Palm Springs Country Club (TTM 36691)
Air Quality Impact Study

Prepared By: Endo Engineering

May 2014

AIR QUALITY IMPACT STUDY

FOR TENTATIVE TRACT MAP NO. 36691

(THE FORMER PALM SPRINGS COUNTRY CLUB SITE)

EAST OF SUNRISE WAY AND NORTH OF VERONA ROAD,
WITH ACCESS TO SAN RAFAEL DRIVE AND WHITEWATER CLUB DRIVE

CITY OF PALM SPRINGS

MAY 22, 2014

Prepared For

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Endo Engineering *Traffic Engineering* *Air Quality Studies* *Noise Assessments*

May 22, 2014

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SUBJECT: Air Quality Impact Analysis for Tentative Tract Map #36691
Proposed on the Former Palm Springs Country Club Site

Gentlemen;

Endo Engineering is pleased to submit this evaluation of the air quality impacts associated with a proposed General Plan Amendment, Planned Development District, and Tentative Tract Map 36691 to permit the development of up to 441 low-density residential dwelling units and the dedication of a 5.37-acre site for a future public park in the City of Palm Springs, California. The project would replace the fallow former Palm Springs Country Club Golf Course and clubhouse facilities on a site with 156.18 gross acres located east of Sunrise Way and north of Verona Road. It would permit the construction of 137 multi-family attached cluster dwelling units in the North Village, with access east of Sunrise Way via the intersection of San Rafael Drive/Golden Sands Drive. In addition, up to 304 single-family detached dwellings would be constructed in the South Village, with access via Whitewater Club Drive, north of Verona Road.

This report details in graphic and narrative form: (1) the existing ambient air quality in the project vicinity; (2) air quality impacts associated with project-related construction activities; (3) operational air quality impacts upon completion of the development, (4) greenhouse gas emissions; and (4) mitigation measures. We trust that the information provided herein will be of use in the preparation of the required environmental documentation and assist the City of Palm Springs in their review of the impacts and conditions of approval associated with the project. In the event that questions or comments arise regarding the findings and recommendations within this report, please do not hesitate to contact Endo Engineering. We look forward to discussing our findings and recommendations with you.

Cordially,
ENDO ENGINEERING

Vicki Lee Endo

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1.0 EXECUTIVE SUMMARY

Appendix A provides a glossary of technical terms related to air quality that are used throughout this report. A list of acronyms is also provided in Appendix A for reference.

1.1 AIR QUALITY SETTING

1. In the Coachella Valley, winds blow predominantly from the northwest to the southeast. The two permanent ambient air quality monitoring stations in the Riverside County portion of the Coachella Valley are located south of the project site (in Palm Springs) and southeast of the project site (in Indio).

2. The South Coast Air Quality Management District (SCAQMD) has jurisdiction over the densely populated South Coast Air Basin (SCAB) and the desert portion of Riverside County in the Salton Sea Air Basin (SSAB), which is predominantly downwind of the SCAB. The project site is located within the Coachella Valley, which is within the Riverside County portion of the Salton Sea Air Basin.

3. Areas that meet ambient air quality standards are classified as "attainment" whereas those that do not meet the relevant standards are classified as "nonattainment" areas. The Coachella Valley is designated by the California Air Resources Board as nonattainment for: (1) ozone, based on exceedances of both the state 1-hour and 8-hour standards; and (2) PM_{10}, based on exceedances of the state 24-hour and annual average standard. The Coachella Valley does not exceed the federal standard for $PM_{2.5}$.

4. Ozone is directly transported from the SCAB and formed photochemically from precursors emitted upwind in the coastal and central Los Angeles County areas of the SCAB. Violations of the air quality standards for ozone in the Coachella Valley are primarily due to pollutant transport from the South Coast Air Basin.

5. The Riverside County portion of the Salton Sea Air Basin has been redesignated by the U.S. EPA as a "Severe-15" ozone nonattainment area for the 8-hour federal ozone standards for 1997 (0.08 ppm) and the lower 2008 standard (0.075 ppm). This extends the attainment deadline to 2019 for the 1997 8-hour ozone standard and establishes an attainment date of December 31, 2027 for the 2008 8-hour ozone standard.

6. The *2007 Air Quality Management Plan* addressed and satisfied the Clean Air Act planning requirements for ozone in the Coachella Valley. The strategy toward attainment of the federal ozone standards in the Coachella Valley remains effective, based upon the emissions and modeling projections in both the *2007 Air Quality Management Plan* (AQMP) and the *Final 2012 AQMP*.

7. The Riverside County portion of the Salton Sea Air Basin has been classified by the U.S. EPA as a "serious" PM_{10} nonattainment area. The Coachella Valley exceeds the federal PM_{10} standard when high wind events cause wind-blown dust to be transported from local disturbed and natural desert areas. However, these days can be classified as exceptional events and not considered when determining attainment status with respect to the national ambient air quality standards. The South Coast Air Basin and the Coachella Valley are currently eligible for redesignation as attainment for PM_{10}. The redesignations are currently pending. Future projections for Coachella Valley PM_{10} levels included in the *2003 Coachella Valley State Implementation Plan* are still applicable.

8. The Coachella Valley does not exceed the 24-hour $PM_{2.5}$ federal health standard or the annual standard and is designated by the U.S. EPA as unclassifiable/attainment with respect to this standard. $PM_{2.5}$ levels have remained relatively low in the Coachella Valley compared to the SCAB because the desert area has fewer combustion sources and increased vertical mixing and horizontal dispersion.[1] The annual $PM_{2.5}$ state standard is not exceeded in the Coachella Valley.

9. The project site is located within the Active Blowsand Hazard Zone, an area where mitigation is required to protect current and future residents and adjacent property owners from blowsand generated by development activities. Mitigation in the form of landscaping, walls, screens, fences, ground covers, soil stabilizers, and watering techniques has been found to be effective in controlling and reducing blowsand.

10. Sensitive population groups (including children, the elderly, people with acute or chronic illnesses, and those with cardiovascular and/or respiratory diseases) live in residential areas and tend to be at home for extended periods of time. As a result, they may be exposed for sustained periods to any pollutants that are present over many years. There are many existing residential land uses with sensitive receptors located within close proximity of the project site.

1.2 AIR QUALITY IMPACTS

The California Environmental Quality Act (CEQA) applies to projects which are funded, undertaken, or require the issuance of a permit by a public agency. CEQA requires public agencies to identify potentially significant effects of projects they intend to approve and mitigate significant effects whenever it is feasible to do so.

THRESHOLDS OF SIGNIFICANCE

Appendix G of the *CEQA Guidelines* provides five examples of situations where a project would normally have a significant effect on the environment (see page 4-1). These examples include: (1) a project that would conflict with or obstruct implementation of the applicable regional air quality plans; (2) causes an air quality standard to be violated or contributes substantially to an existing violation; (3) emits criteria pollutants for which the region is designated nonattainment, including emissions in excess of quantitative thresholds for ozone precursors; (4) exposes sensitive receptors to substantial pollutant levels; and (5) exposes many people to objectionable odors or emits toxic air contaminants. In 2009, the CEQA Guidelines were amended to require greenhouse gas emissions to be analyzed and their significance to be assessed.

The South Coast Air Management District recommends the use of the mass daily regional significance thresholds for construction and operational emissions generated by projects located in the Coachella Valley as indicators of significance for both project-specific and cumulative impacts. These significance thresholds were based primarily upon regulatory standards. However, the use of regulatory standards as the sole threshold of significance was struck from CEQA in 2002.[2] Reliance on regulatory standards can no longer be used as the sole determinant of significance. The SCAQMD thresholds of significance are provided herein as a guideline to be considered on a case-by-case basis with other substantial evidence in light of the whole record to determine if the project may have a significant air quality impact.

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[1] SCAQMD; *Revised Draft 2012 AQMP;* September 2012; pg. 7-9.

[2] Use of regulatory standards as a threshold for significance [former CEQA section 15064(h)] was struck from CEQA pursuant to *Communities For A Better Environment v. California Resources Agency*, Case No. CO38844 (10/28/02).

The SCAQMD recommends that cumulative air quality impacts associated with any pollutant that exceeds the mass daily significance thresholds should be considered significant. Projects that do not exceed the project-specific SCAQMD thresholds of significance are generally not considered to be cumulatively significant.[3]

Projects that could negatively impact levels of service at major intersections at or near the project site with nearby sensitive receptors must quantify and, if necessary, mitigate potentially significant project-related increases in carbon monoxide (CO) emissions from motor vehicles. The potential for localized adverse health effects over the long term associated with project-related increases in traffic volumes is considered significant if the project would result in a localized exceedance of the state or federal health-based carbon monoxide (CO) standards or contribute to an existing or projected violation at nearby sensitive receptor locations. The potential for localized CO "hot spots" is highest during the morning peak hours in the winter months, when congested conditions may result in many vehicles idling or operating at a stop-and-go pace.

LESS-THAN-SIGNIFICANT AIR QUALITY IMPACTS

1. The emissions of NO_x, CO, SO_2, and $PM_{2.5}$ during project-related construction activities are not projected to exceed the SCAQMD mass thresholds of significance and are therefore considered less than significant.

2. The emissions of PM_{10} during project-related construction activities will be mitigated to below the SCAQMD thresholds of significance through compliance with SCAQMD Rule 403.1 and the *Palm Springs Municipal Code* (Chapter 8.50) as well as the construction site regulations and are therefore considered less than significant.

3. Project-related impacts on blowsand shall be reduced to less than significant through compliance with *Uniform Building Code* (Chapter 70) and the *Palm Springs Municipal Code* (Section 9.60.040) during on-site construction activities.

4. The construction activities required to implement the project have the potential to expose sensitive receptors in the surrounding community to toxic air contaminants emitted by diesel-fueled construction equipment. Construction activities will vary from one day to another and move from one location to another. The short-term nature of these emissions and their rapid dispersion with increasing distance between the source and receptor will limit the exposure and risk of sensitive receptors.

5. The long-term emissions of criteria pollutants associated with the operation of the Preferred Alternative are not projected to exceed the SCAQMD mass thresholds of significance and are therefore considered less than significant.

6. Since the Preferred Alternative would not exceed any of the project-specific SCAQMD significance threshold criteria for operational emissions, it is not considered to be cumulatively significant and no mitigation is required.

7. The potential for localized adverse health effects over the long term associated with project-related increases in traffic volumes would be considered less than significant. Based upon a carbon monoxide "hot spot" analysis of the intersection most heavily used by project-related traffic, the future year 2020 carbon monoxide levels are not projected to exceed state or federal CO standards at the intersection of Sunrise Way and San Rafael Drive with or without project-related traffic. The proposed project would not interfere with the attainment of the state 1-hour

[3] The SCAQMD has developed localized significance thresholds (LSTs) for four criteria pollutants applicable to projects with up to five acres. The use of these LSTs as screening criteria for dispersion modeling is voluntary.

or 8-hour carbon monoxide standards by either exceeding them or contributing to an existing or projected violation at sensitive receptor locations.

8. The proposed project would not emit objectionable odors affecting a substantial number of people.

POTENTIALLY SIGNIFICANT AIR QUALITY IMPACTS

Construction-Related Emissions

Architectural coating activities undertaken to implement the proposed project could cause localized emissions of the reactive organic gases (ROG) in the project vicinity at levels projected to exceed the SCAQMD mass daily significance thresholds provided the average volatile organic compounds (VOC) content of the architectural coatings is 250 grams per liter. Under Rule 1113, the most commonly used residential coatings (e.g. flats and nonflats) have a VOC limit of 50 grams per liter. Provided the average VOC content of the architectural coatings does not exceed 150 grams per liter, the project would not exceed the SCAQMD mass daily regional significance threshold of 75 pounds of ROG emitted per day.

Consistency With Regional Air Quality Plans

Consistency with regional air quality plans links local planning and individual projects to the regional plans developed to meet the ambient air quality standards. New development projects that were not anticipated by the local General Plan or the regional *Air Quality Management Plan* have the potential to generate additional air pollutant emissions that could be "cumulatively considerable" and potentially interfere with the region's ability to meet regional air quality goals.

Air quality impacts associated with the proposed project may be considered cumulatively considerable because the project is not consistent with the population growth assumed as the basis for the development of the most recently adopted *Air Quality Management Plan*. The proposed project would require a change in the existing land use designation (e.g., a General Plan Amendment or Zone Change). Although the project-related long-term operational emissions of PM_{10}, ROG and NOx would be greater than the emissions anticipated for the site if developed under the existing land use designations, these emissions would be less than the significance thresholds established by the SCAQMD for both project-level and cumulative impacts.[4]

Greenhouse Gas Emissions

Construction activities required to implement the Preferred Alternative would increase greenhouse gas emissions through the combustion of fossil fuels and may contribute incrementally to climate change. Although there are no established significance thresholds for greenhouse gas emissions during construction activities, these emissions are considered potentially significant because they will occur over a period of five years and may contribute to the inability of the State of California to achieve the greenhouse gas reduction targets identified under AB 32 as necessary to reduce the state's impact on climate change.

The project-related long-term increase in greenhouse gas emissions through the combustion of fossil fuels, energy usage, water usage, and waste disposal would be reduced 2.2 percent through project design and development standards. New homes constructed on-site would comply with the new 2013 statewide energy efficiency standards pursuant to *California Code of Regulations Title 24 Part 6*: California's *Energy Efficiency Standards for Residential and Nonresidential Buildings* which are 33 percent more efficient than the previous 2008 standards. The project would contribute

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[4] The Coachella Valley is designated as nonattainment for PM_{10} and ozone. ROG and NOx are ozone precursors.

incrementally to an increase in greenhouse gas emissions and may contribute to California's inability to achieve the greenhouse gas reduction targets identified in AB 32 as necessary to reduce the state's impact on climate change. The City of Palm Springs has the authority to attach conditions of approval to the proposed project requiring mitigation to reduce potentially significant GHG emissions to the maximum extent feasible. Provided all feasible mitigation measures specified by the City of Palm Springs to reduce GHG emissions are incorporated in the project, the impact of the project-related increases in GHG emissions on climate change may be considered less than significant.

1.3 AIR QUALITY MITIGATION MEASURES

The City of Palm Springs will use its discretionary permit authority to place conditions of approval on the proposed project that require compliance with all applicable policies, rules, regulations and ordinances. Since PM_{10} concentrations are of concern in the Coachella Valley, site-specific Fugitive Dust Control Plans identifying the Coachella Valley Best Available Control Measures to be implemented to ensure that applicable performance standards are met before, during, and after construction activities. These plans shall be submitted for City review and approval prior to the issuance of grading or building permits for any activity with a disturbed surface area of more than 5,000 square feet.

The project proponent and the City of Palm Springs should incorporate the following measures in the Mitigation Monitoring Plan to ensure that significant air quality impacts associated with the proposed project will be reduced to the maximum extent feasible.

1. The architectural coatings used for the project should have an average of 150 grams or less of VOC per liter to achieve net (mitigated) project emissions below 75 pounds per day.

2. A Climate Action Plan could be incorporated in the proposed project to establish specific design features and development standards to achieve sustainable decreases in greenhouse gas emissions at the individual project level and could reduce GHG impacts to less than significant. Appendix F provides details regarding what constitutes an adequate plan.

2.0 PROJECT LOCATION AND DESCRIPTION

2.1 PROJECT LOCATION

The project site is comprised of 156.18 gross acres (125.88 net acres) formerly developed as the Palm Springs Country Club. Figure 2-1 illustrates the project in its regional context within the City of Palm Springs, California. The project site is generally located south of Interstate 10, north of Vista Chino (State Highway 111), east of Sunrise Way, and west of Gene Autry Trail and the Whitewater River Channel.

Figure 2-2 illustrates the project site in its local context including the extent of the two on-site planning areas known as the North Village and the South Village. As shown therein, the North Village is more precisely located south of Four Seasons Boulevard and north of East San Rafael Drive, between Sunrise Way and Farrell Drive. The South Village is north of Verona Road and south of San Rafael Drive, between Farrell Drive and North Whitewater Club Drive.

Figure 2-2 shows the study area and the ten intersections for which current and future traffic volume projections were available from the *Traffic Impact Study For Tentative Tract Map No. 3669* (Endo Engineering; February 10, 2014). These traffic volume projections were modeled to quantify the current and future motor vehicle noise levels.

2.2 PROJECT DESCRIPTION

EXISTING ON-SITE LAND USES

The project site was previously developed as the Palm Springs Country Club, which included: a private golf course, a driving range, and a clubhouse with four tennis courts. The Palm Springs Country Club was sustained by daily fee golfers until economic conditions forced its closure. Once reopening the golf course was determined to no longer be feasible, the clubhouse structure was demolished and removed from the site. The foundation of the clubhouse and the tennis courts and paved parking area remain in the southeast corner of the South Village Planning Area. The turf associated with the fallow 18-hole golf course was removed and the surface soil was chemically stabilized to minimize erosion.

A flood control levee separates the development area within the South Village from the Whitewater River Channel and a 24.93-acre triangular remainder Lot "L" within the South Village Planning Area. In the year 2016, construction is scheduled to begin on a 52-mile regional multi-purpose trail known as the CV Link. The CV Link is currently being planned along the Whitewater River Channel flood control levee.

EXISTING ENTITLEMENTS

The project site has no existing entitlements. The General Plan land use designation for the portion of the project site located west of the Whitewater River levee is Open Space-Parks and Recreation. The General Plan land use designation for the contiguous parcel, located east of the Whitewater River levee, is Open Space Conservation.

The existing zoning designation of the North Village is primarily Open Space with a portion designated O-5 (open space with 5-acre minimum lots) and a smaller portion designated as R-1-C (single-family residential with 10,000 square-foot minimum lots). The existing zoning of the South Village (the area west of the levee) is O or O-5 (open space with 5-acre minimum lots). The parcel

Figure 2-1
Regional Location Map

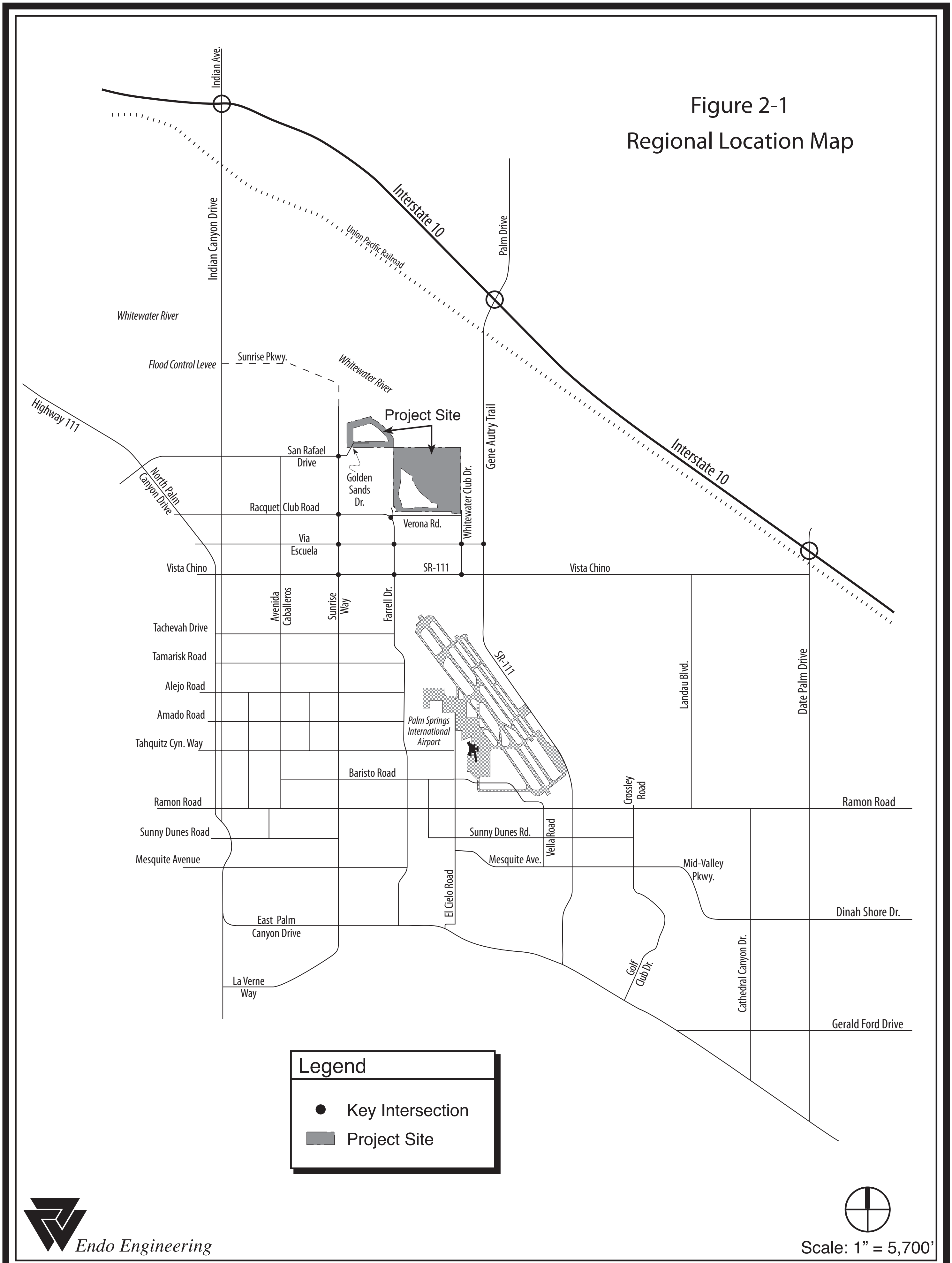
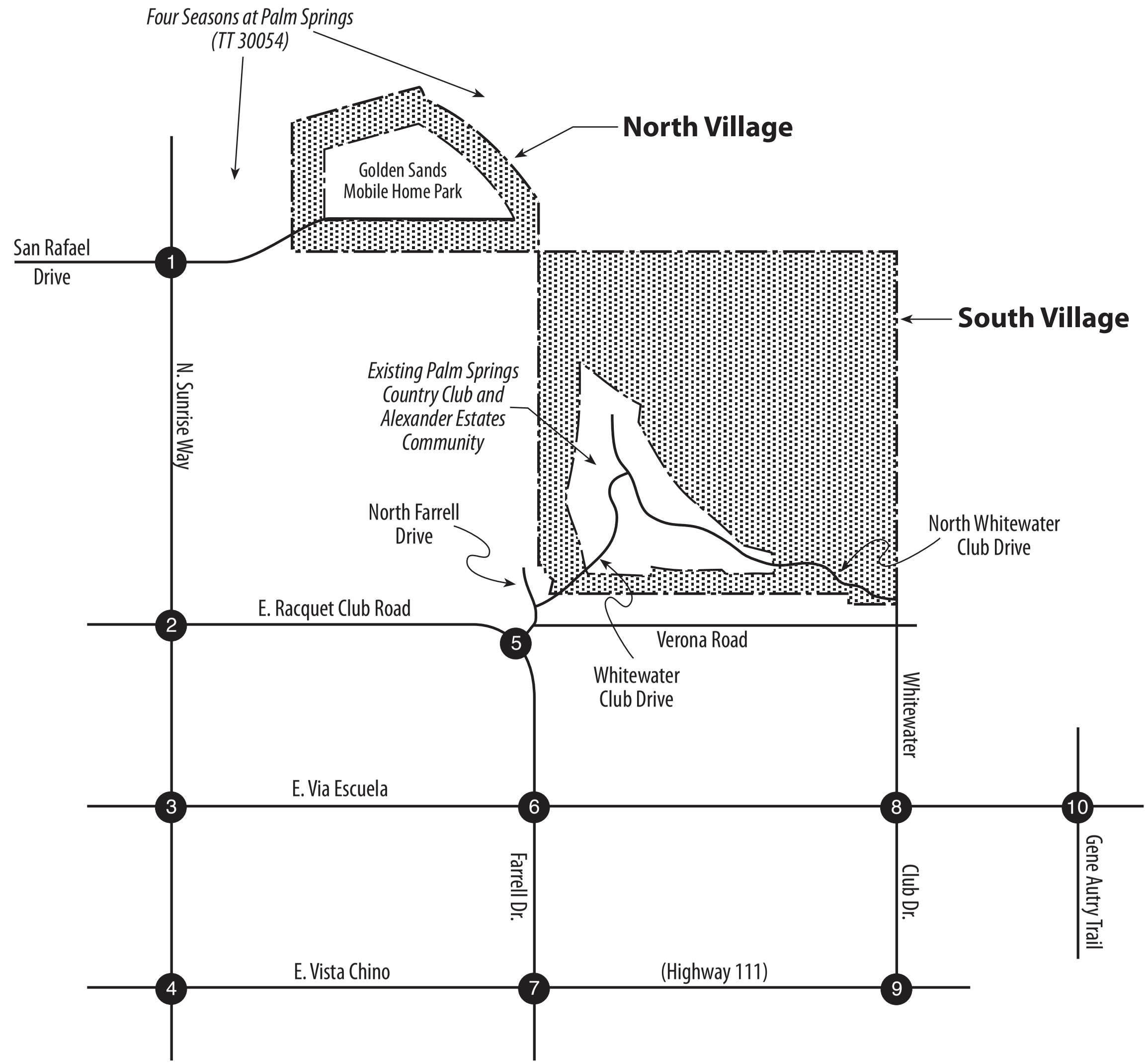


Figure 2-2
Vicinity Map



Legend

- ● Key Intersection
- Project Site

Endo Engineering

Scale: 1" = 1380'

located east of the Whitewater River levee is zoned W (watercourse). Although the former golf course was a compatible use within the Open Space-Conservation designation, the low-density residential land uses currently proposed would require a Planned Development District in lieu of a zone change.

PROPOSED DEVELOPMENT

The proposed project would include: (1) a General Plan Amendment from Private Open Space to Residential Low-4, and (2) a Planned Development District in lieu of a Zone Change to permit a low-density residential land use and a public park site to replace the former golf course and golf clubhouse. The residential density with the proposed project would be approximately 3.6 dwelling units per acre.

The public park site proposed at the southeast corner of the South Village would be deeded to the City of Palm Springs and have public access via North Whitewater Club Drive, outside the gated project entry. The 5.37-acre park site could serve as a trailhead for the planned CV Link, a regional corridor for a Coachella Valley multi-purpose trail to be located along the adjacent flood control levee.

The project proposes the development of a combined total of up to 441 residential dwelling units with direct access via East San Rafael Drive (east of North Sunrise Way) and North Whitewater Club Drive (like the former golf clubhouse). The North Village would be developed with 137 multi-family attached clustered dwelling units on 17.9 net acres, as shown in Figure 2-3. The South Village would be developed with up to 304 single-family detached dwelling units on 45.89 net acres, as shown in Figure 2-4.

Proposed Internal Circulation and Site Access

The project would be developed as a gated community with access via two gated access points located at the southwest corner of the North Village Planning Area and a third gated access located at the southeast corner of the South Village Planning Area, adjacent to the future public park site. The North Village and South Village Planning Areas would be connected via an internal roadway that would allow uncontrolled access between the two development areas within the site.

The existing Golden Sands Mobile Home Park would be surrounded on all sides by the North Village Planning Area. Residents and visitors associated with the Golden Sands Mobile Home Park currently use Golden Sands Drive and East San Rafael Drive to access North Sunrise Way.

Three single-lane roundabouts are proposed in conjunction with the proposed development with geometric features that would encourage slow travel speeds through the roundabout. A roundabout is proposed at the primary entry to the North Village, at the primary entry to the South Village and at the point where an internal connection is proposed between the two villages. A single-lane roundabout is proposed on North Whitewater Drive, north of Verona Road, to facilitate access to the gated South Village development and provide public access to the future public park proposed immediately north of the roundabout. People destined to and from the park will not be required to pass through the entry gates associated with the South Village.

A proposed access and utility easement (90 feet in width) located adjacent to the flood control levee would include a 20-foot wide emergency access that would also function as a pedestrian, bicycle and neighborhood electric vehicle (NEV) path. A 24-foot wide gated emergency access is proposed to Farrell Drive, opposite the intersection of Francis Drive. This emergency access would be located between two existing residences located west of the South Village Planning Area. A Knox-Box Rapid Entry System would be installed at the gate to facilitate emergency access by fire fighters and other emergency first responders.

Figure 2-3
Site Development Plan - North Village

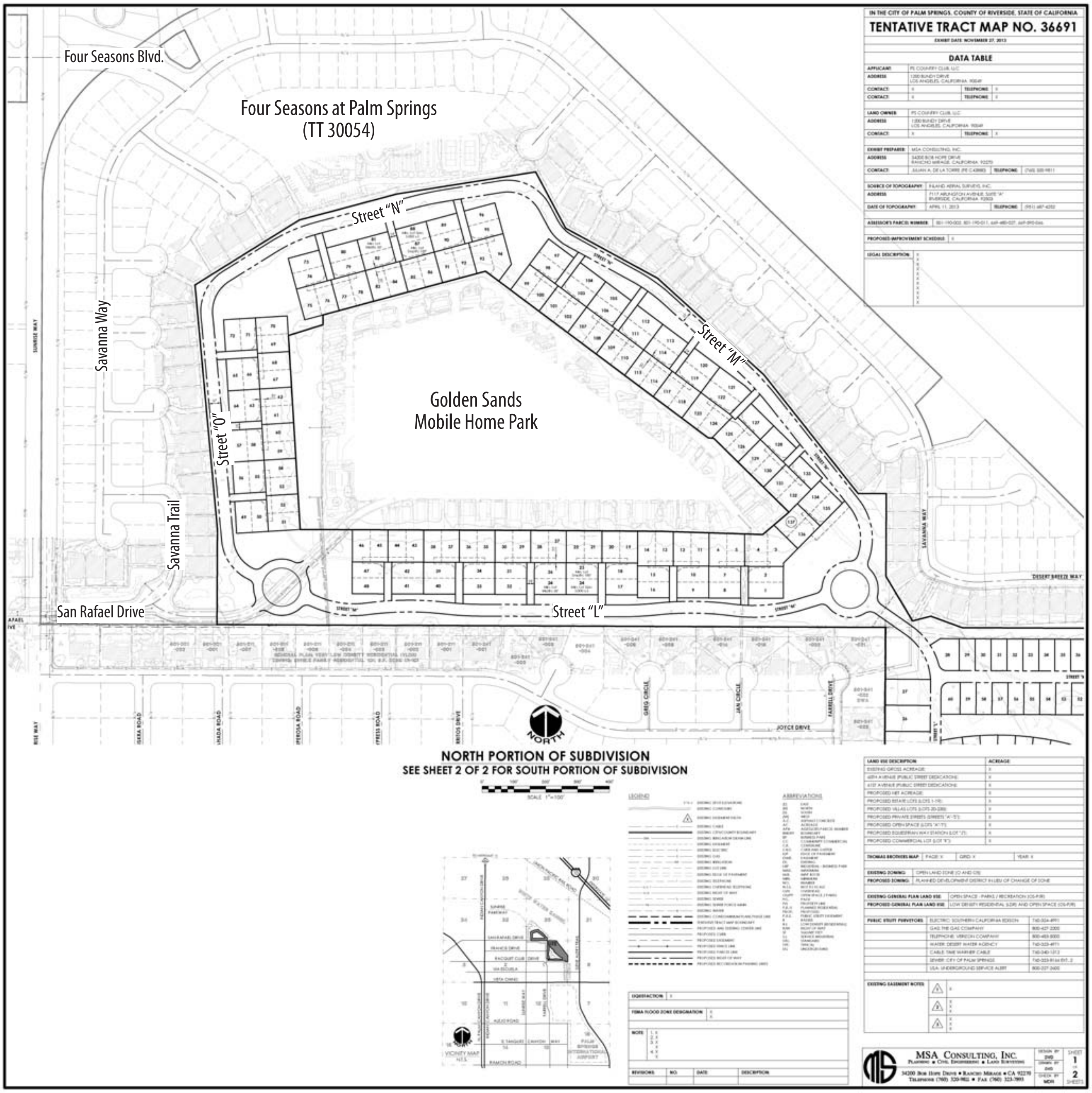


Figure 2-4

Site Development Plan - South Village

The proposed development within the South Village would surround the existing Palm Springs Country Club and Alexander Estates gated community on all sides without taking access through that neighborhood. With the proposed project, Whitewater Club Drive, north of Verona Road, would be realigned and a roundabout would be constructed to serve both the future public park site and the gated South Village residential development. Future residents of the South Village would not be permitted to enter or pass through the existing Palm Springs Country Club and Alexander Estates or use the existing gated entry located at the southwest corner of the existing Palm Springs Country Club and Alexander Estates community (near Farrell Drive).

PROJECT AND CONSTRUCTION PHASING

Demolition and site preparation activities are expected to begin in August of the year 2015. Site grading will occur during September 2015 and be completed in approximately three weeks. Trenching activities necessary to underground utilities are projected to require about twenty days to complete. Construction of the residential structures is expected to begin in April 2016 and require up to 3.5 years to complete. This includes the time required to lay asphalt and pour concrete for the roadways, sidewalks, driveways, trails, and parking lots. Although the phasing of the development will be dictated by the demands of the marketplace, both planning areas could be fully developed and occupied in the year 2020.

2.3 PROJECT ALTERNATIVES

Alternative 1 represents the Preferred Alternative. Approximately 3,740 daily trip-ends would be generated on a typical weekday by the Preferred Alternative.

Alternative 2 would replace approximately 91 of the residential dwelling units proposed within the South Village Planning Area with a 20-acre soccer park site, which could accommodate eight soccer fields. Alternative 2 would generate 3,290 trip-ends per day, approximately 88 percent of the daily trip generation of the Preferred Alternative. Parking for the soccer park would be located outside of the gated residential areas. The North Village would not be gated with Alternative 2. The South Village would be developed with 213 single-family detached dwelling units.

Alternative 3 would include the development of the entire project site with 272 single-family detached dwelling units on 10,000 square-foot lots. Alternative 3 would generate approximately 2,610 trip-ends on a typical weekday, approximately 70 percent of the daily trip generation of the Preferred Alternative.

Alternative 4 represents the no development alternative. The project site would remain vacant with this alternative and would not generate trips.

2.4 EXISTING LAND USES IN PROJECT VICINITY

EXISTING LAND USES SURROUNDING THE NORTH VILLAGE

The North Village Planning Area surrounds the existing Golden Sands Mobile Home Park which includes 139 spaces for mobile homes, three of which are not currently occupied. Access to this development is via Golden Sands Drive, a private street that extends east from the eastern terminus of East San Rafael Drive.

The North Village Planning Area is surrounded to the west, north, and east by the Four Seasons at Palm Springs gated community (Tract 30054). The primary access to this community of 238 single-family detached dwelling units is located northwest of the North Village, at the intersection of Four Seasons Boulevard and Sunrise Way.

Approximately 76 single-family dwellings are located south of Four Seasons Boulevard and north of San Rafael Drive, between Sunrise Way and the western boundary of the North Village. Residents of these dwellings can take access via the gated entry on Four Seasons Boulevard or the secondary gated access located on Savanna Trail, which intersects East San Rafael Drive, east of Sunrise Way. Both Savanna Trail and Savanna Way are private north/south residential streets with access to East San Rafael Drive via the gated southern access to Tract 30054.

EXISTING LAND USES SURROUNDING THE SOUTH VILLAGE

The South Village Planning Area surrounds the gated residential community known as existing Palm Springs Country Club and Alexander Estates. This community includes 275 residences with access to and from North Farrell Drive via Whitewater Club Drive, at the southwest corner of the South Village. With the proposed project, the 23 single-family detached dwellings and 275 condominiums within this community would also have access through the South Village Planning Area via North Whitewater Club Drive (i.e., at the southeast corner of the South Village). North Whitewater Club Drive was the access to the former Palm Springs Country Club clubhouse.

2.5 CUMULATIVE DEVELOPMENT

Plans for the construction of cumulative developments have been disrupted by the economic recession. The growth in traffic volumes projected with the traffic model developed in conjunction with the *Palm Springs 2007 General Plan* update process have been utilized for this noise analysis, and are assumed to address future cumulative development within the study area.

3.0 EXISTING AIR QUALITY

Various air quality fundamentals are discussed below including: criteria pollutants, ambient air quality standards, episode criteria, and demonstrated effects of air pollutants on sensitive receptors. This basic information is followed by a discussion of: (1) regional air quality; (2) local ambient air quality; (3) existing sensitive receptor locations in the project vicinity; (4) local sources of air contaminants; and (5) the regulatory setting. Appendix A includes a glossary of technical terms used throughout the air quality analysis.

3.1 AIR POLLUTION FUNDAMENTALS

Air pollution is comprised of many substances generated from a variety of sources, both man-made and natural. Since the rapid industrialization of the twentieth century, almost every human endeavor, especially those relying on the burning of fossil fuels, creates air pollution. Most contaminants are actually wasted energy in the form of unburned fuels or by-products of the combustion process.

As more people worldwide enjoy modern energy intensive lifestyles, satellites are observing the continuous movement of polluted air masses in the form of dusty plumes that cross oceans above the marine layer and impact countries other than those that are the source of the polluted air mass. The transport of air pollutants from Asia (and China in particular) may cause or contribute to violations of health-based ambient air quality standards for particulate matter in California in the future. Recent studies indicate that the Asian plume (which is 50% carbonatious, 25% dust and 25% sulfate) is already a significant component of the background particulate matter over California.[1]

Motor vehicles are by far the most significant source of air pollutants in urban areas, emitting photochemically reactive hydrocarbons (unburned fuel), carbon monoxide (CO), and oxides of nitrogen (NOx). These primary pollutants chemically react in the atmosphere with sunlight and the passage of time to form secondary pollutants such as ozone.

Significant air quality improvements have been made in California as a result of a progression of standards that require increasingly cleaner air and improved technology and emission control programs. Despite growth in the economy, the population, and vehicle miles traveled, improvements in ambient air quality have occurred in the South Coast Air Basin (SCAB) since the late 1990s. Ozone and suspended particulate matter with a mean aerodynamic diameter of less than 10 micrometers (PM_{10}) represent the major air quality problems in the desert regions of Southern California.

