
Receptor_67	3	3	0.03	2.50	No	0	1	0.12	1.00	No
Receptor_68	3	3	0.07	2.50	No	0	1	0.12	1.00	No
Receptor_69	3	4	0.42	2.50	No	0	1	0.18	1.00	No
Receptor_70	3	3	0.10	2.50	No	0	1	0.12	1.00	No
Receptor_71	3	3	(0.04)	2.50	No	1	1	0.08	1.00	No
Receptor_72	3	3	(0.03)	2.50	No	1	1	0.05	1.00	No
Receptor_73	3	3	0.07	2.50	No	1	1	0.03	1.00	No
Receptor_74	3	3	0.19	2.50	No	1	1	0.02	1.00	No
Receptor_75	3	3	0.28	2.50	No	1	1	0.01	1.00	No
Receptor_76	3	3	0.35	2.50	No	1	1	0.01	1.00	No
Receptor_77	3	3	0.35	2.50	No	1	1	0.00	1.00	No
Receptor_78	3	3	0.32	2.50	No	1	1	(0.00)	1.00	No
Receptor_79	3	3	0.34	2.50	No	1	1	(0.01)	1.00	No
Receptor_80	3	3	0.35	2.50	No	1	1	(0.03)	1.00	No
Receptor_81	3	4	0.33	2.50	No	1	1	(0.06)	1.00	No
Receptor_82	3	4	0.28	2.50	No	1	1	(0.05)	1.00	No
Receptor_83	3	3	0.22	2.50	No	1	1	(0.04)	1.00	No
Receptor_84	3	3	0.27	2.50	No	1	1	(0.02)	1.00	No
Receptor_85	3	3	0.27	2.50	No	1	1	(0.01)	1.00	No

	Respirable Particulate Matter (PM_{10}) 24-Hr					Respirable Particulate Matter (PM_{10}) Annual				
	Max Conc. (ug/m3)		Rwy Closure Incr. Difference			Max Conc. (ug/m3)		Rwy Closure Incr. Difference		
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Threshold	Exceeds?
Receptor_86	2	3	0.28	2.50	No	1	1	(0.00)	1.00	No
Receptor_87	2	3	0.27	2.50	No	1	1	(0.00)	1.00	No
Receptor_88	2	3	0.24	2.50	No	1	1	(0.00)	1.00	No
Receptor_89	2	3	0.21	2.50	No	1	0	(0.00)	1.00	No
Receptor_90	2	2	0.21	2.50	No	0	0	(0.00)	1.00	No
Receptor_91	2	2	0.19	2.50	No	0	0	0.00	1.00	No
Receptor_92	2	2	0.15	2.50	No	0	0	0.00	1.00	No
Receptor_93	2	2	0.11	2.50	No	0	0	0.00	1.00	No
Receptor_94	2	2	0.08	2.50	No	0	0	0.00	1.00	No
Receptor_95	2	2	0.06	2.50	No	0	0	(0.00)	1.00	No
Receptor_96	2	2	0.07	2.50	No	0	0	(0.00)	1.00	No
Receptor_97	2	2	0.09	2.50	No	0	0	(0.00)	1.00	No
Receptor_98	2	2	0.10	2.50	No	1	1	(0.01)	1.00	No
Receptor_99	2	3	0.11	2.50	No	1	1	(0.01)	1.00	No
Receptor_100	3	3	0.12	2.50	No	1	1	(0.02)	1.00	No
Receptor_101	3	3	0.16	2.50	No	1	1	(0.02)	1.00	No
Receptor_102	3	3	0.19	2.50	No	1	1	(0.02)	1.00	No
Receptor_103	3	3	0.14	2.50	No	1	1	(0.01)	1.00	No
Receptor_104	3	3	0.08	2.50	No	1	1	(0.01)	1.00	No
Receptor_105	3	3	(0.00)	2.50	No	1	1	0.00	1.00	No
Receptor_106	3	3	0.01	2.50	No	1	1	0.00	1.00	No
Receptor_107	3	3	0.04	2.50	No	1	1	0.01	1.00	No
Receptor_108	3	3	(0.00)	2.50	No	1	1	0.02	1.00	No
Receptor_109	3	3	(0.01)	2.50	No	1	1	0.03	1.00	No
Receptor_110	3	3	(0.00)	2.50	No	1	1	0.03	1.00	No
Receptor_111	3	3	(0.07)	2.50	No	1	1	0.02	1.00	No
Receptor_112	3	3	0.01	2.50	No	1	1	0.04	1.00	No
Receptor_113	3	3	0.15	2.50	No	1	1	0.06	1.00	No
Receptor_114	3	3	0.34	2.50	No	1	1	0.09	1.00	No
Receptor_115	3	3	0.69	2.50	No	1	1	0.13	1.00	No
Receptor_116	3	3	0.75	2.50	No	1	1	0.13	1.00	No
Receptor_117	3	5	1.85	2.50	No	1	1	0.32	1.00	No
Receptor_118	3	5	2.30	2.50	No	1	1	0.39	1.00	No
Receptor_119	3	6	2.24	2.50	No	1	2	0.38	1.00	No
Receptor_120	4	6	1.88	2.50	No	1	2	0.28	1.00	No
Receptor_121	4	6	2.22	2.50	No	1	2	0.27	1.00	No
Receptor_122	4	7	2.95	2.50	Yes	2	2	0.29	1.00	No
Receptor_123	4	6	1.77	2.50	No	1	2	0.20	1.00	No
Receptor_124	4	5	1.16	2.50	No	1	2	0.14	1.00	No
Receptor_125	4	5	1.78	2.50	No	2	2	0.17	1.00	No
Receptor_126	3	5	1.18	2.50	No	1	2	0.13	1.00	No
Receptor_127	3	4	0.60	2.50	No	1	1	0.08	1.00	No
Receptor_128	3	3	0.34	2.50	No	1	1	0.06	1.00	No
Receptor_129	3	3	0.26	2.50	No	1	1	0.06	1.00	No
Receptor_130	3	3	0.18	2.50	No	1	1	0.05	1.00	No
Receptor_131	3	3	0.13	2.50	No	1	1	0.04	1.00	No
Receptor_132	3	3	0.08	2.50	No	1	1	0.03	1.00	No
Receptor_133	2	3	0.08	2.50	No	1	1	0.02	1.00	No
Receptor_134	2	2	0.07	2.50	No	1	1	0.02	1.00	No
Receptor_135	2	2	0.05	2.50	No	1	1	0.02	1.00	No
Receptor_136	2	2	0.02	2.50	No	1	1	0.01	1.00	No
Receptor_137	2	2	0.00	2.50	No	1	1	0.01	1.00	No
Receptor_138	2	2	0.05	2.50	No	1	1	0.01	1.00	No
Receptor_139	2	2	0.07	2.50	No	1	1	0.01	1.00	No
Receptor_140	2	2	0.05	2.50	No	1	1	0.02	1.00	No
Receptor_141	2	2	0.07	2.50	No	1	1	0.02	1.00	No
Receptor_142	2	2	0.08	2.50	No	1	1	0.02	1.00	No
Receptor_143	2	2	0.03	2.50	No	1	1	0.02	1.00	No
Receptor_144	2	2	0.05	2.50	No	1	1	0.03	1.00	No
Receptor_145	2	2	0.11	2.50	No	1	1	0.04	1.00	No
Receptor_146	2	2	0.07	2.50	No	1	1	0.04	1.00	No
Receptor_147	2	2	0.01	2.50	No	1	1	0.04	1.00	No
Receptor_148	2	2	(0.05)	2.50	No	1	1	0.04	1.00	No
Receptor_149	2	2	(0.08)	2.50	No	1	1	0.04	1.00	No
Receptor_150	2	2	(0.12)	2.50	No	1	1	0.04	1.00	No
Receptor_151	2	2	(0.14)	2.50	No	1	1	0.04	1.00	No
Receptor_152	3	2	(0.07)	2.50	No	1	1	0.05	1.00	No
Receptor_153	3	3	(0.02)	2.50	No	1	1	0.05	1.00	No
Receptor_154	3	3	0.07	2.50	No	1	1	0.05	1.00	No
Receptor_155	2	3	0.02	2.50	No	1	1	0.05	1.00	No
Receptor_156	2	2	(0.05)	2.50	No	1	1	0.05	1.00	No
Receptor_157	2	3	0.11	2.50	No	1	1	0.05	1.00	No
Receptor_158	2	3	0.06	2.50	No	1	1	0.05	1.00	No
Receptor_159	3	3	0.12	2.50	No	1	1	0.05	1.00	No
Receptor_160	3	3	0.16	2.50	No	1	1	0.05	1.00	No
Receptor_161	3	3	0.21	2.50	No	1	1	0.05	1.00	No
Receptor_162	3	3	0.25	2.50	No	1	1	0.05	1.00	No
Receptor_163	3	3	0.29	2.50	No	1	1	0.05	1.00	No
Receptor_164	3	3	0.32	2.50	No	1	1	0.06	1.00	No
Receptor_165	3	3	0.31	2.50	No	1	1	0.06	1.00	No
Receptor_166	3	3	0.16	2.50	No	1	1	0.07	1.00	No
Receptor_167	4	4	0.15	2.50	No	1	2	0.08	1.00	No
Receptor_168	4	4	0.22	2.50	No	2	2	0.10	1.00	No
Receptor_169	4	4	0.30	2.50	No	2	2	0.12	1.00	No
Receptor_170	4	4	0.17	2.50	No	2	2	0.11	1.00	No