The South Coast Air Quality Management District (SCAQMD) has jurisdiction over the SCAB as well as the desert portion of Riverside County in the Salton Sea Air Basin (SSAB) where the Coachella Valley is located. The air quality of the Coachella Valley is determined by the primary pollutant emissions added daily, and by the primary and secondary pollutants already present in the air mass. Primary pollutants are those emitted directly from a source. They include: carbon monoxide, nitric oxide (NO), sulfur dioxide (SO_2), particulate matter (PM), and various hydrocarbons and other volatile organic compounds (VOC). Secondary pollutants include: photochemical oxidants (90% of which are ozone), photochemical aerosols, peroxyacetylnitrate (PAN), and nitrogen dioxide (NO_2).

[1] Presentation of January 22, 2004 by Dr. Vancuren before the California Air Resources Board and *Journal of Geophysical Research;* October 2003.

CRITERIA AIR POLLUTANTS

Criteria air pollutants are those air contaminants for which air quality standards currently exist. State and federal air quality standards currently exist for: ozone, nitrogen dioxide, sulfur dioxide, carbon monoxide, suspended particulate matter, and lead. California has also set standards for visibility and sulfates, hydrogen sulfide and vinyl chloride. Emissions of criteria air contaminants or their precursors also typically include reactive organic gases (ROG), NOx, sulfur oxides (SOx), and PM.

Carbon Monoxide (CO)

Carbon monoxide is a colorless, odorless, toxic gas formed by incomplete combustion of fossil fuels. Carbon monoxide concentrations are generally higher in the winter, when meteorological conditions favor the build-up of directly emitted contaminants. Carbon monoxide health warnings and emergency episodes occur almost entirely during the winter. The most significant source of carbon monoxide is gasoline powered automobiles, as a result of inefficient fuel usage in internal combustion engines. Various industrial processes also emit carbon monoxide.

Oxides of Nitrogen (NO_x)

Oxides of nitrogen are the primary receptors of ultraviolet light initiating the photochemical reactions that produce smog. Nitric oxide combines with oxygen in the presence of reactive hydrocarbons and sunlight to form NO_2 and ozone. Oxides of nitrogen are contributors to other air pollution problems including: high levels of fine particulate matter ($PM_{2.5}$), poor visibility and acid deposition. The primary sources of NOx in the basin are incomplete combustion in motor vehicle engines, power plants, refineries and other industrial operations. Ships, railroads and aircraft are other significant emission sources.

Seven oxides of nitrogen and two hydrated oxides can exist in the atmosphere, but only four are present in noticeable amounts. Two of these are classified as pollutants including: nitric oxide (a colorless and odorless gas) and NO_2 (a reddish-brown gas formed by the combination of NO with oxygen). Nitric oxide is far less toxic than NO_2 in humans. NO_2 absorbs blue light, thereby lending a brown cast to the atmosphere over the SCAB on days when inversions reduce dispersion and trap pollutants near the ground.

Sulfur Dioxide and Sulfate (SO_2)

Sulfur dioxide results from the combustion of high sulfur content fuels. Fuel combustion is the major source of SO_2, while chemical plants, sulfur recovery plants, and metal processing are minor contributors. Sulfates result from a reaction of SO_2 and oxygen in the presence of sunlight. When sunlight is plentiful, sulfate is formed more readily. Therefore, SO_2 levels are generally lower in the summer and higher in the winter. Recent reductions in SO_2 levels reflect the use of natural gas in power plants and boilers (since natural gas is very low in sulfur) and low sulfur fuel oil.

Suspended Particulate Matter (PM_{10} and $PM_{2.5}$)

Suspended PM is a mixture of solid or liquid particles of soot, dust, smoke, fumes and aerosols found in the air. Particulate matter consists of particles in the atmosphere as a by-product of fuel combustion, through abrasion such as tire wear, and through soil erosion by the wind. Particulates can also be formed through photochemical reactions in the atmosphere. PM_{10} refers to fine divided solids or liquids which are 10 microns or less in diameter and can enter the lungs. Particulate concentrations are generally higher in the winter near major sources, when more fuel is burned and meteorological conditions favor the build-up of directly-emitted contaminants.

The size of the particles is directly linked to their potential for causing health problems. Larger particles can irritate eyes, noses, and throats and reduce visibility. Coarse particles (such as those found in wind-blown dust) have diameters between 2.5 and 10 micrometers and can be deposited within the lungs and result in adverse health effects. Coarse particles are produced primarily by motor vehicle tire wear, industrial cutting and grinding processes, and the re-suspension of particles from the ground or road surfaces by wind and human activities (construction, agriculture, etc.). About 90 percent of total particulates are less than 5 microns in diameter, while the aerosols formed within the atmosphere (primarily sulfate and nitrate) are usually smaller than 1 micron.

Fine particulate matter (2.5 micrometers in diameter or less) includes a mixture of microscopic solid or liquid particles suspended in air which are generally soot and aerosols. Fine particles can be emitted directly from combustion sources such as vehicle exhaust, stationary sources, and smoke from fires. They can also be formed in the atmosphere from power plant, industrial, and mobile source emissions of gases such as SO_2 and NOx. Components may include organic chemicals, metals, soil or dust particles, and allergens (such as fragments or pollen or mold spores).

Fine particulate matter ($PM_{2.5}$) poses the greatest health risk because they can penetrate deep into the lungs and may even get into the bloodstream. Exposure to such particles can affect both the lungs and the heart. People with heart or lung disease, asthmatics, older adults, and children are especially at risk. Fine particulates are unhealthy to breathe and have been associated with serious health effects including premature mortality. They also reduce visibility.

Lead

Lead is found in old paints and coatings, plumbing and a variety of other materials. Once in the blood stream, lead can cause damage to the brain, nervous system, and other body systems. Children are highly susceptible to the effects of lead.

Ozone

Photochemical oxidant (O_3) can include several different pollutants, but consists primarily of ozone (90%) and a group of chemicals called organic peroxynitrates. Ozone is a pungent, colorless toxic gas produced in the troposphere by the photochemical process. Photochemical oxidant is created by complex atmospheric reactions involving NOx and VOC in the presence of ultraviolet energy from sunlight. Ozone is found at concentrations below 10 parts per million (ppm) in the lower portion of the stratosphere, approximately 12 to 25 miles above the surface of the Earth. This ozone layer is transparent to UV-A radiation but absorbs harmful ultraviolet radiation (UV-C and UV-B) coming from the sun that can cause skin cancer. At the Earth's surface ozone is a major component of smog and causes numerous adverse health effects.

Motor vehicles are the major source of ozone precursors (NOx and VOC) in the air basin. Ozone is formed through chemical reactions of VOC, NOx, and oxygen in the presence of sunlight. The reactions that form ozone begin at sunrise and require sunlight to proceed. Peak ozone concentrations tend to occur in the SCAB between 1:00 and 2:00 p.m. during the summer and early fall, when the solar radiation exposure of the air mass is the greatest. Ozone and ozone precursors are then transported downwind as the photochemical reactions continue to occur. In areas downwind of the source region like Palm Springs, peak ozone concentrations occur in the late afternoon and early evening (between 5:00 and 6:00 p.m.). If the ozone in Palm Springs were locally generated, the peak concentrations would be found during the middle of the day.

The prevailing marine air currents throughout the South Coast Air Basin typically carry polluted air inland as ozone-forming photochemical reactions proceed. The highest ozone concentrations in are found miles downwind of the largest concentrations of precursor emissions sources. Peak ozone concentrations within the SCAB are found in the inland valleys and adjacent mountains between the San Fernando Valley and the Riverside-San Bernardino area.

Just as oxidant precursors from Los Angeles and the adjacent coastal areas aggravate oxidant problems inland in Riverside, precursor emissions from the central and eastern areas of the SCAB (including Anaheim) contribute to locally produced oxidant in the Coachella Valley.[2] A comprehensive study confirmed the transport pathways to the Coachella Valley in 1983.[3] Although the extent to which the intrusion of ozone contributes to Coachella Valley ozone exceedances has not been quantified, "...it is ARB's judgment that oxidant problems in the Southeast Desert would be minimal if oxidants and oxidant precursors were effectively controlled in the South Coast Air Basin."[4]

The role of local emissions in the formation of oxidants in the Coachella Valley is difficult to quantify. Locally produced oxidant undoubtedly accounts for some standard exceedances. However, tracer studies and studies of ozone levels by location, hour of day, day of week, etc. indicate that an oxidant cloud caused directly by transport from the SCAB causes exceedances in Palm Springs as late as 8 p.m., when local photochemical activity has slowed. In addition, transported NOx and VOC emitted the previous day have been identified as major contributors to ozone concentrations at downwind desert locations.[5]

Volatile Organic Compounds (VOC)

Hydrocarbon and other volatile organic compounds are formed from the combustion of fuels and the evaporation of organic solvents (such as gasoline, alcohol, and the solvents used in paints and other coatings). Many hydrocarbon compounds are major air pollutants and those classified as aromatics are highly photochemically reactive with NOx, forming photochemical smog. Hydrocarbon concentrations are generally higher in winter, when sunlight is limited and photochemical reactions occur more slowly. During the winter, meteorological conditions are more favorable to the accumulation of VOC in the atmosphere which, in the presence of NOx, play a major role in the formation of ozone. Motor vehicles are the major source of reactive organic gases (ROG) in the SCAB which are composed of non-methane hydrocarbons.

GREENHOUSE GASES

Greenhouse gases (GHG) trap solar energy in the Earth's atmosphere and make the planet warmer. Without GHG, the Earth would be too cold to be inhabitable. Common greenhouse gases in the Earth's atmosphere include: water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone, and to a lesser extent chlorofluorocarbons. Carbon dioxide is the main GHG thought to contribute to global climate change. Carbon dioxide absorbs long-wave radiant energy reflected by the Earth, which warms the atmosphere. GHG radiate long-wave radiation absorbed by the atmosphere out to space as well as down toward the Earth's surface. This process is known as the "greenhouse effect." Human activities (such as burning carbon-based fossil fuels) create water vapor and CO_2 as byproducts, thereby impacting the levels of GHG in the atmosphere.

Human activities are thought to be responsible for almost all of the increase in GHG within the atmosphere over the last 150 years. The largest source of GHG emissions is burning fossil fuels for electricity, heat, and transportation.

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2 Drivas, P. J. and F. H. Shair; "A Tracer Study of Pollutant Transport in the Los Angeles Area;" Atmospheric *Environment* 8: 1155-1163; 1974

3 Smith, T.B. et al.; *The Impact of Transport from the South Coast Air Basin on Ozone Levels in the Southeast Desert Air Basin*; CARB Research Library Report No. ARB-R-83-183.

4 SCAQMD and SCAG; *AQMP - Southeast Desert Air Basin, Riverside County;* October 1979.

5 SCAQMD and SCAG; *AQMP - Southeast Desert Air Basin, Riverside County;* October 1979.

The U.S. EPA tracks GHG emissions annually. Since 1990, GHG emissions within the United States have increased approximately 10 percent. During 2010, GHG emissions in the U.S. totaled 6,882 million metric tons of CO_2 equivalent. The U.S. EPA attributes GHG emissions to five sectors. the production of electricity (34%), the transportation sector (27%), industry (21%), the commercial and residential sector (11%), and agriculture (7%). Seventy percent of our nation's energy comes from burning fossil fuels. Ninety percent of the fuel used for transportation is petroleum based. GHG from homes and businesses arise primarily from fossil fuels burned for heat, the use of products containing GHG, and the handling of waste. Managed forests and other land areas can absorb CO_2 from the atmosphere. In the U.S., land-use change and forestry were estimated to offset approximately 15% of the GHG emissions in 2010.[6]

Passenger vehicles have been identified by the California Air Resources Board (CARB) as the primary source of GHG emissions in California. During 2008, the CARB identified the CO_2 emissions associated with fuel use in the SCAB (mostly transportation fuels) as 32 percent of the CO_2 released in California.

In the 2012 AQMP, the SCAQMD identified on-road transportation as the largest source of GHG and criteria pollutants in the SCAB. Transportation and goods movement are responsible for over 80 percent of the NOx and 70 percent of the CO_2 emissions in the SCAB. Reliance primarily on internal combustion engines, which are inherently inefficient, to move people and goods in the SCAB wastes 80 percent of the energy content of the gasoline as heat. The majority of the $PM_{2.5}$ emissions in 2008 within the SCAB were attributable to transportation sources. Within the transportation sector, the majority of the NOx emitted in the SCAB in 2008 was emitted by diesel-powered vehicles. On-road heavy-duty diesel vehicles have a slow rate of fleet turnover which substantially increases the time before the benefits of technology improvements are fully realized.

Improved policies regarding land use and transportation are essential elements in achieving criteria pollutant standards and California's 2050 GHG and climate change goals. Although hybrid and electric vehicles are more efficient than traditional internal combustion engines, additional technology changes in the transportation sector are needed to reduce emissions and increase both efficiency and the use of renewable fuels. Typical gasoline-fueled vehicles currently utilize 20 percent or less of the energy content of gasoline for propulsion.[7]

Even though the SCAB consumes two percent of the energy consumed in the nation, California's per capita energy consumption is fourth lowest in the nation. Sixty percent of the energy use in the SCAB is attributed by the SCAQMD to the transportation sector. Three large airports are located in the SCAB serving 16 million residents. Residents rely on the freeways and highway infrastructure for mobility and use enough gasoline in the process to comprise nearly 50 percent of the total energy consumed in the SCAB. Two of the largest maritime ports in the nation are located in the SCAB and handle 40 percent of the nation's container traffic. Local distribution networks require diesel-powered trucks and trains to move goods. Conservation, renewable energy generation from all sources, and lower emission technologies will all be required to reduce criteria air pollutants and GHG emissions.

AMBIENT AIR QUALITY STANDARDS

Ambient air quality is determined from data collected at air quality monitoring stations located within the Salton Sea Air Basin, as shown in Figure 3-1. The ambient air quality data is given in terms of state and national standards which represent air pollutant concentrations which are considered safe (with a reasonable margin of safety) to protect the public health and welfare. As such, they represent objectives for acceptable concentrations of specified pollutants in outdoor air.

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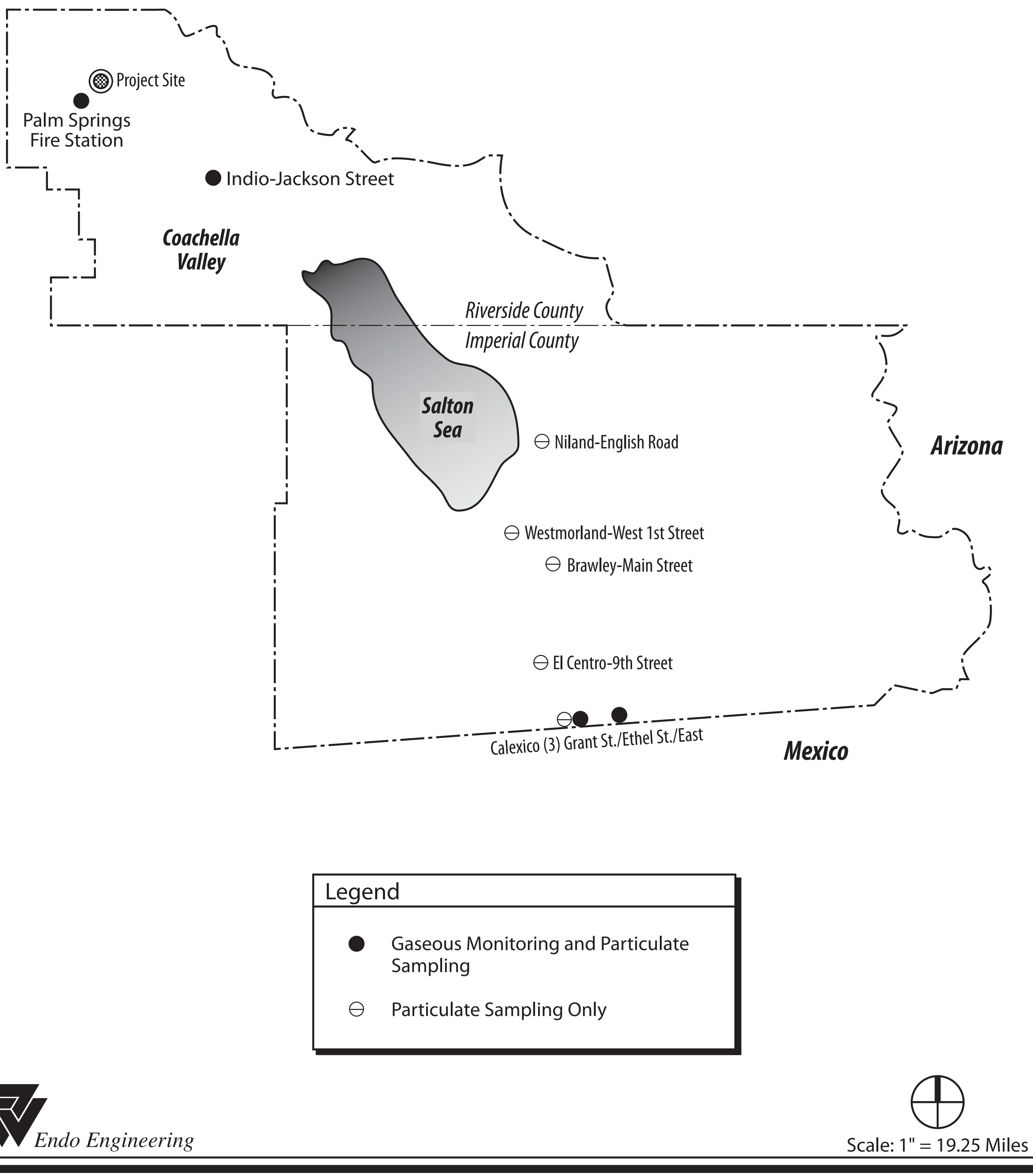
6 U.S. EPA; *Sources of Greenhouse Gas Emissions; June 14, 2012.*

7 Source: fueleconomy.gov

Figure 3-1

Ambient Air Monitoring Stations Operating
In the Salton Sea Air Basin



Endo Engineering

Ambient air quality standards are designed to protect public health and that segment of the population that is most sensitive and susceptible to respiratory distress or infection such as: asthmatics, the very young, the elderly, people weak with illness or disease, or persons engaged in heavy work or exercise (i.e. sensitive receptors). Healthy adults can tolerate periodic exposures to air pollutant levels well above these standards before adverse health effects are observed.

Two types of national standards have been established by the U.S. EPA, as required by the Federal Clean Air Act. Primary standards were designed to safeguard the health of people considered to be sensitive receptors while outdoors. Secondary standards were designed to safeguard public welfare by minimizing damage to plants and animals, buildings, the oxidation of rubber and paint, and protecting against decreased visibility.

The Federal Clean Air Act permits states to adopt more protective air quality standards if needed. California has set standards which are more protective of public health than the respective national ambient air quality standards (NAAQS) and set standards for some pollutants not addressed by the national standards. The state and NAAQS are included in Appendix B. The new health-based federal fine particulate ($PM_{2.5}$) and 8-hour surface-level ozone standards ($\leq$ 0.075 ppm) are more stringent than the previous standards. Unlike national standards, there are no attainment deadlines for state standards. State law requires that they be attained as expeditiously as possible.

California has also adopted health advisory levels called episode criteria for ozone, carbon monoxide, sulfur dioxide, and ozone in combination with sulfates. Episode criteria represent short-term exposures at concentrations which actually threaten public health. SCAQMD Rule 701 identifies specific steps that must be taken when health advisory levels are exceeded.

SALTON SEA AIR BASIN ATTAINMENT STATUS

The California Clean Air Act requires the CARB to establish and periodically review criteria that provide the basis for designating areas each year with respect to the state ambient air quality standards and recent air quality data as: attainment, nonattainment, nonattainment-transitional or unclassified.[8] Proposed 2012 amendments to area designations will become effective on April 1, 2013. The 2012 CARB designations for the Riverside County portion of the Salton Sea Air Basin, including the Coachella Valley, are shown below:

- Attainment - Carbon Monoxide, Nitrogen Dioxide, Sulfur Dioxide, Sulfates and Lead (particulate);
- Nonattainment – Ozone and PM_{10};
- Unclassified - $PM_{2.5}$, Hydrogen Sulfide, and Visibility Reducing Particles.

The U.S. EPA periodically reviews recent ambient air quality data that forms the basis for designating areas with respect to the national ambient air quality standards as unclassified/ attainment or nonattainment. The unclassifiable/attainment designation applies to areas found to be better than the national standards and areas that cannot be classified for some reason (such as the requisite data is not available). The nonattainment designation applies to areas that do not meet the primary standards. The Coachella Valley portion of the Salton Sea Air Basin has been designated by the U.S. EPA for criteria pollutants as shown in Table 3-1.

8 An attainment designation means pollutants do not violate the State standard. A nonattainment designation means pollutant concentrations do violate the State standard. A nonattainment-transitional designation means pollutant concentrations violate the State standard but air quality is nearing attainment. Unclassified means insufficient data.

Table 3-1
NAAQS Attainment Status
Coachella Valley Portion of the Salton Sea Air Basin

Criteria Pollutant	Averaging Time	U.S. EPA Designation	Attainment Date
1979 1-Hour Ozone[a]	1-Hour (0.12 ppm)	Nonattainment (Severe-17)	11/15/2007 (Not timely attained)
1997 8-Hour Ozone[b]	8-Hour (0.08 ppm)	Nonattainment (Severe-15)	6/15/2019
2008 8-Hour Ozone	8-Hour (0.075 ppm)	Nonattainment (Severe-15)	12/31/2027
CO	1-Hour (35 ppm) 8-Hour (9 ppm)	Unclassifiable/Attainment	Attained
NO_2[c]	1-Hour (100 ppb)	Unclassifiable/Attainment	Attained
NO_2[c]	Annual (0.053 ppm)	Unclassifiable/Attainment	Attained
SO_2[d]	1-Hour (75 ppb)	Designations Pending	Pending
SO_2[d]	24-Hour (0.14 ppm) Annual (0.03 ppm)	Unclassifiable/Attainment	Attained
PM_{10}	24-Hour (150 $\mu g/m^3$)	Nonattainment (Serious)[e]	12/31/2006 (redesignation request submitted)
$PM_{2.5}$	24-Hour (35 $\mu g/m^3$) Annual (15.0 $\mu g/m^3$)	Unclassifiable/Attainment	Attained
Lead	3-Months Rolling (0.15 $\mu g/m^3$)	Unclassifiable/Attainment	Attained

a. 1-hour O_3 standard (> 0.12 ppm) was revoked, effective June 15, 2005; the Southeast Desert Modified Air Quality Management Area, including the Coachella Valley, has not attained this standard based on 2005-2007 data and has some continuing obligations under the former standard. Although the 2009-2011 data showed attainment, the maximum concentration of 0.126 ppm monitored in Palm Springs in 2012 would have exceeded the revoked standard).

b. 1997 8-hour O_3 standard (0.08 ppm) was reduced (0.075 ppm), effective May 27, 2008; the 1997 O_3 standard and most related implementation rules remain in place until the 1997 standard is revoked by U.S. EPA.

c. New NO_2 1-hour standard, effective August 2, 2010; attainment designations January 20, 2012; annual NO_2 standard retained.

d. The 1971 Annual and 24-hour SO_2 standards were revoked, effective August 23, 2010; however, these 1971 standards will remain in effect until one year after U.S. EPA promulgates area designations for the 2010 SO_2 1-hour standard. Area designations expected in 2012 with SSAB designated Unclassifiable/Attainment.

e. Annual PM_{10} standard was revoked, effective December 18, 2006; redesignation request to Attainment of the 24-hour PM_{10} standard is pending with U.S. EPA.

The 2007 AQMP and the subsequent SIP submittal requested a redesignation of the Riverside County portion of the Salton Sea Air Basin from "Serious" nonattainment to "Severe-15" nonattainment. The Riverside County portion of the Salton Sea Air Basin was subsequently redesignated by the U.S. EPA as a "Severe-15" ozone nonattainment area for the 8-hour federal ozone standards for 1997 (0.08 ppm) and the lower 2008 standard (0.075 ppm). This extended the attainment deadline to 2019 for the 1997 8-hour ozone standard and established a new attainment date for the 2008 8-hour ozone standard of December 31, 2027. In 2015, a new Ozone SIP attainment demonstration for the 2008 ozone standard will need to be submitted to the U.S. EPA.

The Revised Draft 2012 AQMP ozone modeling indicates that with no additional emissions controls, the 1997 8-hour standard will be attained in the Coachella Valley in 2019. With future emissions controls in place in the SCAB, the 2008 8-hour standard will be attained in the Coachella Valley by the year 2024, three years before the 2007 attainment deadline.

Nonattainment areas are subject to a number of requirements to improve their air quality including the preparation of plans specifying the control requirements that will be employed to meet the national air quality standards by reducing air pollutant emissions. Nonattainment areas are subject to a measure known as transportation conformity which requires local transportation and air quality officials to coordinate planning to ensure that transportation projects (such as road construction) do not affect an area's ability to reach its clean air goals. Transportation conformity requirements become effective one year after an area is designated as nonattainment.

Once designated, nonattainment areas are also subject to New Source Review requirements. New Source Review is a permitting program for industrial facilities to ensure that new and modified sources of pollution do not impede progress toward cleaner air.

EFFECTS OF POLLUTANTS ON SENSITIVE RECEPTORS

The California Air Resources Board has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65; children under 14; athletes; and people with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. These sensitive groups represent over 50 percent of the total California population.[9] Demonstrated effects of specific air contaminants on health and vegetation are discussed in Appendix B and summarized in Table 3-2.

The elderly are most sensitive, since the loss of lung tissue is a natural process of aging. Inhalation of air pollution accelerates this loss by reducing lung volume, and functional lung tissue. Damaged and irritated lung tissue becomes susceptible to bacterial infection. This increases the likelihood of chronic respiratory disease by reducing the ability of the immune system to fight infection and resist disease.

PM_{10} can accumulate in the respiratory system and enter the blood stream through the lungs, creating or aggravating cardiovascular and respiratory problems including asthma. EPA's scientific review concluded that fine particles ($PM_{2.5}$), which penetrate deeply into the lungs, are more likely than PM_{10} particles to contribute to adverse health effects. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. Carbon monoxide can cause dizziness, fatigue, and impairments to central nervous system functions. Lead can cause damage to the brain, nervous system, and other systems in the human body.

[9] CARB; *Facts About How Air Pollution Damages Health;* 1983.

Table 3-2
Health Effects of Air Pollutants[a]

Pollutant	Most Relevant Effects
Ozone	Short-Term Exposures: Decline in pulmonary function in healthy individuals including breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue and immunological changes. Increased frequency of asthma attacks, cough, chest discomfort and headache. Long-Term Exposures: Risk to public health implied by altered connective tissue metabolism and host defense in animals. A correlation has been reported between elevated ambient ozone levels and increases in daily hospital admission rates and mortality.
Carbon Monoxide	A consistent association between increased ambient CO levels and excess admissions for heart diseases (such as congestive heart failure) has been observed. Can cause decreased exercise capacity in patients with angina pectoris. Adversely affects conditions with an increased demand for oxygen supply (fetal development, chronic hypoxemia, anemia, and diseases involving the heart and blood vessels). Can cause impairment of time interval estimation and visual function.
Nitrogen Dioxide	Sensory responses may be elicited or altered. May cause some impairment of pulmonary function and increased incidence of acute respiratory disease including infections and respiratory symptoms in children. Can cause difficulty in breathing in healthy as well as bronchitic groups.
Lead	Increase in blood lead levels which may impair or decrease hemoglobin synthesis. Adversely affects the development and function of the central nervous system, leading to learning disorders, distractibility, lower I.Q. and increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures and death.
Sulfur Dioxide	May cause higher frequencies of acute respiratory symptoms (including airway constriction in some asthmatics and reduction in breathing capacity leading to severe difficulties) and diminished ventilatory function in children. Very high levels of exposure can cause lung edema (fluid accumulation), lung tissue damage, and sloughing off of cells lining the respiratory tract.
Particulates	May cause higher frequencies of acute respiratory symptoms and diminished ventilatory function in children. A consistent correlation between elevated ambient PM10 levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks and the number of hospital admissions has been observed. Some recent studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, reduction in life-span, and the possibility of an increased incidence of cancer.

a. SCAQMD, *Draft 1997 Air Quality Management Plan*.

The health effects associated with exposure to fine particles ($PM_{2.5}$) are significant. Studies have shown significant associations between elevated fine particles and premature mortality. Adverse effects include: aggravation of respiratory and cardiovascular disease (as indicated by increased hospital admissions, emergency room visits, absences from school or work, and restricted activity days), lung disease, decreased lung function, asthma attacks, and certain cardiovascular problems such as heart attacks and cardiac arrhythmia.

Exposure to elevated ozone levels can cause irritated airways, coughing, pain when breathing deeply, wheezing, and inflammation. It can cause headaches, dizziness, memory impairment, aggravate asthma, and cause an increase in susceptibility to respiratory illnesses like bronchitis and pneumonia. Adverse effects vary with the level of exposure and the length of time exposed.

Diesel engines emit a mixture of air pollutants including both gaseous and solid material (including soot) which reduces visibility and is a potent global warmer. Diesel exhaust particulate matter is a toxic air contaminant that has the potential to cause cancer, premature death, and other health problems especially for children and the elderly. Diesel engines also emit fine particulate matter ($PM_{2.5}$).

Approximately 40 percent of the people in the United States will develop an invasive cancer sometime during their lifetime. Approximately one in every four deaths in the United States is from cancer (American Cancer Society, 2002). Associated cancer risks with respect to air pollution are often measured in terms of "excess deaths" due to the environmental exposure. A lifetime risk of 10-5 corresponds to 10 excess deaths per million people whereas a lifetime risk of 10-4 corresponds to 100 excess deaths per million people. The EPA has stated that estimated excess cancer risks for background air pollution, even in remote areas of the United States, are on the order of 10-5 (Guinnup, 2003).

With respect to regional air quality, the SCAQMD *Multiple Air Toxics Exposure Study* (MATES-II, 2000) calculated that the carcinogenic risk in the region was 1,400 excess cancers per million people exposed. This estimate was based on the average of the pollutant concentrations found at ten fixed sites within the SCAB that were monitoring more than 30 toxic air contaminants. Approximately 70 percent of the carcinogenic risk was attributed to mobile source emissions of diesel particulate matter (DPM). Another 20 percent of the risk was attributed to other toxics associated with mobile sources. The remaining 10 percent was attributed to stationary sources of toxic air pollutants. Exposure to DPM is presumed by both federal and state officials to result in excess cancer risk. However, the scientific community is still deliberating over how best to represent the risk from DPM exposure. Refer to Appendix C for additional information from the guidance documents developed by the CARB and the SCAQMD including advisory recommendations for locating sensitive receptors in areas near freeways.[10]

3.2 REGIONAL CLIMATE AND AIR QUALITY

The average wind speed in Los Angeles is the lowest of the nation's ten largest urban areas. The maximum mixing height during the summer months in Southern California averages the lowest in the nation, reducing the vertical dispersion of pollutants in the air mass. This region experiences more days of sunshine than any other major urban area in the nation except Phoenix. The abundant sunshine in Southern California drives photochemical reactions which form secondary pollutants including ozone.

[10] CARB; *Air Quality and Land Use Handbook: A Community Health Perspective* (April, 2005) and SCAQMD; *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning;* May 6, 2005.

Although emissions in Southern California change somewhat by season, the observed variations in pollutant concentrations are largely the result of seasonal differences in weather conditions. Ozone concentrations peak during the summer months (May through September). CO and $PM_{2.5}$ concentrations peak during the late fall and winter months. Peak PM_{10} concentrations in the South Coast Air Basin reflect no clear seasonal variation.

Southern California, with the lowest summer time mean mixing height, the lowest average wind speed and emissions from the second largest urban area in the U.S., has one of the worst air pollution problems in the nation. Although past programs have been effective at improving the air quality of the SCAB, it still exceeds health-based standards frequently.

Pollution controls have reduced exposures to air pollution in the SCAB but population increases have made further emissions reductions more difficult to achieve. Increases in the number of pollution sources and the magnitude of the pollutant emissions may offset or even reverse the gains achieved through decades of regulation unless additional steps are taken to further control pollutant emissions.

During 2011, the SCAB did not exceed the ambient air quality standards for CO, NO_2, or SO_2. The U.S. EPA recently revised the NO_2 and SO_2 ambient air quality standards but the basin appears to be in compliance with the newly mandated standards.

OZONE TRENDS IN THE SCAB

The 1-hour ozone standard was revoked by the U.S. EPA and replaced with the new 8-hour surface level ozone standard. The number of days when the SCAB experiences high ozone levels has decreased dramatically over the last 20 years. The SCAB still experiences ozone levels which exceed the revoked 1-hour standard on 5 percent of the days. A new 1-hour ozone SIP may have to be prepared within the next year demonstrating attainment within 5 years with a potential 5-year extension.

The SCAB is currently designated as an "extreme" nonattainment area for the federal 8-hour ozone standard. The maximum 8-hour ozone concentrations have decreased by thirty percent over the last 20 years. All of the emission control programs implemented for the 1-hour ozone standard have contributed to progress on meeting the new 8-hour surface level standard, which is more stringent. The 8-hour ozone standard will require more emission reductions and time to achieve than the 1-hour standard. The 1997 8-hour ozone standard deadline is 2023.

SUSPENDED PARTICULATE MATTER TRENDS IN THE SCAB

Both PM_{10} and $PM_{2.5}$ concentrations have improved dramatically over the last 20 years. Annual average PM_{10} and $PM_{2.5}$ levels have been reduced by approximately 50 percent. The SCAB has met the PM_{10} standards and a request for redesignation by the U.S. EPA to attainment is pending. During 2011, the annual and the 24-hour $PM_{2.5}$ standards were exceeded at only one location (in Mira Loma).

In the SCAB, PM_{10} is a complex problem because contributions come from a wide variety of emission sources. Nevertheless, progress has been made toward attaining the federal PM_{10} standard in several areas, especially those with fugitive dust problems. PM_{10} concentrations in the SCAB are declining and there has been a substantial decrease in the number of days per year above the standard. The SCAB effectively attains the federal 24-hour PM_{10} standard, with a few remaining exceedances in recent years due to natural windblown dust events.

OTHER REGIONAL POLLUTANT TRENDS

In 2011, the SCAB did not exceed the standards for carbon monoxide, nitrogen dioxide, or sulfur dioxide. Although the U.S. EPA recently revised the NO_2 and SO_2 ambient air quality standards, the basin appears to be in compliance with the newly mandated standards.

Pollution controls have reduced exposures to air pollution in the SCAB but population increases have made further emissions reductions more difficult to achieve. The Draft 2012 AQMP states that increases in the number of pollution sources and the magnitude of the pollutant emissions may offset or even reverse the gains achieved through decades of regulation unless additional steps are taken to further control pollutant emissions.

As federal health-based air quality standards become more stringent and effective new control strategies become increasingly difficult to identify, the SCAB faces several ozone and PM attainment challenges. The California GHG reduction targets and timelines also affect many sources of criteria pollutant emissions. Strategies to achieve air quality and climate goals overlap in terms of both sources and control measures. Meeting multiple deadlines to achieve multiple air quality, climate, and energy objectives is a complex process which requires a coordinated approach involving all levels of government.

3.3 LOCAL CLIMATE AND AIR QUALITY

LOCAL CLIMATE AND METEOROLOGY

The study area is located in the Coachella Valley, an arid desert region with a climate characterized by low annual rainfall, low humidity, hot days and very cool nights. The climate stations at the Indio Fire Station and in Palm Springs are closest to the project site.

The average annual rainfall total in Palm Springs normalized over more than one hundred years is 5.31 inches. The average temperature is 73.2 degrees Fahrenheit in Palm Springs. Temperature extremes typically range from a low of 36 degrees Fahrenheit in December to a high of 120 degrees Fahrenheit in July and August.[11]

Wind direction and speed (which in turn affect atmospheric stability) are the most important climate elements affecting ambient air quality within the planning area. The prevailing wind direction in Palm Springs is predominantly from the northwest, as shown in Figure 3-2. The annual mean wind speed is 7.6 miles per hour. Calm conditions occur 13.6 percent of the time in Palm Springs.

Desert regions are generally windy because minimal friction is generated between the moving air and the low, sparse vegetation. This allows the wind to maintain its speed crossing the desert plains. In addition, the rapid daytime heating of the air closest to the desert surface leads to convective activity and the exchange of surface air for upper air, which accelerates surface winds during the warm part of the day. Rapid cooling at night in the surface layers during the winter months results in a high frequency of calm winds.[12]

Since the dominant daytime onshore wind pattern follows the peak travel period (6:00 a.m. through 9:00 a.m.) in the Los Angeles/Orange County area, during periods of low inversions and low wind speeds, the photochemical smog formed in these areas is transported downwind into Riverside County, San Bernardino County and the Coachella Valley.