	Respirable Particulate Matter (PM_{10}) 24-Hr					Respirable Particulate Matter (PM_{10}) Annual				
	Max Conc. (ug/m3)		Rwy Closure Incr. Difference			Max Conc. (ug/m3)		Rwy Closure Incr. Difference		
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Threshold	Exceeds?
Receptor_171	4	4	0.00	2.50	No	2	2	0.09	1.00	No
Receptor_172	5	5	(0.12)	2.50	No	2	2	0.07	1.00	No
Receptor_173	5	5	(0.19)	2.50	No	2	2	0.05	1.00	No
Receptor_174	5	5	(0.09)	2.50	No	2	2	0.05	1.00	No
Receptor_175	4	4	0.05	2.50	No	2	2	0.05	1.00	No
Receptor_176	4	4	0.32	2.50	No	2	2	0.05	1.00	No
Receptor_177	4	4	0.20	2.50	No	2	2	0.05	1.00	No
Receptor_178	4	4	0.08	2.50	No	2	2	0.05	1.00	No
Receptor_179	4	4	(0.05)	2.50	No	2	2	0.05	1.00	No
Receptor_180	4	3	(0.27)	2.50	No	1	2	0.06	1.00	No
Receptor_181	4	3	(0.38)	2.50	No	1	1	0.06	1.00	No
Receptor_182	4	3	(0.43)	2.50	No	1	1	0.07	1.00	No
Receptor_183	3	3	(0.34)	2.50	No	1	1	0.07	1.00	No
Receptor_184	3	3	(0.14)	2.50	No	1	1	0.08	1.00	No
Receptor_185	3	3	(0.12)	2.50	No	1	1	0.08	1.00	No
Receptor_186	3	3	0.10	2.50	No	1	1	0.09	1.00	No
Receptor_187	3	3	0.23	2.50	No	1	1	0.09	1.00	No
Receptor_188	3	3	0.13	2.50	No	1	1	0.09	1.00	No
Receptor_189	3	3	0.17	2.50	No	1	1	0.09	1.00	No
Receptor_190	3	3	0.16	2.50	No	1	1	0.09	1.00	No
Receptor_191	3	3	0.18	2.50	No	1	1	0.08	1.00	No
Receptor_192	2	3	0.18	2.50	No	1	1	0.07	1.00	No
Receptor_193	2	2	0.09	2.50	No	1	1	0.06	1.00	No
Receptor_194	2	2	0.05	2.50	No	1	1	0.06	1.00	No
Receptor_195	2	2	0.07	2.50	No	1	1	0.05	1.00	No
Receptor_196	2	2	0.12	2.50	No	1	1	0.05	1.00	No
Receptor_197	2	2	0.18	2.50	No	1	1	0.04	1.00	No
Receptor_198	2	2	0.24	2.50	No	1	1	0.04	1.00	No
Receptor_199	2	2	0.24	2.50	No	1	1	0.04	1.00	No
Receptor_200	2	2	0.23	2.50	No	1	1	0.04	1.00	No
Receptor_201	2	2	0.21	2.50	No	1	1	0.03	1.00	No
Receptor_202	2	2	0.22	2.50	No	1	1	0.03	1.00	No
Receptor_203	2	2	0.22	2.50	No	1	1	0.03	1.00	No
Receptor_204	2	2	0.23	2.50	No	1	1	0.03	1.00	No
Receptor_205	2	2	0.20	2.50	No	1	1	0.03	1.00	No
Receptor_206	2	2	0.14	2.50	No	1	1	0.03	1.00	No
Receptor_207	2	2	0.09	2.50	No	1	1	0.03	1.00	No
Receptor_208	2	2	0.07	2.50	No	1	1	0.03	1.00	No
Receptor_209	2	2	0.04	2.50	No	1	1	0.03	1.00	No
Receptor_210	2	2	0.01	2.50	No	1	1	0.03	1.00	No
Receptor_211	2	2	0.00	2.50	No	1	1	0.04	1.00	No
Receptor_212	2	2	0.00	2.50	No	1	1	0.04	1.00	No
Receptor_213	2	2	0.02	2.50	No	1	1	0.04	1.00	No
Receptor_214	2	2	0.04	2.50	No	1	1	0.05	1.00	No
Receptor_215	2	2	0.04	2.50	No	1	1	0.05	1.00	No
Receptor_216	2	2	0.02	2.50	No	1	1	0.05	1.00	No
Receptor_217	2	2	0.04	2.50	No	1	1	0.06	1.00	No
Receptor_218	2	2	0.10	2.50	No	1	1	0.06	1.00	No
Receptor_219	2	2	0.10	2.50	No	1	1	0.07	1.00	No
Receptor_220	2	3	0.13	2.50	No	1	1	0.07	1.00	No
Receptor_221	2	3	0.15	2.50	No	1	1	0.07	1.00	No
Receptor_222	2	3	0.13	2.50	No	1	1	0.08	1.00	No
Receptor_223	3	3	0.05	2.50	No	1	1	0.08	1.00	No
Receptor_224	3	3	0.01	2.50	No	1	1	0.08	1.00	No
Receptor_225	3	3	0.11	2.50	No	1	1	0.08	1.00	No
Receptor_226	3	3	0.17	2.50	No	1	1	0.08	1.00	No
Receptor_227	3	3	0.03	2.50	No	1	1	0.10	1.00	No
Receptor_228	3	3	(0.06)	2.50	No	1	1	0.11	1.00	No
Receptor_229	4	3	(0.07)	2.50	No	1	1	0.13	1.00	No
Receptor_230	4	4	0.05	2.50	No	1	1	0.12	1.00	No
Receptor_231	3	4	0.15	2.50	No	1	1	0.12	1.00	No
Receptor_232	4	4	0.13	2.50	No	1	1	0.14	1.00	No
Receptor_233	5	5	0.08	2.50	No	2	2	0.16	1.00	No
Receptor_234	5	5	(0.06)	2.50	No	2	2	0.18	1.00	No
Receptor_235	6	6	(0.09)	2.50	No	2	2	0.20	1.00	No
Receptor_236	7	7	(0.04)	2.50	No	2	3	0.24	1.00	No
Receptor_237	6	7	0.61	2.50	No	2	2	0.19	1.00	No
Receptor_238	5	6	1.05	2.50	No	1	2	0.15	1.00	No
Receptor_239	5	6	0.96	2.50	No	1	1	0.13	1.00	No
Receptor_240	5	6	0.94	2.50	No	1	1	0.12	1.00	No
Receptor_241	4	5	0.66	2.50	No	1	1	0.10	1.00	No
Receptor_242	4	4	0.46	2.50	No	1	1	0.09	1.00	No
Receptor_243	3	4	0.32	2.50	No	1	1	0.08	1.00	No
Receptor_244	3	3	0.25	2.50	No	1	1	0.07	1.00	No
Receptor_245	3	3	0.20	2.50	No	0	1	0.06	1.00	No
Receptor_246	3	3	0.16	2.50	No	0	0	0.06	1.00	No
Receptor_247	3	3	0.29	2.50	No	0	0	0.06	1.00	No
Receptor_248	2	3	0.41	2.50	No	0	0	0.06	1.00	No
Receptor_249	2	3	0.43	2.50	No	0	0	0.06	1.00	No
Receptor_250	2	3	0.43	2.50	No	0	0	0.07	1.00	No
Receptor_251	2	2	0.52	2.50	No	0	0	0.07	1.00	No
Receptor_252	2	2	0.55	2.50	No	0	0	0.06	1.00	No
Receptor_253	2	2	0.67	2.50	No	0	0	0.08	1.00	No
Receptor_254	2	3	0.82	2.50	No	0	0	0.10	1.00	No
Receptor_255	2	3	1.08	2.50	No	0	0	0.13	1.00	No

	Respirable Particulate Matter (PM_{10}) 24-Hr					Respirable Particulate Matter (PM_{10}) Annual				
	Max Conc. (ug/m3)		Rwy Closure Incr. Difference			Max Conc. (ug/m3)		Rwy Closure Incr. Difference		
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Threshold	Exceeds?
Receptor_256	2	3	0.88	2.50	No	0	0	0.12	1.00	No
Receptor_257	2	3	0.68	2.50	No	0	0	0.11	1.00	No
Receptor_258	2	3	0.69	2.50	No	0	0	0.12	1.00	No
Receptor_259	2	3	1.01	2.50	No	0	0	0.15	1.00	No
Receptor_260	2	3	1.45	2.50	No	0	0	0.18	1.00	No
Receptor_261	2	4	1.93	2.50	No	0	1	0.24	1.00	No
Receptor_262	2	5	2.99	2.50	Yes	0	1	0.38	1.00	No
Receptor_263	2	6	3.61	2.50	Yes	0	1	0.46	1.00	No
Receptor_264	2	6	3.75	2.50	Yes	0	1	0.46	1.00	No
Receptor_265	2	5	3.20	2.50	Yes	0	1	0.38	1.00	No
Receptor_266	2	3	0.97	2.50	No	0	0	0.19	1.00	No
Receptor_267	2	4	1.54	2.50	No	0	0	0.27	1.00	No
Receptor_268	2	4	2.27	2.50	No	0	1	0.34	1.00	No
Receptor_269	2	3	1.02	2.50	No	0	0	0.24	1.00	No
Receptor_270	2	3	0.25	2.50	No	0	0	0.13	1.00	No
Receptor_271	2	3	0.13	2.50	No	0	0	0.09	1.00	No
Receptor_272	2	2	0.06	2.50	No	0	0	0.07	1.00	No
Receptor_273	2	2	0.25	2.50	No	0	0	0.06	1.00	No
Receptor_274	2	2	0.06	2.50	No	0	1	0.06	1.00	No
Receptor_275	2	2	0.02	2.50	No	0	1	0.05	1.00	No
Receptor_276	2	2	(0.07)	2.50	No	1	1	0.05	1.00	No
Receptor_277	3	3	(0.01)	2.50	No	1	1	0.06	1.00	No
Receptor_278	3	3	(0.00)	2.50	No	1	1	0.06	1.00	No
Receptor_279	3	3	(0.07)	2.50	No	1	1	0.06	1.00	No
Receptor_280	3	3	(0.06)	2.50	No	1	1	0.06	1.00	No
Receptor_281	3	3	(0.05)	2.50	No	1	1	0.06	1.00	No
Receptor_282	3	3	(0.06)	2.50	No	1	1	0.06	1.00	No
Receptor_283	3	3	(0.12)	2.50	No	1	1	0.06	1.00	No
Receptor_284	4	3	(0.22)	2.50	No	1	1	0.07	1.00	No
Receptor_285	4	4	(0.34)	2.50	No	1	1	0.07	1.00	No
Receptor_286	4	4	(0.22)	2.50	No	1	1	0.08	1.00	No
Receptor_287	4	4	(0.08)	2.50	No	1	1	0.08	1.00	No
Receptor_288	5	5	(0.01)	2.50	No	1	1	0.09	1.00	No
Receptor_289	5	5	(0.08)	2.50	No	1	1	0.09	1.00	No
Receptor_290	5	4	(0.34)	2.50	No	1	1	0.08	1.00	No
Receptor_291	5	4	(0.61)	2.50	No	1	1	0.07	1.00	No
Receptor_292	4	4	(0.47)	2.50	No	1	1	0.06	1.00	No
Receptor_293	4	4	(0.23)	2.50	No	1	1	0.06	1.00	No
Receptor_294	4	4	(0.10)	2.50	No	1	1	0.06	1.00	No
Receptor_295	4	4	0.02	2.50	No	1	1	0.05	1.00	No
Receptor_296	4	4	0.13	2.50	No	1	1	0.04	1.00	No
Receptor_297	5	5	(0.18)	2.50	No	1	1	0.04	1.00	No
Receptor_298	5	5	(0.35)	2.50	No	1	1	0.04	1.00	No
Receptor_299	5	5	(0.21)	2.50	No	1	1	0.04	1.00	No
Receptor_300	5	4	(0.12)	2.50	No	1	1	0.05	1.00	No
Receptor_301	4	5	0.19	2.50	No	1	1	0.05	1.00	No
Receptor_302	4	5	0.21	2.50	No	1	1	0.05	1.00	No
Receptor_303	5	5	0.33	2.50	No	1	1	0.05	1.00	No
Receptor_304	5	5	0.40	2.50	No	1	1	0.05	1.00	No
Receptor_305	5	5	0.51	2.50	No	1	1	0.05	1.00	No
Receptor_306	4	5	0.62	2.50	No	1	1	0.04	1.00	No
Receptor_307	5	5	0.34	2.50	No	1	1	0.03	1.00	No
Receptor_308	4	5	0.31	2.50	No	1	1	0.03	1.00	No
Receptor_309	4	5	0.36	2.50	No	1	1	0.02	1.00	No
Receptor_310	4	5	0.33	2.50	No	1	1	0.02	1.00	No
Receptor_311	4	4	0.17	2.50	No	1	1	0.02	1.00	No
Receptor_312	4	4	0.08	2.50	No	1	1	0.02	1.00	No
Receptor_313	4	4	(0.02)	2.50	No	1	1	0.02	1.00	No
Receptor_314	4	4	(0.10)	2.50	No	1	1	0.02	1.00	No
Receptor_315	4	4	(0.14)	2.50	No	1	1	0.01	1.00	No
Receptor_316	4	4	(0.05)	2.50	No	1	1	0.01	1.00	No
Receptor_317	3	3	(0.01)	2.50	No	1	1	0.01	1.00	No
Receptor_318	3	3	(0.01)	2.50	No	1	1	0.01	1.00	No
Receptor_319	3	3	0.04	2.50	No	1	1	0.01	1.00	No
Receptor_320	3	3	0.09	2.50	No	1	1	0.01	1.00	No
Receptor_321	3	3	0.14	2.50	No	1	1	0.00	1.00	No
Receptor_322	3	3	0.21	2.50	No	1	1	0.00	1.00	No
Receptor_323	3	3	0.22	2.50	No	1	1	0.00	1.00	No
Receptor_324	3	3	0.21	2.50	No	1	1	(0.00)	1.00	No
Receptor_325	2	3	0.19	2.50	No	1	1	(0.00)	1.00	No
Receptor_326	2	3	0.18	2.50	No	1	1	(0.00)	1.00	No
Receptor_327	6	6	0.44	2.50	No	2	3	0.07	1.00	No
Maximum	7	7	3.75	2.50	Yes	2	3	0.46	1.00	No

	Fine Particulate Matter ($PM_{2.5}$) 24-Hr					Fine Particulate Matter ($PM_{2.5}$) Annual				
	Max Conc. (ug/m3)		Rwy Closure Incr. Difference			Max Conc. (ug/m3)		Rwy Closure Incr. Difference		
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Threshold	Exceeds?
Receptor_1	2	2	0.17	2.50	No	0	0	(0.01)	1.00	No
Receptor_2	2	3	0.16	2.50	No	0	0	(0.02)	1.00	No
Receptor_3	2	3	0.12	2.50	No	0	0	(0.02)	1.00	No
Receptor_4	3	3	0.10	2.50	No	0	0	(0.02)	1.00	No
Receptor_5	3	3	0.07	2.50	No	0	0	(0.02)	1.00	No
Receptor_6	3	3	0.04	2.50	No	0	0	(0.02)	1.00	No
Receptor_7	3	3	(0.01)	2.50	No	0	0	(0.03)	1.00	No
Receptor_8	3	3	(0.07)	2.50	No	0	0	(0.03)	1.00	No
Receptor_9	3	3	(0.12)	2.50	No	0	0	(0.03)	1.00	No
Receptor_10	3	3	(0.05)	2.50	No	0	0	(0.03)	1.00	No
Receptor_11	3	3	(0.05)	2.50	No	0	0	(0.03)	1.00	No
Receptor_12	3	3	(0.08)	2.50	No	0	0	(0.03)	1.00	No
Receptor_13	3	3	0.03	2.50	No	0	0	(0.03)	1.00	No
Receptor_14	3	3	0.10	2.50	No	0	0	(0.03)	1.00	No
Receptor_15	2	3	0.11	2.50	No	0	0	(0.02)	1.00	No
Receptor_16	2	2	0.09	2.50	No	0	0	(0.02)	1.00	No
Receptor_17	2	2	0.01	2.50	No	0	0	(0.02)	1.00	No
Receptor_18	2	2	(0.06)	2.50	No	0	0	(0.02)	1.00	No
Receptor_19	2	2	(0.12)	2.50	No	0	0	(0.01)	1.00	No
Receptor_20	2	2	0.07	2.50	No	0	0	(0.01)	1.00	No
Receptor_21	2	2	0.22	2.50	No	0	0	(0.01)	1.00	No
Receptor_22	2	2	0.09	2.50	No	0	0	(0.01)	1.00	No
Receptor_23	2	2	(0.04)	2.50	No	0	0	(0.01)	1.00	No
Receptor_24	2	2	(0.15)	2.50	No	0	0	(0.01)	1.00	No
Receptor_25	2	2	(0.23)	2.50	No	0	0	(0.01)	1.00	No
Receptor_26	2	2	(0.28)	2.50	No	0	0	(0.00)	1.00	No
Receptor_27	2	2	(0.32)	2.50	No	0	0	(0.00)	1.00	No
Receptor_28	2	2	(0.34)	2.50	No	0	0	(0.00)	1.00	No
Receptor_29	2	2	(0.34)	2.50	No	0	0	(0.00)	1.00	No
Receptor_30	2	2	(0.34)	2.50	No	0	0	(0.00)	1.00	No
Receptor_31	2	2	(0.34)	2.50	No	0	0	(0.00)	1.00	No
Receptor_32	2	2	(0.36)	2.50	No	0	0	(0.00)	1.00	No
Receptor_33	2	2	(0.37)	2.50	No	0	0	(0.00)	1.00	No
Receptor_34	2	2	(0.38)	2.50	No	0	0	(0.00)	1.00	No
Receptor_35	2	2	(0.40)	2.50	No	0	0	(0.00)	1.00	No
Receptor_36	2	2	(0.42)	2.50	No	0	0	(0.00)	1.00	No
Receptor_37	2	2	(0.44)	2.50	No	0	0	(0.00)	1.00	No
Receptor_38	2	2	(0.44)	2.50	No	0	0	0.00	1.00	No
Receptor_39	2	2	(0.43)	2.50	No	0	0	0.00	1.00	No
Receptor_40	3	2	(0.47)	2.50	No	0	0	0.00	1.00	No
Receptor_41	3	2	(0.48)	2.50	No	0	0	0.01	1.00	No
Receptor_42	3	2	(0.48)	2.50	No	0	0	0.01	1.00	No
Receptor_43	3	2	(0.44)	2.50	No	0	0	0.00	1.00	No
Receptor_44	2	2	(0.42)	2.50	No	0	0	0.00	1.00	No
Receptor_45	2	2	(0.38)	2.50	No	0	0	0.00	1.00	No
Receptor_46	3	2	(0.46)	2.50	No	0	0	0.01	1.00	No
Receptor_47	3	2	(0.54)	2.50	No	0	0	0.01	1.00	No
Receptor_48	3	2	(0.49)	2.50	No	0	0	0.01	1.00	No
Receptor_49	3	2	(0.54)	2.50	No	0	0	0.01	1.00	No
Receptor_50	3	2	(0.54)	2.50	No	0	0	0.01	1.00	No
Receptor_51	3	2	(0.45)	2.50	No	0	0	0.01	1.00	No
Receptor_52	3	2	(0.46)	2.50	No	0	0	0.00	1.00	No
Receptor_53	2	2	(0.47)	2.50	No	0	0	(0.00)	1.00	No
Receptor_54	2	2	(0.43)	2.50	No	0	0	(0.00)	1.00	No
Receptor_55	2	2	(0.40)	2.50	No	0	0	(0.00)	1.00	No
Receptor_56	2	2	(0.37)	2.50	No	0	0	(0.00)	1.00	No
Receptor_57	2	2	(0.38)	2.50	No	0	0	(0.00)	1.00	No
Receptor_58	2	2	(0.39)	2.50	No	0	0	(0.00)	1.00	No
Receptor_59	2	2	(0.45)	2.50	No	0	0	(0.00)	1.00	No
Receptor_60	2	2	(0.46)	2.50	No	0	0	(0.00)	1.00	No
Receptor_61	3	2	(0.47)	2.50	No	0	0	(0.00)	1.00	No
Receptor_62	3	2	(0.48)	2.50	No	0	0	(0.01)	1.00	No
Receptor_63	3	2	(0.49)	2.50	No	0	0	(0.01)	1.00	No
Receptor_64	3	2	(0.51)	2.50	No	0	0	(0.01)	1.00	No
Receptor_65	3	2	(0.49)	2.50	No	0	0	(0.01)	1.00	No
Receptor_66	3	2	(0.49)	2.50	No	0	0	(0.02)	1.00	No
Receptor_67	3	2	(0.46)	2.50	No	0	0	(0.03)	1.00	No
Receptor_68	3	3	(0.47)	2.50	No	0	0	(0.04)	1.00	No
Receptor_69	3	3	(0.53)	2.50	No	0	0	(0.04)	1.00	No
Receptor_70	3	3	(0.55)	2.50	No	0	0	(0.05)	1.00	No
Receptor_71	3	3	(0.50)	2.50	No	1	0	(0.06)	1.00	No
Receptor_72	3	3	(0.39)	2.50	No	1	0	(0.07)	1.00	No
Receptor_73	3	3	(0.25)	2.50	No	1	0	(0.07)	1.00	No
Receptor_74	3	3	(0.12)	2.50	No	1	0	(0.07)	1.00	No
Receptor_75	3	3	(0.03)	2.50	No	1	0	(0.07)	1.00	No
Receptor_76	3	3	(0.02)	2.50	No	1	1	(0.09)	1.00	No
Receptor_77	3	3	(0.01)	2.50	No	1	1	(0.08)	1.00	No
Receptor_78	3	3	(0.01)	2.50	No	1	0	(0.08)	1.00	No
Receptor_79	3	3	(0.04)	2.50	No	1	1	(0.10)	1.00	No
Receptor_80	3	3	(0.07)	2.50	No	1	1	(0.12)	1.00	No
Receptor_81	3	3	(0.11)	2.50	No	1	1	(0.16)	1.00	No
Receptor_82	3	3	(0.09)	2.50	No	1	1	(0.14)	1.00	No
Receptor_83	3	3	(0.08)	2.50	No	1	1	(0.12)	1.00	No
Receptor_84	3	3	(0.03)	2.50	No	1	1	(0.10)	1.00	No
Receptor_85	3	3	(0.01)	2.50	No	1	1	(0.08)	1.00	No