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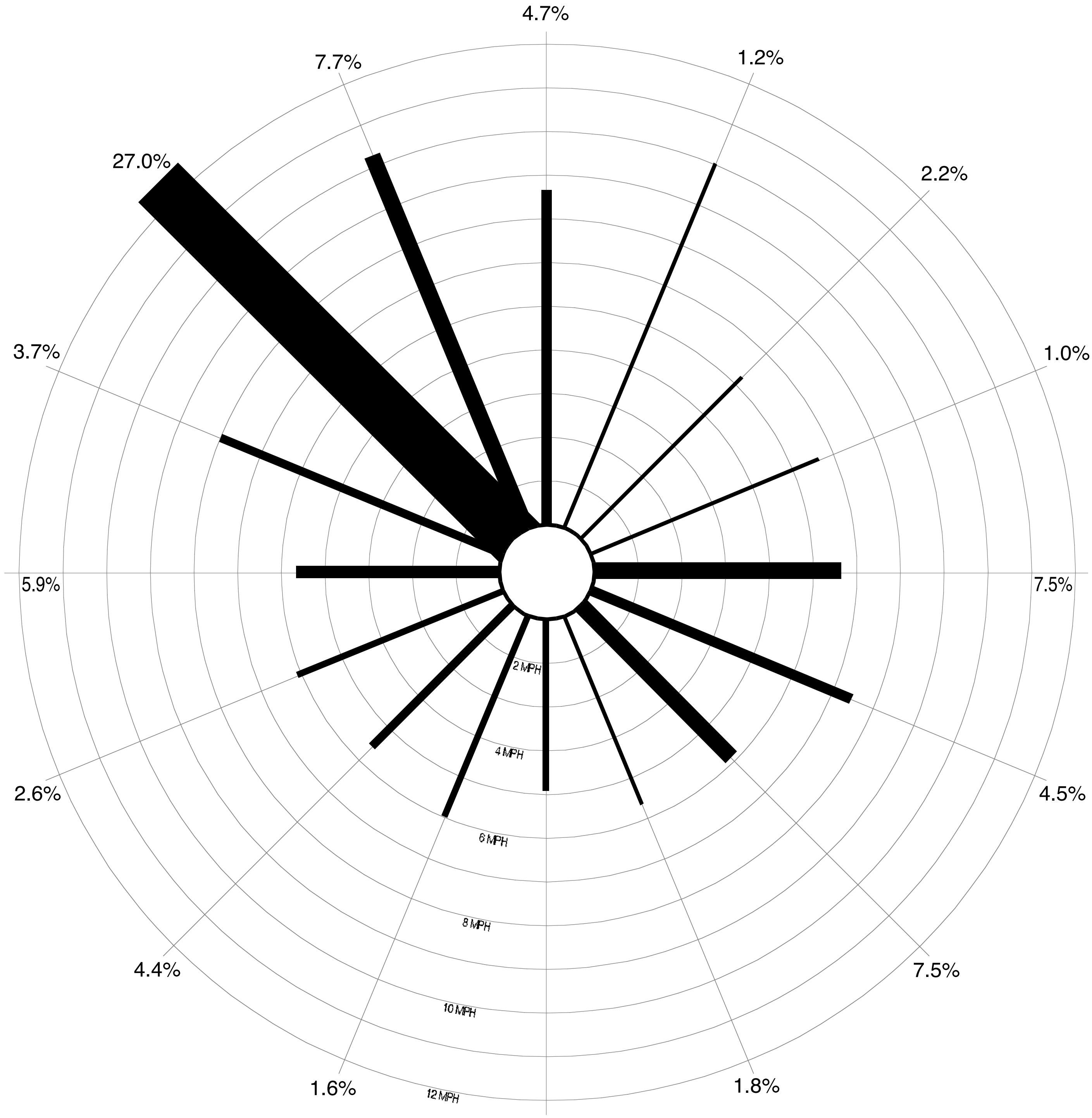
[11] NOAA; *Climatological Data Annual Summary*, California, 2001.
[12] CARB; *Climate of the Southeast Desert Air Basin*, January, 1990.

Figure 3-2

Annual Surface Wind Rose Summary

(Palm Springs)



Note: Bar thickness represents percent of predominant wind direction.
Bar length indicates wind speed. Calm = 13.6% of time. Mean Speed = 7.6 mph.

Endo Engineering

Peak oxidant levels occur in the late afternoon and evening (between 4 p.m. and 8 p.m.), as pollutants are blown through the San Gorgonio Pass. Oxidant concentrations in the 50-mile long and 20-mile wide Coachella Valley are highest, closest to the South Coast Air Basin, and decrease steadily as the air mass moves east from Banning to Palm Springs and then Indio.

Surface-based inversions in the Coachella Valley are prevalent at night throughout the year and usually persist into the day during the winter months. Inversion conditions are associated with degraded air quality because the surface air is prevented from rising and dissipating the air pollutants that accumulate throughout the day.

Radiation inversions are prevalent at night throughout the year. They limit the mixing in the lower atmosphere to a height of 200 to 2,000 feet. They persist through much of the day in winter but are destroyed early in the day in summer.

LOCAL AMBIENT AIR QUALITY

The Coachella Valley Planning Area is a sub-region of Riverside County and the SSAB, as shown in Figure 3-1. It is bounded by the San Jacinto Mountains to the west and continues eastward to the eastern boundary of the Coachella Valley. The Riverside County portion of the SSAB is currently designated as a federal nonattainment area for ozone and PM_{10} ambient air quality standards. The Coachella Valley Planning Area is impacted by pollutant transport from the SCAB. Local programs alone will not be sufficient to solve air quality problems that are regional in nature.

Air pollutants are not constrained by city or county jurisdictional boundaries. The polluted air mass within the neighboring South Coast Air Basin is routinely transported through the San Gorgonio Pass into the Coachella Valley, as photchemical reactions proceed which generate both ozone and suspended particulate matter. Peak ozone levels which are found between 1:00 p.m. and 2:00 p.m. within the SCAB occur in the late afternoon and evening in the Coachella Valley. Ozone concentrations within the Coachella Valley are highest at the Palm Springs monitoring station, which is located closest to the SCAB.

The SCAQMD maintains two ambient air quality monitoring stations within the Coachella Valley. The Palm Springs air monitoring station is located downwind of the densely populated SCAB. It is closer to the San Gorgonio Pass than the Indio station. The Indio monitoring station is located downwind of the main population areas within the Coachella Valley. The project site is located between the two ambient air monitoring stations, within Source Receptor Area (SRA) 30. Air flow within the Coachella Valley and in the project vicinity is predominantly from the northwest.

The ambient air quality data for the most recent three years (2010 through 2012) is included in Appendix B. It indicates that only ozone and PM_{10} have exceeded the relevant state and federal standards in the Riverside County portion of the Salton Sea Air Basin. The months between May and October typically have the highest ozone and PM concentrations.

Ozone

Ozone air quality trends for the Coachella-San Jacinto area indicate a downward trend in the number of days exceeding the national 1-hour ozone standard since 1976. This has occurred despite the fact that population growth in the Coachella Valley over this period has been dramatic. In the Coachella Valley, the Stage 1 ozone episode level have not been reached since1989 and the one-hour ozone health advisory level has not been reached since 1999

Exceedances of the ozone standards in the Coachella Valley are due to the transport of ozone from the densely populated SCAB, which is located upwind. Atmospheric ozone in the Coachella Valley is directly transported through the San Gorgonio Pass by the prevailing sea breezes and also formed from precursors emitted upwind. During 2012, the maximum 1-hour concentration of 0.126 ppm in Palm Springs exceeded the former federal standard (0.124 ppm) by 1.6 percent. The state 1-hour ozone standard was exceeded on 17 days in Palm Springs and 2 days in Indio. The state 8-hour ozone standard was exceeded on 76 days in Palm Springs and 43 days in Indio.

During the year 2012, the current national 8-hour ozone standard (0.075 ppm) was exceeded on 51 days in Palm Springs and 24 days in Indio. The highest 8-hour ozone concentration in the Coachella Valley was measured in Palm Springs and exceeded the current federal standard by 33 percent. The Coachella Valley is classified as a "severe" ozone nonattainment area, based on this federal standard.

Figure 3-3 depicts the number of days exceeding the one-hour state ozone standard during the most recent three-year period. The maximum one-hour ozone concentrations at the Coachella Valley ambient air monitoring stations in Indio and Palm Springs are also shown therein. During this period, ozone levels exceeded the state one-hour standard (0.09 ppm) on 61 days (5.7 percent of the days monitored) in Palm Springs and 12 days (1.1 percent of the days monitored) in Indio. The maximum one-hour ozone concentration measured was 0.126 parts per million (ppm) in Palm Springs and 0.102 ppm in Indio. The state one-hour ozone standard was exceeded by 40 percent in Palm Springs and 13 percent in Indio.

The 8-hour average ozone concentrations monitored in Indio exceeded the current national standard on 62 days (5.8 percent of the days monitored) between 2010 and 2012. The highest 8-hour average ozone level found in Indio (0.090 ppm) exceeded the federal standard by 20 percent. By comparison, the 8-hour ozone concentrations monitored in Palm Springs exceeded the federal standard on 152 days (14 percent of the days monitored) between 2010 and 2012. The highest 8-hour ozone concentration monitored in Palm Springs during these three years (0.100 ppm) exceeded the national standard by 33 percent.

Particulate Matter (PM_{10})

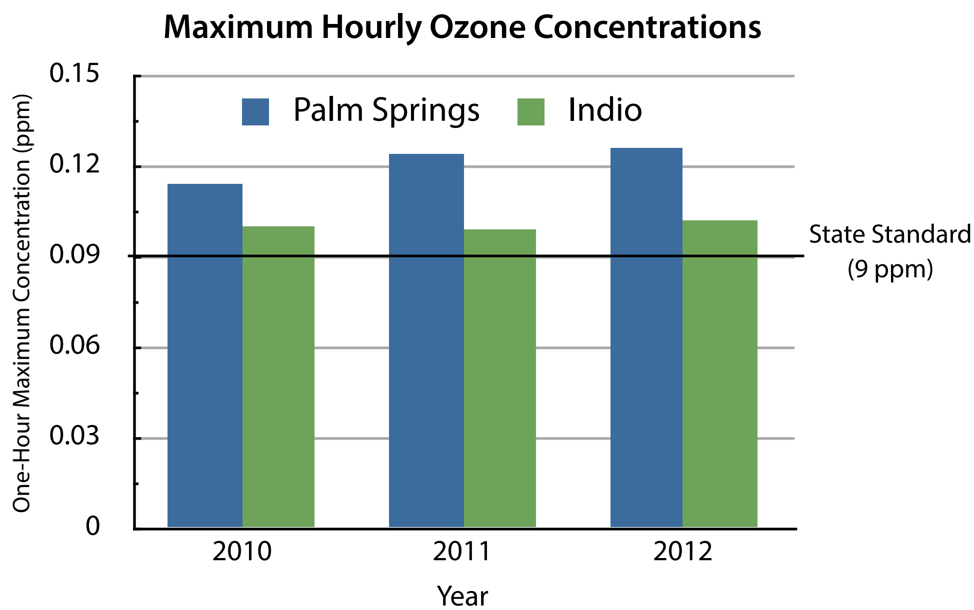
PM_{10} concentrations within the Coachella Valley are not the result of secondary particulate matter generated from precursor gaseous emissions. PM_{10} comes mostly from locally-generated fugitive dust produced by human activities (travel on paved and unpaved roads, construction activities, and farming) as well as natural occurrences (sand and dust storms when local winds exceed 25 mph). Frequent high winds in the Coachella Valley generate windblown sand and dust in areas with disturbed soil as well as in natural desert blowsand areas.

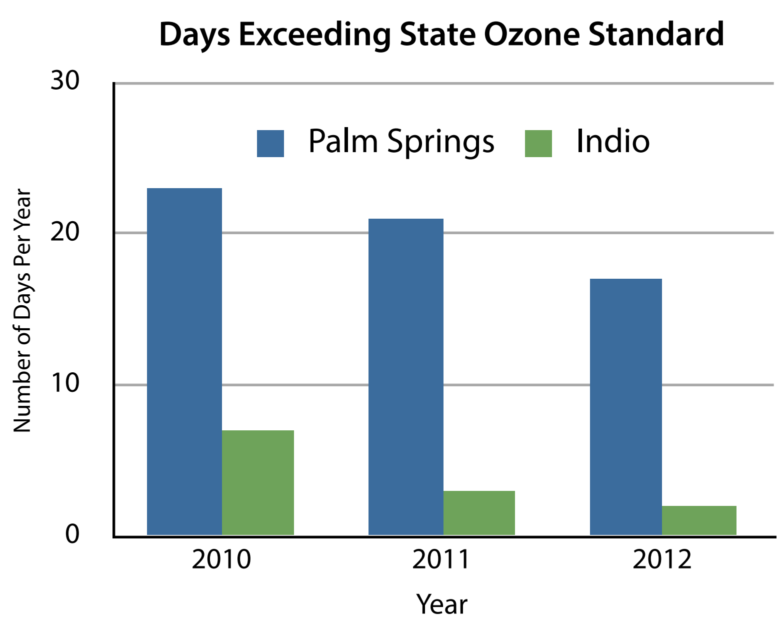
Strong outflows associated with thunderstorms (over northern Mexico, Arizona, Nevada, and the arid portions of southeastern California) have also been determined to transport deeply entrained dust and sand into the Coachella Valley when local winds are relatively light. The U.S. EPA Exceptional Events Rule allows PM_{10} concentrations caused by high-wind natural events to be flagged and eliminated from consideration in determining the attainment status of the Coachella Valley.

The highest PM_{10} concentrations result from unusual circumstances (such as wildfires or much higher than normal levels of construction activity). They are typically occur during the summer, when hot dry weather produces more dust and Independence Day celebrations involve fireworks. PM_{10} concentrations in Palm Springs and Indio peaked in 2006 and 2007, when construction activities peaked.

The Coachella Valley does exceed the PM_{10} standard on days when high wind events cause the transport of windblown dust from disturbed and natural desert areas. The two days during 2011 on which the PM_{10} standard was exceeded were associated with high-wind natural events and have been flagged for exclusion from the federal database. After excluding high-wind natural event days,

Figure 3-3
Coachella Valley Ozone Data





no days have exceeded the federal 24-hour PM_{10} standard (150 μg/m^3) at Indio or Palm Springs since the mid 1990s.

The Coachella Valley is currently designated by the CARB as nonattainment for PM_{10}. It is designated "serious" nonattainment of the 24-hour PM_{10} federal standard by the U.S. EPA. The SCAQMD has requested that the U.S. EPA redesignate the Coachella Valley from nonattainment to attainment of the PM_{10} NAAQS. That request is currently pending.

During 2012, the maximum 24-hour average PM_{10} concentration (without excluded high-wind days) was 124 μg/m^3 (83 percent) of the federal standard of 150 μg/m^3 and nearly 2.5 times the state standard of 50 μg/m^3. The annual average PM_{10} concentration measured in the Coachella Valley during the year 2012 (29.5 μg/m^3 in Indio) was 59 percent of the federal PM_{10} standard revoked in the year 2006 (50 μg/m^3) and 148 percent of the state standard (20 μg/m^3). The annual average PM_{10} concentration measured in Palm Springs was substantially lower (16.4 μg/m^3) and did not exceed the state standard.

Based on Federal Reference Method PM_{10} samples, the state 24-hour PM_{10} standard was exceeded on 7 days in the Coachella Valley during 2012 (5.8 percent of the days sampled). The maximum 24-hour average PM_{10} during the year 2012 at sites with Federal Equivalent Method) PM_{10} continuous monitoring was 142 μg/m^3) at Palm Springs.

Figure 3-4 depicts the percentage of PM_{10} samples exceeding the state 24-hour standard as well as the maximum 24-hour PM_{10} concentrations in the Coachella Valley. As shown therein, the PM_{10} concentrations sampled did not exceed the California 24-hour standard during the days monitored in Palm Springs between 2010 and 2012. The PM_{10} concentrations exceeded the California 24-hour standard on 16 (4.5 percent) of the 359 days monitored in Indio. The maximum 24-hour PM_{10} concentration monitored during 2011 in Palm Springs was 42 micrograms per cubic meter (μg/m^3) which represents 84 percent of the state standard of 50 μg/m^3.

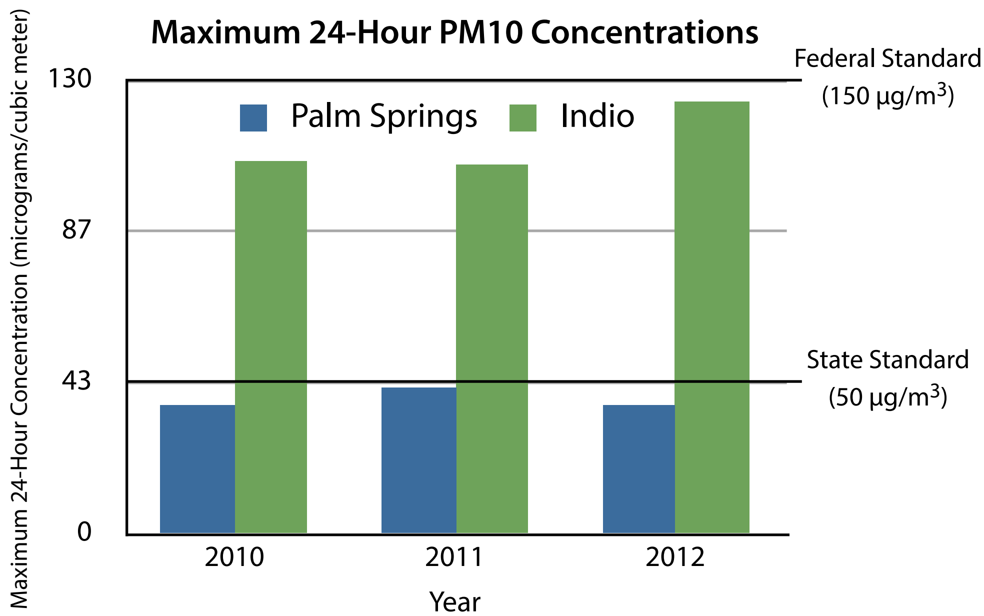
The annual average PM_{10} concentration for all three years exceeded the state standard of 20 μg/m^3 in Indio. The annual average PM_{10} concentration in Palm Springs did not exceed the state standard between the year 2010 and the year 2012. The highest annual average PM_{10} concentration monitored in Palm Springs was 18.7 μg/m^3, which is 93.5 percent of the state standard. The highest annual average PM_{10} concentration monitored in Indio was 29.5 μg/m^3 (1.5 times the state standard).

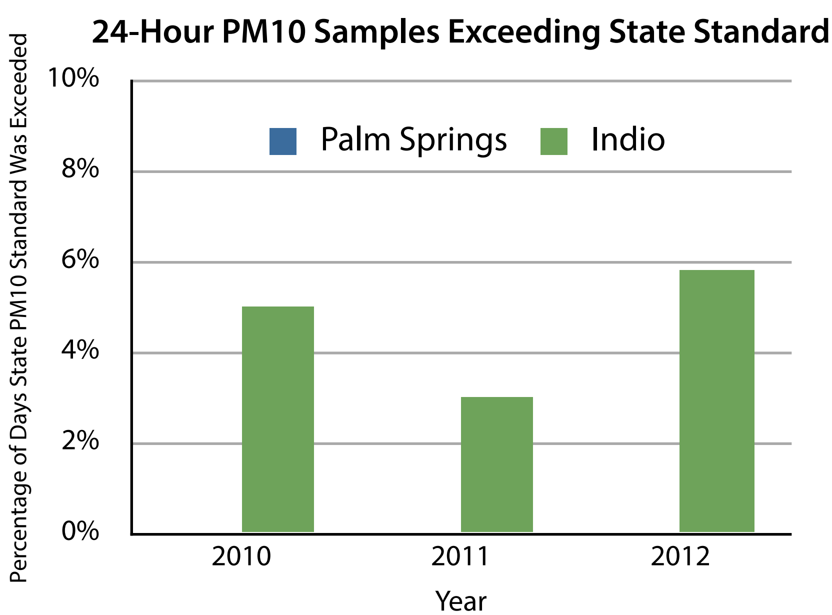
Fine Particulate Matter ($PM_{2.5}$)

With fewer combustion sources than the SCAB, increased vertical mixing, and horizontal dispersion in the desert area, $PM_{2.5}$ concentrations found in the Coachella Valley have remained relatively low compared to levels in the SCAB. The Coachella Valley did not exceed the federal 24-hour or annual standards for $PM_{2.5}$ between the year 2010 and the year 2012. In 2011, the maximum 24-hour average $PM_{2.5}$ concentration in Indio on an exceptionally high-wind day was 99.7 percent of the federal standard. The second highest value represented 74 percent of the federal standard and was monitored in Palm Springs.

The annual average state standard (12 μg/m^3) was not exceeded in the Coachella Valley between the years 2010 and 2012. The maximum value monitored in Palm Springs was 6.5 μg/m^3 in the year 2012, which was 54 percent of the state standard. In Indio, the maximum concentration monitored was 7.6 μg/m^3 in both the year 2010 and 2012. This concentration represents 63 percent of the state standard. The less stringent federal $PM_{2.5}$ standard (an annual arithmetic mean less than 15

Figure 3-4
Coachella Valley PM10 Data





$\mu g/m^3$) was not exceeded in the Coachella Valley. The U.S. EPA revised the annual $PM_{2.5}$ standard from an annual arithmetic mean of 15.0 $\mu g/m^3$ to 12.0 $\mu g/m^3$) effective March 18, 2013.

The federal 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$ was not exceeded at either monitoring station in the Coachella Valley between 2010 and 2012. The highest 24-hour concentration measured at the Indio monitoring station was 35.4 $\mu g/m^3$ in 2011. The highest 24-hour concentration measured at the Palm Springs monitoring station was 26.3 $\mu g/m^3$ in 2011. When rounded down to 35 $\mu g/m^3$, the 24-hour $PM_{2.5}$ concentration monitored in Indio would not exceed the federal 24-hour standard for $PM_{2.5}$ (>35 $\mu g/m^3$). The maximum 24-hour $PM_{2.5}$ concentrations in the Coachella Valley during 2010 and 2012 were substantially lower (15.5 $\mu g/m^3$ in Palm Springs and 20.0 $\mu g/m^3$ in Indio).

Nitrogen Dioxide

Nitrogen dioxide was monitored at the Palm Springs air monitoring station between 2010 and 2012. The maximum one-hour concentration was highest in the year 2010, when it reached 45.7 parts per billion (ppb). The state standard is 180 ppb and the federal standard is 100 ppb (effective April 7, 2010). The maximum 1-hour average NO_2 concentration was 45.7 percent of the federal standard and 25 percent of the state standard.

The annual average concentration was also the highest in the year 2010 when it reached 8.5 ppb. The federal annual standard is 53.4 ppb and the state annual standard is 30 ppb. The annual NO_2 concentration was 16 percent of the federal standard and 28.3 percent of the state standard.

Carbon Monoxide

Carbon monoxide levels within the Coachella Valley were monitored between 2010 and 2012 only in Palm Springs and did not exceed the state or federal standards. The highest 8-hour CO concentration measured in Palm Springs during this period was 0.6 ppm. This concentration was less than seven percent of the 9.0 ppm state and federal standards. The one-hour carbon monoxide concentration in the Coachella Valley was only monitored during 2010. The maximum one-hour CO concentration was 2.0 ppm in Palm Springs. This concentration represents ten percent of the 20 ppm state standard and 5.7 percent of the 35 ppm federal standard. In Palm Springs, the eight-hour CO concentration was 30 percent of the one-hour concentration .

Other Criteria Pollutants

During the year 2011, sulfate from PM_{10} was monitored on 61 days in Palm Springs and 110 days in Indio. The maximum 24-hour concentration was 4.4 $\mu g/m^3$ in Palm Springs and 5.7 $\mu g/m^3$ in Indio. The state sulfate standard is 25 $\mu g/m^3$. During 2011, the maximum 24-hour average sulfate concentration in the Coachella Valley was 23 percent of the state standard. There is no federal standard for sulfate. Sulfate data for the year 2012 is not currently available.

Sulfur dioxide and lead concentrations were not monitored in the Coachella Valley between 2010 and 2012. Historical measurements of sulfur dioxide have been well below the state and federal standards. There are no significant sulfur dioxide emissions sources within the Coachella Valley. No major lead sources are located within the Coachella Valley and lead concentrations have historically been below the state and federal standards.

3.4 EXISTING SENSITIVE RECEPTORS

A sensitive receptor is a person in the population who is particularly susceptible (i.e. more susceptible than the population at large) to health effects due to exposure to an air contaminant. Sensitive receptors and the facilities that house them are of particular concern if they are located in close proximity to localized sources of carbon monoxide, toxic air contaminants, or odors. Land uses considered by the SCAQMD to be sensitive receptors include the following: residences, long-term health care facilities, schools, rehabilitation centers, playgrounds, convalescent centers, child care centers, retirement homes, and athletic facilities. Coordination with the SCAQMD is recommended for projects that would locate sensitive receptors within one-quarter mile of a new or existing land use that emits toxic air contaminants, objectionable odors, or is the site of CO hot spots.

If sensitive receptors are located adjacent to a major intersection, carbon monoxide (CO) "hot spots" may occur during peak travel times. High levels of CO are associated with traffic congestion and with idling or slow-moving vehicles, depending on the background concentration. Therefore, projects that could negatively impact levels of service at major intersections with nearby sensitive receptors must quantify and, if necessary, mitigate potentially significant CO impacts.

The proposed project is essentially an infill development. The North Village is surrounded on all sides by existing residential land uses. The South Village is surrounded on all sides except the northeast by existing residential land uses. There are residential sensitive receptors currently located in close proximity to many of the intersections that are expected to be used by project-related traffic.

Since ambient carbon monoxide concentrations in the Coachella Valley are quite low, it is unlikely that a CO “hot spot” exists locally. The signalized intersection of Sunrise Way and San Rafael Drive is located immediately west of the North Village and will serve forty percent of the future traffic generated by the project. The control delay (idling) and peak hour congestion (slow-moving vehicles) at this intersection will increase as traffic volumes increase in the future once Sunrise Parkway is constructed between Indian Canyon Drive and Sunrise Way. Sensitive residential land uses occupy all four corners of the intersection of Sunrise Way and San Rafael Drive, with the closest residential lot located approximately fifty feet southeast of the intersection.

Since significant localized project impacts could occur if carbon monoxide standard exceedances are projected at sensitive receptor locations adjacent to roadways serving project-related traffic, future carbon monoxide concentrations were modeled adjacent to the intersection of Sunrise Way and San Rafael Drive. Future conditions with and without project-related traffic were evaluated to determine if the proposed project would make a substantial contribution to or cause an exceedance of the one-hour and/or eight-hour carbon monoxide standards. Carbon monoxide was used as a surrogate for all primary pollutants directly emitted by motor vehicles in the vicinity of this intersection. Secondary pollutants require sunlight and time to form in the atmosphere and would not be expected to be present in high concentrations immediately adjacent to an intersection where precursors like VOC and NOx are being emitted. Refer to Table 4-6 (page 4-23) for the future CO concentrations estimated with the CALINE4 model.

3.5 LOCAL SOURCES OF AIR CONTAMINANTS

The Coachella Valley is sparsely populated, with the largest urban area represented by Palm Springs. Industrial sources in the Coachella Valley are generally limited and localized. The population growth accelerated and the number of land development projects in the Coachella Valley increased dramatically as the local economy improved from the late 1990s through 2008. The number of public complaints regarding fugitive dust emissions at building and development sites and farms also increased during that time.

The SCAQMD has estimated that approximately 15 to 20 percent of the improvements in air quality over the last five years are attributable to economic factors. The economic downturn and recession that began in late 2007 reduced economic activity in the SCAB and the SSAB. It also reduced air pollutant emissions. Goods movement activities declined more than 20 percent. Construction activity dropped by 40 percent. High fuel prices reduced vehicle miles traveled. As the economy recovers, economic activity levels and air pollutant emissions will increase. The *Final 2012 AQMP* projects that air quality will continue to improve but not to the degree necessary to achieve ambient air quality standards without additional control programs.

BLOWSAND

Blowsand is the most severe form of wind erosion, occurring when barren sand or sandy loam soils are exposed to high winds, in the absence of moisture. Blowsand can cause significant property damage and expensive clean-up procedures. It contributes to high suspended particulate levels and associated respiratory problems for sensitive receptors.

The Coachella Valley Blowsand Zone is identified in SCAQMD Rule 403.1 as "the corridor of land extending two miles to either side of the centerline of the Interstate 10 Freeway, beginning at the State Route 111/Interstate 10 junction and continuing southeast to the Interstate 10/Jefferson Street interchange in Indio."[13] Controlling the blowsand problem is intended to: (1) protect the health, safety and general welfare of any current or future residents of the Blowsand Hazard Zone; (2) provide for the protection of adjacent property owners who are subject to soil erosion and/or soil accumulation resulting from development activities within the Blowsand Hazard Zone; and (3) minimize the public cost of removing accumulated sand on public roads.

As shown in Figure 3-5, the project site is located within the area designated by the Coachella Valley Association of Governments (CVAG) as a "Blowsand Hazard Zone."[14] This zone is defined as ".. all land, by nature of its location or soil characteristics subject to real or potential sand accumulation and/or abrasion, or land which may cause sand damage to adjacent property."

The project site is within the "Active Blowsand Zone." Blowsand reduction measures are required for projects located within the "Active Blowsand Zone." Vegetative planting has been the most effective method of direct blowsand control and protection. Other methods include: windbreaks, walls, screens, fences, vegetative ground covers, soil stabilizers, and watering techniques.

SCAQMD Rule 403.1 requires people involved in active operations within the Coachella Valley Blowsand Hazard Zone to take the following steps to reduce potential impacts related to blowsand.

- Determine when wind speed conditions exceed 25 miles per hour so that activities cease.
- Stabilize new man-made deposits of bulk material within 24 hours.
- Stabilize new man-made deposits of bulk material originating from off-site undisturbed natural desert areas within 72 hours.
- Implement at least one of the control actions specified in Rule 403.1 for Inactive Disturbed Surface Areas.
- Prepare and receive approval of a Fugitive Dust Control Plan for operations disturbing more than 5,000 square feet.

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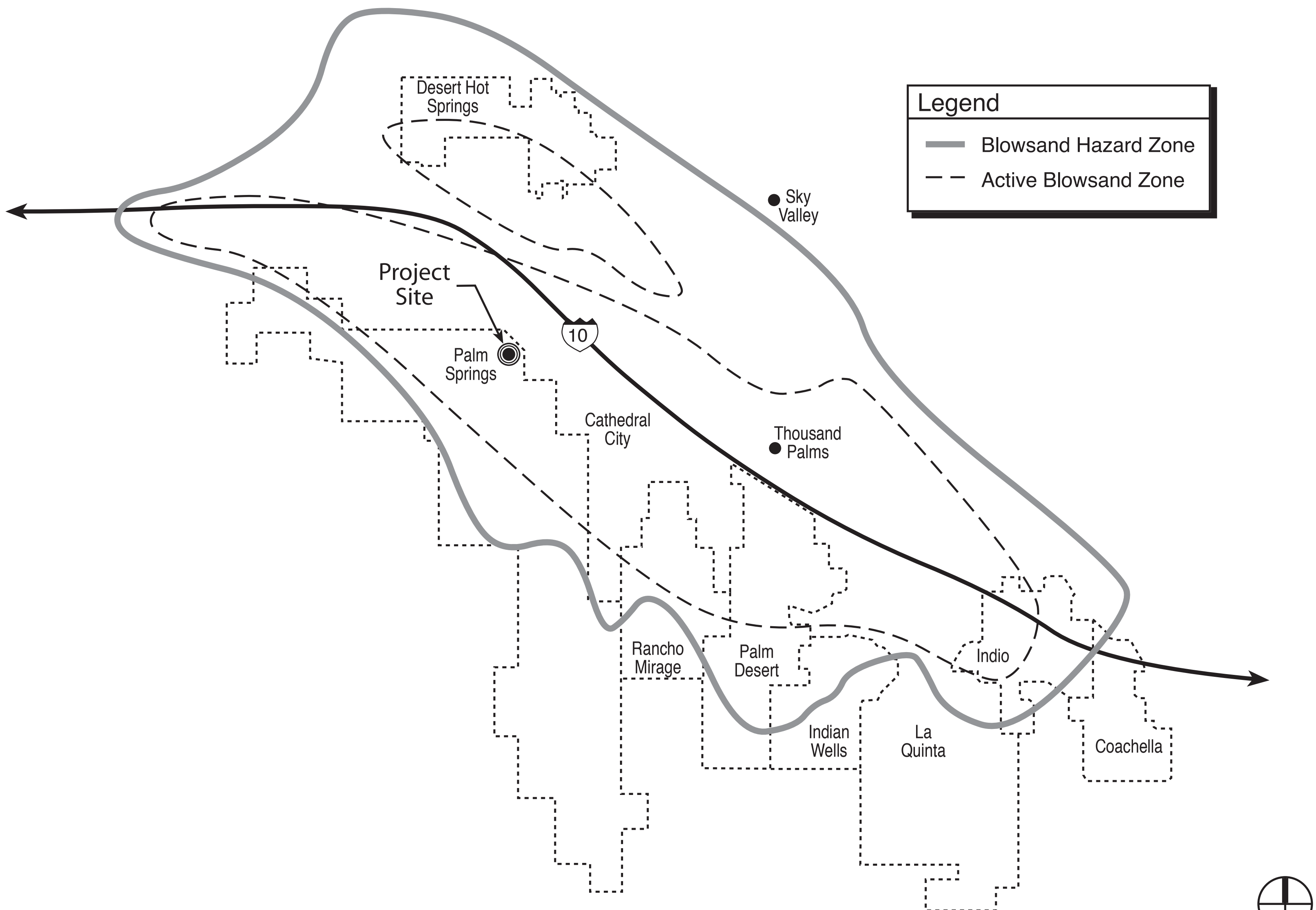
[13] SCAQMD; *Rule 403.1 – Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources;* Amended: April 2, 2004; pg. 403.1-2.

[14] CVAG; *Final SIP for PM10 in the Coachella Valley*; November 1990.

Figure 3-5
Coachella Valley Blowsand Region



Note: Derived from C.V.A.G. Blowsand Control and Protection Plan, June 1977

Endo Engineering

- Provide signage with project contact information per the Rule 403.1 Implementation Handbook.
- Have a Dust Control Supervisor for any project that disturbs 50 or more acres.

Criteria Pollutants and Greenhouse Gases

The existing local sources of criteria air pollutant and greenhouse gas emissions in the project vicinity are transportation-related facilities. Criteria pollutants and toxic air contaminants are emitted by on-road mobile sources along Interstate 10 and other heavily traveled arterials in the study area as well as non-road mobile sources in the Coachella Valley (such as planes, locomotives, boats, and construction equipment).

Interstate 10 is an eight-lane freeway located 1.5 miles north of the project site that provides regional access to the Coachella Valley. Interstate 10 is one of the major routes used for regional mobility and goods movement between the ports in Los Angeles County and the rest of the country. The posted speed limit on Interstate 10 is 70 miles per hour. The 2012 annual average daily traffic volume was 79,000 vehicles per day on Interstate 10 near the project site. During the peak month, the daily traffic volume increases to 87,000 vehicles per day. Approximately 23.6% of the daily traffic volume on Interstate 10, east of Indian Canyon Drive, is truck traffic.

Peak hour traffic volumes on Interstate 10 in 2011 were evaluated in conjunction with the *Riverside County Congestion Management Program* and projected to experience level of service C operation in both directions. Level of service C operation during the peak hours is considered acceptable within the Coachella Valley.

The Union Pacific Railroad line traverses the area south of Interstate 10 and north of the project site. The Union Pacific Railroad provides freight rail service to Riverside County, with up to fifty freight trains per day passing through the area to/from major cities throughout the continental United States. In addition, Amtrak provides regional passenger rail and bus service in the Coachella Valley. Locomotive emissions occur along the railroad tracks that parallel the south side of Interstate 10.

Palm Springs International Airport is the largest of the three airports serving the Coachella Valley. It is south of Vista Chino, between Gene Autry Trail and Farrell Drive. The closest airport boundary is located approximately 950 feet south of the project site. At its closest point, the end of the runway at the Palm Springs International Airport is located approximately 4,325 feet south of the southern boundary of the South Village.

With connections throughout California and the continental United States, this commercial airport is the major facility for regional air passenger transportation in the project vicinity. It also handles air freight. Heliport access is limited to medical evacuation flights between the Desert Regional Medical Center heliport and the Palm Springs International Airport. The *Palm Springs International Airport Master Plan Study* (May 2003) estimated that a total of 109,500 annual operations occurred during the year 2002 at the Palm Springs International Airport (304 operations on an average annual day). The airport activity is projected to increase to 170,260 annual operations (473 operations on an average annual day) by the year 2020.

Toxic and Hazardous Air Contaminants

Motor vehicle emissions contain gaseous pollutants, fine particulate matter, ultrafine particles (UFP), metals, organic material, black carbon, VOC, NOx, and CO. Although ultrafine particles are toxic and have been shown to have adverse health impacts, they are not regulated at this time. Concern has been growing regarding the potential health effects on people living near major roadways and freeways caused by their exposure to criteria pollutants and air toxics emitted by gasoline and diesel vehicles. Recent studies have identified living near major roadways as a risk factor for respiratory and cardiovascular problems as well as other health-related problems including lung cancer and premature death.

In 2005, the CARB, acting in its advisory capacity, recommended a minimum separation of 500 feet between new sensitive land uses and freeways or busy traffic corridors to reduce localized air pollution exposures by as much as 80 percent. This recommendation was based upon relative exposure and health risk assessments addressing the downwind sides of freeways. The SCAQMD references this CARB recommendation. Freeways and busy traffic corridors are facilities with traffic volumes over 100,000 vehicles per day in urban areas and traffic volumes over 50,000 vehicles per day in rural areas. These recommendations are advisory, not regulatory.

It is important to avoid exposing children to elevated levels of air pollution immediately downwind of freeways and high traffic roadways. With some exceptions, state law restricts the location of new schools to sites more than 500 feet from a freeway, urban roadways with 100,000 vehicles per day (VPD), or rural roadways with 50,000 VPD. No such requirements apply to the location of residences, daycare centers, parks and playgrounds, or medical facilities (such as hospitals and nursing homes). The available data show that potential cancer risks decrease with distance and the relative exposure and health risk drop substantially within the first 300 feet from the downwind edge of a freeway or busy travel corridor. The carcinogenic health risk at 300 feet on the upwind side of the freeway is much less than that at the same distance on the downwind side.[15] Appendix C provides additional details.

Interstate 10 is a local source of both criteria air pollutants and toxic air contaminants. During the year 2012, Caltrans data shows that Interstate 10 accommodated an annual average daily traffic volume of 79,000 vehicles. During the peak month, the average daily traffic volume increased to 87,000. Caltrans data also indicates that 18,644 (23.6 percent) of the vehicles on Interstate 10, east of Indian Canyon Drive, are trucks. Approximately 77.9 percent of these trucks are five-axle heavy-duty diesel trucks. These heavy-duty diesel trucks are critical to the economy and needed to move goods between the ports in Los Angeles and Long Beach and locations throughout the continental United States.

The authority for controlling exposure to mobile source pollutants near freeways and roadways is shared by federal, state and local government. Federal and state agencies have authority over vehicle emissions standards. Although cities and counties have no authority to regulate mobile source emissions, they maintain the authority to determine the types of land use that are allowed within their jurisdictions through their land use planning and zoning decisions. Current land use patterns reflect the historical decisions made by local governments. These decisions have resulted in approximately 691,000 people in Los Angeles County alone who live within 500 feet of a freeway.[16]

Land use planning and zoning decisions affect the exposure of future residents to air pollutant emissions near freeways and heavily traveled roadways. Potential mitigation and policy strategies to limit the community exposure to air pollutant emissions along Interstate 10 in the Coachella Valley and thereby reduce public health risk is within the authority of Riverside County and the cities located along the freeway. However, the practical implications of applying a single hard and fast definition of a large impact area along a freeway require serious consideration.