	Fine Particulate Matter ($PM_{2.5}$) 24-Hr					Fine Particulate Matter ($PM_{2.5}$) Annual				
	Max Conc. (ug/m3)		Rwy Closure Incr. Difference			Max Conc. (ug/m3)		Rwy Closure Incr. Difference		
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Threshold	Exceeds?
Receptor_86	2	2	0.02	2.50	No	1	0	(0.06)	1.00	No
Receptor_87	2	2	0.04	2.50	No	1	0	(0.06)	1.00	No
Receptor_88	2	2	0.02	2.50	No	1	0	(0.05)	1.00	No
Receptor_89	2	2	(0.01)	2.50	No	1	0	(0.05)	1.00	No
Receptor_90	2	2	0.01	2.50	No	0	0	(0.04)	1.00	No
Receptor_91	2	2	0.05	2.50	No	0	0	(0.04)	1.00	No
Receptor_92	2	2	0.05	2.50	No	0	0	(0.03)	1.00	No
Receptor_93	2	2	0.06	2.50	No	0	0	(0.03)	1.00	No
Receptor_94	2	2	0.06	2.50	No	0	0	(0.03)	1.00	No
Receptor_95	2	2	0.06	2.50	No	0	0	(0.03)	1.00	No
Receptor_96	2	2	0.07	2.50	No	0	0	(0.04)	1.00	No
Receptor_97	2	2	0.09	2.50	No	0	0	(0.04)	1.00	No
Receptor_98	2	2	0.10	2.50	No	1	0	(0.05)	1.00	No
Receptor_99	2	3	0.11	2.50	No	1	1	(0.06)	1.00	No
Receptor_100	3	3	0.12	2.50	No	1	1	(0.07)	1.00	No
Receptor_101	3	3	0.16	2.50	No	1	1	(0.07)	1.00	No
Receptor_102	3	3	0.19	2.50	No	1	1	(0.07)	1.00	No
Receptor_103	3	3	0.07	2.50	No	1	1	(0.07)	1.00	No
Receptor_104	3	3	(0.14)	2.50	No	1	1	(0.06)	1.00	No
Receptor_105	3	3	(0.22)	2.50	No	1	1	(0.06)	1.00	No
Receptor_106	3	3	(0.24)	2.50	No	1	1	(0.06)	1.00	No
Receptor_107	3	3	(0.25)	2.50	No	1	1	(0.06)	1.00	No
Receptor_108	3	3	(0.34)	2.50	No	1	1	(0.06)	1.00	No
Receptor_109	3	3	(0.43)	2.50	No	1	1	(0.05)	1.00	No
Receptor_110	3	3	(0.40)	2.50	No	1	1	(0.04)	1.00	No
Receptor_111	3	3	(0.40)	2.50	No	1	1	(0.04)	1.00	No
Receptor_112	3	3	(0.35)	2.50	No	1	1	(0.03)	1.00	No
Receptor_113	3	3	(0.26)	2.50	No	1	1	(0.01)	1.00	No
Receptor_114	3	3	(0.05)	2.50	No	1	1	0.01	1.00	No
Receptor_115	3	3	0.25	2.50	No	1	1	0.04	1.00	No
Receptor_116	3	3	0.33	2.50	No	1	1	0.04	1.00	No
Receptor_117	3	4	0.76	2.50	No	1	1	0.16	1.00	No
Receptor_118	3	4	0.97	2.50	No	1	1	0.20	1.00	No
Receptor_119	3	4	0.80	2.50	No	1	1	0.17	1.00	No
Receptor_120	4	5	0.81	2.50	No	1	1	0.09	1.00	No
Receptor_121	4	5	0.91	2.50	No	1	2	0.07	1.00	No
Receptor_122	4	5	1.22	2.50	No	2	2	0.08	1.00	No
Receptor_123	4	5	0.73	2.50	No	1	2	0.05	1.00	No
Receptor_124	4	4	0.47	2.50	No	1	1	0.02	1.00	No
Receptor_125	4	4	0.78	2.50	No	2	2	0.06	1.00	No
Receptor_126	3	4	0.48	2.50	No	1	2	0.04	1.00	No
Receptor_127	3	3	0.17	2.50	No	1	1	0.01	1.00	No
Receptor_128	3	3	0.02	2.50	No	1	1	(0.01)	1.00	No
Receptor_129	3	3	(0.03)	2.50	No	1	1	(0.01)	1.00	No
Receptor_130	3	3	(0.06)	2.50	No	1	1	(0.01)	1.00	No
Receptor_131	3	3	(0.08)	2.50	No	1	1	(0.01)	1.00	No
Receptor_132	3	3	(0.09)	2.50	No	1	1	(0.01)	1.00	No
Receptor_133	2	2	(0.08)	2.50	No	1	1	(0.01)	1.00	No
Receptor_134	2	2	(0.07)	2.50	No	1	1	(0.01)	1.00	No
Receptor_135	2	2	(0.06)	2.50	No	1	1	(0.01)	1.00	No
Receptor_136	2	2	(0.07)	2.50	No	1	1	(0.01)	1.00	No
Receptor_137	2	2	(0.08)	2.50	No	1	1	(0.01)	1.00	No
Receptor_138	2	2	(0.05)	2.50	No	1	1	(0.01)	1.00	No
Receptor_139	2	2	(0.01)	2.50	No	1	1	(0.01)	1.00	No
Receptor_140	2	2	(0.01)	2.50	No	1	1	(0.00)	1.00	No
Receptor_141	2	2	(0.02)	2.50	No	1	1	(0.00)	1.00	No
Receptor_142	2	2	(0.01)	2.50	No	1	1	0.00	1.00	No
Receptor_143	2	2	(0.01)	2.50	No	1	1	0.01	1.00	No
Receptor_144	2	2	0.04	2.50	No	1	1	0.02	1.00	No
Receptor_145	2	2	0.10	2.50	No	1	1	0.02	1.00	No
Receptor_146	2	2	0.07	2.50	No	1	1	0.02	1.00	No
Receptor_147	2	2	0.01	2.50	No	1	1	0.02	1.00	No
Receptor_148	2	2	(0.05)	2.50	No	1	1	0.02	1.00	No
Receptor_149	2	2	(0.08)	2.50	No	1	1	0.02	1.00	No
Receptor_150	2	2	(0.12)	2.50	No	1	1	0.03	1.00	No
Receptor_151	2	2	(0.14)	2.50	No	1	1	0.03	1.00	No
Receptor_152	3	2	(0.14)	2.50	No	1	1	0.03	1.00	No
Receptor_153	3	2	(0.08)	2.50	No	1	1	0.04	1.00	No
Receptor_154	3	3	0.00	2.50	No	1	1	0.04	1.00	No
Receptor_155	2	2	(0.05)	2.50	No	1	1	0.03	1.00	No
Receptor_156	2	2	(0.06)	2.50	No	1	1	0.03	1.00	No
Receptor_157	2	3	0.10	2.50	No	1	1	0.03	1.00	No
Receptor_158	2	3	0.04	2.50	No	1	1	0.03	1.00	No
Receptor_159	3	3	0.12	2.50	No	1	1	0.03	1.00	No
Receptor_160	3	3	0.16	2.50	No	1	1	0.03	1.00	No
Receptor_161	3	3	0.21	2.50	No	1	1	0.03	1.00	No
Receptor_162	3	3	0.25	2.50	No	1	1	0.03	1.00	No
Receptor_163	3	3	0.29	2.50	No	1	1	0.03	1.00	No
Receptor_164	3	3	0.31	2.50	No	1	1	0.04	1.00	No
Receptor_165	3	3	0.30	2.50	No	1	1	0.04	1.00	No
Receptor_166	3	3	0.09	2.50	No	1	1	0.04	1.00	No
Receptor_167	4	4	(0.02)	2.50	No	1	2	0.05	1.00	No
Receptor_168	4	4	0.00	2.50	No	2	2	0.06	1.00	No
Receptor_169	4	4	0.01	2.50	No	2	2	0.07	1.00	No
Receptor_170	4	4	0.14	2.50	No	2	2	0.07	1.00	No