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[15] California EPA and CARB; *Air Quality and Land Use Handbook: A Community Health Perspective*; April 2005; pg. 9-10.

[16] SCAQMD Revised Draft 2012 AQMP; September 2012; pg. 9-24.

The concentrations of various air contaminants found near freeways change constantly and will change in the future as numerous control measures included in the State Implementation Plan and the CARB *Diesel Risk Reduction Plan* are fully implemented. Traffic volumes and speeds change continuously, as do the number of heavy diesel trucks and low emission vehicles on the freeway. The emission control standards for passenger vehicles and on-road heavy diesel trucks change, as do the characteristics of the fuels being used. The localized wind direction and wind speed change by hour of the day and season, thereby changing the area that is located downwind of the freeway at any given time. Changes in weather conditions (such as the ambient temperature, humidity, inversion height, and atmospheric stability) alter the mixing height and affect the dispersion of air contaminants. The presence of sound walls along a freeway has been found to reduce all pollutant concentrations close to the ground behind the barrier by 15 to 50 percent.

Although traffic volumes on Interstate 10 will increase over time, the application of advanced emissions control technologies to both diesel and gasoline engines is reducing the area adjacent to all freeways that is impacted by motor vehicle emissions. Tighter federal and state emissions standards for new on-road engines and the fuels they use will reduce overall air pollutant emissions substantially in the future.

Future emission control technology and fuel economy requirements that will double the gas mileage of passenger vehicles will change motor vehicle emissions over time and help meet GHG goals as well as the state and federal ambient air quality standards. Mobile Source Control Measures for ozone in the SIP (i.e., ONRD-01 through ONRD-04) will reduce emissions of air pollutants along Interstate 10 by accelerating the retirement of older vehicles and accelerating the market penetration of partial zero-emission and zero-emission vehicles. Each of these factors will influence the future levels of criteria pollutants and air toxics near freeways.

CEQA requires project-related motor vehicle emissions to be evaluated to determine their impact on air quality and the environment. Section 15162.2 of the *CEQA Guidelines* states that an EIR "shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected." However, recent court rulings have found that CEQA does not require an analysis of the impacts of the environment on a project.[17]

Lead agencies that approve CEQA documents retain the authority to include any additional information they deem relevant to assessing and mitigating the environmental impacts of a proposed project. After balancing many considerations and quality of life issues, local agencies retain the authority to make land use decisions for their communities.

At its closest point, the project site is located approximately 1.5 miles south of the Interstate 10 freeway. This distance locates the future residents of the site well outside the 500-foot minimum separation recommended by the CARB for new sensitive land uses. There is a strong connection between health risk and the distance between the air pollution source and sensitive receptors located downwind. Land use policies that rely on design and distance parameters can minimize exposures and lower potential health risks.

[17] In a 2011 case (*Ballona Wetlands Land Trust versus the City of Los Angeles* 201 Cal.App.4th 455,473-474) a revised EIR for a coastal multi-family residential development was not required to address impacts on the project from sea-level rise caused by global warming. Another case in 2011 (*South Orange County Wastewater Authority versus the City of Dana Point* 196 Cal.App.4th 1604) an analysis of impacts from locating a residential development next to an existing source of noxious odors was not required.

3.6 Regulatory Setting

Federal Clean Air Act Requirements

Section 110 of the federal Clean Air Act (CAA) requires that each State adopt a plan which provides for implementation, maintenance and enforcement of the primary and secondary national air quality standards in that state. That requirement is met by the State Implementation Plan (SIP).

The federal CAA prohibits federal departments and agencies or other agencies from acting on behalf of the federal government, and the Metropolitan Planning Organization (MPO) from engaging in, supporting in any way, providing financial assistance for, licensing, permitting, or approving any activity that does not conform to the SIP. The Coachella Valley Association of Governments (CVAG) is the MPO for the Coachella Valley. Federal law requires that a proposed project conform with the SIP.

The November 1990 amendments to the federal Clean Air Act (CAA) were intended to intensify air pollution control efforts across the nation. The CAA identified specific emission reduction goals, required both a demonstration of reasonable further progress (an incremental reduction in emissions of relevant air pollutants needed to ensure attainment of the national ambient air quality standards or NAAQS by the applicable date) and an attainment demonstration, and incorporates more stringent sanctions for failure to attain or to meet interim milestones.

The California Clean Air Act

The California Clean Air Act (CCAA), which is generally more stringent than the federal CAA, was signed into law in 1988 and amended in 1992. The CCAA divides nonattainment areas into categories with progressively more stringent requirements, based on pollutant levels monitored therein.

The CCAA establishes a legal mandate to achieve health-based state air quality standards at the earliest practicable date that is generally more stringent than the federal CAA. Serious and above nonattainment areas are required to revise their AQMP to include specified emission reduction strategies and to meet milestones in implementing emission controls and achieving better air quality.

The study area is located in the Coachella Valley. The Coachella Valley exceeds the federal ozone standard and is classified as a "Severe-15" ozone nonattainment area. Pollutant transport from the SCAB to the Salton Sea Air Basin through the Banning Pass is the primary cause of the high ozone concentrations found in Indio and Palm Springs in the late afternoon and early evening. Air pollutant emissions within the SCAB are between five and fifty times greater than emissions in the Coachella Valley, depending on which pollutant is considered. Consequently, improved air quality within the Coachella Valley depends on substantial emission reductions in the SCAB. Since the SCAB is also designated a nonattainment area for ozone, the Coachella Valley may only be able to attain the ozone standard after the SCAB reduces emissions of ozone precursors (VOCs and NOx).

Meeting the rate-of-progress requirements of the CAA in rapidly growing areas like the Coachella Valley is difficult. With the control strategy for the SCAB described in the *Final 2007 AQMP,* the federal ozone standard can only be attained by the Coachella Valley if further control of locally-generated VOC emissions occurs via state and federal regulations.

The federal Clean Air Act requires the Coachella Valley to: (1) identify specific emission reduction goals; (2) demonstrate reasonable further progress in VOC emission reductions; (3) demonstrate attainment of the federal ozone standard; and (4) provide contingency actions in the event that interim milestones are not met. These requirements are addressed by the *Final 2007 AQMP*, which also satisfies the State Implementation Plan requirements under Title I of the CAA.

REGIONAL AIR QUALITY MANAGEMENT PLAN (AQMP)

Southern California is far from meeting all of the federal and state ambient air quality standards. The current regional strategy to attain the ambient air quality standards relies on incremental changes in the SCAQMD Rules and Regulations (a command-and control regulatory structure) supplemented by market incentive and compliance flexibility strategies. To attain the federal standards, Southern California must significantly accelerate its pollution reduction efforts. The SCAQMD is attempting to identify the most effective strategies to improve air quality; maintain a healthy economy; coordinate their efforts with others; and meet applicable transportation, energy and climate objectives.

The SCAQMD leads the regional effort to attain the state and federal ambient air quality standards. The SCAQMD also develops and implements the *Air Quality Management Plan* (AQMP). The AQMP is the region's comprehensive multi-year control strategy to reduce air pollution from stationary sources, on-road and off-road mobile sources, and area sources to ensure continued progress toward attainment, and comply with state and federal requirements.

The federal CAA requires the SCAB (a 24-hour $PM_{2.5}$ non-attainment area) to prepare and submit a SIP demonstrating attainment by 2014. It also requires that transportation conformity budgets be established based on the most recent planning assumptions (within the last 5 years) and approved motor vehicle emission models. The *Final 2012 AQMP* is based on the most recent assumptions by CARB and SCAG and includes updated transportation conformity budgets.

The *Final 2012 AQMP* demonstrates attainment of the federal 24-hour $PM_{2.5}$ standard by 2014 in the SCAB through adoption of all feasible measures. It revises the U.S. EPA approved 8-hour ozone control plan with new commitments for short-term NOx and VOC reductions and updated emissions inventories and projections. Specific measures that assist in attaining the 1997 8-hour ozone (80 ppb) standard by 2023 are included. It builds upon the approaches in the 2007 AQMP for the attainment of federal PM and ozone standards and shows that additional strategies are needed (especially for mobile sources) to meet all federal criteria pollutant standards within the time frames allowed under the federal Clean Air Act.

The purpose of the AQMP is to set forth a comprehensive program to lead the South Coast Air Basin and the desert portion of Riverside County in the Salton Sea Air Basin (including the Coachella Valley) into compliance with all national and state air quality standards. The newest federal $PM_{2.5}$ and 8-hour surface-level ozone standards are more stringent than previous standards. Consequently, meeting the federal Clean Air Act deadlines over the next twenty years will be challenging. Effective strategies are required to improve air quality and meet related transportation, energy, and climate objectives.

Compliance with the provisions of the federal CAA and CCAA is the primary focus of the *Final 2007 Air Quality Management Plan* developed by the SCAQMD and SCAG. Since local government provides the primary focus of land use and growth management decisions, no air quality management plan can succeed without the active participation of local government. Most of the control measures relating to local government are in the areas of trip reduction, energy conservation, and dust control.

Consistent with the need to reduce emissions from mobile sources, many control measures focus on alternatives to current transportation strategies. Ride sharing, carpooling, flexible work schedules, parking management and the acquisition of clean-fueled fleet vehicles are a few of the transportation control measures to be considered for adoption by affected cities and counties. Measures which call upon local jurisdictions to develop more efficient management programs for solid waste including: (1) recycling programs; (2) energy conservation programs; and (3) programs to reduce fugitive dust emissions are also included. Nearly all of the measures call for the adoption of ordinances to implement control programs.

Control strategies from the AQMP that should be considered for adoption by local governments include: (1) emission reductions from paved roads, unpaved roads, unpaved parking lots and staging areas (SCAQMD Rule 403); (2) promotion of lighter color roofing and road materials and tree planting programs; (3) advanced transportation technology incentive programs such as telecommunications, advanced shuttle transit, zero-emission vehicles, alternative fuel vehicles and Intelligent Vehicle Highway Systems.

Local governments (cities and counties) are also responsible for participating in voluntary supportive programs (e.g. implementing transportation improvements called for in the AQMP, coordinating with CVAG regarding regional transportation projects, programs and plans that conform to the State Implementation Plan, developing and adopting ordinances to comply with the CMP). Most AQMP Transportation Control Measures included in the RTIP are designed to relieve congestion, reduce emissions from idling vehicles, and help maintain the CMP level of service standards. Local governments and CVAG should coordinate on trip reduction strategies to meet CMP trip reduction requirements.

Most of the air pollutant emissions and health threat to the residents in the SCAQMD region are currently the result of mobile sources including: automobiles, trucks, ships, trains, planes, and construction equipment. The *2007 AQMP* focuses on measures to reduce mobile source emissions through the accelerated turnover of existing fleets and incentive programs to help fund the replacement of aging dirty diesel engines and clean up locomotives. In Southern California, locomotives emit 30 tons per day of pollutants including particulate-forming nitrogen oxides. That exceeds the combined total emitted by the region’s 300 largest factories and other facilities. The *2007 AQMP* also addresses the need to further reduce emissions from stationary sources such as power plants, refineries, dry cleaners, gas stations, and industrial facilities. The *2007 AQMP* will help reach the goal of cutting smog-forming emissions an additional 50 percent by the year 2020.

The U.S. EPA approved the 8-hour ozone SIP portion of the 2007 AQMP in 2011. The *2007 AQMP* demonstrated attainment with the 8-hour ozone standard by the year 2023 using a provision of the federal CAA that allows credit for emissions reductions from future improvements in control techniques and technologies. These reductions still account for 65 percent of the remaining NOx emissions reductions needed in 2023. The *Final 2012 AQMP* updates certain portions of the 8-hour ozone control plan approved by the U.S. EPA to include new implementation control measures and commitments for short-term NOx and VOC emissions reductions to meet the 2023 attainment deadline.

The *Final 2012 AQMP* is the latest update of the comprehensive regional plan with all feasible control measures to attain the health-based federal 24-hour $PM_{2.5}$ standard by the year 2014 in the SCAB. It also updates the air quality status of the Salton Sea Air Basin in the Coachella Valley. A strategy focused on NOx reductions has been identified as the most effective way to achieve both the ozone and $PM_{2.5}$ attainment objectives.

The Coachella Valley is a rapidly growing area. The population in the year 2000 is projected to more than double by the year 2030. This population growth is accounted for in the emissions projections for future years used to demonstrate attainment of the air quality standards in the *Final 2012 AQMP*. The 2011 population (450,000) in the Riverside County portion of the SSAB under the jurisdiction of the SCAQMD is projected to increase to 558,321 by the year 2020 and 710,430 by the year 2030, as shown in Table 3-3.

Table 3-3
Coachella Valley Population Projections

Year	1990	2000	2010	2020	2030
South Coast Air Basin	13,022,000	14,681,000	15,759,412	16,901,492	18,129,690
Riverside County SSAB	267,000	320,892	439,357	558,321	710,430

Source: *Final 2012 AQMP*, Table 7-1.

Based upon the statewide average residential occupancy of 3.23 people per dwelling unit, the Preferred Alternative would accommodate a population of 1,425 residents that were not envisioned by the *City of Palm Springs 2007 General Plan* land use designations for the project site. These residents represent one-quarter of one percent of the projected year 2020 population for the Riverside County portion of the SSAB shown in Table 3-3.

STATE IMPLEMENTATION PLAN

On April 18, 2003, the U.S. EPA approved the 2002 *Coachella Valley State Implementation Plan* (2002 CVSIP) which addressed attainment of the PM_{10} standards by building upon a historically proactive and successful dust control program carried out by local jurisdictions in the Coachella Valley and the SCAQMD. The 2002 CVSIP established additional controls needed to demonstrate expeditious attainment of the standards such as:

- Additional stabilizing or paving of unpaved surfaces, including parking lots;
- A prohibition on building new unpaved roads;
- Requiring more detailed dust control plans from builders in the valley that specify the use of more aggressive and frequent watering, soil stabilization, wind screens, and phased development as opposed to mass grading to minimize dust;
- Designating a worker to monitor dust control at construction sites; and
- Testing requirements for soil and road surfaces.

The *Final 2003 Coachella Valley PM_{10} SIP* revised the 2002 CVSIP to reflect updated planning assumptions, fugitive dust source emissions estimates, mobile source emissions estimates, and attainment modeling. The 2002 CVSIP control strategies and control measure commitments were not revised. The 2003 CVSIP was approved by the U.S. EPA on December 14, 2005.

Over the past five years, annual average PM_{10} concentrations have met the levels of the revoked federal annual standard (50 $\mu g/m^3$) and the peak 24-hour average PM_{10} concentrations have not exceeded the current federal standard (150 $\mu g/m^3$). The Coachella Valley is currently eligible for redesignation as attainment. Requests have been submitted to the U.S. EPA to re-designate the Coachella Valley and SCAB as attainment for PM_{10}. These redesignations are currently pending. On February 25, 2010, the CARB approved the *2010 Coachella Valley PM_{10} Maintenance Plan* and transmitted it to the U.S. EPA for approval.

The U.S. EPA has designated the SCAB nonattainment for the national $PM_{2.5}$ standards. The Coachella Valley is designated by the U.S. EPA as unclassifiable/attainment of this standard. The 2012 AQMP addresses the Clean Air Act planning requirements for the 24-hour $PM_{2.5}$ standard in the SCAB, not the Coachella Valley.

The $PM_{2.5}$ portion of the 2007 AQMP is the adopted State Implementation Plan to achieve compliance with the NAAQS for $PM_{2.5}$. The majority of the $PM_{2.5}$ portion of the 2007 AQMP has been approved by the U.S. EPA. The only exception was the failure to meet contingency measure requirements. In 2011, the SCAQMD submitted a $PM_{2.5}$ SIP revision designed to meet the contingency measure requirement for the annual $PM_{2.5}$ SIP.

The U.S. EPA has designated the SCAB and the Coachella Valley portion of the SSAB as nonattainment for the national ozone standards. The 2007 AQMP addressed the Clean Air Act planning requirements for ozone in the SCAB and the Coachella Valley portion of the SSAB. In 2011, the ozone portion of the 2007 AQMP was approved by the U.S. EPA into the 8-hour ozone SIP.

The Final CARB/EPA/SIP Submittal to the U.S. EPA occurred in December 2012. The *Final 2012 AQMP* (February 2013) for the SCAB is the current regional plan to achieve compliance with the 2006 health-based federal NAAQS for the 24-hour $PM_{2.5}$ standard and the federal 8-hour ozone standards. The *Final 2012 AQMP* addresses the Clean Air Act planning requirements for the 24-hour $PM_{2.5}$ standard in the SCAB, not the Coachella Valley. The Coachella Valley is designated by the U.S. EPA as unclassifiable/attainment for this standard.

SENATE BILL 375

In 2008, the passage of Senate Bill 375 developed regional GHG reduction targets for the year 2020 and the year 2035 for passenger vehicle emissions. These GHG targets include: an 8 percent reduction below 2005 levels on a per capita basis by the year 2020 and a 13 percent reduction by the year 2035. The SCAG used these targets to develop a Sustainable Communities Strategy integrating land use, housing, and transportation planning in the *2012 Regional Transportation Plan* (2012 RTP).

The 2012 RTP promotes higher residential and employment densities in high quality transit (HQT) areas and encourages transit-oriented development to reduce the total vehicle miles traveled (VMT) by locating homes and jobs closer to public transportation. Much of the transit network is located in close proximity to existing freeways. Consequently, many of the HQT areas are also near freeways. Implementation of the 2012 RTP would result in 282,000 households in the SCAG region located within 500 feet of a freeway and within an HQT area in the year 2035.[18]

SENATE BILL 97 AND ASSEMBLY BILL 32

The Global Warming Solutions Act of 2006 (AB-32) seeks to reduce GHG emissions in California to 1990 levels by the year 2020. To address the long-term adverse impacts associated with global climate change, implementation of *The Governor's Executive Order S-3-05* would also reduce greenhouse gas (GHG) emissions in California 80 percent below 1990 levels or 90 percent below current levels by the year 2050. Achieving this objective would contribute to efforts being made around the globe to stabilize the global climate by capping GHG concentrations at 450 ppm.

To achieve the 2020 goal, the CARB plans to use both voluntary and regulatory measures to reduce GHG emissions. One measure known as the "cap-and-trade" program went into effect in January of 2013. It would establish a cap on GHG emissions for California's largest emitters (facilities with emissions >25,000 MT of CO_{2e}).

[18] SCAQMD; *Final 2012 AQMP;* February 2013; pg. 9-25. High quality transit areas are the 0.5-mile corridor surrounding a fixed bus route (or the intersection of two or more major bus routes) with service intervals no longer than 15 minutes during peak commute hours).

New or modified projects must be analyzed pursuant to CEQA and mitigated to the maximum extent feasible. With the passage of Assembly Bill 32 in California, environmental documents for projects pursuant to CEQA are required to analyze greenhouse gases and assess the potential significance of GHG emission impacts. However, there is currently no statewide threshold for GHG emissions for use in making a determination regarding the significance of environmental effects related to GHG emissions in the environmental review process.

Pursuant to Senate Bill 97, greenhouse gases (GHG) and their effects are subject to CEQA, because GHG are thought to contribute to global climate change. California law requires the Governor's Office of Planning and Research (OPR) to develop guidelines under CEQA for the feasible mitigation of GHG. In the interim, an OPR *Technical Advisory* addressing CEQA and climate change was released on June 19, 2008 providing preliminary guidance in addressing climate change for lead agencies.

The OPR also asked the CARB to develop recommendations for GHG significance thresholds, since the CARB is responsible for monitoring and tracking GHG emissions. Significance thresholds are necessary for lead agencies to determine whether a project's direct or indirect impact on climate change would be significant. Significant impacts would be disclosed in an EIR so that feasible mitigation measures to reduce the impact could be imposed.

On October 24, 2008 the CARB released a Preliminary Draft Staff Proposal entitled *Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases Under CEQA*. The CARB proposed one GHG threshold for stationary source (industrial) projects and another for residential and commercial projects that meet specific performance standards. On December 9, 2008, the CARB released proposed performance standards for residential and commercial projects. Comments are being solicited on the proposed performance standards at public workshops, prior to the submittal of proposed recommendations for review and adoption by the CARB board.

The SCAQMD has adopted an interim GHG significance threshold for permitting activities related to industrial (stationary source) projects for which the SCAQMD is the lead agency. The threshold is 10,000 metric tons per year of CO_2 equivalent (MT/year of CO2e) emissions. This threshold includes construction emissions amortized over 30 years and added to the operational GHG emissions. While not recommended for use at this time, an interim screening level of 3,000 MT/year of CO2e emissions was identified by the SCAQMD for new mixed-use residential and commercial projects.

Although the CARB has not identified an interim GHG significance threshold for residential or commercial sector projects to date, it is recommended that a threshold be developed based on the implementation of stringent performance standards or equivalent mitigation measures addressing energy use, transportation, water use, waste and construction. Residential and commercial sector projects should only be presumed to have a less-than-significant effect on the environment if: (1) specific performance standards in references such as the California Energy Commission's *Tier II Energy Efficiency Standards* and GHG-reducing programs such as LEED, GreenPoint Rated, and the *California Green Building Code* are met, and (2) total net emissions are below a specified ceiling.

SCAQMD RULES AND REGULATIONS

The SCAQMD is responsible for controlling stationary air pollution sources. Therefore, its *Rules and Regulations* address a wide variety of industrial and commercial operations and require operational controls on many processes. The SCAQMD establishes Permit to Construct and Permit to Operate requirements, inspects emissions sources, and enforces rules and regulations through educational programs and fines. The location of new homes does not require an air quality permit.

Rule 1108 specifies the content of cutback asphalt. Rule 1113 details permitted VOC emissions from architectural coatings. To significantly reduce emissions from paints and coatings, which are one of the largest categories of smog-forming emissions in the region, the SCAQMD adopted amendments to Rule 1113 in December, 2004. The Rule 1113 amendments will lower the current volatile organic compound (VOC) limit for specialty coatings used by homeowners, contractors and maintenance workers. The new VOC limits rely on compliant coatings already available from several manufacturers and in wide use throughout the region. The amendment to Rule 1113 will reduce VOC emissions by 3.7 tons per day, which is more than the emissions produced by the region's largest oil refinery.[19]

Studies indicate that one-third of the SCAB ambient PM_{10} concentrations and 90 percent of the Coachella Valley PM_{10} levels are the result of soil dust entrainment (fugitive dust). Rule 403 (Fugitive Dust) specifies control measures for use in developing site specific fugitive dust control plans to minimize blowing dust from construction sites and insure the clean up of construction-related dirt on approach routes to the site including: watering measures, chemical stabilizers, wind fencing, covering haul vehicles, bed liners in haul vehicles, wheel washers, and high wind measures. Rule 403 also prohibits the release of fugitive dust emissions from any active operation, open storage pile, or disturbed surface area beyond the property line of the emission source and prohibits particulate matter deposits on public roadways.

In April of 2004, Rule 403 (Fugitive Dust), Rule 1186 (PM_{10} Emission Reduction from Paved and Unpaved Roads and Livestock Operations), and Rule 403.1 (Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources) were amended. The amended rules increased the stringency of current Best Available Control Measures (BACM) for many dust sources including: construction and related operations, roadways, Coachella Valley farming, and weed abatement activities. The amendments were projected to reduce PM_{10} emissions from construction, road and agricultural sources by 1.7 tons per day. The amendments implement 2003 AQMP control measure BCM-07 and the SCAQMD rule making portion of the 2002 CVSIP.

SCAQMD Permitting Requirements For Facilities Emitting TACs

The SCAQMD establishes permitting requirements, adopts rules regulating the operation of the sources of toxic contaminants, inspects emission sources, and enforces emission control program requirements through education and by levying fines. The SCAQMD also verifies for lead agencies all permitted and non-permitted sources of air pollutants that might significantly affect the health of students and staff at school sites.

The SCAQMD has developed a number of rules and regulations directed at HAPs to meet state and federal requirements. Through its Title V permitting program, the SCAQMD implements the national emission standards for HAPs when they are promulgated by insuring that maximum available control technology is implemented by major sources to reduce HAP emissions by new and existing sources. These regulations require that sources of hazardous materials or criteria pollutants above threshold levels obtain permits prior to operation of the facility.

The SCAQMD reviews the potential for TAC emissions from new and modified stationary sources and regulates levels of air toxics through the District permitting process for stationary sources which covers both construction and operation. Rule 1401 specifies thresholds for maximum individual cancer risk from new or modified stationary sources which emit carcinogenic air toxins (with or without best available control technology for toxics (T-BACT)). Any facilities involving the emission or threatened emission of a carcinogenic or toxic air contaminant identified in Rule 1401 that exceeds the maximum individual cancer risk of ten in one million is considered

[19] SCAQMD; *AQMD Advisor;* Volume 11, Number 1, January 2004.

significant, if the project is constructed with best available control technology for toxics using the procedures in Rule 1401.[20]

HAZARDOUS AND TOXIC AIR CONTAMINANTS (TACS)

Hazardous substances that are released into the air are called air toxics. Air toxics are often called "non-criteria" pollutants because ambient air standards have not been established for them. Toxic air contaminants (TACs) are diverse and their effects on health tend to be local rather than regional. There are hundreds of air toxics. Exposure to these pollutants can cause or contribute to cancer, birth defects, genetic damage, and other adverse health effects.
Toxic air contaminants pose health risks to those who are exposed. The regulatory approach used in controlling toxic air pollutant levels relies on a quantitative risk assessment process to determine allowable emissions from the source, rather than on ambient air concentrations. Local concentrations that can pose a significant health risk are termed "toxic hot spots." Several studies have shown that risk decreases dramatically with increased distance from the source of the emissions.

Young people, the elderly, pregnant women, and people with existing health problems are particularly susceptible to health effects associated with toxic emissions from certain types of sources. Occupants of land uses such as schools, hospitals, convalescent homes, and daycare facilities are considered sensitive receptors. Residential areas are also considered sensitive receptors, since residents are at home for extended periods of time, which can cause relatively long exposures to air contaminants that are present.

Exposure to toxic compounds can cause a variety of health effects including neurological, respiratory, and developmental effects as well as cancer. Toxic air pollutants may have both chronic effects (long duration) and acute effects (severe but of short duration) on human health. Chronic health effects, such as cancer, result from low-dose, long-term exposure from routine releases of air toxics. Acute health effects are due to sudden exposure to high concentrations of air toxics. These effects may include nausea, skin irritation, respiratory illness, and, in some cases, death.

Title III of the federal Clean Air Act provides a program for the control of Hazardous Air Pollutants (HAPs). Pursuant to Section 112(g) of the federal Clean Air Act (Federal New Source Review for Toxics), no person shall begin construction or reconstruction of a major stationary source emitting hazardous air pollutants listed in Section 112 (b) of the CAA, unless the source is constructed with the Best Available Control Technology for Toxics (T-BACT) and complies with all other applicable requirements, including public noticing, referenced in 40 CFR 63.40 through 63.44.

The Tanner Toxics Act (AB 1807), the Air Toxics Hot Spots Assessment Program (AB 2588), the Toxic Emissions Near Schools Program (AB 3205), and the Disposal Site Air Monitoring Program (AB 3374) have all been enacted by the State Legislature to limit and deal with toxic air contaminant emissions. These programs are all being implemented by the SCAQMD.

The regulatory approach used in controlling toxic air pollutant levels relies on a quantitative risk assessment process to determine allowable emissions from the source, rather than on ambient air concentrations. For carcinogenic air pollutants, there is no safe recognized concentration in the atmosphere. Local concentrations that can pose a significant health risk are termed "toxic hot spots".

The SCAQMD and the CARB are responsible for developing and implementing rules and regulations regarding air toxics on the local level. The SCAQMD and the CARB have strong

[20] T-BACT (Best Available Control Technology for Toxics) associated with gasoline refueling stations involves underground gasoline storage tanks and Phase I and Phase II Vapor Recovery Systems.

comprehensive regulatory programs in place for new and existing sources of air pollution. The SCAQMD has developed a number of rules and regulations directed at HAPs to meet state and federal requirements. Through its Title V permitting program, the SCAQMD implements the national emission standards for HAPs when they are promulgated by insuring that maximum available control technology is implemented by major sources to reduce HAP emissions by new and existing sources. These regulations require that sources of hazardous materials or criteria pollutants above threshold levels obtain permits prior to operation of the facility.

The SCAQMD regulates levels of air toxics through a permitting process that covers both construction and operation. Rule 1401 specifies thresholds for maximum individual cancer risk from new or modified stationary sources (with or without best available control technology for toxics (T-BACT) which emit carcinogenic air toxins. Any facilities involving the emission or threatened emission of a carcinogenic or toxic air contaminant identified in Rule 1401 that exceeds the maximum individual cancer risk of ten in one million if the project is constructed with best available control technology for toxics, using the procedures in Rule 1401 is considered significant.[21]

The CARB *Diesel Risk Reduction Plan* proposes a three-pronged approach that would require: the use of low-sulfur diesel fuel; retrofitting existing engines with PM filters; and nearly a 90 percent reduction of PM emissions from all new diesel engines and vehicles (see Appendix C). A number of adopted and proposed state regulations that will reduce diesel emissions target the following source categories: Heavy-Duty Public Fleets and Private Utilities; Cargo Handling Equipment; Non-Urban Transit Buses; Harbor Craft; Truck Idling from Sleeper Cabs; Off Road and Private On-Road Fleets; Agriculture Equipment; and Ships.

CITY OF PALM SPRINGS GENERAL PLAN AND MUNICIPAL CODE

City of Palm Springs 2007 General Plan

The City of Palm Springs has prepared a series of objectives, policies, and implementation programs related to air quality as part of the *Palm Springs 2007 General Plan*. The objectives rely on cooperation with the South Coast Air Quality Management District regarding stationary sources.

For mobile sources, the objectives and policies encourage a balance between jobs and housing, as well as increased use of mass transit, carpooling and clean-burning energy sources for motorized vehicles. The implementation program addresses coordinating local transit improvements and carpooling and van pooling programs, adopting and implementing a TSM/TDM Ordinance, and establishing regular meetings with CVAG and the SCAQMD to implement regional actions to reduce local air pollutant emissions.

The *Palm Springs 2007 General Plan* policies require the development of bikeways and pedestrian paths and encourage balanced development that reduces vehicle miles traveled by providing jobs in this "housing rich" area. The *Palm Springs General Plan* policies require that State Energy Efficiency Standards (Title 24) be implemented and enforced and encourage the use of passive design concepts to increase energy efficiency.

Air quality policies contained in the Air Quality Element of the *Palm Springs 2007 General Plan* address construction and grading activities. These policies specify City requirements for site watering and the use of soil stabilizers, the washing of construction truck tires, the covering of trucks hauling loose material from construction sites, the need to establish ground cover as soon as

21. T-BACT (Best Available Control Technology for Toxics) associated with gasoline refueling stations involves underground gasoline storage tanks, and Phase I and Phase II Vapor Recovery Systems.

possible after grading, increased street sweeping activities during construction periods, and prohibitions on earth moving operations during periods of high winds.

City of Palm Springs Municipal Code

Chapter 8.50 of the *Palm Springs Municipal Code* (Fugitive Dust Control) addresses fugitive dust and erosion control related to construction and demolition activities to reduce PM_{10} emissions. The control requirements specify work practices associated with all fugitive dust sources that include the following:

- Persons conducting any potential dust-generating activity are required to utilize one or more Coachella Valley Best Available Control Measures (BACM) for each dust source as necessary to meet the applicable performance standards.[22]
- If the activity is on a site with a disturbed surface area greater than one acre and watering is the selected control measure, a water application system shall be operated as identified in the *Coachella Valley Fugitive Dust Control Handbook*.

Section 8.50.022 requires any person applying for a grading or building permit for an activity with a disturbed surface area of more than 5,000 square feet (0.11 acre) to submit and receive approval of a Fugitive Dust Control Plan prior to initiating any earth-moving operations. The Fugitive Dust Control Plan is to be prepared pursuant to the provisions of the most recently approved *Coachella Valley Fugitive Dust Control Handbook* (SCAQMD). The "Fugitive Dust Control Plan" requirements include numerous short-term and long-term measures designed to minimize fugitive dust emissions during grading and construction activities as well as emissions from disturbed surface areas where construction is not scheduled to occur for at least 30 days.

Construction Site Regulations Sections 8.04.230 and 8.04.240 of the *Palm Springs Municipal Code* address erosion control associated with grading projects and outline measures required to assure that no debris is washed, blown by wind, or otherwise deposited onto streets or adjacent property. Special measures that may be required in addition to an on-site watering system are outlined therein.

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[22] The performance standard to be met specifies that no person shall cause or allow visible dust emissions to exceed twenty percent opacity or extend more than 100 feet (horizontally or vertically) from the source, or cross any property line.

4.0 AIR QUALITY IMPACT ANALYSIS

The California Environmental Quality Act (CEQA) applies to projects which are funded, undertaken, or require the issuance of a permit by a public agency. CEQA requires public agencies to identify potentially significant effects of projects they intend to approve and mitigate significant effects whenever it is feasible to do so. CEQA was intended to identify ways to reduce adverse impacts by informing both decision makers and the public of the potential effects of a project and disclosing to the public why a project was approved. Through the environmental process, CEQA also provides a means of considering alternatives to projects with significant impacts.

Projects that are subject to CEQA generally undergo a preliminary evaluation in an Initial Study to determine if they may have a significant effect on the environment. Appendix G of the *State CEQA Guidelines* includes a “Model Initial Study Checklist” with suggested criteria for use in determining whether a project will have a potentially significant impact on air quality. The checklist provides the following examples of air quality impacts that would normally be considered to have a significant effect on the environment. A project would typically have a significant air quality impact if it would:

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

Based upon the *State CEQA Guidelines*, air quality analyses have traditionally focused on the air quality impacts associated with criteria pollutants and toxic air contaminants. However, following the passage of the California Global Warming Solutions Act of 2006 (Assembly Bill 32), environmental documents for projects in California are required to analyze greenhouse gases (GHG) and assess the potential significance of GHG emission impacts. There is currently no statewide threshold for GHG emissions for use in making a determination regarding the significance of environmental effects related to GHG emissions in the environmental review process. Although the South Coast Air Quality Management District (SCAQMD) has adopted an interim significance threshold for GHG emissions, it applies only to industrial (stationary source) projects where the SCAQMD is the lead agency. The California Air Resources Board is currently in the process of developing significance thresholds for GHG.

The *State CEQA Guidelines* recommend that, where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make determinations regarding the significance of air quality impacts. The SCAQMD is responsible for adopting, implementing and enforcing air quality regulations within the Salton Sea Air Basin. The SCAQMD is also responsible for reviewing and commenting on environmental documents for projects that may generate significant adverse air quality impacts. The SCAQMD advises the lead agency in addressing and mitigating the potential adverse air quality impacts caused by projects both during and after construction.

To assist lead agencies in determining the significance of air quality impacts, the SCAQMD has established suggested short-term construction-related and long-term operational impact significance thresholds in the *CEQA Air Quality Handbook* (1993) which is currently being revised. It provides recommended significance thresholds for both local and regional air quality impacts associated with project construction and operation. Local significance thresholds currently apply only to projects with fewer than five acres.

Local governments control the impact of air pollutants on sensitive receptors through land use decisions and discretionary permits related to a proposed project. Ultimately, the responsibility for making decisions regarding the significance of the proposed project's air quality impacts rests with the City of Palm Springs, which is the lead agency. Through the public review process, local jurisdictions recognize environmental ethics that are consistent with accepted local values. Local land use decisions are typically based upon numerous considerations such as the following.

- What is the intensity and type of project?
- What is the location of the project (i.e. upwind of sensitive receptors or in areas with high pollutant concentrations)?
- Will the project cause an exceedance of any air quality standard?
- Will the project make a substantial contribution to an existing exceedance of an air quality standard?
- Is the project inconsistent with the regional AQMP and State Implementation Plan?
- Will the project emit toxic air contaminants (TACs) within one-quarter mile of a sensitive receptor?
- Will the mitigation measures that are attached to the project mitigate the air quality impacts to the maximum extent feasible?

4.1 IMPACT SIGNIFICANCE THRESHOLD CRITERIA

Pursuant to Section 15064 (b) of the *CEQA Guidelines*, the final determination of whether or not a project is significant is within the purview of the lead agency.[1] The lead agency is also responsible for implementing and monitoring any required mitigation measures. Neither the CEQA Guidelines nor the CEQA statute prescribe thresholds of significance or particular methodologies for performing impact analyses. This is left to the discretion and judgment of lead agencies, based upon factual data and guidance from regulatory agencies and others, where applicable and available. Even in the absence of clearly defined thresholds of significance, the law requires that when a lead agency determines that a project contributes to a significant individual or cumulative impact, such emissions from must be disclosed and mitigated to the extent feasible.

CRITERIA POLLUTANTS

As shown in Table 4-1, the SCAQMD has established construction and operational mass daily significance thresholds which are recommended for use by lead agencies in considering both primary or "direct" impacts and secondary or "indirect" impacts on air quality. If the lead agency finds that a project has the potential to generate emissions that would exceed these thresholds, the project may have significant adverse regional effects on air quality and mitigation should be identified.

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[1] SCAQMD, *CEQA Air Quality Handbook*, November 1993, page 6-2.

Table 4-1

Regional Air Quality Significance Threshold Criteria[a]

(Pounds/Day)

Emissions Source	CO	VOC	NO_x	SO_x	PM_{10}	$PM_{2.5}$
Construction or Operation[b]	550	75	100	150	150	55

a. Source: SCAQMD, March, 2011.

b. Projects in the Coachella Valley with peak (highest daily) operation-related emissions that exceed any of these emissions thresholds should be considered significant. A significance threshold for lead emissions of three pounds per day is recommended by the SCAQMD for both operations and construction activities.