	Fine Particulate Matter ($PM_{2.5}$) 24-Hr					Fine Particulate Matter ($PM_{2.5}$) Annual				
	Max Conc. (ug/m3)		Rwy Closure Incr. Difference			Max Conc. (ug/m3)		Rwy Closure Incr. Difference		
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Threshold	Exceeds?
Receptor_171	4	4	0.00	2.50	No	2	2	0.06	1.00	No
Receptor_172	5	5	(0.12)	2.50	No	2	2	0.04	1.00	No
Receptor_173	5	5	(0.19)	2.50	No	2	2	0.03	1.00	No
Receptor_174	5	4	(0.10)	2.50	No	2	2	0.03	1.00	No
Receptor_175	4	4	0.05	2.50	No	2	2	0.03	1.00	No
Receptor_176	4	4	0.32	2.50	No	2	2	0.03	1.00	No
Receptor_177	4	4	0.20	2.50	No	2	2	0.03	1.00	No
Receptor_178	4	4	0.08	2.50	No	2	2	0.03	1.00	No
Receptor_179	4	4	(0.05)	2.50	No	2	2	0.04	1.00	No
Receptor_180	4	3	(0.27)	2.50	No	1	1	0.04	1.00	No
Receptor_181	4	3	(0.43)	2.50	No	1	1	0.05	1.00	No
Receptor_182	4	3	(0.43)	2.50	No	1	1	0.06	1.00	No
Receptor_183	3	3	(0.34)	2.50	No	1	1	0.06	1.00	No
Receptor_184	3	3	(0.14)	2.50	No	1	1	0.07	1.00	No
Receptor_185	3	3	(0.12)	2.50	No	1	1	0.07	1.00	No
Receptor_186	3	3	0.10	2.50	No	1	1	0.08	1.00	No
Receptor_187	3	3	0.23	2.50	No	1	1	0.08	1.00	No
Receptor_188	3	3	0.13	2.50	No	1	1	0.08	1.00	No
Receptor_189	3	3	0.12	2.50	No	1	1	0.08	1.00	No
Receptor_190	3	3	0.12	2.50	No	1	1	0.07	1.00	No
Receptor_191	3	3	0.13	2.50	No	1	1	0.07	1.00	No
Receptor_192	2	3	0.13	2.50	No	1	1	0.06	1.00	No
Receptor_193	2	2	0.04	2.50	No	1	1	0.05	1.00	No
Receptor_194	2	2	(0.00)	2.50	No	1	1	0.05	1.00	No
Receptor_195	2	2	0.02	2.50	No	1	1	0.04	1.00	No
Receptor_196	2	2	0.07	2.50	No	1	1	0.04	1.00	No
Receptor_197	2	2	0.13	2.50	No	1	1	0.03	1.00	No
Receptor_198	2	2	0.18	2.50	No	1	1	0.03	1.00	No
Receptor_199	2	2	0.19	2.50	No	1	1	0.03	1.00	No
Receptor_200	2	2	0.18	2.50	No	1	1	0.03	1.00	No
Receptor_201	2	2	0.16	2.50	No	1	1	0.02	1.00	No
Receptor_202	2	2	0.17	2.50	No	1	1	0.02	1.00	No
Receptor_203	2	2	0.17	2.50	No	1	1	0.02	1.00	No
Receptor_204	2	2	0.18	2.50	No	1	1	0.02	1.00	No
Receptor_205	2	2	0.15	2.50	No	1	1	0.02	1.00	No
Receptor_206	2	2	0.10	2.50	No	1	1	0.02	1.00	No
Receptor_207	2	2	0.06	2.50	No	1	1	0.02	1.00	No
Receptor_208	2	2	0.04	2.50	No	1	1	0.02	1.00	No
Receptor_209	2	2	0.01	2.50	No	1	1	0.02	1.00	No
Receptor_210	2	2	(0.01)	2.50	No	1	1	0.03	1.00	No
Receptor_211	2	2	(0.02)	2.50	No	1	1	0.03	1.00	No
Receptor_212	2	2	(0.02)	2.50	No	1	1	0.03	1.00	No
Receptor_213	2	2	(0.00)	2.50	No	1	1	0.04	1.00	No
Receptor_214	2	2	0.02	2.50	No	1	1	0.04	1.00	No
Receptor_215	2	2	0.02	2.50	No	1	1	0.04	1.00	No
Receptor_216	2	2	(0.01)	2.50	No	1	1	0.05	1.00	No
Receptor_217	2	2	0.03	2.50	No	1	1	0.05	1.00	No
Receptor_218	2	2	0.10	2.50	No	1	1	0.05	1.00	No
Receptor_219	2	2	0.10	2.50	No	1	1	0.06	1.00	No
Receptor_220	2	2	0.13	2.50	No	1	1	0.06	1.00	No
Receptor_221	2	3	0.15	2.50	No	1	1	0.06	1.00	No
Receptor_222	2	3	0.13	2.50	No	1	1	0.07	1.00	No
Receptor_223	3	3	0.04	2.50	No	1	1	0.07	1.00	No
Receptor_224	3	3	(0.03)	2.50	No	1	1	0.07	1.00	No
Receptor_225	3	3	0.06	2.50	No	1	1	0.07	1.00	No
Receptor_226	3	3	0.12	2.50	No	1	1	0.07	1.00	No
Receptor_227	3	3	(0.01)	2.50	No	1	1	0.08	1.00	No
Receptor_228	3	3	(0.06)	2.50	No	1	1	0.10	1.00	No
Receptor_229	4	3	(0.07)	2.50	No	1	1	0.11	1.00	No
Receptor_230	4	4	0.05	2.50	No	1	1	0.11	1.00	No
Receptor_231	3	4	0.14	2.50	No	1	1	0.11	1.00	No
Receptor_232	4	4	0.13	2.50	No	1	1	0.12	1.00	No
Receptor_233	5	5	0.08	2.50	No	2	2	0.14	1.00	No
Receptor_234	5	5	(0.07)	2.50	No	2	2	0.17	1.00	No
Receptor_235	6	6	(0.09)	2.50	No	2	2	0.19	1.00	No
Receptor_236	7	7	(0.05)	2.50	No	2	3	0.22	1.00	No
Receptor_237	6	7	0.60	2.50	No	2	2	0.17	1.00	No
Receptor_238	5	6	1.04	2.50	No	1	2	0.14	1.00	No
Receptor_239	5	6	0.95	2.50	No	1	1	0.11	1.00	No
Receptor_240	5	6	0.93	2.50	No	1	1	0.10	1.00	No
Receptor_241	4	5	0.65	2.50	No	1	1	0.08	1.00	No
Receptor_242	4	4	0.45	2.50	No	1	1	0.07	1.00	No
Receptor_243	3	4	0.31	2.50	No	1	1	0.06	1.00	No
Receptor_244	3	3	0.22	2.50	No	1	1	0.06	1.00	No
Receptor_245	3	3	0.19	2.50	No	0	1	0.05	1.00	No
Receptor_246	3	3	0.14	2.50	No	0	0	0.04	1.00	No
Receptor_247	3	3	0.24	2.50	No	0	0	0.04	1.00	No
Receptor_248	2	3	0.39	2.50	No	0	0	0.04	1.00	No
Receptor_249	2	3	0.43	2.50	No	0	0	0.03	1.00	No
Receptor_250	2	3	0.43	2.50	No	0	0	0.03	1.00	No
Receptor_251	2	2	0.40	2.50	No	0	0	0.03	1.00	No
Receptor_252	2	2	0.30	2.50	No	0	0	0.03	1.00	No
Receptor_253	2	2	0.27	2.50	No	0	0	0.03	1.00	No
Receptor_254	2	2	0.30	2.50	No	0	0	0.04	1.00	No
Receptor_255	2	2	0.37	2.50	No	0	0	0.05	1.00	No

	Fine Particulate Matter ($PM_{2.5}$) 24-Hr					Fine Particulate Matter ($PM_{2.5}$) Annual				
	Max Conc. (ug/m3)		Rwy Closure Incr. Difference			Max Conc. (ug/m3)		Rwy Closure Incr. Difference		
Receptor ID	2015 Normal Ops	2015 Runway Closure	Project Increase	Threshold	Exceeds?	2015 Normal Ops	2015 Runway Closure	Project Increase	Threshold	Exceeds?
Receptor_256	2	2	0.33	2.50	No	0	0	0.05	1.00	No
Receptor_257	2	3	0.33	2.50	No	0	0	0.05	1.00	No
Receptor_258	2	3	0.31	2.50	No	0	0	0.05	1.00	No
Receptor_259	2	2	0.36	2.50	No	0	0	0.05	1.00	No
Receptor_260	2	2	0.46	2.50	No	0	0	0.06	1.00	No
Receptor_261	2	2	0.57	2.50	No	0	0	0.08	1.00	No
Receptor_262	2	3	0.82	2.50	No	0	0	0.11	1.00	No
Receptor_263	2	3	0.83	2.50	No	0	0	0.13	1.00	No
Receptor_264	2	3	0.68	2.50	No	0	0	0.13	1.00	No
Receptor_265	2	2	0.55	2.50	No	0	0	0.11	1.00	No
Receptor_266	2	2	0.29	2.50	No	0	0	0.06	1.00	No
Receptor_267	2	2	0.35	2.50	No	0	0	0.08	1.00	No
Receptor_268	2	3	0.40	2.50	No	0	0	0.10	1.00	No
Receptor_269	2	3	0.16	2.50	No	0	0	0.07	1.00	No
Receptor_270	2	2	(0.03)	2.50	No	0	0	0.05	1.00	No
Receptor_271	2	3	0.13	2.50	No	0	0	0.04	1.00	No
Receptor_272	2	2	0.06	2.50	No	0	0	0.03	1.00	No
Receptor_273	2	2	0.11	2.50	No	0	0	0.03	1.00	No
Receptor_274	2	2	0.05	2.50	No	0	0	0.03	1.00	No
Receptor_275	2	2	0.02	2.50	No	0	1	0.03	1.00	No
Receptor_276	2	2	(0.07)	2.50	No	1	1	0.04	1.00	No
Receptor_277	3	3	(0.01)	2.50	No	1	1	0.04	1.00	No
Receptor_278	3	3	(0.00)	2.50	No	1	1	0.04	1.00	No
Receptor_279	3	3	(0.07)	2.50	No	1	1	0.05	1.00	No
Receptor_280	3	3	(0.06)	2.50	No	1	1	0.05	1.00	No
Receptor_281	3	3	(0.05)	2.50	No	1	1	0.05	1.00	No
Receptor_282	3	3	(0.06)	2.50	No	1	1	0.05	1.00	No
Receptor_283	3	3	(0.12)	2.50	No	1	1	0.05	1.00	No
Receptor_284	4	3	(0.22)	2.50	No	1	1	0.05	1.00	No
Receptor_285	4	4	(0.34)	2.50	No	1	1	0.06	1.00	No
Receptor_286	4	4	(0.22)	2.50	No	1	1	0.07	1.00	No
Receptor_287	4	4	(0.08)	2.50	No	1	1	0.07	1.00	No
Receptor_288	5	5	(0.01)	2.50	No	1	1	0.08	1.00	No
Receptor_289	5	5	(0.08)	2.50	No	1	1	0.08	1.00	No
Receptor_290	5	4	(0.34)	2.50	No	1	1	0.07	1.00	No
Receptor_291	5	4	(0.61)	2.50	No	1	1	0.06	1.00	No
Receptor_292	4	4	(0.47)	2.50	No	1	1	0.05	1.00	No
Receptor_293	4	4	(0.23)	2.50	No	1	1	0.05	1.00	No
Receptor_294	4	4	(0.11)	2.50	No	1	1	0.05	1.00	No
Receptor_295	4	4	0.02	2.50	No	1	1	0.04	1.00	No
Receptor_296	4	4	0.12	2.50	No	1	1	0.03	1.00	No
Receptor_297	5	5	(0.18)	2.50	No	1	1	0.03	1.00	No
Receptor_298	5	5	(0.35)	2.50	No	1	1	0.03	1.00	No
Receptor_299	5	5	(0.21)	2.50	No	1	1	0.03	1.00	No
Receptor_300	5	4	(0.12)	2.50	No	1	1	0.04	1.00	No
Receptor_301	4	5	0.19	2.50	No	1	1	0.04	1.00	No
Receptor_302	4	5	0.21	2.50	No	1	1	0.04	1.00	No
Receptor_303	5	5	0.33	2.50	No	1	1	0.04	1.00	No
Receptor_304	5	5	0.40	2.50	No	1	1	0.04	1.00	No
Receptor_305	5	5	0.51	2.50	No	1	1	0.03	1.00	No
Receptor_306	4	5	0.62	2.50	No	1	1	0.03	1.00	No
Receptor_307	5	5	0.34	2.50	No	1	1	0.02	1.00	No
Receptor_308	4	5	0.31	2.50	No	1	1	0.02	1.00	No
Receptor_309	4	5	0.36	2.50	No	1	1	0.01	1.00	No
Receptor_310	4	5	0.33	2.50	No	1	1	0.01	1.00	No
Receptor_311	4	4	0.17	2.50	No	1	1	0.01	1.00	No
Receptor_312	4	4	0.08	2.50	No	1	1	0.01	1.00	No
Receptor_313	4	4	(0.02)	2.50	No	1	1	0.00	1.00	No
Receptor_314	4	4	(0.10)	2.50	No	1	1	0.00	1.00	No
Receptor_315	4	4	(0.14)	2.50	No	1	1	0.00	1.00	No
Receptor_316	4	4	(0.05)	2.50	No	1	1	0.00	1.00	No
Receptor_317	3	3	(0.01)	2.50	No	1	1	0.00	1.00	No
Receptor_318	3	3	(0.01)	2.50	No	1	1	(0.00)	1.00	No
Receptor_319	3	3	0.04	2.50	No	1	1	(0.00)	1.00	No
Receptor_320	3	3	0.09	2.50	No	1	1	(0.00)	1.00	No
Receptor_321	3	3	0.14	2.50	No	1	1	(0.01)	1.00	No
Receptor_322	3	3	0.21	2.50	No	1	1	(0.01)	1.00	No
Receptor_323	3	3	0.22	2.50	No	1	1	(0.01)	1.00	No
Receptor_324	3	3	0.21	2.50	No	1	1	(0.01)	1.00	No
Receptor_325	2	3	0.19	2.50	No	1	1	(0.01)	1.00	No
Receptor_326	2	3	0.18	2.50	No	1	1	(0.01)	1.00	No
Receptor_327	6	6	0.44	2.50	No	2	2	0.04	1.00	No
Maximum	7	7	1.22	2.50	No	2	3	0.2	1.00	No