Operational impacts should be considered significant if the project's daily emissions exceed the threshold criteria shown in Table 4-1 or the project is inconsistent with the *2003 Coachella Valley PM_{10} State Implementation Plan* (the PM_{10} CVSIP) or the *Final 2012 Air Quality Management Plan* (AQMP; February 2013). Inconsistency with regional plans indicates that a project could interfere with the ability of the region to comply with federal and state ambient air quality standards. Only new or amended General Plan Elements, Specific Plans, and significant projects need to undergo a consistency review. A project that requires a General Plan Amendment or revision which would provide directly or indirectly for increased population growth above the level projected in the adopted AQMP will have a significant cumulative adverse air quality impact. Projects that are consistent with local General Plans are considered consistent with the air quality related regional plans including the current AQMP, the PM_{10} CVSIP and other applicable regional plans.[2]

Significant localized project impacts could occur where carbon monoxide standard exceedances are projected to occur at sensitive receptor locations adjacent to roadways serving project-related traffic. In locations where the background carbon monoxide concentration already exceeds the state carbon monoxide standards, a measurable increase in carbon monoxide levels at the receptor site would indicate a significant localized adverse impact. A measurable increase is defined by the SCAQMD as 1.0 ppm for carbon monoxide levels averaged over a one-hour period or 0.45 ppm for carbon monoxide levels averaged over an 8-hour period.

The City of Palm Springs has recognized that there are certain adverse impacts associated with implementation of the General Plan that cannot be avoided. Among these impacts are exceedances of the SCAQMD significance threshold criteria for emissions of criteria air pollutants. Project-related impacts that have the potential to exceed the SCAQMD significance thresholds require a Statement of Overriding Considerations, regardless of compliance with the *City of Palm Springs 2007 General Plan* and the *Regional Growth Management Plan.*

GREENHOUSE GASES

California's Global Warming Solutions Act of 2006 (AB 32) required the CARB to establish a greenhouse gas (GHG) emissions cap for the year 2020 and adopt mandatory reporting rules for significant sources of GHG. AB 32 did not amend CEQA to require new analytical processes to account for the impacts of GHG emissions. However, it did acknowledge that GHG emissions cause significant adverse impacts to human health and the environment.

2 SCAQMD, *CEQA Air Quality Handbook,* November 1993; pg. 12-2.

Senate Bill 97 amended the CEQA statute to establish that GHG emissions and their effects are appropriate topics for CEQA analysis. As a result, CEQA documents prepared by lead agencies must analyze greenhouse gases and assess the potential significance of GHG emission impacts. There is currently no statewide threshold for GHG emissions for use in making a determination regarding the significance of effects related to GHG emissions in the environmental review process.

Although the SCAQMD adopted an interim significance threshold for GHG emissions on December 5, 2008, it applies only to those industrial (stationary source) projects for which the SCAQMD is the lead agency. The SCAQMD has not formally adopted GHG emissions thresholds of significance for residential projects. The September 2010 draft significance threshold for residential projects was 3,500 metric tons per year of equivalent CO_2 (MT/year of CO_2e).

TOXIC AIR CONTAMINANTS

The SCAQMD has established the following significance thresholds for TACs.

- A maximum incremental cancer risk equal to or exceeding ten per million exposed people provided that the source has the best available control technology for toxics (T-BACT).
- A cancer burden greater than 0.5 excess cancer cases (in areas greater than or equal to one in one million).
- Chronic and acute hazard index equal to or greater than 1.0 (project increment).

The SCAQMD has established the following significance thresholds for odor.

- The project creates an odor nuisance pursuant to SCAQMD Rule 402.

4.2 SHORT-TERM CONSTRUCTION-RELATED IMPACTS

Two types of air pollutant sources must be considered with respect to the proposed project: stationary sources and mobile sources. Stationary source considerations include emissions from construction activities and natural gas combustion, emissions at the power plant associated with the electrical requirements of the proposed development. Mobile source considerations include exhaust emissions resulting from short-term construction activities and long-term vehicular travel associated with the proposed project.

Short-term impacts on air quality would occur during the construction activities required to implement the proposed project. These adverse impacts would include:

- diesel exhaust emissions from the construction equipment used on-site as well as the vehicles used to transport the off-highway construction equipment to/from the site;
- emissions from the vehicles of construction workers;
- particulate emissions (fugitive dust) during site clearing, grading, and excavation for utilities as well as roadway improvements within the site;
- exhaust emissions from the vehicles used to cut, break up, load, and transport concrete foundation, parking lot and tennis court debris from the site to the landfill and the vehicles used to transport building materials to the site;
- off-gassing emissions associated with the asphalt used for the required roadway improvements and the architectural coatings applied to the interior and exterior of the buildings.

The number and type of construction equipment as well as the number of hours that they will be in operation each day are key parameters affecting construction-related air pollutant emissions. In addition, the size of the area disturbed during grading activities and the quantity of earthwork as well as whether or not the material will be balanced on-site can have a substantial impact on the air pollutant emissions generated locally and regionally during construction activities. Overlapping construction phases can also substantially increase daily air pollutant emissions.

PROJECT-RELATED CONSTRUCTION DETAILS

The California Emissions Estimator Model (CalEEMod Version 2013.2.2; Released October 2, 2013) was utilized to estimate the short-term construction-related emissions of criteria air pollutants and greenhouse gas emissions that would be associated with the construction activities necessary to implement the Preferred Alternative. Many site-specific construction details provided by MSA Consulting Inc. were used as input parameters for CalEEMod. Default construction parameters incorporated in CalEEMod were assumed for those construction activities for which site-specific information is not currently available. Appendix D provides more detailed information regarding the site-specific and default values assumed as well as the CalEEMod output.

CalEEMod uses the project location and details regarding various project characteristics to estimate the air pollutant emissions associated with construction activities. Although the model can evaluate up to seven distinct construction phase types, no structures with load-bearing members will be demolished to implement the proposed project. Therefore, a building demolition phase was not modeled. The six construction phase types modeled included: (1) site preparation (including the cutting, loading, and removal of the concrete foundation, tennis courts, and parking lot at the former clubhouse), (2) site grading, (3) utility trenching, (4) construction of the residential structures, (5) roadway paving activities, and (6) interior and exterior architectural coating activities.

The default length of each construction phase is estimated by CalEEMod, based upon the total acreage to be developed and the land uses proposed. The default construction information incorporated in CalEEMod is based on the findings of a survey of numerous construction sites performed by the SCAQMD. The survey identified a typical construction crew and associated equipment by phase type for development sites of up to 34 acres.

Existing Land Uses On-Site

The project site is comprised of 156.18 gross acres (125.88 net acres) formerly developed as the Palm Springs Country Club. The site was previously graded and developed as a private golf course, a driving range, and a clubhouse with four tennis courts and parking areas. The clubhouse structure was demolished and removed from the site. The foundation of the clubhouse and the tennis courts and paved parking area remain in the southeast corner of the South Village Planning Area. The turf associated with the fallow 18-hole golf course was removed and the surface soil was chemically stabilized to minimize erosion.

Site-Specific Construction Phasing

The project is expected to be constructed over a period of five years. Site preparation activities are expected to begin in August 2015 and require fifteen days to complete. Site grading is expected to occur next and be completed in approximately three weeks. Trenching activities necessary to underground utilities are projected to require approximately twenty days to complete. Construction of the residential structures is expected to begin after the trenching activities and be completed by the end of October 2019. This includes the time required to lay asphalt and pour concrete for the roadways, sidewalks, driveways, trails, etc. Although the phasing of the development will be dictated by the demands of the marketplace, both planning areas could be fully developed and occupied in the year 2020.

The site preparation and grading activities are expected to be completed relatively quickly. Three motor graders are expected to be used over a period of three weeks. Cut and fill earthwork quantities are expected to be balanced within the project site. Debris associated with the remaining clubhouse foundation, four tennis courts, and parking area is expected to be removed by haul trucks during the site preparation phase. Approximately 42 truckloads per day of debris is expected to be removed from the site over a period of ten days.

CalEEMod Default Parameters

The CalEEMod default building construction period with one crew and one set of equipment would be 3,970 working days (15.3 years) assuming that the six construction phase types do not overlap.[3] This would exceed the proposed development construction schedule of five years. To complete the project in a timely fashion, the phase involving the construction of the residential structures cannot extend 3,100 working days (twelve years). Three building crews and three equipment sets would be required to complete this phase within four years.

CalEEMod permits the number of pieces of construction equipment and the size of the construction crew to be altered to reflect the construction period proposed. The site preparation phase was reduced from 120 days to fifteen days and an industrial concrete saw was added to the default equipment. The length of the grading phase was reduced from the default value (310 days) to 20 days and the default grading equipment was altered to reflect site-specific grading information provided by Earth Systems and MSA Consulting Inc. The trenching equipment and phase length (20 days) were identified by MSA Consulting Inc.

To reduce the time required to construct the Preferred Alternative in CalEEMod to five years, the default construction parameters (i.e., the number and type of construction equipment as well as the number of construction workers) were tripled for the phase involving the construction of the residential structures. The default work crew and equipment set were assumed for paving activities and architectural coating activities, each of which would require 220 days to complete.

Municipal Code Requirements Related to Fugitive Dust Control

Chapter 8.50 of the *City of Palm Springs Municipal Code* outlines the minimum requirements for construction activities to reduce man-made fugitive dust and corresponding PM_{10} emissions. The City of Palm Springs will require the preparation of a fugitive dust control plan describing fugitive dust sources at the site and the work practices and control measures proposed to meet the City of Palm Springs minimum performance standards for all fugitive dust sources. No activity with the potential to generate dust is permitted by the City of Palm Springs unless one or more of the Coachella Valley Best Available Control Measures (CVBACM) identified in the SCAQMD publication *Coachella Valley Fugitive Dust Control Handbook* is utilized for each fugitive dust source such that the applicable performance standards are met before, during, and after the construction process.

Fugitive dust control measures that are required to comply with the *City of Palm Springs Municipal Code* are not considered mitigation by the SCAQMD. Similarly, compliance with applicable SCAQMD *Rules and Regulations* is not considered mitigation by the SCAQMD. As a result, any fugitive dust control measures required by the *City of Palm Springs Municipal Code* or SCAQMD Rule 403.1 were considered incorporated in the project and reflected in the unmitigated short-term emissions projections shown in Table 4-2.

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[3] A single CalEEMod default set of building construction equipment includes: one crane, three forklifts, three tractors/loaders/backhoes, one welder, and one generator set. A single CalEEMod default set of grading equipment includes: one rubber-tired dozer, two tractors/loaders/ backhoes, one grader, two excavators, and two scrapers.

Table 4-2

Peak Day Unmitigated Short-Term Air Pollutant Emissions[a]
Associated With Construction of the Preferred Alternative
(Year 2015 Pounds/Day)

Emissions Source	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_{2e}
Site Preparation							
- Fugitive Dust	0.00	0.00	0.00	0.00	18.37	9.97	0.00
- Off-Road Diesel	5.97	61.88	46.44	0.05	3.48	3.23	4,731.52
- Hauling	1.33	15.78	16.74	0.04	83.03	8.74	3,965.41
- Worker Trips	0.09	0.14	1.18	0.00	16.35	1.66	153.19
Subtotal	7.39	77.80	64.36	0.09	121.23	23.60	8,850.12
Site Grading							
- Fugitive Dust	0.00	0.00	0.00	0.00	12.69	4.03	0.00
- Off-Road Diesel	5.18	53.85	30.77	0.03	3.04	2.80	3,582.43
- Worker Trips	0.07	0.10	0.89	0.00	12.26	1.24	114.89
Subtotal	5.25	53.95	31.66	0.03	27.99	8.07	3,697.32
Trenching							
- Off-Road Diesel	2.17	23.87	13.75	0.02	1.24	1.14	2,609.67
- Worker Trips	0.04	0.07	0.59	0.00	8.18	0.83	76.59
Subtotal	2.21	23.94	14.34	0.02	9.42	1.97	2,686.26
Highest Phase	7.39	77.80	64.36	0.09	121.23	23.60	8,850.12
SCAQMD Threshold	75	100	550	150	150	55	NA
Threshold Exceeded	No	No	No	No	No	No	NA

a. These three phases would occur sequentially during the year 2015. Refer to Appendix D for the CalEEMod input parameters and output. The PM_{10} emissions include exhaust and fugitive dust emissions. Twice daily watering of exposed surfaces was assumed as well as reduced speeds (less than 15 mph) on unpaved on-site surfaces. Site preparation includes haul trips necessary to remove 8,424 tons of concrete debris (421 truckloads) from the former clubhouse site at a rate of 42 truckloads per day over a period of ten days.

Table 4-2 (Continued)
Peak Day Unmitigated Short-Term Air Pollutant Emissions[a] Associated With Construction of the Preferred Project
(Pounds/Day)

Emissions Source	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_{2e}
Building Activities[b]							
- Off-Road Diesel	10.98	90.09	56.23	0.08	6.35	5.97	8,111.24
- Vendor Trips	0.64	3.95	8.13	0.01	18.98	2.00	771.33
- Worker Trips	0.92	1.43	12.31	0.02	170.05	17.25	1,593.15
Subtotal	12.54	95.47	76.67	0.11	195.38	25.22	10,475.72
Architectural Coatings							
- Coating On-Site	97.30	0.00	0.00	0.00	0.00	0.00	0.00
- Off-Road Diesel	0.30	2.01	1.85	0.00	0.15	0.15	282.01
- Worker Trips	0.13	0.22	1.82	0.01	34.34	3.48	285.10
Subtotal	97.73	2.23	3.67	0.01	34.49	3.63	567.11
Asphalt Paving							
- Off-Road Diesel	1.61	17.16	19.58	0.02	0.94	0.86	2,259.95
- Worker Trips	0.05	0.08	1.04	0.00	12.26	1.24	101.82
Subtotal	1.66	17.24	20.62	0.02	13.20	2.10	2,361.77
Highest Phase	97.73	95.47	76.67	0.11	195.38	25.22	10,475.72
SCAQMD Threshold	75	100	550	150	150	55	NA
Threshold Exceeded	Yes	No	No	No	Yes	No	NA

a. The highest daily emissions during building construction activities occur during the year 2015. The highest daily paving and architectural coating emissions occur in the year 2018. See Appendix D for the CalEEMod input parameter assumptions, defaults and output. The CalEEMod default value was assumed for the VOC content of architectural coatings (250 grams of VOC per liter).

b. PM_{10} emissions for worker and vendor trips during the building construction phase on unpaved roads are overstated by the single CalEEMod default mean speed of 40 mph, which is uniformly applied by the model to unmitigated travel on both paved and unpaved roadways. Chapter 8.50 of the *Palm Springs Municipal Code* limits travel speeds on private unpaved roadways used by 20 to 150 vehicles per day to less than 15 mph.

CONSTRUCTION-RELATED EMISSIONS PROJECTIONS

Air pollutant emissions generated by construction activities are difficult to accurately quantify, since the type and amount of equipment that will be used and the acreage that may be disturbed on any given day is not known with any reasonable level of certainty. Consequently, the emphasis in the environmental process has traditionally been on minimizing the emissions as fully as possible through comprehensive mitigation strategies, even though the exact emissions cannot be precisely quantified.

Table 4-2 summarizes the unmitigated short-term emissions of six criteria pollutants and greenhouse gases (CO2e) associated with the construction activities required to implement the Preferred Alternative that were estimated with CalEEMod. Peak day emissions estimates are provided by construction phase type and reflect activities in the year with the highest daily emissions. As shown in Table 4-2, the unmitigated peak day air pollutant emissions during the construction phase with the highest projected emissions could exceed two of the significance thresholds. PM_{10} emissions during activities required to construct the residential buildings and ROG emissions during the architectural coating application phase could exceed the SCAQMD significance thresholds. The CalEEMod input parameters and output are provided in Appendix D.

CalEEMod uses EMFAC2011 (Version 2.3) emission factors for on-road mobile sources and OFFROAD2011 emission factors for off-road mobile sources. This model evaluates multiple construction phases. It provides refined estimates of default construction equipment and can be used to evaluate conditions when construction phases overlap. This model also incorporates an enhanced procedure for estimating and mitigating architectural coating emissions and provides emissions estimates for $PM_{2.5}$ and greenhouse gases.

The SCAQMD requires any emission reductions resulting from existing rules or ordinances to be included as part of the unmitigated project emissions.[4] Those measures that are legally mandated and therefore required of all developments by applicable ordinances, rules, and regulations are not considered mitigation. Once the unmitigated project emissions have been determined, additional mitigation measures may be applied to reduce any potentially significant air quality impacts to the maximum extent feasible and quantify the net project emissions.

CEQA requires that all feasible measures that go beyond what is required by law be utilized during project construction and operation to minimize or eliminate significant adverse air quality impacts.[5] Feasible mitigation measures may be identified to reduce any significant impacts by the applicant and/or the City of Palm Springs.

Criteria Pollutant Emissions During Construction

Construction activities required to implement the proposed project will vary from day to day and generate increases in localized greenhouse gas emissions as well as criteria pollutant emissions in the project vicinity. Exhaust emissions during the construction activities will vary as required construction equipment and activity levels change. The resulting increases in air pollutant concentrations will depend on several factors. These factors may include: the soil moisture content; the meteorological conditions (such as the wind stability and presence of a temperature inversion that limits the atmospheric mixing height); the extent of the construction activity at any given time; the number and type of machinery used at any given point in time; and the construction schedule.

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4 SCAQMD, *CEQA Air Quality Handbook*, 1993, pg. 9-2.

5 Ms. Susan Nakamura, Planning & Rules Manager, Planning, Rule Development & Area Sources Department of the SCAQMD, Correspondence dated May 1, 2007.

PM_{10} Emissions During Building Construction

The unmitigated building construction activities are projected to generate approximately 195 pounds of PM_{10} emissions on a peak day in the year 2015. Without mitigation, these PM_{10} emissions would exceed the SCAQMD significance threshold by 30 percent (45 pounds per day). As shown in Table 4-2, the primary source of these emissions would be worker and vendor trips. The CalEEMod output (see Appendix D) indicates that travel on unpaved off-site roadways associated with the 208 construction worker trips and 47 vendor trips per day would be responsible for 97 percent of the unmitigated PM_{10} emissions during the building construction phase.

MSA Consulting Inc. has estimated that at least 95 percent of the worker and vendor trips are likely to occur on paved roadways. Although on-site travel would occur primarily on unpaved surfaces, the mean speed on these unpaved roadways would be 15 mph or less. The *Palm Springs Municipal Code* (Section 8.50.024) limits speeds on private unpaved roadways with between 20 and 150 vehicles per day to no more than 15 mph.

The CalEEMod default assumption that 50 percent of worker and vendor off-site travel would occur on unpaved surfaces was reduced to 5 percent. The remaining 95 percent of worker and vendor travel was assumed to occur at the default mean speed of 40 mph on paved roads. The unmitigated PM_{10} emissions estimate shown in Table 4-2 reflects this modification to the CalEEMod default values. The algorithm in CalEEMod that estimates unmitigated PM_{10} emissions does not permit different mean travel speeds to be assumed for worker and vendor travel on paved versus unpaved roadways. As a result, the unmitigated PM_{10} emissions shown in Table 4-2 for worker and vendor travel overestimate the emissions from unpaved surfaces (by using a 40 mph mean speed, rather than a lower speed of 15 mph). Although the CalEEMod default mean speed of 40 mph can be reduced to 15 mph, that also reduces the mean speed assumed for travel on paved roadways to 15 mph, which underestimates the emissions associated with travel on paved roads.

The magnitude of the overestimate can be appreciated by comparing the PM10 emissions from the worker and vendor trips to the emissions associated with the off-road diesel construction equipment operated on-site during building construction activities. With the 40 mph CalEEMod default speed for travel on unpaved roadways, worker trips and vendor trips would generate 170 pounds per day and 19 pounds per day, respectively, of PM_{10} emissions during building activities. By comparison, the off-road diesel equipment exhaust would be responsible for 6.36 pounds per day of PM_{10} emissions (3 percent of the total) during building construction activities.

The mitigated emissions estimates from CalEEMod permit different speeds to be assumed for travel on unpaved roadways without changing the mean speed assumed for travel on paved roadways. As a result, the mitigated CalEEMod emissions estimates provide a more accurate estimate of the magnitude of the potential PM_{10} emissions during the proposed building construction activities.

The *City of Palm Springs Municipal Code* (Chapter 8.50) requires the preparation and submittal of a Fugitive Dust Control Plan including one or more of the control measures in the *Coachella Valley Fugitive Dust Control Handbook* (SCAQMD), as needed, to meet the City of Palm Springs fugitive dust control performance standards. Prior to the issuance of grading or building permits for any activity with a disturbed surface area of more than 5,000 square feet, a site-specific Fugitive Dust Control Plan will be submitted for review and approval by the City of Palm Springs. As specified in the Chapter 8.50 of the *Palm Springs Municipal Code*, the Fugitive Dust Control Plan will detail all of the site-specific control measures that will be implemented to minimize airborne dust before, during, and after grading and construction activities to ensure that the City of Palm Springs performance standards are met.

The magnitude of the project-related fugitive dust emissions can be reduced to a level below the significance threshold through compliance with all applicable policies, rules, regulations, and ordinances. Numerous measures identified in the *Coachella Valley Fugitive Dust Control Handbook* are feasible and would reduce the PM_{10} emissions sufficiently to meet the City of Palm Springs performance standards during construction activities and remain below the significance threshold criteria.

The City of Palm Springs fugitive dust performance standards can be met in a variety of ways. The *Coachella Valley Fugitive Dust Control Handbook* identifies numerous Coachella Valley Best Available Control Measures for consideration in developing Fugitive Dust Control Plans. A water application system can be used for pre-watering before site grading begins to reduce fugitive dust by maintaining a high moisture content. Vehicle speeds on unpaved roads shall be limited to less than 15 mph. Water can be applied to stabilize surfaces during non-working hours for dust suppression. Adjacent streets can be swept to remove track out from the site on paved roads used by construction workers and equipment that are open to through traffic.

A Fugitive Dust Control Plan identifying each fugitive dust source and control measure shall be prepared and submitted to the City of Palm Springs for review and approval. Once approved, each site-specific control measure identified in the Fugitive Dust Control Plan shall be incorporated in the construction specifications. The construction specifications shall limit the idling of construction equipment on-site while not in use to periods of no longer than five consecutive minutes. This will reduce on-site exhaust emissions of diesel particulate matter from on-road and off-road diesel equipment.

MSA Consulting Inc. has estimated that as little as five percent of the construction-related travel is expected to occur on unpaved roads. Soil stabilizers are expected to be used on unpaved roads. Ground cover will be replaced in disturbed areas. Exposed areas will be watered four times per day. As mitigation for unpaved roads, the soil moisture content will be increased to 70 percent, as needed, to achieve the City of Palm Springs performance standards. Vehicle speeds shall be limited to less than 15 mph. Paved roads shall be cleaned twice per day and as needed.

Table 4-3 shows the net (mitigated) project-related air pollutant emissions on peak days during the construction process. During the building construction phase 37.75 pounds of PM_{10} emissions per day are projected to be generated. This represents approximately 25 percent of the SCAQMD significance threshold. The net construction-related $PM_{2.5}$ emissions associated with the construction of the Preferred Alternative are not projected to exceed sixteen percent of the SCAQMD significance threshold during any phase of the construction process. The net (mitigated) project-related short-term impacts on PM_{10} and $PM_{2.5}$ concentrations in the vicinity of the project site would be less than significant.

VOC Emissions From Architectural Coatings

The highest daily emissions of reactive organic gases (ROG) during a peak construction day, are projected to occur during the application of architectural coatings. As shown in Table 4-2, approximately 97.73 pounds of volatile organic compounds per day are projected to be emitted during the 220 days required to complete the application of architectural coatings. The 97.3 pounds per day of evaporative VOC emissions shown in Table 4-2 is based on the CalEEMod default value for the volatility of architectural coating materials (250 grams of VOC per liter).

Without mitigation, the projected emissions of volatile organic compounds associated with painting the interior and exterior of two new dwelling units per day would exceed the SCAQMD daily significance threshold of 75 pounds of VOC per day) by 30 percent and contribute to the formation of ground level ozone in downwind areas. This represents a significant impact that would require mitigation.

Table 4-3

Net (Mitigated) Project-Related Air Pollutant Emissions By Construction Phase Type[a]

(Year 2015 Pounds/Day)

Emissions Source	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_{2e}
Site Preparation							
- Fugitive Dust	0.00	0.00	0.00	0.00	6.09	3.30	0.00
- Off-Road Diesel	5.97	61.88	46.44	0.05	3.48	3.23	4,731.52
- Hauling	1.33	15.78	16.74	0.04	14.15	1.84	3,965.41
- Worker Trips	0.09	0.14	1.18	0.00	2.71	0.29	153.19
Subtotal	7.39	77.80	64.36	0.09	26.43	8.66	8,850.12
Site Grading							
- Fugitive Dust	0.00	0.00	0.00	0.00	4.21	1.34	0.00
- Off-Road Diesel	5.18	53.85	30.77	0.03	3.04	2.80	3,582.43
- Worker Trips	0.07	0.10	0.89	0.00	2.03	0.22	114.89
Subtotal	5.25	53.95	31.66	0.03	9.28	4.36	3,697.32
Trenching							
- Off-Road Diesel	2.17	23.87	13.75	0.02	1.24	1.14	2,609.67
- Worker Trips	0.04	0.07	0.59	0.00	1.35	0.15	76.59
Subtotal	2.21	23.94	14.34	0.02	2.59	1.29	2,686.26
Highest Phase	7.39	77.80	64.36	0.09	26.43	8.66	8,850.12
SCAQMD Threshold	75	100	550	150	150	55	NA
Threshold Exceeded	No	No	No	No	No	No	NA

a. These three phases would occur sequentially during the year 2015. Refer to Appendix D for the CalEEMod output, input parameter assumptions, and defaults. Values shown assume the following mitigation: (1) the application of water to exposed surfaces three times daily; (2) travel speeds less than 15 mph for unpaved on-site surfaces; (3) unpaved roads will be treated with soil stabilizers; (4) groundcover will be replaced in areas disturbed; (5) a high moisture content will be maintained on unpaved roadways; and (6) paved roadways will be cleaned, as needed.

Table 4-3 (Continued)
Net (Mitigated) Project-Related Air Pollutant Emissions By Construction Phase Type[a]
(Pounds/Day)

Emissions Source	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_{2e}
Building Activities							
- Off-Road Diesel	10.98	90.09	56.23	0.08	6.35	5.97	8,111.24
- Vendor Trips	0.64	3.95	8.13	0.01	3.24	0.42	771.33
- Worker Trips	0.92	1.43	12.31	0.02	28.16	3.02	1,593.15
Subtotal	12.54	95.47	76.67	0.11	37.75	3.44	10,475.72
Architectural Coatings							
- Coating On-Site[b]	58.38	0.00	0.00	0.00	0.00	0.00	0.00
- Off-Road Diesel	0.30	2.01	1.85	0.00	0.15	0.15	282.01
- Worker Trips	0.13	0.22	1.82	0.01	5.69	0.61	285.10
Subtotal	58.81	2.23	3.67	0.01	5.84	0.76	567.11
Asphalt Paving							
- Off-Road Diesel	1.61	17.16	14.49	0.02	0.94	0.86	2,259.95
- Worker Trips	0.05	0.08	0.65	0.00	2.03	0.22	101.82
Subtotal	1.66	17.24	15.14	0.02	2.97	1.08	2,361.77
Highest Phase	58.81	95.47	76.67	0.11	37.75	3.44	10,475.72
SCAQMD Threshold	75	100	550	150	150	55	NA
Threshold Exceeded	No	No	No	No	No	No	NA

a. The highest daily emissions during building construction are projected to occur in the year 2015. The highest daily paving and architectural coating emissions are projected to occur in the year 2018. See Appendix D for the CalEEMod input parameter assumptions, defaults and output. The fugitive dust mitigation assumed during building activities included: (1) the application of soil stabilizer to unpaved roads, (2) replacing ground cover in disturbed areas; (3) watering exposed areas three times per day; (4) maintaining a high moisture content on unpaved roads; and (5) cleaning track out from the site on paved roads open to through traffic.

b. Lower VOC architectural coatings than required by SCAQMD Rule 1113 were assumed (150 gm/liter rather than 250 gm/liter) to be applied to the interior and exterior surfaces of the structures.

Several techniques are available to substantially reduce the ROG emissions during architectural coating application activities. Construction activity management techniques can be employed such as avoiding the application of architectural coatings concurrently with other on-site construction activities that generate high VOC emissions (e.g., asphalt paving). In addition, consideration should be given to implementing one or more of the following strategies to minimize VOC emissions during architectural coating activities.

- Use pre-coated building materials.
- Use natural building materials (such as stone, brick, tile, etc.) that do not require coatings.
- Use a combination of water-based coatings, low-VOC coatings, super compliant coatings, and zero-VOC coatings to reduce the average VOC levels to a maximum of 150 grams of VOC per liter.
- Use coating transfer or spray equipment with a high transfer efficiency.
- Use skilled workers well versed in Rule 1113 requirements to improve the transfer efficiency and reduce paint and solvent spills.

The use of lower volatility architectural coatings with an overall average VOC content no greater than 150 grams per liter, would reduce the peak ROG emissions during the application of architectural coatings from approximately 98 to 59 pounds per day, as shown in Table 4-3. With this mitigation, the residual ROG emissions on a peak day during architectural coating activities would remain below the SCAQMD threshold criteria for ROG and less than significant.

NOx Emissions During Building Construction

The peak unmitigated NOx emissions of 95.47 pounds per day during building construction activities in the year 2015 would represent approximately 95.5 percent of the SCAQMD of significance threshold of 100 pounds of NOx per day. The unmitigated daily NOx emissions (which include 90 pounds per day of off-road diesel emissions) are not projected to exceed the SCAQMD daily threshold of significance. No mitigation is required for this impact because the peak building construction activities and the peak asphalt paving activities are not expected to occur at the same time.

Each year after the first year of building construction, the NOx emission rates for off-road equipment and on-road motor vehicles associated with building construction activities are projected to decrease. By the year 2018, the NOx emissions are projected to be 73.67 pounds per day (23 percent lower) on days when building construction activities peak. If the building construction phase and the paving phase overlap in the year 2018, the combined NOx emissions of 90.83 pounds per day would not exceed the significance threshold of 100 pounds per day.

NOx emissions generated by off-road diesel-fueled equipment used to construct the buildings can be reduced by construction activity management (e.g., reducing the number of pieces of equipment that would be operating simultaneously during building activities). With the default equipment for paving in CalEEMod and a single paving crew, CalEEMod estimates that 220 working days would be required to pave the roadways within the project site. Peak day emissions during paving activities would not exceed the SCAQMD significance thresholds.

A substantial reduction in the projected NOx emissions generated by off-road diesel-fueled equipment could be achieved through the use of one or more of the following mitigation strategies:

- Use equipment powered by alternative fuels such as biodiesel, compressed natural gas, or propane.

- Use newer tier engines that meet more stringent U.S. EPA tier emissions standards than the state fleet mix. A combination of Tier 3 and Tier 4 engines would substantially reduce the NOx emissions (see Appendix C).
- Use a combination of construction activity management techniques such as: extending the construction period; reducing the number of pieces of equipment that are used simultaneously; turning off heavy equipment on-site when it is not in use to minimize emission sources; and reducing or changing the hours of construction.

Impact of Construction Activity on Blowsand

On-site grading and control of wind erosion shall conducted in accordance with the *Uniform Building Code* (Chapter 70) and the *Palm Springs Municipal Code* (Section 9.60.040). The developer(s) of the site shall be responsible for compliance with the following City of Palm Springs blowsand control measures.

- Sides of the proposed subdivision that abut undeveloped area shall have installed a minimum six-foot solid masonry wall to protect them from the prevailing winds (from the northwest).
- The perimeter streets, walls, and required landscaping shall be installed first and the western most phase shall be developed first to protect subsequent phases from blowsand accumulation.
- Site grading shall be broken down into as many phases as economically feasible to reduce the exposure of graded soils to wind erosion.
- Soils disturbed during development whether within or adjacent to the site shall be covered with approved materials (such as gravel or rock landscaping, irrigated grasses, landscape vegetation, organic mulch irrigated by sprinklers) to effectively control wind erosion.
- A minimum 15-gallon tree may be required to be planted in the front setback area of each single-family residential lot and provided with a permanent irrigation system.

The developer(s) shall implement the blowsand control measures required by the City of Palm Springs as conditions of approval. This would reduce the project-related short-term and long-term impact on blowsand to less than significant.

Greenhouse Gas Emissions During Construction

Table 4-2 provides the greenhouse emissions estimates from CalEEMod on peak days during the site preparation, grading, trenching, building construction, paving, and architectural coating activities required to implement the Preferred Alternative. The building construction phase would result in the highest daily greenhouse gas emissions, with 10,476 pounds of equivalent CO_2 (CO_{2e}) emitted on a peak day. During a peak day in the site grading phase, a total of 8,850 pounds of equivalent CO_2 emissions would be emitted. The greenhouse gas emissions during both of these construction phases, would be primarily from off-road diesel engines. During paving activities, approximately 2,362 pounds of CO_{2e} per day would be emitted. The application of architectural coatings would result in much lower daily GHG emissions of 567 pounds of CO_{2e} per day.

The architectural coating phase and the paving phase were assumed to occur sequentially during the year 2018, when building construction activities would still be occurring. Thus, the highest daily GHG emissions are expected to occur when the building construction phase and the paving activities occur concurrently. During the year 2018, paving activities are expected to generate 236 metric tons of CO_{2e} and building construction activities are expected to generate 1,196 metric tons of CO_{2e}. By comparison, the application of architectural coatings during the year 2018 would emit 11 metric tons per year of CO_{2e}.

The daily CO_{2e} emissions during each type of construction activity can be multiplied by the number of days required to complete each type of construction activity to determine the total construction-related greenhouse gas emissions (5,200 metric tons of CO_{2e}) over the entire five-year construction period. When amortized over 30 years, the average annual construction-related GHG emissions would be 173 metric tons of CO_{2e}.

The year 2015 is expected to have the lowest annual construction-related GHG emissions (339 metric tons of equivalent CO_2). Construction-related greenhouse gas emissions are expected to peak at1,443 metric tons of CO_{2e} during the year 2018.

To date, the State of California has not adopted significance thresholds for GHG emissions. However, various thresholds are being considered to reduce net GHG emissions, based on the implementation of stringent performance standards or equivalent mitigation measures addressing: energy use, transportation, water use, waste disposal, and construction. In the absence of significance thresholds for GHG emissions, project specific and cumulative GHG emissions during construction activities should be considered potentially significant so that feasible mitigation measures to control GHG emissions and reduce the potential impact of the Preferred Alternative on climate change can be imposed by the City of Palm Springs.

Toxic Air Contaminants Emitted During Construction

During construction activities required to implement the proposed project, primarily diesel-fueled construction equipment will be used on-site. Diesel equipment is durable and tends to last for many years. Consequently, the beneficial effects associated with new emission control technology may not be seen for many years until older equipment is eventually replaced by newer cleaner equipment. Sensitive receptors are currently located within one-quarter mile of the project site. The Preferred Alternative would include up to 441 residential dwelling units, which are considered to be sensitive to air quality.

The combustion products emitted by diesel-fueled construction equipment include a mix of toxic air contaminants. Diesel exhaust contains up to 100 times more emissive particles than exhaust from gasoline-powered equipment. Most of the diesel exhaust will be diesel particulate matter, including soot particles that can be inhaled and deposited in the lungs. Of the twenty-one mobile source air toxics (MSAT) identified by the U.S. EPA, the highest risk air toxics from on-road vehicles have been identified as six “priority” MSAT (including diesel particulate matter and diesel exhaust organic gases, benzene, 1,3-butadiene, formaldehyde, acetaldehyde, and acrolein). Diesel exhaust organic gases include the other five priority MSAT pollutants. With the exception of acrolein, this is consistent with the CARB list of five air toxics emitted by on-road mobile sources. POM includes a wide range of substances including polycyclic aromatic hydrocarbons (PAHs) and in some instances dioxins and furans. Many of the organic compounds present on diesel particulate matter and in the diesel exhaust organic gases are individually known to have mutagenic and carcinogenic properties. PAHs comprise one percent or less of the DPM mass.

Impacts during construction activities will be reduced through the implementation of the CARB Diesel Risk Reduction Plan.[6] This plan requires: (1) the use of low-sulfur diesel fuel; (2) the retrofitting of existing engines with particulate matter filters; and (3) a reduction of nearly 90 percent in the emissions of particulate matter from all new diesel engines and vehicles.

[6] CARB; *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*; October, 2000.

Air regulatory agencies have been working with diesel vehicle manufacturers to reduce emissions by establishing cleaner fuel specifications and engine technologies. Regulatory efforts at the national, state and local level are expected to substantially lower the average level of diesel emissions per vehicle. By the year 2015, all new construction equipment sold in California will have Tier 4 engines which emit less air pollution. After treatment will be mandatory on Tier 4 engines (including oxidation catalysts and particulate matter traps) and reduce air pollutant emissions by 90 percent. The CARB goal is to achieve a statewide reduction in diesel particulate emissions of 85 percent by the year 2020 (see Appendix C). Full implementation of the *Final 2012 AQMP* and CARB measures is expected to reduce toxic-weighted emissions throughout the SCAB by 50 percent.

The construction activities shall comply with all applicable SCAQMD *Rules and Regulations* and the *City of Palm Springs Municipal Code* as well as the environmental specifications in the construction contract. Emissions of toxic air contaminants and GHG will be reduced by reducing engine idling, using cleaner fuels, and the preferential use of newer construction equipment with pollution control equipment installed (such as diesel oxidation catalysts and diesel particulate matter filters). The Tier 3 and Tier 4 equipment that would be required to achieve substantial NOx emission reductions would also reduce emissions of diesel particulate matter, which is considered by the CARB to be a toxic air contaminant.

Construction management techniques can reduce the emissions of diesel particulate matter and diesel exhaust organic gases as well as other mobile source air toxic emissions. Reducing unnecessary idling will reduce emissions of TACs and criteria pollutants as well as GHG. Using cleaner low sulfur fuels can reduce emissions. Low sulfur fuel can reduce particulate matter by 10 to 20 percent. Ultra low sulfur fuel can reduce fine particle emissions by 5 to 9 percent. The use of construction equipment that has pollution control equipment (such as diesel oxidation catalysts) can reduce particulate matter emissions by 20 to 50 percent (in certain types of vehicles), reduce hydrocarbons by 50 percent and reduce CO by 40 percent. Diesel particulate matter filters can be installed in some equipment types built after 1995 to collect particulates in the exhaust stream. For a diesel particulate matter filter to work effectively, ultra low sulfur diesel fuel must be used.

4.3 LONG-TERM OPERATIONAL IMPACTS

The California Emissions Estimator Model (Version 2013.2.2) was utilized to estimate the long-term operational air pollutant emissions and the greenhouse gas emissions that would result from implementation of the Preferred Alternative. Conditions upon project completion and full occupancy were evaluated for the year 2020. Future year 2020 traffic projections modeled with CALINE4 were derived from the *Traffic Impact Study for Tentative Tract Map No. 36691* (Endo Engineering; February 10, 2014). CalEEMod default values for the project-related weekday trip generation, the disposal of solid waste into landfills, as well as water, wastewater, and energy usage were assumed to quantify the project-related greenhouse gas emissions.

CalEEMod utilizes EMFAC2011 (Version 2.3) on-road mobile source emission factors and has been approved for use in addressing air quality and climate change impacts in CEQA documents. CalEEMod estimates for daily maximum emissions were utilized for the impact analysis except for GHG emissions (for which the average annual CO_2 equivalent emissions were used). The default ITE average trip generation rates in CalEEMod were used for a worst-case analysis. They resulted in a slightly higher weekday trip generation forecast (3,812 daily trips) than the 3,740 weekday trips estimated for the Preferred Alternative in the *Traffic Impact Study for Tentative Tract Map No. 36691* (Endo Engineering; February 10, 2014). The trip generation estimate in the traffic study was developed from the regression equations provided in *Trip Generation* (ITE; 2008).

OPERATIONAL EMISSIONS OF CRITERIA AIR POLLUTANTS

A variety of air pollutant emissions will be produced by the day-to-day operation of the proposed development. CalEEMod estimates the operational criteria pollutant and GHG emissions associated with each of the following:

- on-road mobile vehicle travel generated by the proposed land uses;
- fugitive dust associated with travel over roads;
- volatile emissions of reactive organic gases associated with architectural coatings;
- emissions associated with the use of landscape maintenance equipment;
- area source emissions resulting from the use of consumer products and cleaning supplies;
- emissions resulting from the usage of natural gas fireplaces in some of the residential dwelling units;
- natural gas usage within buildings for cooking and space and water heating;
- electricity used in buildings (GHG emissions only);
- water use associated with the proposed land uses (GHG emissions only); and
- solid waste disposal associated with the proposed land uses (GHG emissions only).

Table 4-4 shows the unmitigated increase in long-term operational criteria pollutant emissions and GHG emissions associated with completion and full occupancy of the Preferred Alternative. Since motor vehicle emissions of criteria pollutants vary with the ambient temperature, daily emissions for both the summer and winter months are provided in Table 4-4. Site-specific landscaping details are currently unavailable. Consequently, beneficial impacts associated with one-time sequestration changes (i.e., new tree plantings and permanent vegetation changes) were not included in Table 4-4.

The operational emissions associated with the project fall into three categories including: (1) emissions resulting from area sources, (2) emissions resulting from energy use, and (3) motor vehicle emissions. Only a fraction of the project-related operational emissions of criteria pollutants would result from energy usage. However, 11.5 percent of the project-related operational GHG emissions would result from energy usage.

The proposed development is essentially an infill development that would occupy approximately 125.8 acres. As shown in Table 4-4, none of the projected daily emissions of the six criteria pollutants would exceed the SCAQMD thresholds of significance. Based upon the operational emissions of the criteria air pollutants, the development associated with the Preferred Alternative would have a less than significant long-term impact on air quality. This impact requires no mitigation.

The project-related area sources would generate higher GHG emissions than energy use but lower GHG emissions than motor vehicles. Area source emissions include natural gas combustion for space and water heating. Fossil fuel combustion for landscape maintenance equipment is also included. The reactive organic gas emissions have been included that would result from the re-application of low VOC architectural coatings to the interior and exterior surfaces of the structures in conjunction with routine maintenance activities. The reactive organic gas emissions that would result from consumer products and cleaning supplies have also been included in the area source emissions.

Table 4-4
Unmitigated Operational Air Pollutant Emissions[a] Associated With Development of the Preferred Alternative
(Year 2020 Pounds/Day)

Emissions Source	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$	CO_{2e}
Summer Day							
- Area Sources	22.05	0.42	36.53	Negl.	0.50	0.50	4,775.33
- Energy Use	0.39	3.30	1.41	0.02	0.27	0.27	4,244.24
- Mobile Sources	25.30	61.06	249.47	0.30	20.29	6.11	27,739.78
Total	47.74	64.78	287.41	0.32	21.06	6.88	36,759.35
Winter Day							
- Area Sources	22.05	0.42	36.53	Negl.	0.49	0.49	4,775.33
- Energy Use	0.39	3.30	1.41	0.02	0.27	0.27	4,244.24
- Mobile Sources	21.48	66.06	239.67	0.28	20.30	6.11	26,368.63
Total	43.92	69.78	277.61	0.30	21.06	6.87	35,388.20
SCAQMD Threshold	75	100	550	150	150	55	NA
Threshold Exceeded	No	No	No	No	No	No	NA

a. Refer to Appendix D for the California Emissions Estimator Model input assumptions and output sheets. Area source emissions are associated with the use of hearths, consumer products, area architectural coatings, and landscaping equipment. Mobile emissions include vehicle emissions associated with vehicle trips, vehicle emissions, and road dust. No details are available regarding future on-site vegetation or sequestration.

Operational Emissions of Greenhouse Gases

Carbon dioxide (CO_2) is the primary component of GHG emissions. CalEEMod estimates that CO_2 emissions will comprise 98.5 percent of the Preferred Alternative's mitigated carbon dioxide equivalent (CO_{2e}) emissions over the long term. Biological CO_2 emissions would comprise 0.9 percent and Non Biological CO_2 would represent 97.6 percent of the operational GHG emissions with the Preferred Alternative. Methane (CH_4) emissions would represent 0.06 percent of the operational GHG emissions. Nitrous oxide (N_2O) emissions would be negligible. The global warming potential of each of these greenhouse gases is taken into account by converting emissions of CO_2, CH_4, and N_2O into CO_2 equivalent (CO_{2e}) emissions, which are often expressed in units of metric tons (MT) per year.

With the design features incorporated in the project design, the Preferred Alternative would generate an estimated 6,261.6 metric tons per year of CO_{2e} emissions, as shown in Table 4-5. These emissions would occur as a result of project-related area sources (landscaping equipment, fireplaces, consumer products, and the reapplication of architectural coatings), the use of natural gas, electricity, motor vehicles, water, wastewater, by future residents of the site as well as the disposal of the solid waste they generate. The annual average GHG emissions associated with the Preferred Alternative were determined with CalEEMod for each of these different source categories.

Table 4-5
Preferred Alternative
Annual Average Operational GHG Emissions[a]

Source Category	Unmitigated CO2e Emissions (Metric Tons per Year)	Mitigated CO2e Emissions (Metric Tons per Year)	Reduction (Percentage) (Metric Tons per Year)
Area	180.59	179.42	1.17 (0.6%)
Energy	1,565.32	1,565.32	Negl. (Negl.)
Mobile	4,242.19	4,242.19	Negl. (Negl.)
Waste	211.82	105.91	105.91 (50.0%)
Water	200.93	168.77	32.16 (16.0%)
Total	6,400.85	6,261.61	139.24 (2.2%)

a. Refer to Appendix D for the CalEEMod assumptions and the mitigation incorporated in the project design.

Projects should only be presumed to have a less-that-significant effect on the environment if specific performance standards are met such that their GHG emissions would not prevent California from achieving the GHG reduction targets identified under AB 32 to reduce the state's impact on climate change. As shown in Table 4-5, the design features incorporated in the Preferred Alternative would reduce its long-term GHG emissions by approximately 139.24 metric tons per year (2.2 percent). Design features incorporated in the Preferred Alternative would reduce energy and water usage as well as solid waste disposal.

The current fuel economy ratings for passenger vehicles (27.5 miles per gallon for cars and 22 miles per gallon for trucks) will be increased to 35.5 miles per gallon by the year 2016. On July 29, 2011, the U.S. EPA announced that the administration had reached an agreement with automakers increasing fuel economy to 54.5 miles per gallon (or 163 grams of CO_2 per mile) by the year 2025. This legislation will effectively double the fuel efficiency of these on-road vehicles and cut their GHG emissions by fifty percent.

Since mobile source GHG emissions represent 67.7 percent of the total GHG emissions associated with the project, a fifty percent reduction in mobile GHG emissions would be equivalent to a 33.9 percent reduction in the overall operational GHG emissions of the Preferred Alternative over the long term. This 33.9 percent reduction, when coupled with the 2.2 percent reduction in project-related GHG emissions shown in Table 4-5, would make the proposed project less likely to prevent California from achieving the GHG reduction targets identified under AB 32 to reduce the state's impact on climate change. However, the cumulative impact on climate change associated with many such projects throughout California would remain potentially significant. Consequently, the proposed project should incorporate measures to reduce GHG emissions to the maximum extent feasible.

OPERATIONAL HAZARDOUS AND TOXIC AIR CONTAMINANTS (TACS)

There are existing sensitive receptor sites located within one-quarter mile (1,320 feet) of the project site. The Preferred Alternative would not generate operational emissions of hazardous or toxic air contaminants that would result in adverse impacts on those existing sensitive receptors. This potential impact is considered less than significant and does not require mitigation.

Unlike stationary sources of air pollution, new homes do not require an air quality permit. When considering approval of new hotels, homes, day care centers, schools, athletic facilities, parks/playgrounds, etc. in close proximity to stationary pollutant sources, local jurisdictions need to be aware of the potential for air quality impacts associated with incompatible existing and future land uses.

Residential areas are sensitive receptor sites because residents spend much of their time at home and tend to live in the same home for many years. This can result in relatively long exposures to any toxic air contaminants that are present. The health risk assessment guidelines for TACs assume that residential exposures will occur over a period of 70 years. Young people, the elderly, and the infirm are more susceptible to infections and other health problems related to poor air quality. As a result, occupants of land uses such as schools, hospitals, convalescent homes, and day care facilities are considered sensitive receptors.

Localized air pollution impacts that result from incompatible land uses can occur when sources of air contaminants (including heavily used freeways and roadways, and certain industrial and commercial facilities) are located either directly upwind or very near land uses where sensitive individuals are found such as homes. Air quality impacts associated with incompatible land uses can contribute to an increased risk of illness, missed work and school, a lower quality of life, and higher costs for public health and pollution control. Avoiding incompatible land uses can be challenging. It typically requires either adequate separation or enhanced building ventilation and/or filtering systems.

Cumulative air pollution impacts can occur from the development of a large number of light industrial operations and commercial facilities in one area (such as gasoline dispensing stations, auto collision repair shops, and auto repair shops). A concentration of multiple sources of air contaminants may pose a public health risk to individuals who are exposed, even though each of the pollution sources may individually comply with air pollution control requirements (or fall below applicable risk thresholds). Freeways and other busy transportation corridors in the immediate vicinity can also contribute to local background air pollution levels. Activities such as truck idling, warehousing facilities, truck stops, and traffic congestion, can cause TACs (including diesel particulate matter and diesel exhaust organic gases) to be added to local air pollution levels. Exposure to TACs emitted by diesel trucks can elevate health risks. Risks associated with diesel particulate matter will decrease over time as vehicles with cleaner technology are phased in to the fleet.

There is a strong connection between health risk and the distance between the air pollution source and sensitive receptors located downwind. Land use policies that rely on design and distance parameters can minimize emissions and lower potential health risks. Future residents of the dwellings proposed within the project site will not be located within one-quarter mile of any commercial and industrial facilities that emit hazardous or toxic air contaminants. The potential air quality impacts of airport-related hazardous and TAC emissions on project-related sensitive receptors are considered less than significant and do not require mitigation.

OPERATIONAL EMISSIONS OF OBJECTIONABLE ODORS

Objectionable odors can be associated with toxic or non-toxic emissions. If a project is located near an existing residential area, the effects of project-related offensive odor emissions may be more pronounced because they may impact a considerable number of people, including children. If a project has the potential to cause an objectionable odor or other nuisance problem which could impact a residential area or a considerable number of sensitive receptors, it warrants close scrutiny under CEQA. In making a determination of odor significance, the distance between the odor source and the sensitive receptors must be considered to minimize the potential for impacts associated with objectionable odors.

The SCAQMD has compiled a list of facilities and operations that tend to produce offensive odors. While almost any source may emit objectionable odors, residential buildings are not identified on the SCAQMD list as common sources of odor emissions. No operation or activity on-site shall cause the emission of any smoke, fly ash, dust, fumes, vapors, gases, odors, or other forms of air pollution which exceed levels identified as acceptable by the SCAQMD or the *Palm Springs 2007 General Plan* or *Palm Springs Municipal Code.*

CARBON MONOXIDE “HOT SPOT” ANALYSIS

Significant localized project impacts could result where carbon monoxide standard exceedances are projected to occur at sensitive receptor locations adjacent to roadways serving project-related traffic. The intersection of Sunrise Way and San Rafael Drive is located close to the northern site access and serves both site traffic and a substantial amount of background traffic. There are sensitive residential receptors located on all four corners of this intersection, with the closest backyard located southeast of this intersection.

Future carbon monoxide levels in the project vicinity during morning peak hour traffic conditions were projected with the California Line Source Dispersion Model (CALINE4). The intersection of Sunrise Way and San Rafael Drive was modeled with year 2020 traffic volumes with and without the Preferred Alternative. All other intersections in the project vicinity carrying project-related traffic will experience similar or lower increases in carbon monoxide levels than those shown in Table 4-6.

The closest sensitive residential receptor at the intersection of Sunrise Way and San Rafael Drive is located on the southeast corner. The peak hour traffic passing through this intersection in the year 2020 would contribute up to 0.2 ppm (over a 1-hour period) and up to 0.1 ppm (over an 8-hour period) to the carbon monoxide concentrations on the southeast corner of the intersection. The location of the closest point within the residential lot (for which the CO concentrations were modeled) is 50 feet east of the centerline of Sunrise Way and 50 feet south of the centerline of San Rafael Drive.

Table 4-6

Projected Future Carbon Monoxide Concentrations[a]
Near the Intersection of Sunrise Way and San Rafael Drive

Future Scenario	1-Hour Average[b]	8-Hour Average[b]
Year 2020 No-Project		
- Year 2020 CO Background[c]	2.2 ppm	1.3 ppm
- Ambient Traffic Contribution	0.2 ppm	0.1 ppm[d]
2020 No-Project Total Concentration	2.4 ppm	1.4 ppm
Year 2020 With Preferred Alternative		
- Year 2020 CO Background[c]	2.2 ppm	1.3 ppm
- Ambient+Project Traffic Contribution	0.2 ppm	0.1 ppm[d]
2020+Project Total Concentration	2.4 ppm	1.4 ppm
State Standard	20.0 ppm	9.0 ppm
Federal Standard	35.0 ppm	9.0 ppm

a. Refer to Appendix E for the CALINE4 assumptions and output sheets.
b. These concentrations reflect conditions at a receptor location on the southeast corner, 50 feet east of the centerline of Sunrise Way and 50 feet south of the centerline of San Rafael Drive.
c. The background CO concentrations for the year 2020 were taken from the SCAQMD website *CEQA Air Quality Handbook* CO html for CO hotspots analysis (updated March 11, 2005). The background concentration, when added to the CO concentration near the intersection, determined the total CO concentration projected to occur at the receptor location.
d. A persistence factor of 0.6 was used to determine the 8-hour ambient and ambient+project CO concentrations from the 1-hour average concentrations.

The highest carbon monoxide concentration expected near the intersection of Sunrise Way and San Rafael Drive in the year 2020 without the proposed project is projected to be 2.4 ppm (over a 1-hour averaging period) and 1.4 ppm (over an 8-hour averaging period). With the Preferred Alternative, the carbon monoxide concentration at this existing receptor location was projected to remain unchanged.

A project has a significant impact if it interferes with the attainment of the state 1-hour or 8-hour carbon monoxide standards by either exceeding them or contributing to an existing or projected violation. Based upon the CO "hotspot" analysis, the proposed project would not interfere with the attainment of the state 1-hour or 8-hour carbon monoxide standards by either exceeding them or contributing to an existing or projected violation at sensitive receptor locations.

Future year 2020 carbon monoxide concentrations adjacent to the intersection modeled would represent up to 12.0 percent of the 20 ppm state standard and 6.9 percent of the 35 ppm federal standard (1-hour average) with or without the Preferred Alternative. Projected 8-hour carbon monoxide concentrations with or without the Preferred Alternative would represent up to 15.6 percent of the state and federal 8-hour carbon monoxide standard in the horizon year 2020. The Preferred Alternative would not interfere with the attainment of the state 1-hour or 8-hour carbon monoxide standards by either exceeding them or contributing to an existing or projected violation. This impact would be considered less than significant and no mitigation would be required.

OPERATIONAL TRANSPORTATION INFRASTRUCTURE IMPACTS

The proposed project would provide transportation infrastructure improvements that offer better mobility for all segments of the community and represent an effective means of creating a more sustainable community. Between the residential lots in the South Village and the adjacent Whitewater River flood control levee, a twenty-foot wide meandering multi-purpose trail is proposed with connections to the regional trail system and the future alignment of the CVLink at the project boundarys. This path would provide emergency access and accommodate pedestrians, bicyclists and neighborhood electric vehicles (NEV). It would promote the use of alternative modes of transportation and reduce reliance on traditional automobiles, thereby rendering the community's long-term GHG emissions less significant.

Access connections would be provided to the adjacent cul-de-sac on the end of each residential street proposed immediately west of this proposed path. This path would connect to the future CV Link regional corridor being planned along the Whitewater River flood control levee. The future park site proposed for dedication to the City of Palm Springs in the southeast corner of the South Village may provide a location suitable for use as a staging area for the future CVLink.

The project incorporates various design strategies that are sensitive to air quality issues in addition to pedestrian walkways and bicycle routes to facilitate walking and bicycling. Other design-related features that could reduce air pollution include proper building orientation as well as adequate open space and landscaping to maximize cooling benefits and make walking and cycling more attractive transportation options. The lot layout proposed would maximize access between the project site and the regional trail along the Whitewater River channel.

Any project that affects the regional transportation system will also affect air quality. Projects, such as land use development, that increase traffic volumes on already congested roadways, thereby reducing vehicle speeds and increasing vehicle miles traveled, will result in an increase in mobile source emissions that could adversely affect regional air quality.

The requirements of CEQA and the *Congestion Management Program* (CMP) are closely linked. The intent of the CMP is to prompt reasonable growth management programs that alleviate traffic congestion and improve air quality by more directly linking land use, transportation, and air quality. It is the responsibility of local agencies, when reviewing and approving development proposals, to consider the traffic impacts on their portion of the CMP transportation system. In addition, consideration should be given to project-related improvements and contributions that would mitigate or measurably improve existing transportation deficiencies, thereby reducing traffic congestion, improving circulation, and contributing to improved air quality.[7]

A traffic impact analysis has been prepared that identifies project-related circulation impacts and the specific improvements that would be necessary to achieve and maintain acceptable levels of service. The provision of internal access connections between the residential land uses within the North Village and the South Village portions of the site would encourage residents of the development to walk or cycle between the two areas.

4.4 CONSISTENCY WITH AIR QUALITY PLANS, PROGRAMS, AND REGULATIONS

CRITERIA POLLUTANTS

The project-related impacts on ambient air quality would be relatively small when considered within the regional context of the site (i.e., within the Coachella Valley and the region under the jurisdiction of the SCAQMD). Regional air quality impacts are addressed in terms of a project's compatibility

[7] SCAQMD, *CEQA Air Quality Handbook*, Version 2, July, 1999, pg. 4-5 and 4-8.

with regional air quality plans. If the project has been incorporated in regional growth projections, it should have no significant adverse impact on regional air quality.

The inclusion of a project in local and regional growth projections, which form the basis for regional air quality and transportation planning, allows appropriate regional strategies to be identified that will achieve regional air quality goals in a timely manner. New development projects that were not anticipated by the local General Plan or would exceed the demographic assumptions in the regional Air Quality Management Plan, have the potential to generate additional air pollutant emissions that could be "cumulatively considerable" and potentially interfere with the ability of the region to attain the state and federal ambient air quality standards.

The proposed project would not exceed any of the SCAQMD significance threshold criteria. As a result, it would not contribute significantly to an increase in the frequency or severity of the violations of the ambient air quality standards for which the Coachella Valley is designated nonattainment. In addition, it would not delay attainment of the ambient air quality standards in the region or have a significant impact on regional emission reductions in the AQMD.

The proposed land uses would not be consistent with the land use designations for the site *in the Palm Springs 2007 General Plan*. A determination that a project is inconsistent with regional plans that deal with air quality (such as the AQMP, the Coachella Valley SIP, and the local General Plan, etc.) informs local agency decision makers that to eliminate the inconsistency, project approval should be contingent upon the incorporation of all feasible mitigation measures that would substantially reduce the significant project-related environmental effects. This allows decision makers to contribute to the clean air goals in the *Final 2012 AQMP* and the *Coachella Valley State Implementation Plan*.

The project has been shown to have no significant construction-related or operational impacts based on the CalEEMod emissions estimates for the criteria pollutants provided that the average volitility of the architectural coatings does not exceed 150 grams of VOC per liter. With this mitigation, the project would have no significant impact on local or regional air quality and no additional mitigation would be required to reduce the project-related emissions of criteria pollutants.

GREENHOUSE GASES

Climate change is a large-scale environmental concern that must be addressed at the state, regional, and local level before it can be effectively addressed at the project level. A project should be presumed to have a less-that-significant effect on the environment, provided specific performance standards are met such that the project's GHG emissions would not prevent California from achieving the mandated GHG reduction targets identified under AB 32 to reduce the state's impact on climate change. However, mitigating GHG emissions under CEQA requires the development and approval of programmatic regional and local GHG reduction plans with existing and future area-wide GHG emissions quantified, and specific goals and reduction targets identified before GHG emissions can be reduced to less than significant at the project level.

Substantially reducing GHG emissions at the project level may be achieved by developing a Climate Action Plans outlining those site-specific design features and development standards that will achieve sustainable decreases in GHG emissions required to meet local GHG reduction goals. Without local or regional GHG reduction plans in place identifying existing and future community-wide GHG emissions as well as specific GHG emissions reduction targets, project level analyses have no effective way of identifing what constitutes the required level of mitigation.

Based on the following indicators, the cumulative impact of the project on GHG emissions may be considered significant. The site is no longer developed as a golf course and clubhouse and currently generates no GHG emissions. No mitigation would eliminate all of the future project-related GHG emissions other than the selection of the No-Project Alternative. Since the project site has no existing entitlements, future GHG emissions associated with the Preferred Alternative would exceed the GHG emissions associated with buildout of the site per the existing General Plan land use designations. Although the project incorporates design features that would reduce GHG emissions over the long-term, the 2.2 percent reduction achieved would be relatively modest compared to the GHG reduction targets identified under AB 32.

The State of California is addressing climate change by requiring local agencies to develop and implement plans and policies that would result in sustainable GHG reductions at the local level. The City of Palm Springs has the authority to attach conditions of approval to the proposed project requiring mitigation to lessen the potentially significant GHG emissions to the maximum extent feasible.

Appendix F includes a comprehensive list of mitigation strategies for consideration by the project proponent and the City of Palm Springs in identifying a site-specific series of feasible mitigation measures that would result in the maximum reduction in project-related GHG emissions. Once this mitigation is identified and incorporated in the project design, the City of Palm Springs can make a finding regarding the significance of the project-related GHG emissions and, if necessary, prepare a Statement of Overriding Considerations outlining the basis for their finding.

Based on the following indicators, the cumulative impact of the project on GHG emissions may be considered less than significant. One strategy being employed throughout California to effectively reduce GHG emissions is to reduce older inefficient models with newer and more energy efficient models. New homes, like new motor vehicles and Energy Star appliances, are more energy efficient. Replacing older less-efficient homes with new homes that are substantially more energy efficient will contribute to the reductions in future GHG emissions mandated by AB 32.

Regardless of where future residents of the proposed development live currently, they all have an existing carbon "footprint"(i.e. the current GHG emissions associated with their use of energy and fossil fuels). Many factors will influence whether the GHG emissions of each future resident will increase or decrease when they relocate to the proposed development. The amount of data required to characterize their daily activities and quantify all relevant GHG emissions is cost prohibitive and the analysis would be speculative.

New homes constructed on-site will have building permits issued on or after July 1, 2014, and will be required to comply with the 2013 statewide energy efficiency standards pursuant to *California Code of Regulations Title 24 Part 6*: California's *Energy Efficiency Standards for Residential and Nonresidential Buildings*. The new 2013 standards for single-family residential construction are 33 percent more efficient than the previous 2008 standards. These standards would substantially reduce the project-related energy consumption and decrease the project-related long-term operational greenhouse gas emissions. Provided all feasible mitigation measures specified by the City of Palm Springs to reduce GHG emissions are incorporated in the project, the impact of the project-related increases in GHG emissions on climate change may be considered less than significant.

CONSISTENCY WITH GENERAL PLAN LAND USE AND ZONING

The *Palm Springs 2007 General Plan* land use designation for the portion of the South Village located west of the Whitewater River levee is Open Space-Parks/Recreation (OS-P/R). The contiguous parcel located east of the levee (the 24.93-acre remainder Lot "L") is designated Open Space Conservation. The proposed General Plan land use designation is Very Low Density Residential (VLDR).

The existing zoning designation of the North Village is primarily Open Space with a portion designated O-5 (open space with 5-acre minimum lots) and a smaller portion designated R-1-C (single-family residential with 10,000 square-foot minimum lots). The existing zoning of the South Village area west of the levee is Open Space (O) and Open Space with 5-acre minimum lots (O-5). The parcel located east of the Whitewater River levee is zoned W (watercourse). Although the former golf course was a compatible use within the Open Space-Conservation designation, the low-density residential land uses currently proposed would require a Planned Development District in lieu of a change of zone.

CONSISTENCY WITH REGIONAL POPULATION GROWTH FORECASTS

The CalEEMod default value for the population per household was the statewide average of 3.23 persons per household. Based upon this default value CalEEMod projected the future population associated with development on-site per the Preferred Alternative as 1,425 residents. However, the SCAG *2004 Growth Forecast* was used to develop the *2007 AQMP* and assumed a lower population density of 2.0 residents per household within the City of Palm Springs by the year 2020. Assuming 2.0 persons per household, the Preferred Alternative would result in an increase in the City of Palm Springs population of 882 new residents. The average annual population growth rate for Palm Springs between 2005 and 2030 was projected to be 1.4 percent. The average annual housing growth rate for the same interval was projected to be 1.8 percent. Between 2010 and 2020, an increase of 4,394 new households and 7,591 new residents was projected for the City of Palm Springs. From the year 2015 to the year 2020, the growth in the number of households was projected to total 2,212 new households.

The Preferred Alternative would increase the local housing supply by up to 441 dwelling units by the year 2020. This housing increase would represent 20 percent of the locally generated housing increase projected to occur within the City of Palm Springs between the year 2015 and the year 2020 in the SCAG *2004 Growth Forecast*. The new residents within the site would represent 23.4 percent of the population growth anticipated for the City of Palm Springs between 2015 and 2020.

The most recent SCAG *2012 Growth Forecast* provides updated future growth projections for population, households, and employment within the City of Palm Springs for the years 2008, 2020, and 2035, as shown in Table 4-7. The SCAG *2012 Growth Forecast* includes a lower projection of 1.9 persons per household for Palm Springs by the year 2020. Assuming 1.9 persons per household, the Preferred Alternative would provide homes for 838 new residents that were not anticipated by the *Palm Springs 2007 General Plan*.

Table 4-7

SCAG 2012 Growth Forecast For the City of Palm Springs

Demographic Parameter	Year 2008 Projection	Year 2020 Projection	Year 2035 Projection
Population	43,400	48,900	56,100
Households	22,700	25,700	30,400
Employment	36,300	44,400	52,300
Persons/Household	1.91	1.90	1.84
Jobs/Housing Balance	1.6	1.7	1.7

a. Source: SCAG, *2012-2035 Regional Transportation Plan Growth Forecast Appendix* (Adopted April 2012).

This population increase was not included in the assumptions used to identify the control strategies in the *2007 AQMP* or the *Final 2012 AQMP*. Only a portion of the future population on the project site represents an increase in population in Palm Springs because some future homeowners may be relocating from another location in Palm Springs or other housing developments in Palm Springs may remain unoccupied. However, increasing the housing supply may lead to an increase in population on-site that may exceed the population growth previously approved and accounted for in the plans used to develop the regional air quality strategies. Whether or not it actually causes the local population to exceed previous projections will depend on whether or not other developments occur by the year 2020 that cumulatively add 2,212 new households locally. The project-related impact on regional plans and programs is considered to be potentially significant.

The *Final 2012 AQMP* (SCAQMD; February 2013) identifies the population growth in the Coachella Valley in the decade from the year 2000 through the year 2010 as 118,465 persons. A similar population growth estimate (118,964 persons) was assumed in the AQMP for the decade between the year 2010 and the year 2020. From the year 2020 through the year 2030, a population growth of 152,109 was assumed in the *Final 2012 AQMP*. The population that would result from the Preferred Alternative (approximately 838 residents) would represent 0.7 percent of the population growth assumed by the *Final 2012 AQMP* to occur between the year 2010 and the year 2020 within the Coachella Valley.

The *Final 2012 AQMP* (Table 7-3B) includes an annual average emissions inventory for the Coachella Valley for the year 2020 with the CPV Sentinel Power Plant emissions in Desert Hot Springs. The CalEEMod output includes annual average operational emissions for the Preferred Alternative which were compared to the future emissions projections in the *Final 2012 AQMP*. The operational emissions generated by the Preferred Alternative would be equivalent to approximately: 0.18 percent of the Coachella Valley's future VOC emissions; 0.22 percent of the NOx emissions; 0.27 percent of the CO emissions; 0.08 percent of the SOx emissions; 0.05 percent of the PM_{10} emissions, and 0.08 percent of the $PM_{2.5}$ emissions. This does not reflect the 50 percent improvements in automotive fuel economy agreed to by thirteen motor vehicle manufacturers in the United States in 2012.

STATE IMPLEMENTATION PLAN FOR PM_{10} IN THE COACHELLA VALLEY

The proposed project would adhere to the provisions of the *Palm Springs Municipal Code* (Chapter 8.50) to ensure that fugitive dust emissions are minimized during construction activities. This is a control measure outlined in the *2003 Coachella Valley PM_{10} State Implementation Plan* (the PM_{10} CVSIP). A site-specific *Fugitive Dust Control Plan* shall be developed and submitted to the City of Palm Springs for review and approval, prior to the issuance of grading or building permits for any area that would involve 5,000 square feet or more. The proposed project would be consistent with the *2003 Coachella Valley PM_{10} State Implementation Plan*.

SCAQMD RULES AND REGULATIONS

The project proponent would comply with all applicable SCAQMD *Rules and Regulations*.

4.5 CUMULATIVE IMPACTS

CEQA defines cumulative impacts as two or more individual effects which, when considered together, are either significant or "cumulatively considerable," meaning they add considerably to a significant environmental impact. The *CEQA Guidelines* (Section 15355) state that cumulative impacts can result from individually minor but collectively significant projects. To be adequate, an assessment of cumulative impacts must consider a project in conjunction with other past, present, and reasonably foreseeable future projects whose impacts might compound those of the project being evaluated.

CEQA also requires that a proposed project be examined within the scope of the existing setting, taking into account new and planned similar and nearby projects. Regional air quality and climate change are both large-scale environmental problems affected by too many individual past, present, and probable future projects within the region to permit the incremental contributions of each project to be evaluated individually.

CRITERIA POLLUTANTS

The South Coast Air Management District recommends the use of the mass daily regional significance thresholds for construction and operational emissions generated by projects located in the Coachella Valley as indicators of significance for both project-specific and cumulative impacts. These significance thresholds were based primarily upon regulatory standards. However, the use of regulatory standards as the sole threshold of significance was struck from CEQA in 2002.[8] Reliance on regulatory standards can no longer be used as the sole determinant of significance. The SCAQMD thresholds of significance are provided herein as a guideline to be considered on a case-by-case basis with other substantial evidence in light of the whole record to determine if the project may have a significant air quality impact.

The SCAQMD recommends that cumulative air quality impacts associated with any pollutant that exceeds the mass daily significance thresholds should be considered significant. Conversely, projects that do not exceed the project-specific SCAQMD thresholds of significance are generally not considered to be cumulatively significant.[9] Since the emissions associated with the Preferred Alternative would not exceed any of the project-specific SCAQMD significance threshold criteria, the project would not be considered cumulatively significant and no mitigation would be required.

The inclusion of a project in local and regional growth projections, which are used as the basis for regional air quality and transportation planning, allows project-related operational air pollutant emissions to be taken into account in the development of appropriate strategies to meet regional air quality goals. New development projects that were not anticipated by the local General Plan or the regional *Air Quality Management Plan* have the potential to generate additional air pollutant emissions that could be "cumulatively considerable" and potentially interfere with the region's ability to meet regional air quality goals.

Air quality impacts associated with the proposed project may be considered cumulatively considerable because the project is not consistent with the population growth assumed as the basis for the development of the most recently adopted *Air Quality Management Plan*.[10] The proposed project would require a change in the existing land use designation (e.g., a General Plan Amendment or Zone Change). Although the project-related long-term operational emissions of PM_{10}, ROG and NOx would be greater than the emissions anticipated for the site if developed under the existing land use designations, these emissions would be less than the significance thresholds established by the SCAQMD for both project-level and cumulative impacts.[11]

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[8] Use of regulatory standards as a threshold for significance [former CEQA section 15064(h)] was struck from CEQA pursuant to *Communities For A Better Environment v. California Resources Agency*, Case No. CO38844 (10/28/02).

[9] SCAQMD. *White Paper on Potential Control Strategies to Address Cumulative Impacts From Air Pollution*. August 2003. [Appendix D; ppD-2 and D-3]

[10] Mr. Steve Smith, Ph.D., SCAQMD Program Supervisor, CEQA Section, Correspondence dated November 9, 2006.

[11] The Coachella Valley is designated as nonattainment for PM_{10} and ozone. ROG and NOx are ozone precursors.

CUMULATIVE GHG EMISSIONS

Since climate change is a large-scale environmental concern, the impacts of GHG emissions would ultimately be the result of the incremental changes in GHG emissions associated with all past, present, and future cumulative developments as well as future advances in technology that increase energy efficiency and reduce GHG emissions. Without mitigation, the project-related long-term impact on GHG emissions could be considered cumulatively considerable and significant. This finding reflects the fact that the operational GHG emissions over the long term would be more the existing GHG emissions associated with the undeveloped project site.

The project-related long-term increase in greenhouse gas emissions through the combustion of fossil fuels, energy usage, water usage, and waste disposal would be reduced 2.2 percent through project design and development standards. New homes constructed on-site would comply with the new 2013 statewide energy efficiency standards pursuant to *California Code of Regulations Title 24 Part 6*: California's *Energy Efficiency Standards for Residential and Nonresidential Buildings* which are 33 percent more efficient than the previous 2008 standards.

The project would contribute incrementally to an increase in greenhouse gas emissions and may contribute to California's inability to achieve the greenhouse gas reduction targets identified in AB 32 as necessary to reduce the state's impact on climate change. Without regional or local significance criteria for GHG emissions, the City of Palm Springs has the authority to determine if the project-related GHG emissions would be significant. The City of Palm Springs has the authority to attach conditions of approval to the proposed project requiring mitigation to reduce potentially significant GHG emissions to the maximum extent feasible. Provided all feasible mitigation measures specified by the City of Palm Springs to reduce GHG emissions are incorporated in the project, the impact of the project-related increases in GHG emissions on climate change may be considered less than significant.

4.6 IMPACTS OF PROJECT ALTERNATIVES

Four development alternatives were considered for the project site. The trip generation associated with each of the development alternatives was identified in the *Traffic Impact Study For Tentative Tract Map No. 36691* (Endo Engineering; February 10, 2014). The Preferred Alternative would have the highest trip generation of the four alternatives. The Preferred Alternative (Alternative 1) was evaluated in detail because it would result in the highest daily emissions of criteria pollutants and greenhouse gases.

Alternative 2 would replace approximately 91 of the residential dwelling units proposed within the South Village Planning Area with a 20-acre soccer park site, which could accommodate eight soccer fields. Alternative 3 would include the development of the entire project site with 272 single-family detached dwelling units on 10,000 square-foot lots. Alternative 4 represents the no development alternative.

ALTERNATIVE 1 (PREFERRED ALTERNATIVE)

The Preferred Alternative would included the development of a combined total of up to 441 residential dwelling units with direct access via East San Rafael Drive (east of North Sunrise Way) and North Whitewater Club Drive (like the former golf clubhouse). The North Village would be developed with 137 multi-family attached clustered dwelling units on 17.9 net acres. The South Village would be developed with up to 304 single-family detached dwelling units on 45.89 net acres. A 5.37-acre site for a future public park located in the southeast corner of the South Village would be dedicated to the City of Palm Springs with Alternative 1. The Preferred Alternative would generate approximately 3,740 daily trip-ends on a typical weekday and have the highest operational air quality impact of the four alternatives.

ALTERNATIVE 2

Alternative 2 would generate 3,290 trip-ends per day, approximately 88 percent of the daily trip generation of the Preferred Alternative. The North Village would be developed with 137 multi-family attached dwelling units, and the South Village would be developed with 213 single-family detached dwelling units. The daily trip generation from the residential component of Alternative 2 would be 68 percent of the daily trip generation of the Preferred Alternative. The operational air quality impact of Alternative 2 would be less than that of the Preferred Alternative, but greater than that of Alternatives 3 and 4.

ALTERNATIVE 3

Alternative 3 would include the development of 272 single-family detached dwelling units on 10,000 square-foot lots within the project site. Alternative 3 would generate approximately 2,610 trip-ends on a typical weekday, approximately 70 percent of the daily trip generation of the Preferred Alternative. The operational air quality impact of Alternative 3 would be less than that of the Preferred Alternative and Alternative 2, but greater than that of Alternative 4.

ALTERNATIVE 4 (NO-PROJECT ALTERNATIVE)

Alternative 4 represents the no development alternative. The project site would remain vacant with this alternative and would not generate trips. Alternative 4 would generate the smallest long-term air quality impact, assuming that the previously graded portion of the site is maintained in a stabilized condition to minimize fugitive dust emissions.

5.0 AIR QUALITY MITIGATION MEASURES

The inclusion of mitigation measures in the project is required to minimize to the greatest extent feasible significant air quality impacts attributable to the proposed project. The City of Palm Springs must take affirmative steps to determine that approved mitigation measures are implemented subsequent to project approval. A mitigation monitoring and reporting plan must be prepared, pursuant to the California *Public Resources Code* (Section 21081.6) for any mitigation measures incorporated in the project or imposed as a condition of approval.