Attachment B.4
Construction – Cumulative Emissions Analysis

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Cumulative Emissions

Project No.	Concurrent Construction Project	Estimated Total Total Construction Cost [2] (millions)	Start Date	End Date	Carbon Monoxide (CO) Year 2015 Q1	Q2	Q3	Q4	Peak Quarter (tons/quarter)
N/A [1]	Runway 6L-24R and Runway 6R-24R Runway Safety Area and Associated Improvements	$38.90	May-15	Dec-15	-	14.7	29.6	22.9	29.6
1	Runway Safety Area Improvements-South Airfield [3]	$106.30	Nov-13	May-15	3.8	3.8			3.8
2	LAX Bradley West Project - Remaining Work [5]	$603.70	Nov-13	Dec-17	6.4	6.4	6.4	6.4	6.4
3	Terminal 3 Connector [6]	$175.00	Jul-19	Jan-22					-
4	North Terminal Improvements [7]	$380.00	Aug-13	Aug-17	0.3	0.3	0.3	0.3	0.3
5	South Terminal Improvements [7]	$665.00	Nov-11	Feb-18	0.6	0.6	0.6	0.6	0.6
6	Midfield Satellite Concourse – North	$666.50	Jul-14	Jun-19	20.6	17.0	20.1	17.4	20.6
7	Central Utility Plant Replacement Project Remaining Work [8]	$120.60	Sep-13	Dec-14					-
8	Miscellaneous Projects and Improvements [9]	$945.50	Jan-14	Jul-20	23.9	23.9	23.9	23.9	23.9
9	West Aircraft Maintenance Area Project [10]	$175.00	Jan-14	Dec-18	9.8	6.1	1.7		9.8
10	LAX Northside Area Development [11]	N/A	Jan-15	Dec-22	7.8	7.8	7.8	7.8	7.8
11	LAX Master Plan Alt. D/SPAS Development [12]	$16,391.00	Jun-15	Jun-25		61.7	61.7	61.7	61.7
12	Metro Crenshaw / LAX Transit Corridor and Station [13]	N/A	Dec-15	Apr-19				4.9	4.9
	Total from Other Construction Projects				73.1	127.5	122.4	122.9	127.5
	Total Cumulative Construction Projects				73.1	142.2	152.0	145.8	152.0

Notes:

1 N/A = Not Applicable

2 Estimated total costruction costs for related projects based on Los Angeles International Airport, Capital Improvement Projects (CIP) List (June 18, 2013).

3 Construction emissions based on Los Angeles International Airport, Runway 7L/25R Runway Safety Area (RSA) and Associated Improvements Projects Draft Environmental Impact Report (DEIR), September 2013.

4 Construction emissions for RSA Improvements - North Airfield are estimated based on the proportional costruction costs compared to RSA Improvements - South Airfield, given the generally similar nature of improvements.

5 Emissions estimates reflect the ratio of total project costs to the total project emissions as applied to cost of the remaining improvements, based on Los Angeles International Airport, Bradley West Project Draft Environmental Impact Report (DEIR), Table 4.3-9 (total project cost data), Tables 4.4-8 and 4.4-11 (total project emissions data), May 2009.

6 Emissions estimates based on same approach as described above for LAX Bradley West Project - Remaining Work.

7 Emissions estimates for all terminal renovation projects based on the emission rates associated with the United Airlines (UAL) T-7 Improvements Project, as presented in Table III-2 of the United Airlines T-7 Initial Study (March 2013), given that the nature of construction activity associated with terminal/concourse renovations would be generally comparable to those of the UAL project. The subject emissions rates of the UAL project were applied to terminal renovation projects based on cost ratios (i.e., emissions per million dollars of construction costs).

8 Emissions estimates reflect the ratio of total project costs to the total project emissions as applied to cost of the remaining improvements, based on Los Angeles International Airport, Bradley West Project Draft Environmental Impact Report (DEIR), Table 4.3-9 (cost data); Central Utility Plant Replacement Project Draft EIR, Tables 4.2-11 and 4.2-12, Appendix C Tables 3-1 and 3-2, July 2009.

9 Emissions based on average of terminal improvements projects, utilities/infrastructure improvements projects, and airfield operations area (AOA) improvements projects, as applied based on total construction cost.

10 Construction emissions based on Los Angeles International Airport, West Aircraft Maintenance Area Project Draft Environmental Impact Report (DEIR), Appendix B.4, October 2013.

11 Emissions estimates based on preliminary results for Los Angeles International Airport, Northside Area Development Project Draft Environmental Impact Report (DEIR), Table B.11-3 (total project emissions data), September 2013. Emissions, which were provided in tons per year, were divided by four to obtain tons per quarter.

12 As of this date, LAWA had considered nine development alternatives for the LAX Specific Plan Amendment Study (SPAS), and a combination of Alternatives 1 and 9 was approved; however, the implementation of that alternative cannot occur without future review and approval by FAA. As such, it assumed for the purposes of this analysis that the LAX Master Plan Alternative D, as currently approved, and was included in the SPAS analysis as Alternative 3, is implemented. The SPAS EIR indicates that construction of SPAS-related development, if approved, would occur between 2015 and 2025; however, there currently is no detailed construction schedule or construction phasing program. The SPAS EIR provides a general estimate of average daily construction emissions for the overall 11-year development duration. Emissions are based on the estimate of average daily construction emissions converted to tons per year.

13 Los Angeles County Metropolitan Transportation Authority, Crenshaw/LAX Transit Corridor, Final EIS/Final EIR, August 2011. Detailed construction information was not available at the time of this analysis. Estimated emissions based on maximum daily construction emissions presented in the Crenshaw/LAX Transit Corridor Project FEIS/R and converted to tons per quarter based on a 5-day workweek.

Sources: Los Angeles World Airports; CDM Smith; Ricondo & Associates, Inc.,April 2014.

Prepared by: Ricondo & Associates, Inc., April 2014.

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Cumulative Emissions

Project No.	Concurrent Construction Project	Estimated Total Total Construction Cost [2] (millions)	Start Date	End Date	Volatile Organic Compounds (VOCs) Year 2015 Q1	Q2	Q3	Q4	Peak Quarter (tons/quarter)
N/A [1]	Runway 6L-24R and Runway 6R-24R Runway Safety Area and Associated Improvements	$38.90	May-15	Dec-15	-	1.8	3.5	2.9	3.5
1	Runway Safety Area Improvements-South Airfield [3]	$106.30	Nov-13	May-15	0.3	0.3			0.3
2	LAX Bradley West Project - Remaining Work [5]	$603.70	Nov-13	Dec-17	1.1	1.1	1.1	1.1	1.1
3	Terminal 3 Connector [6]	$175.00	Jul-19	Jan-22					-
4	North Terminal Improvements [7]	$380.00	Aug-13	Aug-17	0.1	0.1	0.1	0.1	0.1
5	South Terminal Improvements [7]	$665.00	Nov-11	Feb-18	0.3	0.3	0.3	0.3	0.3
6	Midfield Satellite Concourse – North	$666.50	Jul-14	Jun-19	2.0	1.6	1.9	1.6	2.0
7	Central Utility Plant Replacement Project Remaining Work [8]	$120.60	Sep-13	Dec-14					-
8	Miscellaneous Projects and Improvements [9]	$945.50	Jan-14	Jul-20	6.4	6.4	6.4	6.4	6.4
9	West Aircraft Maintenance Area Project [10]	$175.00	Jan-14	Dec-18	1.0	0.7	0.3		1.0
10	LAX Northside Area Development [11]	N/A	Jan-15	Dec-22	1.3	1.3	1.3	1.3	1.3
11	LAX Master Plan Alt. D/SPAS Development [12]	$16,391.00	Jun-15	Jun-25		12.2	12.2	12.2	12.2
12	Metro Crenshaw / LAX Transit Corridor and Station [13]	N/A	Dec-15	Apr-19				1.0	1.0
	Total from Other Construction Projects				12.4	23.9	23.5	24.0	24.0
	Total Cumulative Construction Projects				12.4	25.7	27.0	26.9	27.0

Notes:

1 N/A = Not Applicable

2 Estimated total costruction costs for related projects based on Los Angeles International Airport, Capital Improvement Projects (CIP) List (June 18, 2013).

3 Construction emissions based on Los Angeles International Airport, Runway 7L/25R Runway Safety Area (RSA) and Associated Improvements Projects Draft Environmental Impact Report (DEIR), September 2013.

4 Construction emissions for RSA Improvements - North Airfield are estimated based on the proportional costruction costs compared to RSA Improvements - South Airfield, given the generally similar nature of improvements.

5 Emissions estimates reflect the ratio of total project costs to the total project emissions as applied to cost of the remaining improvements, based on Los Angeles International Airport, Bradley West Project Draft Environmental Impact Report (DEIR), Table 4.3-9 (total project cost data), Tables 4.4-8 and 4.4-11 (total project emissions data), May 2009.

6 Emissions estimates based on same approach as described above for LAX Bradley West Project - Remaining Work.

7 Emissions estimates for all terminal renovation projects based on the emission rates associated with the United Airlines (UAL) T-7 Improvements Project, as presented in Table III-2 of the United Airlines T-7 Initial Study (March 2013), given that the nature of construction activity associated with terminal/concourse renovations would be generally comparable to those of the UAL project. The subject emissions rates of the UAL project were applied to terminal renovation projects based on cost ratios (i.e., emissions per million dollars of construction costs).

8 Emissions estimates reflect the ratio of total project costs to the total project emissions as applied to cost of the remaining improvements, based on Los Angeles International Airport, Bradley West Project Draft Environmental Impact Report (DEIR), Table 4.3-9 (cost data); Central Utility Plant Replacement Project Draft EIR, Tables 4.2-11 and 4.2-12, Appendix C Tables 3-1 and 3-2, July 2009.

9 Emissions based on average of terminal improvements projects, utilities/infrastructure improvements projects, and airfield operations area (AOA) improvements projects, as applied based on total construction cost.

10 Construction emissions based on Los Angeles International Airport, West Aircraft Maintenance Area Project Draft Environmental Impact Report (DEIR), Appendix B.4, October 2013.

11 Emissions estimates based on preliminary results for Los Angeles International Airport, Northside Area Development Project Draft Environmental Impact Report (DEIR), Table B.11-3 (total project emissions data), September 2013. Emissions, which were provided in tons per year, were divided by four to obtain tons per quarter.

12 As of this date, LAWA had considered nine development alternatives for the LAX Specific Plan Amendment Study (SPAS), and a combination of Alternatives 1 and 9 was approved; however, the implementation of that alternative cannot occur without future review and approval by FAA. As such, it assumed for the purposes of this analysis that the LAX Master Plan Alternative D, as currently approved, and was included in the SPAS analysis as Alternative 3, is implemented. The SPAS EIR indicates that construction of SPAS-related development, if approved, would occur between 2015 and 2025; however, there currently is no detailed construction schedule or construction phasing program. The SPAS EIR provides a general estimate of average daily construction emissions for the overall 11-year development duration. Emissions are based on the estimate of average daily construction emissions converted to tons per year.