5.1 MITIGATION INCORPORATED IN THE PROJECT DESIGN

The proposed project would provide transportation infrastructure improvements that offer better mobility for all segments of the community and represent an effective means of creating a more sustainable community. A twenty-foot wide meandering multi-purpose trail is proposed with connections to the regional trail system and the future alignment of the CVLink regional corridor being planned along the Whitewater River flood control levee. This path would accommodate pedestrians, bicyclists and neighborhood electric vehicles (NEV). This multi-purpose trail would promote the use of alternative modes of transportation and reduce reliance on traditional automobiles powered by the combustion of fossil fuels, thereby rendering the long-term GHG emissions of both the project and the adjacent community less significant. The future park site proposed for dedication to the City of Palm Springs in the southeast corner of the South Village may provide a location suitable for use as a staging area for the future CVLink.

The project incorporates various design strategies that are sensitive to air quality issues in addition to pedestrian walkways and bicycle routes to facilitate walking and bicycling. Other design-related features that could reduce air pollution include proper building orientation as well as adequate open space and landscaping to maximize cooling benefits and make walking and cycling more attractive transportation options.

The Preferred Alternative incorporates design elements (such as high efficiency lighting with a 75 percent energy reduction) that would reduce its long-term operational energy consumption. The project will incorporate water-efficient irrigation systems that would reduce water usage by 50 percent. Recycling and composting services on-site are projected to reduce the project-related green waste by 50 percent. Low-flow toilets (with a 20 percent flow reduction), faucets (with a 30 percent flow reduction) and showers (with a 30 percent flow reduction) would be installed to reduce the project-related water usage over the long term.

The net (mitigated) project-related operational greenhouse gas emissions of CO_{2e} associated with the Preferred Alternative would be reduced by 2.2 percent as a result of the mitigation strategies incorporated in the project design to reduce energy consumption, water use, the production of wastewater, and recycle green waste. The incorporation of sidewalks and trail improvements within the project site will make alternative modes of transportation more attractive and reduce the GHG emissions generated as a result of the combustion of fossil fuels to power automobiles.

5.2 MITIGATION REQUIRED OF ALL PROJECTS

CITY OF PALM SPRINGS REQUIREMENTS

The City of Palm Springs will use its discretionary permit authority to place conditions of approval on the proposed project that require compliance with all applicable policies, rules, regulations and ordinances. The following measures reflect policies, rules and/or regulations that apply to all developments proposed within the City of Palm Springs.

1. The proposed project shall comply with the provisions of the *City of Palm Springs Municipal Code* (Chapter 8.50 Fugitive Dust Control), which establishes minimum requirements for construction activities, unpaved roads, unpaved parking lots, disturbed vacant lands, and paved roads to reduce fugitive dust and PM_{10} emissions. A Fugitive Dust Control Plan describing fugitive dust sources at the site and the Coachella Valley Best Available Control Measures to be implemented for each fugitive dust source during any dust-generating activity from the *Coachella Valley Fugitive Dust Control Handbook* (SCAQMD; May, 2003) shall be prepared and submitted to the City of Palm Springs for approval, prior to the issuance of any grading permits or building permits associated with the project and prior to the initiation of any earth-moving operations.

2. On-site grading and control of wind erosion shall be conducted in accordance with the *Uniform Building Code* (Chapter 70) and the *Palm Springs Municipal Code* (Section 9.60.040). The developer(s) of the site shall be responsible for compliance with all applicable City of Palm Springs blowsand control measures.

3. The project proponent shall comply with all applicable SCAQMD *Rules and Regulations* including but not limited to the following:

   - Rule 403 (Fugitive Dust) specifies control measures for use in developing site specific fugitive dust control plans to minimize blowing dust from construction sites and insure the clean up of construction-related dirt on approach routes to the site including: watering measures, chemical stabilizers, wind fencing, covering haul vehicles, bed liners in haul vehicles, wheel washers, and high wind measures;

   - Rule 1108 and 1108.1 prohibits the use of rapid and medium cure cutback asphalts as well as organic compounds in emulsified asphalts used during the construction process; and

   - Rule 1113 (Architectural Coatings) restricts the VOC content of any architectural coating materials used on-site to a maximum of 2.08 pounds of VOC per gallon.

4. Building construction on-site shall, at a minimum, comply with the 2013 statewide energy efficiency standards pursuant to *California Code of Regulations Title 24 Part 6*: California's *Energy Efficiency Standards for Residential and Nonresidential Buildings.*

5. The project proponent shall comply with all applicable City of Palm Springs requirements regarding master planned bikeways (including a future Class I bikeway located top of the levee) and multi-purpose trails within and/or adjacent to the project site.

5.3 OTHER MITIGATION MEASURES

The construction phases associated with site preparation, grading, and trenching should occur sequentially. The peak building construction activities should not be scheduled during the paving activities, especially during the early years of construction. Given the number of sensitive residential receptors in close proximity, the Construction Specifications should require that construction activity management techniques be utilized to minimize unnecessary idling by heavy equipment.

STRATEGIES TO REDUCE EMISSIONS FROM ARCHITECTURAL COATINGS

With one compressor operating within the site during construction, the architectural coating phase is projected to exceed the SCAQMD mass daily regional significance threshold for VOC, assuming the CalEEMod default VOC limit of 250 grams/liter of coating. All coatings will comply with SCAQMD Rule 1113, which limits the VOC content of architectural coatings. Under Rule 1113, the most commonly used coatings (e.g. flats and nonflats) will have a VOC limit of 50 grams/liter. Other coatings (e.g. primers and stains) will have a VOC limit of 100 grams/liter.

The average VOC content of the architectural coatings that will be used by the project is not currently known. Provided the average volatility associated with all interior and exterior architectural coatings used to implement the project does not exceed 150 grams/liter, the construction-related ROG emissions are projected to remain less than the SCAQMD mass daily regional significance threshold (75 pounds of VOC emitted per day).

MITIGATION ASSOCIATED WITH GHG EMISSIONS

Global warming and disruptive climate changes pose risks for California. More frequent and intense forest fires, more air pollution, a reduction in snow pack and state water supplies, a rise in sea level, and coastline erosion are a few of the risks that have been associated with climate change. A Climate Action Plan could be incorporated in the proposed project establishing specific design features and development standards to achieve sustainable decreases in greenhouse gas emissions. Appendix F provides details regarding what constitutes an adequate plan.

The City of Palm Springs has the authority to attach conditions of approval to the proposed project requiring mitigation to reduce potentially significant GHG emissions to the maximum extent feasible. Provided all feasible mitigation measures specified by the City of Palm Springs to reduce GHG emissions are incorporated in the project, the impact of the project-related increases in GHG emissions on climate change may be considered less than significant.

Appendices

A. Air Quality Glossary and List of Acronyms

B. Ambient Air Quality Standards,
Health Effects of Air Pollutants,
Ambient Air Quality Monitoring Data

C. Tier 1-4 Emission Standards For Construction Equipment,
CARB Heavy-Duty Idling Emission Reduction Program,
CARB Off-Road Diesel Vehicle Regulation

D. CalEEMod Assumptions and Output

E. CALINE4 Assumptions and Output

F. Climate Action Plan Framework

Appendix A

AIR QUALITY GLOSSARY

LIST OF ACRONYMS

Appendix A

AIR QUALITY GLOSSARY

AAQS – Ambient Air Quality Standards.

AB 32 – Assembly Bill 32 is California's Global Warming Solutions Act of 2006 which requires the CARB to establish a greenhouse gas emissions cap for the year 2020 and adopt mandatory reporting rules for significant sources of greenhouse gas.

Air Basin – An area with common and distinctive geographical features.

Air Monitoring – Sampling and measuring pollutants present in the atmosphere.

Ambient Air – Outside air.

AQMP – The Air Quality Management Plan.

ARB – The California Air Resources Board.

Attainment – Legal recognition that an area meets standards for a particulate pollutant.

AVR – Average Vehicle Ridership

BACT – Best Available Control Technology.

CAA – The Federal Clean Air Act.

CALINE4 – The California Line Source Dispersion Model.

CARB – The California Air Resources Board.

CalEEMod – The California Emissions Estimator Model (Version 2011.1.1) is a land use emissions computer model developed by ENVIRON International Corporation for the SCAQMD to provide a uniform platform for governmental agencies, planners, and environmental professionals to quantify criteria pollutant and greenhouse gas emissions associated with both construction and operation from land use projects throughout California.

CCAA – The California Clean Air Act.

CEQA – The California Environmental Quality Act.

CMP – The Congestion Management Program.

CO – Carbon monoxide is a colorless, odorless, toxic gas formed by incomplete combustion of fossil fuels.

Coachella Valley Blowsand Zone – The corridor of land extending two miles to either side of the centerline of the I-10 Freeway beginning at the SR-111/I-10 junction and continuing southeast to the I-10/Jefferson Street interchange in Indio.

Construction Activities – Any on-site activities preparatory to or related to the building, alteration, rehabilitation, or improvement of property, including but not limited to the following activities: grading, excavation, trenching, loading, vehicular travel, crushing, blasting, cutting, shaving, shaping, breaking, equipment staging/storage areas, weed abatement activities or adding or removing bulk materials from storage piles, or ground breaking.

Contingency Measures – Actions which will be implemented in the event of a failure to attain or to meet interim milestones.

Criteria Air Contaminants – Criteria air contaminants are pollutants for which air quality standards currently exist (i.e. ozone, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), fine suspended particulates (PM_{10}), lead and sulfate).

CVAG – The Coachella Valley Association of Governments.

CVBACM – The Coachella Valley Best Available Control Measures identified in the *Coachella Valley Fugitive Dust Control Handbook*.

CVSIP – The Coachella Valley PM_{10} State Implementation Plan.

Demolition Activities – the wrecking or removal of any load-supporting structural member of a structure or building and related handling operations or the intentional burning of any structure or building.

Disturbed Surface Area – A portion of the earth's surface which has been physically moved, uncovered, de stabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for emission of fugitive dust. This definition excludes those areas restored to a natural state, such that vegetative ground cover and soil characteristics are similar to adjacent or near-by natural conditions.

DPM – Diesel particulate matter.

DRRP – CARB *Diesel Risk Reduction Plan.*

Dust Suppressants – Water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive emissions. Non-toxic chemical stabilizers must not be used if prohibited by the Regional Water Quality Control Boards, the California Air Resources Board, the Environmental Protection Agency, or any other applicable law, rule or regulation; and should meet any specifications, criteria, or tests required by any federal, state, or local water agency.

Earth-Moving Activities – Shall include, but not be limited to, such operations as grading, loading or unloading of dirt or bulk materials, adding to or removing from open storage piles of bulk materials, landfill operations, soil mulching, or agricultural tilling.

EIR – Environmental Impact Report.

EMFAC2011 – Version 2.3 Burden model developed by the CARB and used by CalEEMod to identify on-road mobile source emission factors for various speeds throughout California based on local conditions including the vehicle fleet mix and year of interest.

Emission Inventory – A listing by source of pollutants emitted into a community's atmosphere (typically given in units of pounds per day or tons per year).

EPA – The U.S. Environmental Protection Agency (i.e., the federal agency with responsibility for ambient air quality).

Episode Criteria – California has adopted health advisory levels called episode criteria for ozone, carbon monoxide, sulfur dioxide, and ozone in combination with sulfates. Episode criteria represent short-term exposures at concentrations which actually threaten public health.

Facility – Any permit unit or grouping of permit units or other air contaminant-emitting activities which are located on one or more contiguous properties within the District, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control).

FIP – The Federal Implementation Plan.

Fugitive Dust – Any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of man.

Fugitive Dust Control Plan – A document that describes fugitive dust sources at a site and the corresponding control measures prepared in accordance with the guidance contained in the *Coachella Valley Fugitive Dust Control Handbook*.

GHG – Greenhouse gas emissions, which are usually given in units of metric tons per year of equivalent CO_2 (MT/year of CO_2e).

GP – General Plan.

Health Advisory – Issued when ozone levels are projected to reach 15 parts per hundred million to warn athletes to avoid strenuous outdoor activities.

High-Wind Episode – When winds exceed 25 miles per hour as measured by the closest AQMD monitoring station, or a certified meteorological monitoring station, or an on-site wind monitor calibrated and operated on-site in accordance with the manufacturer's specifications with a data logger or strip chart recorder.

HOV – High Occupancy Vehicle.

Hydrocarbons – Any compound containing carbon and hydrogen in various combinations found in solvents and fuels.

Inversion – A layer of warm air in the atmosphere that lies over a layer of cooler air, trapping pollutants in the mixing layer beneath it.

$\mu g/m^3$ – Microgram (1/1,000,000 of a gram) per cubic meter of air.

NAAQS – National Ambient Air Quality Standards.

NO – Nitric oxide, a colorless, odorless gas.

NO_2 – Nitrogen dioxide, a reddish-brown gas formed by the combination of nitric oxide with oxygen.

Nonattainment Area – An area that does not meet state or national standards for a given pollutant.

NOx – Oxides of nitrogen. Gases formed primarily from atmospheric nitrogen and oxygen when combustion takes place (particularly under conditions of high temperature). Oxides of nitrogen are primary receptors of ultraviolet light initiating the photochemical reactions that produce smog.

O_3 – Ozone, a pungent, colorless toxic gas which is produced by the photochemical process. Ozone is formed through chemical reactions of VOCs, oxides of nitrogen and oxygen in the presence of sunlight.

OFFROAD2011 – A program that identifies emission factors for off-road equipment (including off-highway trucks, scrapers, graders, etc.) that is used by CalEEMod to estimate construction-related equipment exhaust emissions.

Offset – An emission reduction that compensates for an emission increase.

OPR – Governor's Office of Planning and Research

Ozone Precursors – Chemicals such as hydrocarbons VOCs and oxides of nitrogen, which contribute to the formation of ozone.

Particulate Matter – Particulate matter consists of particles in the atmosphere as a by-product of fuel combustion, through abrasion such as tire wear, and through soil erosion by the wind. Particulates can also be formed through photochemical reactions in the atmosphere.

Photochemical – Requiring the presence of sunlight for a chemical reaction.

Photochemical Oxidant – Photochemical oxidant (O_3) can include several different pollutants, but consists primarily of ozone (90%) and a group of chemicals called organic peroxynitrates. Photochemical oxidant is created by complex atmospheric reactions involving oxides of nitrogen and volatile organic compounds, in the presence of ultraviolet energy from sunlight.

PM – Total suspended particulate matter.

$PM_{2.5}$ – Suspended particulate matter with a mean aerodynamic diameter of less than 2.5 micrometers.

PM_{10} – Suspended particulate matter with a mean aerodynamic diameter of less than 10 micrometers.

PM_{10} SIP – The PM_{10} State Implementation Plan.

PPM – Parts per million parts of air.

Primary Pollutants – Primary pollutants (i.e., those emitted directly from a source and include: carbon monoxide (CO), nitric oxide (NO), sulfur dioxide (SO_2), particulates, and various hydrocarbons and other volatile organic compounds (VOC).

RACM – Reasonably Available Control Measures.

RACT – Reasonably Available Control Technology.

Rate-of-Progress – Reducing pollutants contributing to nonattainment by five percent per year or all feasible control measures and an expeditious adoption schedule.

Receptor Location – Any location outside the boundaries of the facility at which a person could experience acute or chronic exposure. The SCAQMD shall consider the potential for exposure in determining whether the location will be considered a receptor location.

Reasonable Further Progress – An incremental reduction in emissions of relevant air pollutants that is needed to ensure attainment of the national ambient air quality standards or NAAQS by the applicable date.

Risk Assessment – An evaluation of expected health impacts on a specific population.

ROC – Reactive organic compounds (i.e., compounds composed of hydrocarbons that contribute to the formation of photochemical oxidant).

ROG – Reactive organic gases (i.e., gases composed of hydrocarbons that contribute to the formation of photochemical oxidant).

SCAB – The South Coast Air Basin.

SCAG – The Southern California Association of Governments.

SCAQMD – The South Coast Air Quality Management District.

Secondary Pollutants – Secondary pollutants are created with the passage of time in the air mass and include: photochemical oxidants (90% of which are ozone), photochemical aerosols, peroxyacetylnitrate (PAN), and nitrogen dioxide (NO_2).

Senate Bill 97 – Amended the CEQA statute to establish that GHG emissions and their effects are appropriate topics for CEQA analysis.

Sensitive Land Use – Sensitive land uses are land uses associated with indoor and/or outdoor human activities that may be subject to stress and/or significant impact as a result of air pollutant exposure. They include residential (single-family and multi-family dwellings, mobile home parks, dormitories and similar uses); transient lodging (including hotels, motels and similar uses); hospitals, nursing homes, convalescent hospitals and other facilities for long-term medical care; and public or private educational facilities.

SIP – State Implementation Plan. A document that shows the steps planned to meet federal air quality standards (outlined in the Clean Air Act). Each nonattainment area prepares an air quality improvement plan. These plans are combined to make the statewide SIP.

SO_2 – Sulfur dioxide results from the combustion of high sulfur content fuels.

SOx – Sulfates result from a reaction of sulfur dioxide and oxygen in the presence of sunlight.

SRA – Source Receptor Area. The Coachella Valley is in Source Receptor Area 30.

SSAB – The Salton Sea Air Basin.

Stabilized Surface – any portion of land that meets the minimum standards as established by the applicable test method contained in the *Coachella Valley Fugitive Dust Control Handbook*.

Stage I Alert – alert called when ozone concentrations are projected to reach 20 parts per hundred million. A Stage I Alert indicates that the general public should avoid strenuous outdoor activities because of unhealthful air quality.

Stage II Alert – Alert called when ozone concentrations are projected to reach 35 parts per hundred million. A Stage II Alert indicates that everyone should remain indoors because of very unhealthful air quality.

TACs – Toxic air contaminants.

T-BACT – Best Available Control Technology For Toxics means the most stringent emissions limitation or control technique which has been achieved in practice for such permit unit category or class of source or any other emissions limitation or control technique found by the SCAQMD to be technologically feasible for a specific source.

TCM – Transportation Control Measures.

TDM – Transportation Demand Management.

Toxic Air Contaminant – An air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health.

Unpaved Parking Lot – An area used for parking vehicles and associated vehicle maneuvering that is not covered with roadway materials (e.g., cement, asphalt or asphaltic concrete). Within the City of Palm Springs, temporary unpaved parking lots are those used less than 24 days per year.

VMT – Vehicle Miles Traveled (usually daily). CalEEMod determines the annual VMT.

VOC – Hydrocarbon and other Volatile Organic Compounds are formed from combustion of fuels and the evaporation of organic solvents. Many hydrocarbon compounds are major air pollutants, and those classified as aromatics are highly photochemically reactive with NO_x, forming photochemical smog.

VT – Vehicle Trips.

List of Acronyms

AB	Assembly Bill
AADT	Annual Average Daily Traffic
ADT	Average Daily Traffic
ARB	Air Resources Board
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
BACM	Best Available Control Measures
CAA	Federal Clean Air Act
CCAA	California Clean Air Act
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CMA	Congestion Management Agency
CMP	Congestion Management Program
CO	Carbon Monoxide
CVAG	Coachella Valley Association of Governments
DPM	Diesel Particulate Matter
DU	Dwelling Units
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
GHG	Greenhouse Gas Emissions
HAP	Hazardous Air Pollutants
HOV	High Occupancy Vehicles
I-10	Interstate 10
ITE	Institute of Transportation Engineers
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NEV	Neighborhood Electric Vehicle
NOx	Oxides of Nitrogen
OPR	Office of Planning and Research
PM	Particulate Matter
PPB	Parts Per Billion
PPM	Parts Per Million
RCTC	Riverside County Transportation Commission
ROG	Reactive Organic Gases
ROW	Right-Of-Way
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SOx	Sulfur Oxides
SR	State Route
SSAB	Salton Sea Air Basin
TAC	Toxic Air Contaminant
T-BACT	Best Available Control Technology For Toxics
TDM	Transportation Demand Management
TSM	Transportation Systems Management
UFP	Ultrafine Particles
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
VPD	Vehicles Per Day
VPH	Vehicles Per Hour
TDM	Transportation Demand Management
TSM	Transportation Systems Management

Appendix B

AMBIENT AIR QUALITY STANDARDS

EFFECTS OF AIR POLLUTANTS ON SENSITIVE RECEPTORS

AMBIENT AIR QUALITY MONITORING DATA

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM10)[8]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5)[8]	24 Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[9]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[10]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[10]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[10]	—	
Lead[11,12]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m^3		
Visibility Reducing Particles[13]	8 Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	**No National Standards**		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[11]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

See footnotes on next page …

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the U.S. EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the U.S. EPA.

8. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

9. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

10. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

    Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

11. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

12. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

13. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Appendix B

EFFECTS OF AIR POLLUTANTS ON SENSITIVE RECEPTORS

Oxidants (primarily ozone) at high enough concentrations can cause eye irritation; aggravate respiratory disease; suppress the body's capacity to fight infection; impair athletic performance and cause growth retardation in sensitive trees. Oxidants also cause cracking of untreated rubber. Short-term and long-term ozone exposures have been found to have adverse health effects on humans and animals. Ozone and fine particulates are responsible for a wide range of health effects including slowed lung growth in children, worsening of asthma symptoms, increased susceptibility to respiratory infections, increased hospital admissions, and increased death rates.

Suspended particulates such as soot, dust, aerosols, fumes, and mists produce haze and reduce visibility. Health concerns focus on smaller particles that penetrate deeply into and then damage the human respiratory tract. Deaths from short-term exposures have been documented and symptoms are exacerbated in sensitive patients with respiratory disease. Excess seasonal declines in pulmonary function have been found (especially in children). Typically, industrial and agricultural operations, combustion, and photochemical reactions produce suspended particulates.

Volatile organic compounds in the presence of other primary pollutants (particularly oxides of nitrogen) lead to the formation of oxidants. VOCs also damage plants by inhibiting growth and causing flowers and leaves to fall.

Carbon monoxide is essentially colorless, odorless and toxic to humans. It enters the blood stream and interferes with the transfer of fresh oxygen, thereby depriving sensitive tissues in the heart and brain of oxygen. At high enough concentrations it can impair visual function, psychomotor performance and time discrimination. Carbon monoxide exposure aggravates angina pectoris and other aspects of coronary heart disease. It may also impose increase risks to fetuses.

Nitrogen dioxide at high enough exposures can cause fibrotic lung changes, bronchostriction, and acute bronchitis among infants and school children. Over several months, it can cause collapsed lesions near the leaf margin and moderate injury in sensitive plants. Nitrogen dioxide aggravates chronic respiratory disease and respiratory symptoms in sensitive groups.

Lead at high enough concentrations impairs hemoglobin synthesis and nerve conduction by increasing lead levels in the blood. Sulfur dioxide and suspended particulate exposures can each cause higher frequencies of acute respiratory symptoms and diminished ventilatory function in children. In addition, these two pollutants at lower concentrations can act in conjunction to cause greater harm by injuring lung tissue. Sulfur oxides, in combinations with moisture and oxygen, can yellow the leaves of plants, dissolve marble, and erode iron and steel. Sulfates decrease ventilatory function, aggravate asthmatic symptoms, aggravate cardio-pulmonary disease and cause damage to vegetation (while degrading visibility).

2010 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2010

Source/Receptor Area No.	Location	Station No.	Carbon Monoxide[a)] No. Days of Data	Carbon Monoxide Max. Conc. in ppm 1-hour	Carbon Monoxide Max Conc. in ppm 8-hour	Ozone No. Days of Data	Ozone Max. Conc. in ppm 1-hour	Ozone Max. Conc. in ppm 8-hour	Ozone Fourth High Conc. ppm 8-hour	Ozone No. Days Standard Exceeded: Health Advisory ≥ 0.15 ppm 1-hour	Ozone No. Days Standard Exceeded: Federal Old > 0.12 ppm 1-hour	Ozone No. Days Standard Exceeded: Federal Current > 0.075 ppm 8-hour	Ozone No. Days Standard Exceeded: State Current > 0.09 ppm 1-hour	Ozone No. Days Standard Exceeded: State Current > 0.070 ppm 8-hour	Nitrogen Dioxide[b)] No. Days of Data	Nitrogen Dioxide Max Conc. in ppb 1-hour	Nitrogen Dioxide 98th Percentile Conc. ppb 1-hour	Nitrogen Dioxide Annual Average AAM Conc. ppb	Sulfur Dioxide[c)] No. Days of Data	Sulfur Dioxide Max. Conc. in ppb 1-hour	Sulfur Dioxide Max. Conc. in ppb 24-hour
LOS ANGELES COUNTY																					
1	Central LA	087	364	3	2.3	357	0.098	0.080	0.064	0	0	1	1	1	364	89.0	70.5	25.0	355	9.8	1.5
2	Northwest Coastal LA County	091	364	2	1.4	360	0.099	0.078	0.069	0	0	1	2	4	365	70.8	57.4	15.6	--	--	--
3	Southwest Coastal LA County	820	344	3	2.2	319	0.089	0.070	0.059	0	0	0	0	1	358	75.8	60.9	12.1	327	25.9	3.5
4	South Coastal LA County 1	072	358	3	2.1	358	0.101	0.084	0.057	0	0	1	1	1	360	92.8	70.2	19.8	329	40.0	6.0
4	South Coastal LA County 2	077	--	--	--	--	--	--	--	--	--	--	--	--	--			--	--	--	--
6	West San Fernando Valley	074	365	3	2.6	295	0.122	0.091	0.086	0	0	19	11	40	365	75.0	56.0	16.7	--	--	--
7	East San Fernando Valley	069	364	3	2.4	317	0.111	0.084	0.076	0	0	4	3	11	359	82.0	64.3	24.1	233*	14.9	4.1
8	West San Gabriel Valley	088	355	3	2.0	325	0.101	0.081	0.075	0	0	3	1	6	355	71.0	63.0	19.6	--	--	--
9	East San Gabriel Valley 1	060	355	3	1.3	356	0.104	0.081	0.075	0	0	3	5	10	364	77.2	59.6	18.5	--	--	--
9	East San Gabriel Valley 2	591	360	2	1.3	350	0.124	0.099	0.090	0	0	20	25	48	360	78.5	55.5	15.4	--	--	--
10	Pomona/Walnut Valley	075	365	3	1.8	342	0.115	0.082	0.076	0	0	4	9	20	365	97.0	72.5	26.2	--	--	--
11	South San Gabriel Valley	085	364	2	1.9	358	0.112	0.086	0.059	0	0	1	1	1	364	79.0	65.4	22.9	--	--	--
12	South Central LA County	112	353	6	3.6	358	0.081	0.062	0.050	0	0	0	0	0	364	76.8	68.8	17.9	--	--	--
13	Santa Clarita Valley	090	355	2	1.1	331	0.126	0.105	0.087	0	1	23	18	44	364	59.3	54.2	14.3	--	--	--
ORANGE COUNTY																					
16	North Orange County	3177	356	3	1.8	351	0.118	0.096	0.071	0	0	1	2	4	333	82.5	61.6	20.1	--	--	--
17	Central Orange County	3176	358	3	2.0	331	0.104	0.088	0.060	0	0	1	1	1	364	73.3	61.1	17.5	--	--	--
18	North Coastal Orange County	3195	364	2	2.1	353	0.097	0.076	0.060	0	0	1	1	2	364	70.0	56.0	11.3	348	9.5	2.1
19	Saddleback Valley	3812	362	1	0.9	353	0.117	0.082	0.069	0	0	2	2	2	--			--	--	--	--
RIVERSIDE COUNTY																					
22	Norco/Corona	4155	--	--	--	--	--	--	--	--	--	--	--	--	--			--	--	--	--
23	Metropolitan Riverside County 1	4144	364	3	1.8	341	0.128	0.098	0.092	0	1	47	31	78	333	64.5	57.0	16.8	349	17.6	4.6
23	Metropolitan Riverside County 2	4146	355	3	1.7	--	--	--	--	--	--	--	--	--	361	60.8	51.5	17.2	--	--	--
23	Mira Loma	4165	360	3	1.9	324	0.121	0.094	0.090	0	0	38	22	63	365	62.2	50.3	15.1	--	--	--
24	Perris Valley	4149	--	--	--	343	0.122	0.107	0.099	0	0	50	42	82	--			--	--	--	--
25	Lake Elsinore	4158	363	1	0.6	355	0.107	0.091	0.086	0	0	24	15	42	363	51.2	40.6	10.1	--	--	--
29	Banning Airport	4164	--	--	--	328	0.124	0.107	0.099	0	0	60	31	84	365	65.7	53.2	11.6	--	--	--
30	Coachella Valley 1**	4137	365	2	0.5	361	0.114	0.099	0.092	0	0	52	23	83	365	45.7	39.0	8.5	--	--	--
30	Coachella Valley 2**	4157	--	--	--	348	0.100	0.087	0.084	0	0	19	7	47	--			--	--	--	--
SAN BERNARDINO COUNTY																	--				
32	Northwest San Bernardino Valley	5175	353	2	1.8	349	0.131	0.097	0.090	0	1	39	31	59	365	78.9	58.0	20.4	--	--	--
33	Southwest San Bernardino Valley	5817	--	--	--	--	--	--	--	--	--	--	--	--	--			--	--	--	--
34	Central San Bernardino Valley 1	5197	359	3	1.4	350	0.143	0.100	0.094	0	2	33	28	55	363	71.9	64.8	23.1	330*	6.6	1.6
34	Central San Bernardino Valley 2	5203	326	2	1.7	354	0.129	0.105	0.095	0	1	40	27	63	365	69.2	56.6	18.8	--	--	--
35	East San Bernardino Valley	5204	--	--	--	363	0.128	0.112	0.097	0	1	61	43	86	--			--	--	--	--
37	Central San Bernardino Mountains	5181	--	--	--	364	0.142	0.123	0.109	0	6	74	52	101	--			--	--	--	--
38	East San Bernardino Mountains	5818	--	--	--	--	--	--	--	--	--	--	--	--	--			--	--	--	--
DISTRICT MAXIMUM				6	3.6		0.143	0.123	0.109	0	6	74	52	101		97.0	72.5	26.2		40.0	6.0
SOUTH COAST AIR BASIN				6	3.6		0.143	0.123	0.109	0	7	102	79	131		97.0	72.5	26.2		40.0	6.0

ppm - Parts Per Million parts of air, by volume ppb – Parts Per Billion parts of air, by volume AAM = Annual Arithmetic Mean -- - Pollutant not monitored

** Salton Sea Air Basin

- In 2010, the State and Federal Ambient Air Quality Standards were met for the gaseous pollutants CO, NO2 and SO2 at all District regular monitoring sites, listed above.
  a) - The federal 8-hour standard is 8-hour average CO > 9 ppm and state 8-hour standard is 8-hour average CO > 9.0 ppm. The federal and state 1-hour standards are 35 ppm and 20 ppm.
  b) - The NO2 federal 1-hour standard is 100 ppb and the annual standard is annual arithmetic mean NO_2 > 0.0534 ppm. The state 1-hour and annual standards are 0.18 ppm and 0.030 ppm.
  c) - The federal SO2 1-hour standard is 75 ppb (0.075 ppm). The state standards are 1-hour average SO_2 > 0.25 ppm and 24-hour average SO_2 > 0.04 ppm.
- Revised/New Standards in 2010:
  -- U.S. EPA established the new NO2 1-hour federal standard of 100 ppb (0.100 ppm), effective April 7, 2010.
  -- U.S. EPA revised the SO2 federal standard by establishing the new 1-hour standard of 75 ppb (0.075 ppm) and revoking the existing annual (0.03 ppm) and 24-hour (0.14 ppm) standards, effective August 2, 2010.

South Coast
Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4182
www.aqmd.gov

2010 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2010

Source/Receptor Area No.	Location	Station No.	Suspended Particulates PM10 d) No. Days of Data	Max. Conc. in µg/m³ 24-hour	No. (%) Samples Exceeding Standards Federal > 150 µg/m³ 24-hour	State > 50 µg/m³ 24-hour	Annual Average Conc. (AAM) µg/m³	Fine Particulates PM2.5 e) No. Days of Data	Max. Conc. in µg/m³ 24-hour	98th Percentile Conc. in µg/m³ 24-hour	No. (%) Samples Exceeding Fzederal Std > 35 µg/m³ 24-hour	Annual Average Conc. (AAM) µg/m³	Particulates TSP f) No. Days of Data c)	Max. Conc. in µg/m³ 24-hour	Annual Average Conc. (AAM) µg/m³	Lead f) Max. Monthly Average Conc. µg/m³	Max. Quarterly Average Conc. µg/m³	Sulfate f) Max. Conc. in µg/m³ 24-hour	No. Days Exceeding State Std ≥ 25 µg/m³ 24-hour
LOS ANGELES COUNTY																			
1	Central LA	087	56	42	0	0	27.1	335	39.2	27.1	2(0.6%)	11.9	53	105	53.3	0.02	0.01	9.1	0
2	Northwest Coastal LA County	091	--	--	--	--	--	--	--	--	--	--	59	82	40.8	--	--	7.5	0
3	Southwest Coastal LA County	820	55	37	0	0	20.6	--	--	--	--	--	55	85	36.7	0.01	0.01	9.7	0
4	South Coastal LA County 1	072	58	44	0	0	22.0	338	35.0	28.3	0	10.5	60	129	45.5	0.01	0.01	11.8	0
4	South Coastal LA County 2	077	59	76	0	2(3.4%)	27.3	351	33.7	26.5	0	10.4	57	130	50.8	0.01	0.01	12.2	0
6	West San Fernando Valley	074	--	--	--	--	--	100	40.7	30.4	1(1.0%)	10.2	--	--	--	--	--	--	--
7	East San Fernando Valley	069	55	51	0	1(1.8%)	29.6	322	43.7	31.8	4(1.2%)	12.5	--	--	--	--	--	--	--
8	West San Gabriel Valley	088	--	--	--	--	--	97	35.2	24.0	0	10.2	58	58	36.4	--	--	7.7	0
9	East San Gabriel Valley 1	060	55	70	0	5(9.1%)	29.8	93	44.4	35.4	1(1.1%)	10.9	53	136	58.2	--	--	6.4	0
9	East San Gabriel Valley 2	591	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10	Pomona/Walnut Valley	075	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11	South San Gabriel Valley	085	--	--	--	--	--	117	34.9	32.0	0	12.5	59	265	86.1	0.02	0.01	8.5	0
12	South Central LA County	112	--	--	--	--	--	111	38.2	31.8	1(0.9%)	12.5	58	94	49.2	0.01	0.01	7.8	0
13	Santa Clarita Valley	090	57	40	0	0	21.0	--	--	--	--	--	--	--	--	--	--	--	--
ORANGE COUNTY																			
16	North Orange County	3177	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17	Central Orange County	3176	57	43	0	0	22.4	331	31.7	25.2	0	10.2	--	--	--	--	--	--	--
18	North Coastal Orange County	3195	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19	Saddleback Valley	3812	58	34	0	0	18.1	116	19.9	17.3	0	8.0	--	--	--	--	--	--	--
RIVERSIDE COUNTY																			
22	Norco/Corona	4155	61	50	0	0	27.2	--	--	--	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	122	75	0	7(5.7%)	32.8	351	46.5	32.0	4(1.1%)	13.2	60	131	64.3	0.01	0.01	6.7	0
23	Metropolitan Riverside County 2	4146	--	--	--	--	--	115	43.7	27.3	2(1.7%)	11.0	59	88	45.0	0.01	0.01	5.0	0
23	Mira Loma	4165	60	89	0	25(41.7%)	42.3	340	54.2	36.1	8(2.4%)	15.2	--	--	--	--	--	--	--
24	Perris Valley	4149	61	51	0	1(1.6%)	28.0	--	--	--	--	--	--	--	--	--	--	--	--
25	Lake Elsinore	4158	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29	Banning Airport	4164	60	55	0	1(1.7%)	21.8	--	--	--	--	--	--	--	--	--	--	--	--
30	Coachella Valley 1**	4137	61	37	0	0	18.7	111	12.8	12.6	0	6.0	--	--	--	--	--	--	--
30	Coachella Valley 2**	4157	119	107	0	6(5%)	29.3	112	16.0	12.2	0	6.8	--	--	--	--	--	--	--
SAN BERNARDINO COUNTY																			
32	Northwest San Bernardino Valley	5175	--	--	--	--	--	--	--	--	--	--	59	86	46.7	0.01	0.01	10.1	0
33	Southwest San Bernardino Valley	5817	60	87	0	3(5%)	31.8	112	46.1	31.2	1(0.9%)	13.0	--	--	--	--	--	--	--
34	Central San Bernardino Valley 1	5197	53	62	0	9(17%)	33.9	112	42.6	30.8	2(1.8%)	12.0	61	142	73.3	--	--	6.3	0
34	Central San Bernardino Valley 2	5203	59	63	0	3(5.1%)	32.4	119	39.3	29.7	2(1.7%)	11.1	60	106	57.7	0.01	0.01	11.4	0
35	East San Bernardino Valley	5204	58	57	0	1(1.7%)	25.8	--	--	--	--	--	--	--	--	--	--	--	--
37	Central San Bernardino Mountains	5181	57	39	0	0	18.9	--	--	--	--	--	--	--	--	--	--	--	--
38	East San Bernardino Mountains	5818	--	--	--	--	--	53	35.4	27.5	0	8.4	--	--	--	--	--	--	--
	DISTRICT MAXIMUM			107	0	25	42.3		54.2	36.1	8	15.2		265	86.1	0.02	0.01	12.2	0
	SOUTH COAST AIR BASIN			89	0	34	42.3		54.2	36.1	13	15.2		265	86.1	0.02	0.01	12.2	0

** Salton Sea Air Basin   µg/m³ - Micrograms per cubic meter of air   AAM = Annual Arithmetic Mean   -- - Pollutant not monitored

- In 2010, Particulate Matter concentrations met the Ambient Air Quality Standard levels for the federal PM10 Standard, the State and Federal Lead Standards, and the State Sulfate standard at the regular monitoring sites, listed above.
  d) - PM10 samples were collected every 6 days at all sites except for Station Numbers 4144 and 4157, where samples were collected every 3 days. The Federal annual PM10 standard (AAM > 50 µg/m³) was revoked in 2006.
  State standard is annual average (AAM) > 20 µg/m³.
  e) - PM2.5 samples were collected every 3 days at all sites except for station numbers 069, 072, 077, 087, 3176, 4144 and 4165, where samples were taken daily, and station number 5818 where samples were taken every 6 days.
  Federal annual PM2.5 standard is annual average (AAM) > 15.0 µg/m³. State standard is annual average (AAM) > 12.0 µg/m³.
  f) - TSP Particulate, Lead and Sulfate samples were taken every 6 days at all sites monitored.
- Federal Equivalent Method (FEM) continuous monitoring instruments were operated at some of the above locations for PM10 and PM2.5 monitoring. The Federal Reference Method (FRM) data is used for the above statistics.