13 Los Angeles County Metropolitan Transportation Authority, Crenshaw/LAX Transit Corridor, Final EIS/Final EIR, August 2011. Detailed construction information was not available at the time of this analysis. Estimated emissions based on maximum daily construction emissions presented in the Crenshaw/LAX Transit Corridor Project FEIS/R and converted to tons per quarter based on a 5-day workweek.

Sources: Los Angeles World Airports; CDM Smith; Ricondo & Associates, Inc.,April 2014.

Prepared by: Ricondo & Associates, Inc., April 2014.

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Cumulative Emissions

Project No.	Concurrent Construction Project	Estimated Total Total Construction Cost [2] (millions)	Start Date	End Date	Nitrogen Oxides (NO_x) Year 2015 Q1	Q2	Q3	Q4	Peak Quarter (tons/quarter)
N/A [1]	Runway 6L-24R and Runway 6R-24R Runway Safety Area and Associated Improvements	$38.90	May-15	Dec-15	-	2.6	6.7	4.2	6.7
1	Runway Safety Area Improvements-South Airfield [3]	$106.30	Nov-13	May-15	1.1	1.1			1.1
2	LAX Bradley West Project - Remaining Work [5]	$603.70	Nov-13	Dec-17	8.1	8.1	8.1	8.1	8.1
3	Terminal 3 Connector [6]	$175.00	Jul-19	Jan-22					-
4	North Terminal Improvements [7]	$380.00	Aug-13	Aug-17	0.4	0.4	0.4	0.4	0.4
5	South Terminal Improvements [7]	$665.00	Nov-11	Feb-18	0.8	0.8	0.8	0.8	0.8
6	Midfield Satellite Concourse – North	$666.50	Jul-14	Jun-19	5.3	3.1	3.8	3.3	5.3
7	Central Utility Plant Replacement Project Remaining Work [8]	$120.60	Sep-13	Dec-14					-
8	Miscellaneous Projects and Improvements [9]	$945.50	Jan-14	Jul-20	32.3	32.3	32.3	32.3	32.3
9	West Aircraft Maintenance Area Project [10]	$175.00	Jan-14	Dec-18	5.4	3.2	0.9		5.4
10	LAX Northside Area Development [11]	N/A	Jan-15	Dec-22	2.5	2.5	2.5	2.5	2.5
11	LAX Master Plan Alt. D/SPAS Development [12]	$16,391.00	Jun-15	Jun-25		157.2	157.2	157.2	157.2
12	Metro Crenshaw / LAX Transit Corridor and Station [13]	N/A	Dec-15	Apr-19				8.8	8.8
	Total from Other Construction Projects				55.9	208.7	206.1	213.5	213.5
	Total Cumulative Construction Projects				55.9	211.4	212.8	217.7	217.7

Notes:

1 N/A = Not Applicable

2 Estimated total costruction costs for related projects based on Los Angeles International Airport, Capital Improvement Projects (CIP) List (June 18, 2013).

3 Construction emissions based on Los Angeles International Airport, Runway 7L/25R Runway Safety Area (RSA) and Associated Improvements Projects Draft Environmental Impact Report (DEIR), September 2013.

4 Construction emissions for RSA Improvements - North Airfield are estimated based on the proportional costruction costs compared to RSA Improvements - South Airfield, given the generally similar nature of improvements.

5 Emissions estimates reflect the ratio of total project costs to the total project emissions as applied to cost of the remaining improvements, based on Los Angeles International Airport, Bradley West Project Draft Environmental Impact Report (DEIR), Table 4.3-9 (total project cost data), Tables 4.4-8 and 4.4-11 (total project emissions data), May 2009.

6 Emissions estimates based on same approach as described above for LAX Bradley West Project - Remaining Work.

7 Emissions estimates for all terminal renovation projects based on the emission rates associated with the United Airlines (UAL) T-7 Improvements Project, as presented in Table III-2 of the United Airlines T-7 Initial Study (March 2013), given that the nature of construction activity associated with terminal/concourse renovations would be generally comparable to those of the UAL project. The subject emissions rates of the UAL project were applied to terminal renovation projects based on cost ratios (i.e., emissions per million dollars of construction costs).

8 Emissions estimates reflect the ratio of total project costs to the total project emissions as applied to cost of the remaining improvements, based on Los Angeles International Airport, Bradley West Project Draft Environmental Impact Report (DEIR), Table 4.3-9 (cost data); Central Utility Plant Replacement Project Draft EIR, Tables 4.2-11 and 4.2-12, Appendix C Tables 3-1 and 3-2, July 2009.

9 Emissions based on average of terminal improvements projects, utilities/infrastructure improvements projects, and airfield operations area (AOA) improvements projects, as applied based on total construction cost.

10 Construction emissions based on Los Angeles International Airport, West Aircraft Maintenance Area Project Draft Environmental Impact Report (DEIR), Appendix B.4, October 2013.

11 Emissions estimates based on preliminary results for Los Angeles International Airport, Northside Area Development Project Draft Environmental Impact Report (DEIR), Table B.11-3 (total project emissions data), September 2013. Emissions, which were provided in tons per year, were divided by four to obtain tons per quarter.

12 As of this date, LAWA had considered nine development alternatives for the LAX Specific Plan Amendment Study (SPAS), and a combination of Alternatives 1 and 9 was approved; however, the implementation of that alternative cannot occur without future review and approval by FAA. As such, it assumed for the purposes of this analysis that the LAX Master Plan Alternative D, as currently approved, and was included in the SPAS analysis as Alternative 3, is implemented. The SPAS EIR indicates that construction of SPAS-related development, if approved, would occur between 2015 and 2025; however, there currently is no detailed construction schedule or construction phasing program. The SPAS EIR provides a general estimate of average daily construction emissions for the overall 11-year development duration. Emissions are based on the estimate of average daily construction emissions converted to tons per year.

13 Los Angeles County Metropolitan Transportation Authority, Crenshaw/LAX Transit Corridor, Final EIS/Final EIR, August 2011. Detailed construction information was not available at the time of this analysis. Estimated emissions based on maximum daily construction emissions presented in the Crenshaw/LAX Transit Corridor Project FEIS/R and converted to tons per quarter based on a 5-day workweek.

Sources: Los Angeles World Airports; CDM Smith; Ricondo & Associates, Inc.,April 2014.
Prepared by: Ricondo & Associates, Inc., April 2014.

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Cumulative Emissions

Project No.	Concurrent Construction Project	Estimated Total Total Construction Cost [2] (millions)	Start Date	End Date	Sulfur Oxides (SO_x) Year 2015 Q1	Q2	Q3	Q4	Peak Quarter (tons/quarter)
N/A [1]	Runway 6L-24R and Runway 6R-24R Runway Safety Area and Associated Improvements	$38.90	May-15	Dec-15	-	0.76	1.18	1.15	1.18
1	Runway Safety Area Improvements-South Airfield [3]	$106.30	Nov-13	May-15	-	-			-
2	LAX Bradley West Project - Remaining Work [5]	$603.70	Nov-13	Dec-17	0.02	0.02	0.02	0.02	0.02
3	Terminal 3 Connector [6]	$175.00	Jul-19	Jan-22					-
4	North Terminal Improvements [7]	$380.00	Aug-13	Aug-17	0.01	0.01	0.01	0.01	0.01
5	South Terminal Improvements [7]	$665.00	Nov-11	Feb-18	0.01	0.01	0.01	0.01	0.01
6	Midfield Satellite Concourse – North	$666.50	Jul-14	Jun-19	0.05	0.04	0.05	0.05	0.05
7	Central Utility Plant Replacement Project Remaining Work [8]	$120.60	Sep-13	Dec-14					-
8	Miscellaneous Projects and Improvements [9]	$945.50	Jan-14	Jul-20	0.12	0.12	0.12	0.12	0.12
9	West Aircraft Maintenance Area Project [10]	$175.00	Jan-14	Dec-18	0.02	0.01	-		0.02
10	LAX Northside Area Development [11]	N/A	Jan-15	Dec-22	0.02	0.02	0.02	0.02	0.02
11	LAX Master Plan Alt. D/SPAS Development [12]	$16,391.00	Jun-15	Jun-25		0.17	0.17	0.17	0.17
12	Metro Crenshaw / LAX Transit Corridor and Station [13]	N/A	Dec-15	Apr-19				0.03	0.03
	Total from Other Construction Projects				0.24	0.38	0.39	0.41	0.41
	Total Cumulative Construction Projects				0.24	1.15	1.56	1.57	1.57

Notes:

1 N/A = Not Applicable

2 Estimated total costruction costs for related projects based on Los Angeles International Airport, Capital Improvement Projects (CIP) List (June 18, 2013).

3 Construction emissions based on Los Angeles International Airport, Runway 7L/25R Runway Safety Area (RSA) and Associated Improvements Projects Draft Environmental Impact Report (DEIR), September 2013.

4 Construction emissions for RSA Improvements - North Airfield are estimated based on the proportional costruction costs compared to RSA Improvements - South Airfield, given the generally similar nature of improvements.

5 Emissions estimates reflect the ratio of total project costs to the total project emissions as applied to cost of the remaining improvements, based on Los Angeles International Airport, Bradley West Project Draft Environmental Impact Report (DEIR), Table 4.3-9 (total project cost data), Tables 4.4-8 and 4.4-11 (total project emissions data), May 2009.

6 Emissions estimates based on same approach as described above for LAX Bradley West Project - Remaining Work.

7 Emissions estimates for all terminal renovation projects based on the emission rates associated with the United Airlines (UAL) T-7 Improvements Project, as presented in Table III-2 of the United Airlines T-7 Initial Study (March 2013), given that the nature of construction activity associated with terminal/concourse renovations would be generally comparable to those of the UAL project. The subject emissions rates of the UAL project were applied to terminal renovation projects based on cost ratios (i.e., emissions per million dollars of construction costs).

8 Emissions estimates reflect the ratio of total project costs to the total project emissions as applied to cost of the remaining improvements, based on Los Angeles International Airport, Bradley West Project Draft Environmental Impact Report (DEIR), Table 4.3-9 (cost data); Central Utility Plant Replacement Project Draft EIR, Tables 4.2-11 and 4.2-12, Appendix C Tables 3-1 and 3-2, July 2009.

9 Emissions based on average of terminal improvements projects, utilities/infrastructure improvements projects, and airfield operations area (AOA) improvements projects, as applied based on total construction cost.

10 Construction emissions based on Los Angeles International Airport, West Aircraft Maintenance Area Project Draft Environmental Impact Report (DEIR), Appendix B.4, October 2013.

11 Emissions estimates based on preliminary results for Los Angeles International Airport, Northside Area Development Project Draft Environmental Impact Report (DEIR), Table B.11-3 (total project emissions data), September 2013. Emissions, which were provided in tons per year, were divided by four to obtain tons per quarter.

12 As of this date, LAWA had considered nine development alternatives for the LAX Specific Plan Amendment Study (SPAS), and a combination of Alternatives 1 and 9 was approved; however, the implementation of that alternative cannot occur without future review and approval by FAA. As such, it assumed for the purposes of this analysis that the LAX Master Plan Alternative D, as currently approved, and was included in the SPAS analysis as Alternative 3, is implemented. The SPAS EIR indicates that construction of SPAS-related development, if approved, would occur between 2015 and 2025; however, there currently is no detailed construction schedule or construction phasing program. The SPAS EIR provides a general estimate of average daily construction emissions for the overall 11-year development duration. Emissions are based on the estimate of average daily construction emissions converted to tons per year.

13 Los Angeles County Metropolitan Transportation Authority, Crenshaw/LAX Transit Corridor, Final EIS/Final EIR, August 2011. Detailed construction information was not available at the time of this analysis. Estimated emissions based on maximum daily construction emissions presented in the Crenshaw/LAX Transit Corridor Project FEIS/R and converted to tons per quarter based on a 5-day workweek.

Sources: Los Angeles World Airports; CDM Smith; Ricondo & Associates, Inc.,April 2014.
Prepared by: Ricondo & Associates, Inc., April 2014.

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Cumulative Emissions

Project No.	Concurrent Construction Project	Estimated Total Total Construction Cost [2] (millions)	Start Date	End Date	Respirable Particulate Matter (PM10) Year 2015 Q1	Q2	Q3	Q4	Peak Quarter (tons/quarter)
N/A [1]	Runway 6L-24R and Runway 6R-24R Runway Safety Area and Associated Improvements	$38.90	May-15	Dec-15	-	0.2	2.5	0.5	2.5
1	Runway Safety Area Improvements-South Airfield [3]	$106.30	Nov-13	May-15	0.1	0.1			0.1
2	LAX Bradley West Project - Remaining Work [5]	$603.70	Nov-13	Dec-17	2.0	2.0	2.0	2.0	2.0
3	Terminal 3 Connector [6]	$175.00	Jul-19	Jan-22					-
4	North Terminal Improvements [7]	$380.00	Aug-13	Aug-17	0.1	0.1	0.1	0.1	0.1
5	South Terminal Improvements [7]	$665.00	Nov-11	Feb-18	0.1	0.1	0.1	0.1	0.1
6	Midfield Satellite Concourse – North	$666.50	Jul-14	Jun-19	3.8	3.1	3.6	3.1	3.8
7	Central Utility Plant Replacement Project Remaining Work [8]	$120.60	Sep-13	Dec-14					-
8	Miscellaneous Projects and Improvements [9]	$945.50	Jan-14	Jul-20	4.2	4.2	4.2	4.2	4.2
9	West Aircraft Maintenance Area Project [10]	$175.00	Jan-14	Dec-18	0.4	0.2	0.1		0.4
10	LAX Northside Area Development [11]	N/A	Jan-15	Dec-22	0.9	0.9	0.9	0.9	0.9
11	LAX Master Plan Alt. D/SPAS Development [12]	$16,391.00	Jun-15	Jun-25		64.5	64.5	64.5	64.5
12	Metro Crenshaw / LAX Transit Corridor and Station [13]	N/A	Dec-15	Apr-19				1.0	1.0
	Total from Other Construction Projects				11.5	75.1	75.4	75.8	75.8
	Total Cumulative Construction Projects				11.5	75.4	78.0	76.3	78.0

Notes:

1 N/A = Not Applicable

2 Estimated total costruction costs for related projects based on Los Angeles International Airport, Capital Improvement Projects (CIP) List (June 18, 2013).

3 Construction emissions based on Los Angeles International Airport, Runway 7L/25R Runway Safety Area (RSA) and Associated Improvements Projects Draft Environmental Impact Report (DEIR), September 2013.

4 Construction emissions for RSA Improvements - North Airfield are estimated based on the proportional costruction costs compared to RSA Improvements - South Airfield, given the generally similar nature of improvements.

5 Emissions estimates reflect the ratio of total project costs to the total project emissions as applied to cost of the remaining improvements, based on Los Angeles International Airport, Bradley West Project Draft Environmental Impact Report (DEIR), Table 4.3-9 (total project cost data), Tables 4.4-8 and 4.4-11 (total project emissions data), May 2009.

6 Emissions estimates based on same approach as described above for LAX Bradley West Project - Remaining Work.

7 Emissions estimates for all terminal renovation projects based on the emission rates associated with the United Airlines (UAL) T-7 Improvements Project, as presented in Table III-2 of the United Airlines T-7 Initial Study (March 2013), given that the nature of construction activity associated with terminal/concourse renovations would be generally comparable to those of the UAL project. The subject emissions rates of the UAL project were applied to terminal renovation projects based on cost ratios (i.e., emissions per million dollars of construction costs).

8 Emissions estimates reflect the ratio of total project costs to the total project emissions as applied to cost of the remaining improvements, based on Los Angeles International Airport, Bradley West Project Draft Environmental Impact Report (DEIR), Table 4.3-9 (cost data); Central Utility Plant Replacement Project Draft EIR, Tables 4.2-11 and 4.2-12, Appendix C Tables 3-1 and 3-2, July 2009.

9 Emissions based on average of terminal improvements projects, utilities/infrastructure improvements projects, and airfield operations area (AOA) improvements projects, as applied based on total construction cost.

10 Construction emissions based on Los Angeles International Airport, West Aircraft Maintenance Area Project Draft Environmental Impact Report (DEIR), Appendix B.4, October 2013.

11 Emissions estimates based on preliminary results for Los Angeles International Airport, Northside Area Development Project Draft Environmental Impact Report (DEIR), Table B.11-3 (total project emissions data), September 2013. Emissions, which were provided in tons per year, were divided by four to obtain tons per quarter.

12 As of this date, LAWA had considered nine development alternatives for the LAX Specific Plan Amendment Study (SPAS), and a combination of Alternatives 1 and 9 was approved; however, the implementation of that alternative cannot occur without future review and approval by FAA. As such, it assumed for the purposes of this analysis that the LAX Master Plan Alternative D, as currently approved, and was included in the SPAS analysis as Alternative 3, is implemented. The SPAS EIR indicates that construction of SPAS-related development, if approved, would occur between 2015 and 2025; however, there currently is no detailed construction schedule or construction phasing program. The SPAS EIR provides a general estimate of average daily construction emissions for the overall 11-year development duration. Emissions are based on the estimate of average daily construction emissions converted to tons per year.

13 Los Angeles County Metropolitan Transportation Authority, Crenshaw/LAX Transit Corridor, Final EIS/Final EIR, August 2011. Detailed construction information was not available at the time of this analysis. Estimated emissions based on maximum daily construction emissions presented in the Crenshaw/LAX Transit Corridor Project FEIS/R and converted to tons per quarter based on a 5-day workweek.

Sources: Los Angeles World Airports; CDM Smith; Ricondo & Associates, Inc.,April 2014.

Prepared by: Ricondo & Associates, Inc., April 2014.

Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Draft EIR
Cumulative Emissions

Project No.	Concurrent Construction Project	Estimated Total Total Construction Cost [2] (millions)	Start Date	End Date	Fine Particulate Matter (PM2.5) Year 2015 Q1	Q2	Q3	Q4	Peak Quarter (tons/quarter)
N/A [1]	Runway 6L-24R and Runway 6R-24R Runway Safety Area and Associated Improvements	$38.90	May-15	Dec-15	-	0.2	0.9	0.3	0.9
1	Runway Safety Area Improvements-South Airfield [3]	$106.30	Nov-13	May-15	0.0	0.0			0.0
2	LAX Bradley West Project - Remaining Work [5]	$603.70	Nov-13	Dec-17	0.7	0.7	0.7	0.7	0.7
3	Terminal 3 Connector [6]	$175.00	Jul-19	Jan-22					-
4	North Terminal Improvements [7]	$380.00	Aug-13	Aug-17	0.0	0.0	0.0	0.0	0.0
5	South Terminal Improvements [7]	$665.00	Nov-11	Feb-18	0.1	0.1	0.1	0.1	0.1
6	Midfield Satellite Concourse – North	$666.50	Jul-14	Jun-19	0.8	0.6	0.7	0.6	0.8
7	Central Utility Plant Replacement Project Remaining Work [8]	$120.60	Sep-13	Dec-14					-
8	Miscellaneous Projects and Improvements [9]	$945.50	Jan-14	Jul-20	1.7	1.7	1.7	1.7	1.7
9	West Aircraft Maintenance Area Project [10]	$175.00	Jan-14	Dec-18	0.2	0.1	0.1		0.2
10	LAX Northside Area Development [11]	N/A	Jan-15	Dec-22	0.3	0.3	0.3	0.3	0.3
11	LAX Master Plan Alt. D/SPAS Development [12]	$16,391.00	Jun-15	Jun-25		10.2	10.2	10.2	10.2
12	Metro Crenshaw / LAX Transit Corridor and Station [13]	N/A	Dec-15	Apr-19				0.6	0.6
	Total from Other Construction Projects				3.7	13.7	13.7	14.1	14.1
	Total Cumulative Construction Projects				3.7	13.9	14.6	14.4	14.6

Notes:

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3 Construction emissions based on Los Angeles International Airport, Runway 7L/25R Runway Safety Area (RSA) and Associated Improvements Projects Draft Environmental Impact Report (DEIR), September 2013.

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6 Emissions estimates based on same approach as described above for LAX Bradley West Project - Remaining Work.

7 Emissions estimates for all terminal renovation projects based on the emission rates associated with the United Airlines (UAL) T-7 Improvements Project, as presented in Table III-2 of the United Airlines T-7 Initial Study (March 2013), given that the nature of construction activity associated with terminal/concourse renovations would be generally comparable to those of the UAL project. The subject emissions rates of the UAL project were applied to terminal renovation projects based on cost ratios (i.e., emissions per million dollars of construction costs).

8 Emissions estimates reflect the ratio of total project costs to the total project emissions as applied to cost of the remaining improvements, based on Los Angeles International Airport, Bradley West Project Draft Environmental Impact Report (DEIR), Table 4.3-9 (cost data); Central Utility Plant Replacement Project Draft EIR, Tables 4.2-11 and 4.2-12, Appendix C Tables 3-1 and 3-2, July 2009.

9 Emissions based on average of terminal improvements projects, utilities/infrastructure improvements projects, and airfield operations area (AOA) improvements projects, as applied based on total construction cost.

10 Construction emissions based on Los Angeles International Airport, West Aircraft Maintenance Area Project Draft Environmental Impact Report (DEIR), Appendix B.4, October 2013.

11 Emissions estimates based on preliminary results for Los Angeles International Airport, Northside Area Development Project Draft Environmental Impact Report (DEIR), Table B.11-3 (total project emissions data), September 2013. Emissions, which were provided in tons per year, were divided by four to obtain tons per quarter.

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13 Los Angeles County Metropolitan Transportation Authority, Crenshaw/LAX Transit Corridor, Final EIS/Final EIR, August 2011. Detailed construction information was not available at the time of this analysis. Estimated emissions based on maximum daily construction emissions presented in the Crenshaw/LAX Transit Corridor Project FEIS/R and converted to tons per quarter based on a 5-day workweek.

Sources: Los Angeles World Airports; CDM Smith; Ricondo & Associates, Inc.,April 2014.

Prepared by: Ricondo & Associates, Inc., April 2014.