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For information on the current standard levels and most recent revisions please refer to the previous year "Air Quality" summary card or access the "Ambient Air Quality Standards" chart at http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

Maps showing the source/receptor area boundaries can be accessed via the Internet by entering your address in the AQMD Current Hourly Air Quality Map, accessed from http://www2.aqmd.gov/webappl/gisaqi2/VEMap3D.aspx or at http://www.aqmd.gov/map/MapAQMD2.pdf . A map is also available free of charge from the AQMD Public Information Center at 1-800-CUT-SMOG.

2011 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2011

Source/Receptor Area No.	Location	Station No.	Carbon Monoxide a): No. Days of Data	Carbon Monoxide a): Max Conc. in ppm 8-hour	Ozone: No. Days of Data	Ozone: Max. Conc. in ppm 1-hour	Ozone: Max. Conc. in ppm 8-hour	Ozone: Fourth High Conc. ppm 8-hour	Ozone: Health Advisory ≥ 0.15 ppm 1-hour	Ozone: No. Days Standard Exceeded: Old Federal > 0.124 ppm 1-hour	Ozone: No. Days Standard Exceeded: Current Federal > 0.075 ppm 8-hour	Ozone: No. Days Standard Exceeded: Current State > 0.09 ppm 1-hour	Ozone: No. Days Standard Exceeded: Current State > 0.070 ppm 8-hour	Nitrogen Dioxide b): No. Days of Data	Nitrogen Dioxide b): Max Conc. in ppb 1-hour	Nitrogen Dioxide b): 98th Percentile Conc. ppb 1-hour	Nitrogen Dioxide b): Annual Average AAM Conc. ppb	Sulfur Dioxide c): No. Days of Data	Sulfur Dioxide c): Max. Conc. in ppb 1-hour	Sulfur Dioxide c): 99th Percentile Conc. ppb 1-hour
LOS ANGELES COUNTY																				
1	Central LA	087	365	2.4	365	0.087	0.065	0.060	0	0	0	0	0	365	109.6	67.0	23.1	331	19.8	11.0
2	Northwest Coastal LA County	091	360	1.3	360	0.098	0.068	0.061	0	0	0	2	0	360	81.3	58.2	13.9	--	--	--
3	Southwest Coastal LA County	820	364	1.8	360	0.078	0.067	0.062	0	0	0	0	0	365	97.6	64.8	13.4	365	11.5	8.3
4	South Coastal LA County 1	072	365	2.6	363	0.073	0.061	0.059	0	0	0	0	0	365	106.4	67.6	17.7	365	14.8	10.7
4	South Coastal LA County 2	077	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	South Coastal LA County 3	033	354	3.3	360	0.074	0.063	0.057	0	0	0	0	0	359	90.0	74.0	21.2	350	43.3	24.7
6	West San Fernando Valley	074	355	2.8	365	0.130	0.103	0.091	0	3	26	17	35	359	56.1	53.8	14.9	--	--	--
7	East San Fernando Valley	069	365	2.4	364	0.120	0.084	0.081	0	0	6	8	10	365	67.8	56.2	22.1	363	9.0	5.2
8	West San Gabriel Valley	088	365	2.2	365	0.107	0.084	0.077	0	0	5	5	13	359	87.3	72.8	20.3	--	--	--
9	East San Gabriel Valley 1	060	365	1.4	365	0.111	0.092	0.082	0	0	12	13	19	356	79.5	65.1	19.0	--	--	--
9	East San Gabriel Valley 2	591	362	1.1	362	0.134	0.111	0.095	0	4	30	35	40	361	77.6	53.9	12.9	--	--	--
10	Pomona/Walnut Valley	075	364	1.6	364	0.119	0.096	0.086	0	0	16	15	24	364	87.3	66.7	24.6	--	--	--
11	South San Gabriel Valley	085	365	2.4	362	0.096	0.074	0.061	0	0	0	1	1	362	90.6	72.5	23.7	--	--	--
12	South Central LA County	112	364	4.7	362	0.082	0.065	0.061	0	0	0	0	0	361	75.4	65.3	18.6	--	--	--
13	Santa Clarita Valley	090	363	0.8	363	0.144	0.122	0.101	0	3	30	31	52	360	60.1	46.8	13.3	--	--	--
ORANGE COUNTY																				
16	North Orange County	3177	365	2.1	365	0.095	0.074	0.069	0	0	0	1	3	365	69.8	60.7	17.7	--	--	--
17	Central Orange County	3176	365	2.1	365	0.088	0.072	0.064	0	0	0	0	1	365	73.8	60.8	16.8	--	--	--
18	North Coastal Orange County	3195	344	2.2	360	0.093	0.077	0.063	0	0	1	0	2	350	60.5	52.8	10.0	357	7.7	4.8
19	Saddleback Valley	3812	365	0.8	365	0.094	0.083	0.074	0	0	2	0	5	--	--	--	--	--	--	
RIVERSIDE COUNTY																				
22	Norco/Corona	4155	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	365	1.4	365	0.128	0.115	0.106	0	4	67	52	92	359	63.3	56.5	16.6	365	51.3	12.5
23	Metropolitan Riverside County 2	4146	365	1.5	--	--	--	--	--	--	--	--	--	364	57.1	50.4	16.9	--	--	--
23	Mira Loma	4165	361	1.4	362	0.126	0.104	0.096	0	1	36	32	63	364	58.8	51.8	15.3	--	--	--
24	Perris Valley	4149	--	--	364	0.125	0.112	0.094	0	2	54	44	77	--	--	--	--	--	--	--
25	Lake Elsinore	4158	365	0.7	365	0.133	0.106	0.092	0	1	28	19	45	365	50.3	41.3	9.6	--	--	--
26	Temecula	4031	--	--	355	0.105	0.085	0.073	0	0	14	1	27	--	--	--	--	--	--	--
29	Banning Airport	4164	--	--	362	0.127	0.111	0.100	0	3	41	35	59	350	60.7	50.2	9.5	--	--	--
30	Coachella Valley 1**	4137	350	0.6	350	0.124	0.098	0.092	0	0	49	21	69	350	44.7	39.4	8.0	--	--	--
30	Coachella Valley 2**	4157	--	--	360	0.099	0.090	0.085	0	0	19	3	42	--	--	--	--	--	--	--
SAN BERNARDINO COUNTY																				
32	Northwest San Bernardino Valley	5175	365	1.3	365	0.145	0.122	0.098	0	5	36	36	45	353	68.5	60.1	19.6	--	--	--
33	Southwest San Bernardino Valley	5817	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34	Central San Bernardino Valley 1	5197	365	1.1	365	0.144	0.124	0.105	0	5	39	39	53	365	76.4	64.6	21.1	365	12.3	7.2
34	Central San Bernardino Valley 2	5203	365	1.7	365	0.135	0.121	0.101	0	2	39	40	66	365	61.9	52.9	16.9	--	--	--
35	East San Bernardino Valley	5204	--	--	364	0.151	0.133	0.113	1	7	80	64	96	--	--	--	--	--	--	--
37	Central San Bernardino Mountains	5181	--	--	360	0.160	0.136	0.106	1	8	84	58	103	--	--	--	--	--	--	--
38	East San Bernardino Mountains	5818	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	DISTRICT MAXIMUM			4.7		0.160	0.136	0.113	1	8	84	64	103		109.6	74.0	24.6		51.3	24.7
	SOUTH COAST AIR BASIN			4.7		0.160	0.136	0.113	1	16	106	90	125		109.6	74.0	24.6		51.3	24.7

ppm - Parts Per Million parts of air, by volume ppb – Parts Per Billion parts of air, by volume AAM = Annual Arithmetic Mean -- - Pollutant not monitored

** Salton Sea Air Basin

a) - The federal 8-hour standard (8-hour average CO > 9 ppm) and state 8-hour standard (8-hour average CO > 9.0 ppm) were not exceeded. The federal and state 1-hour standards (35 ppm and 20 ppm) were not exceeded either.

b) - The NO_2 federal 1-hour standard is 100 ppb and the annual standard is annual arithmetic mean NO_2 > 0.0534 ppm (5.34 ppb). The state 1-hour and annual standards are 0.18 ppm (180 ppb) and 0.030 ppm (30 ppb).

c) - The federal SO_2 1-hour standard is 75 ppb (0.075 ppm). The state standards are 1-hour average SO_2 > 0.25 ppm (250 ppb) and 24-hour average SO_2 > 0.04 ppm (40 ppb).

South Coast Air Quality Management District
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For information on the current standard levels and most recent revisions please refer to "Appendix II – Current Air Quality" of the "Final 2012 AQMP (December)" which can be accessed at http://www.aqmd.gov/aqmp/2012aqmp/DraftFinal/appII.pdf. Maps showing the source/receptor area boundaries can be accessed via the Internet by entering your address in the AQMD Current Hourly Air Quality Map, accessed from http://www2.aqmd.gov/webappl/gisaqi2/VEMap3D.aspx or at http://www.aqmd.gov/map/MapAQMD2.pdf . A map or copy of the AQMP Appendix II is also available free of charge from the AQMD Public Information Center at 1-800-CUT-SMOG.

2011 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2011

Source/Receptor Area No.	Location	Station No.	Suspended Particulates PM10[d]: No. Days of Data	PM10: Max. Conc. in $\mu g/m^3$ 24-hour	PM10: No. (%) Samples Exceeding Standards, Federal > 150 $\mu g/m^3$ 24-hour	PM10: No. (%) Samples Exceeding Standards, State > 50 $\mu g/m^3$ 24-hour	PM10: Annual Average Conc.[e] (AAM) $\mu g/m^3$	Fine Particulates PM2.5[f]: No. Days of Data	PM2.5: Max. Conc. in $\mu g/m^3$ 24-hour	PM2.5: 98th Percentile Conc. in $\mu g/m^3$ 24-hour	PM2.5: No. (%) Samples Exceeding Federal Std > 35 $\mu g/m^3$ 24-hour	PM2.5: Annual Average Conc. (AAM) $\mu g/m^3$	Particulates TSP: No. Days of Data	TSP: Max. Conc. in $\mu g/m^3$ 24-hour	TSP: Annual Average Conc. (AAM) $\mu g/m^3$	Lead[h]: Max. Monthly Average Conc. $\mu g/m^3$	Lead: Max. 3-Months Rolling Averages $\mu g/m^3$	Lead: Max. Quarterly Average Conc. $\mu g/m^3$	PM10 Sulfate[i]: No. Days of Data	PM10 Sulfate: Max. Conc. in $\mu g/m^3$ 24-hour
LOS ANGELES COUNTY																				
1	Central LA	087	59	53	0	1(2%)	29.0	331	49.3	31.5	4(1.2%)	13.0	60	84	53.7	0.012	0.011	0.011	58	8.0
2	Northwest Coastal LA County	091	--	--	--	--	--	--	--	--	--	--	59	155	49.3	--	--	--	--	--
3	Southwest Coastal LA County	820	58	41	0	0	21.7	--	--	--	--	--	55	69	36.1	0.008	0.005	0.005	58	5.9
4	South Coastal LA County 1	072	60	43	0	0	24.2	340	39.7	27.8	1(0.3%)	11.0	61	91	44.0	0.010	0.007	0.007	59	6.1
4	South Coastal LA County 2	077	60	50	0	0	28.7	346	42.0	26.6	3(0.9%)	10.7	56	81	43.9	0.013	0.009	0.009	60	5.9
4	South Coastal LA County 3	033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	West San Fernando Valley	074	--	--	--	--	--	117	39.8	23.6	1(0.9%)	10.2	--	--	--	--	--	--	--	--
7	East San Fernando Valley	069	55	61	0	2(4%)	28.4	321	47.8	33.5	5(1.6%)	13.2	--	--	--	--	--	--	54	7.4
8	West San Gabriel Valley	088	--	--	--	--	--	97	43.8	29.8	1(1.0%)	10.8	59	74	44.1	--	--	--	--	--
9	East San Gabriel Valley 1	060	61	65	0	9(15%)	32.7	118[g]	49.5[g]	26.9[g]	1(0.8%)[g]	11.4[g]	57	154	72.5	--	--	--	60	6.6
9	East San Gabriel Valley 2	591	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10	Pomona/Walnut Valley	075	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11	South San Gabriel Valley	085	--	--	--	--	--	114	41.2	31.5	1(0.9%)	12.5	59	140	64.4	0.011	0.010	0.010	--	--
12	South Central LA County	112	--	--	--	--	--	110	35.3	31.5	0	13.0	57	112	52.8	0.014	0.010	0.010	--	--
13	Santa Clarita Valley	090	58	45	0	0	20.8	--	--	--	--	--	--	--	--	--	--	--	58	6.1
ORANGE COUNTY																				
16	North Orange County	3177	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17	Central Orange County	3176	60	53	0	2(3%)	24.8	352	39.2	28.1	2(0.6%)	11.0	--	--	--	--	--	--	60	6.5
18	North Coastal Orange County	3195	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19	Saddleback Valley	3812	61	48	0	0	19.2	110	33.4	28.8	0	8.6	--	--	--	--	--	--	61	4.8
RIVERSIDE COUNTY																				
22	Norco/Corona	4155	59	60	0	2(3%)	27.6	--	--	--	--	--	--	--	--	--	--	--	56	5.1
23	Metropolitan Riverside County 1	4144	112	82	0	14(13%)	33.7	352	60.8	31.0	4(1.1%)	13.6	60	107	62.7	0.007	0.007	0.007	119	5.1
23	Metropolitan Riverside County 2	4146	--	--	--	--	--	112	51.6	28.0	2(1.8%)	11.8	59	83	43.8	0.007	0.006	0.006	--	--
23	Mira Loma	4165	59	79	0	25(42%)	41.3	343	56.3	36.6	8(3%)	15.3	--	--	--	--	--	--	58	5.4
24	Perris Valley	4149	60	65	0	3(5%)	29.2	--	--	--	--	--	--	--	--	--	--	--	58	4.4
25	Lake Elsinore	4158	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26	Temecula	4031	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29	Banning Airport	4164	59	51	0	1(2%)	19.3	--	--	--	--	--	--	--	--	--	--	--	59	4.4
30	Coachella Valley 1**	4137	61[g]	42[g]	0[g]	0[g]	18.5[g]	114	26.3	12.5	0	6.1	--	--	--	--	--	--	61	4.4
30	Coachella Valley 2**	4157	119[g]	106[g]	0[g]	3(3%)[g]	28.5[g]	111	35.4	15.6	0	7.2	--	--	--	--	--	--	110	5.7
SAN BERNARDINO COUNTY																				
32	Northwest San Bernardino Valley	5175	--	--	--	--	--	--	--	--	--	--	58	94	47.2	0.009	0.008	0.007	--	--
33	Southwest San Bernardino Valley	5817	60	70	0	3(5%)	30.8	118	52.9	35.3	2(1.7%)	13.2	--	--	--	--	--	--	60	5.5
34	Central San Bernardino Valley 1	5197	60	84	0	4(7%)	31.8	109	60.1	28.2	2(1.8%)	12.6	54	131	64.7	--	--	--	59	6.0
34	Central San Bernardino Valley 2	5203	58	56	0	3(5%)	31.5	101	65.0	32.5	2(2%)	12.2	61	97	51.4	0.008	0.007	0.007	59	5.5
35	East San Bernardino Valley	5204	58	71	0	2(3%)	24.9	--	--	--	--	--	--	--	--	--	--	--	57	4.9
37	Central San Bernardino Mountains	5181	59	43	0	0	19.0	--	--	--	--	--	--	--	--	--	--	--	57	4.0
38	East San Bernardino Mountains	5818	--	--	--	--	--	55	30.7	30.6	0	8.5	--	--	--	--	--	--	--	--
	DISTRICT MAXIMUM			106	0	25	41.3		65.0	36.6	8	15.3		155	72.5	0.014	0.011	0.011		8.0
	SOUTH COAST AIR BASIN			84[g]	0	35	41.3		65.0	36.6	17	15.3		155	72.5	0.014	0.011	0.011		8.0

** Salton Sea Air Basin $\mu g/m^3$ - Micrograms per cubic meter of air   AAM = Annual Arithmetic Mean   -- - Pollutant not monitored

d) - Federal Reference Method (FRM) PM10 samples were collected every 6 days at all sites except for Stations 4144 and 4157, where samples were collected every 3 days. PM10 statistics listed above are for the FRM data only. Federal Equivalent Method (FEM) PM10 continuous monitoring instruments were operated at some of the above locations. Max 24-hour average PM10 at sites with FEM monitoring was 152 $\mu g/m^3$, at Mira Loma (155 $\mu g/m^3$ is needed to exceed the PM10 standard).

e) - Federal annual PM10 standard (AAM > 50 $\mu g/m^3$) was revoked in 2006. State standard is annual average (AAM) > 20 $\mu g/m^3$.

f) - PM2.5 samples were collected every 3 days at all sites except for station numbers 069, 072, 077, 087, 3176, 4144 and 4165, where samples were taken daily, and station number 5818 where samples were taken every 6 days. PM2.5 statistics listed above are for the FRM data only. FEM PM2.5 continuous monitoring instruments were operated at some of the above locations. Max 24-hour average PM2.5 concentration recorded at FEM sites was 73.1 $\mu g/m^3$, at Mira Loma. Federal annual PM2.5 standard is annual average (AAM) > 15.0 $\mu g/m^3$. State standard is annual average (AAM) > 12.0 $\mu g/m^3$.

g) - High PM10 and PM2.5 data samples excluded in accordance with the EPA Exceptional Event Regulation due to the special events (i.e., high wind, firework activities, etc.) are as follows: PM10 (FRM) on August 28 at Indio (323 $\mu g/m^3$); and PM2.5 (FRM) on July 5 at Station 060 (94.6 $\mu g/m^3$). Also, the following high PM10 FEM data were excluded: July 3 (396 and 344 $\mu g/m^3$) and August 28 (265 and 375 $\mu g/m^3$), both dates recorded at Stations 4137 and 4157, respectively.

h) – Federal lead standard is 3-months rolling average > 0.15 $\mu g/m^3$; state standard is monthly average ≥ 1.5 $\mu g/m^3$. Lead statistics listed above are for population-oriented sites only; standards were not exceeded at any of these sites. Lead standards were exceeded at source-oriented monitoring sites immediately downwind of stationary lead sources. Maximum monthly and 3-month rolling averages at source-oriented sites were 0.51 $\mu g/m^3$ and 0.46 $\mu g/m^3$, respectively.

i) – State sulfate standard is 24-hour ≥ 25 $\mu g/m^3$. There is no federal standard for sulfate.

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2012 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2012

Source/Receptor Area No.	Location	Station No.	Carbon Monoxide a) No. Days of Data	Carbon Monoxide a) Max Conc. in ppm 8-hour	Ozone No. Days of Data	Ozone Max. Conc. in ppm 1-hour	Ozone Max. Conc. in ppm 8-hour	Ozone Fourth High Conc. ppm 8-hour	No. Days Standard Exceeded: Old Federal > 0.124 ppm 1-hour	No. Days Standard Exceeded: Current Federal > 0.075 ppm 8-hour	No. Days Standard Exceeded: Current State > 0.09 ppm 1-hour	No. Days Standard Exceeded: Current State > 0.070 ppm 8-hour	Nitrogen Dioxide b) No. Days of Data	Nitrogen Dioxide b) Max Conc. in ppb 1-hour	Nitrogen Dioxide b) 98th Percentile Conc. ppb 1-hour	Nitrogen Dioxide b) Annual Average AAM Conc. ppb	Sulfur Dioxide c) No. Days of Data	Sulfur Dioxide c) Max. Conc. in ppb 1-hour	Sulfur Dioxide c) 99th Percentile Conc. ppb 1-hour
	LOS ANGELES COUNTY																		
1	Central LA	087	365	1.9	364	0.093	0.077	0.068	0	1	0	2	240*	77.3	68.9	24.8	235*	5.2	5.0
2	Northwest Coastal LA County	091	366	1.4	351	0.093	0.073	0.065	0	0	0	1	324*	61.3	53.6	13.7	--	--	--
3	Southwest Coastal LA County	820	366	2.5	366	0.106	0.075	0.059	0	0	1	1	268*	61.7	55	10.4	203*	4.9	4.7
4	South Coastal LA County 1	072	363	2.2	366	0.084	0.067	0.060	0	0	0	0	221*	77.2	62.5	20.8	285*	22.2	14.3
4	South Coastal LA County 2	077			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	South Coastal LA County 3	033	214*	2.6	212*	0.08	0.066	0.054	0	0	0	0	213*	90.5	77.4	25.3	213*	22.7	21.3
6	West San Fernando Valley	074	366	2.8	366	0.129	0.098	0.095	1	23	18	38	261*	70.9	48.7	14.9	--	--	--
7	East San Fernando Valley	069	366	2.4	366	0.117	0.088	0.081	0	8	8	15	295*	79.5	57	21.9	366	6.5	2.9
8	West San Gabriel Valley	088	319	1.6	318	0.111	0.086	0.08	0	9	8	20	280*	71.2	55.8	17.2	--	--	--
9	East San Gabriel Valley 1	060	366	1.2	366	0.134	0.095	0.079	1	10	18	18	352	71.8	61.5	19.5	--	--	--
9	East San Gabriel Valley 2	591	366	1.1	366	0.147	0.11	0.095	3	45	45	57	287*	60	53.3	14.2	--	--	--
10	Pomona/Walnut Valley	075	364	1.5	364	0.117	0.092	0.085	0	15	21	28	364	81.6	60.6	21.4	--	--	--
11	South San Gabriel Valley	085	366	2.2	357	0.106	0.075	0.071	0	0	5	6	204*	80.8	55.2	20.4	--	--	--
12	South Central LA County	112	366	4.0	357	0.086	0.07	0.064	0	0	0	0	337*	79.3	63.1	17.2	--	--	--
13	Santa Clarita Valley	090	353	1.1	366	0.134	0.112	0.102	6	57	45	81	366	66.1	50.7	13.6	--	--	--
	ORANGE COUNTY																		
16	North Orange County	3177	348	2.4	365	0.100	0.078	0.070	0	2	3	3	332*	67.5	53.2	18.0	--	--	--
17	Central Orange County	3176	366	2.3	366	0.079	0.067	0.065	0	0	0	0	366	67.3	53.5	14.6	--	--	--
18	North Coastal Orange County	3195	366	1.7	366	0.090	0.076	0.060	0	1	2	1	348	74.4	50.6	10.4	350	6.2	2
19	Saddleback Valley	3812	366	1.1	336	0.096	0.078	0.071	0	1	0	4	--	--	--	--	--	--	--
	RIVERSIDE COUNTY																		
22	Norco/Corona	4155	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	366	1.6	357	0.126	0.102	0.096	1	47	27	70	333*	61.7	54.6	15.5	321*	4.3	2
23	Metropolitan Riverside County 2	4146	365	1.5	--	--	--	--	--	--	--	--	246*	60.3	53.7	16.5	--	--	--
23	Mira Loma	4165	355	1.9	360	0.124	0.102	0.095	0	47	31	70	301*	60.7	49.7	13.9	--	--	--
24	Perris Valley	4149			321	0.111	0.093	0.090	0	46	28	64	--	--	--	--	--	--	--
25	Lake Elsinore	4158	366	0.7	366	0.111	0.089	0.087	0	17	10	29	366	48.3	40.9	10.2	--	--	--
26	Temecula	4031	--	--	306	0.104	0.082	0.077	0	4	1	22	--	--	--	--	--	--	--
29	Banning Airport	4164	--	--	338	0.117	0.098	0.095	0	53	40	71	321*	72.0	49.7	9.5	--	--	--
30	Coachella Valley 1**	4137	366	0.5	366	0.126	0.100	0.094	1	51	17	76	353	45.1	39.3	7.8	--	--	--
30	Coachella Valley 2**	4157	--	--	364	0.102	0.089	0.085	0	24	2	43	--	--	--	--	--	--	--
	SAN BERNARDINO COUNTY																		
32	Northwest San Bernardino Valley	5175	360	1.1	336	0.136	0.111	0.102	4	45	42	66	328*	66.7	60.2	19.5	--	--	--
33	Southwest San Bernardino Valley	5817	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34	Central San Bernardino Valley 1	5197	366	1.1	366	0.142	0.11	0.106	5	62	60	85	359	69.1	61.2	22.1	366	22.5	4.3
34	Central San Bernardino Valley 2	5203	362	1.7	366	0.124	0.109	0.100	0	54	41	74	315*	67.0	59.7	18.8	--	--	--
35	East San Bernardino Valley	5204	--	--	366	0.136	0.109	0.105	3	79	66	98	--	--	--	--	--	--	--
37	Central San Bernardino Mountains	5181	--	--	364	0.140	0.112	0.103	2	86	56	100	--	--	--	--	--	--	--
38	East San Bernardino Mountains	5818	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	DISTRICT MAXIMUM			4.0		0.147	0.112	0.106	6	86	66	100		90.5	77.4	25.3		22.7	21.3
	SOUTH COAST AIR BASIN			4.0		0.147	0.112	0.106	12	111	98	138		90.5	77.4	25.3		22.7	21.3

* Incomplete data. ** Salton Sea Air Basin

ppm - Parts Per Million parts of air, by volume ppb – Parts Per Billion parts of air, by volume AAM = Annual Arithmetic Mean -- - Pollutant not monitored

a) - The federal 8-hour standard (8-hour average CO > 9 ppm) and state 8-hour standard (8-hour average CO > 9.0 ppm) were not exceeded. The federal and state 1-hour standards (35 ppm and 20 ppm) were not exceeded either.

b) - The NO_2 federal 1-hour standard is 100 ppb and the annual standard is annual arithmetic mean NO_2 > 0.0534 ppm (53.4 ppb). The state 1-hour and annual standards are 0.18 ppm (180 ppb) and 0.030 ppm (30 ppb).

c) - The federal SO_2 1-hour standard is 75 ppb (0.075 ppm). The state standards are 1-hour average SO_2 > 0.25 ppm (250 ppb) and 24-hour average SO_2 > 0.04 ppm (40 ppb).

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4182
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For information on the current standard levels and most recent revisions please refer to "Appendix II – Current Air Quality" of the "Final 2012 AQMP (December)" which can be accessed at http://www.aqmd.gov/aqmp/2012aqmp/DraftFinal/appII.pdf. Maps showing the source/receptor area boundaries can be accessed via the Internet by entering your address in the AQMD Current Hourly Air Quality Map, accessed from http://www2.aqmd.gov/webappl/gisaqi2/VEMap3D.aspx or at http://www.aqmd.gov/map/MapAQMD2.pdf . A map or copy of the AQMP Appendix II is also available free of charge from the AQMD Public Information Center at 1-800-CUT-SMOG.

2012 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2012

Source/Receptor Area No.	Location	Station No.	Suspended Particulates PM10 [d,g] No. Days of Data	Max. Conc. in $\mu g/m^3$ 24-hour	No. (%) Samples Exceeding Standards: Federal > 150 $\mu g/m^3$ 24-hour	State > 50 $\mu g/m^3$ 24-hour	Annual. Average Conc. [e] (AAM) $\mu g/m^3$	Fine Particulates PM2.5 [f,g] No. Days of Data	Max. Conc. in $\mu g/m^3$ 24-hour	98^{th} Percentile Conc. in $\mu g/m^3$ 24-hour	No. (%) Samples Exceeding Federal Std > 35 $\mu g/m^3$ 24-hour	Annual. Average Conc. (AAM) $\mu g/m^3$	Particulates TSP No. Days of Data	Max. Conc. in $\mu g/m^3$ 24-hour	Annual. Average Conc. (AAM) $\mu g/m^3$	Lead [h] Max. Monthly Average Conc. $\mu g/m^3$	Max. 3-Months Rolling Averages $\mu g/m^3$	Max. Quarterly Average Conc. $\mu g/m^3$	PM10 Sulfate [i] No. Days of Data	Max. Conc. in $\mu g/m^3$ 24-hour
LOS ANGELES COUNTY																				
1	Central LA	087	60	80	0	4	30.2	342	58.7	31.8	4	12.5								
2	Northwest Coastal LA County	091	--	--	--	--	--	--	--	--	--	--								
3	Southwest Coastal LA County	820	57	31	0	0	19.8	--	--	--	--	--								
4	South Coastal LA County 1	072	60	45	0	0	23.3	349	49.8	26.4	4	10.4								
4	South Coastal LA County 2	077	60	54	0	1	25.5	340	46.7	25.1	4	10.6								
4	South Coastal LA County 3	033	--	--	--	--	--	--	--	--	--	--								
6	West San Fernando Valley	074	--	--	--	--	--	110	41.6	31.2	2	10.5	TSP, Lead and Sulfate data are not available at this time and will be provided later.							
7	East San Fernando Valley	069	60	55	0	1	26.4	355	54.2	28.2	2	12.2								
8	West San Gabriel Valley	088	--	--	--	--	--	96	30.5	24.2	0	10.1								
9	East San Gabriel Valley 1	060	61	78	0	6	30.3	118	39.6	25.6	1	11.0								
9	East San Gabriel Valley 2	591	--	--	--	--	--	--	--	--	--	--								
10	Pomona/Walnut Valley	075	--	--	--	--	--	--	--	--	--	--								
11	South San Gabriel Valley	085	--	--	--	--	--	119	45.3	28.5	1	11.9								
12	South Central LA County	112	--	--	--	--	--	115	51.2	30.3	1	11.7								
13	Santa Clarita Valley	090	55	37	0	0	19.6	--	--	--	--	--								
ORANGE COUNTY																				
16	North Orange County	3177	--	--	--	--	--	--	--	--	--	--								
17	Central Orange County	3176	61	48	0	0	22.4	347	50.1	24.9	4	10.8								
18	North Coastal Orange County	3195	--	--	--	--	--	--	--	--	--	--								
19	Saddleback Valley	3812	60	37	0	0	17.3	123	27.6	17.6	0	7.9								
RIVERSIDE COUNTY																				
22	Norco/Corona	4155	59	52	0	1	26.6	--	--	--	--	--								
23	Metropolitan Riverside County 1	4144	121	67	0	19	34.5	352	38.1	33.7	7	13.5								
23	Metropolitan Riverside County 2	4146	--	--	--	--	--	104	30.2	26.8	0	11.4								
23	Mira Loma	4165	56	78	0	15	39.9	351	39.3	35.1	7	15.1								
24	Perris Valley	4149	60	62	0	1	26.5	-	-	-	-	-								
25	Lake Elsinore	4158	--	--	--	--	--	--	--	--	--	--								
26	Temecula	4031	--	--	--	--	--	--	--	--	--	--								
29	Banning Airport	4164	60	45	0	0	19.1	--	--	--	--	--								
30	Coachella Valley 1**	4137	60	37	0	0	16.4	117	15.5	13.7	0	6.5								
30	Coachella Valley 2**	4157	121	124	0	7	29.5	117	20	16.4	0	7.6								
SAN BERNARDINO COUNTY																				
32	Northwest San Bernardino Valley	5175	--	--	--	--	--	--	--	--	--	--								
33	Southwest San Bernardino Valley	5817	61	57	0	4	30.8	120	35.2	28.6	0	12.4								
34	Central San Bernardino Valley 1	5197	60	67	0	9	34.3	110	39.9	35.6	3	12.8								
34	Central San Bernardino Valley 2	5203	55	53	0	1	29.2	107	34.8	27.1	0	11.8								
35	East San Bernardino Valley	5204	61	48	0	0	23.4	--	--	--	--	--								
37	Central San Bernardino Mountains	5181	57	54	0	0	18.9	--	--	--	--	--								
38	East San Bernardino Mountains	5818	--	--	--	--	--	52	36.4	27.4	1	8.0								
	DISTRICT MAXIMUM			124	0	19	39.9		58.7	35.6	7	15.1								
	SOUTH COAST AIR BASIN			80	0		39.9		58.7	35.6	15	15.1								

** Salton Sea Air Basin — $\mu g/m^3$ - Micrograms per cubic meter of air — AAM = Annual Arithmetic Mean — -- - Pollutant not monitored

d) - Federal Reference Method (FRM) PM10 samples were collected every 6 days at all sites except for Stations 4144 and 4157, where samples were collected every 3 days. PM10 statistics listed above are for the FRM data only. Federal Equivalent Method (FEM) PM10 continuous monitors were operated at some of the above locations. Max 24-hour average PM10 at sites with FEM monitoring was 142 $\mu g/m^3$, at Palm Springs in Coachella Valley. The FEM Basin's max was 104 $\mu g/m^3$, at Mira Loma.

e) - Federal annual PM10 standard (AAM > 50 $\mu g/m^3$) was revoked in 2006. State standard is annual average (AAM) > 20 $\mu g/m^3$.

f) - PM2.5 samples were collected every 3 days at all sites except for station numbers 069, 072, 077, 087, 3176, 4144 and 4165, where samples were taken daily, and station number 5818 where samples were taken every 6 days. PM2.5 statistics listed above are for the FRM data only. FEM PM2.5 continuous monitoring instruments were operated at some of the above locations. Max 24-hour average PM2.5 concentration recorded at FEM sites was 79.0 $\mu g/m^3$, at Central LA.. U.S. EPA has revised the annual PM2.5 standard from annual average (AAM) 15.0 $\mu g/m^3$ to 12.0 $\mu g/m^3$, effective March 18, 2013. State standard is annual average (AAM) > 12.0 $\mu g/m^3$.

g) - High PM10 and PM2.5 data samples excluded in accordance with the EPA Exceptional Event Regulation are as follows: PM10 (FEM) data recorded on August 9 (270 $\mu g/m^3$) and January 21 (207 $\mu g/m^3$) both at Indio; PM2.5 (FRM) at Azusa (39.6 $\mu g/m^3$) and Fontana (39.9 $\mu g/m^3$), both recorded on July 5.

h) – Federal lead standard is 3-months rolling average > 0.15 $\mu g/m^3$; state standard is monthly average ≥ 1.5 $\mu g/m^3$. Lead statistics listed above are for population-oriented sites only; standards were not exceeded at any of these sites.

i) – State sulfate standard is 24-hour ≥ 25 $\mu g/m^3$. There is no federal standard for sulfate.

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Appendix C

TIER 1-4 EMISSION STANDARDS FOR CONSTRUCTION EQUIPMENT

CARB HEAVY-DUTY IDLING EMISSION REDUCTION PROGRAM

CARB OFF-ROAD DIESEL VEHICLE REGULATION

Appendix C

FEDERAL CONSTRUCTION EQUIPMENT EMISSION STANDARDS
CARB HEAVY-DUTY VEHICLE IDLING EMISSION REDUCTION PROGRAM
CARB OFF-ROAD DIESEL VEHICLE REGULATION

1. Federal Tier 1-4 Emission Standards for Construction Equipment

In 1994, the first federal standards (Tier 1) for new nonroad (or off-road) diesel engines over 50 horsepower (hp) were adopted. These standards were phased-in by the year 2000. In 1998, Tier 1 standards were introduced for equipment under 50 hp. In addition, increasingly more stringent Tier 2 and Tier 3 standards were introduced for all equipment and subsequently phased in by the year 2008. The Tier 1-3 standards are met through advanced engine design, with no or only limited use of exhaust gas after treatment using oxidation catalysts. Tier 3 standards for NOx and hydrocarbons are similar in stringency to the 2004 standards for highway engines. However, Tier 3 standards for particulate matter were never adopted. Voluntary, more stringent emission standards exist that manufacturers can meet to earn a designation for their engines of “Blue Sky Series” (which is applicable to Tier 1-3 certifications).

In 2004, the EPA signed the final rule introducing Tier 4 emission standards, which is to be fully implemented by the year 2015. The initial standards are designed to achieve PM compliance. These standards are sometimes referred to as interim, transitional, or ‘Tier 4A’ standards. The final Tier 4 standards (‘Tier 4B’) are designed to achieve NOx and HC compliance. They require that emissions of PM and NOx be further reduced by about 90 percent from Tier 2 levels. Such emission reductions can be achieved through the use of control technologies similar to those required by the 2007-2010 standards for highway engines (such as advanced exhaust gas after treatment).

Construction companies typically have a fleet of equipment with a variety of engine tiers. Larger pieces of construction equipment typically have longer effective lifetimes and are more likely to have lower tier engines that emit more air pollution. Newer equipment tends to have higher tier engines, which emit less air pollution. By the year 2015, all new construction equipment sold in California will have Tier 4 engines. Tier 4 engines reduce pollutant emissions by 90 percent compared to Tier 2 or 3.

2. CARB Heavy-Duty Vehicle Idling Emission Reduction Program

The CARB identified particulate matter from diesel-fueled engines as a toxic air contaminant in 1998. Compared to other air toxics the CARB has identified and controlled, diesel particulate matter emissions are responsible for approximately 70 percent of the total ambient air toxics risk. The CARB *Diesel Risk Reduction Plan* (DRRP) identifies various airborne toxic control measures (ATCMs) that are being used to develop regulations to reduce diesel particulate matter emissions and associated cancer risks by 75 percent in the year 2010 and by 85 percent in the year 2020. The DRRP identifies control measures that will reduce localized risks associated with activities that expose nearby individuals to diesel particulate emissions. New retrofit requirements for existing on-road, off-road, and stationary diesel-fueled engines and vehicles are included in the DRRP. Regulatory standards are also identified in the DRRP for all new on-road, off-road, and stationary diesel-fueled engines and vehicles to reduce current diesel particulate emissions by 90 percent.[1]

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1 California Air Resources Board; *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles,* October 2000.

The CARB has adopted airborne toxic control measures and regulations to reduce public exposure to diesel particulate matter and other air contaminants by limiting the idling of diesel-fueled commercial motor vehicles. The regulation identifies new engine and in-use truck requirements and emission performance requirements for technologies used as alternatives to idling the main engine of the truck. The requirements include equipping new heavy-duty diesel engines with a non-programmable engine shutdown system that is activated automatically after five minutes of idling. Operators of in-use registered sleeper berth equipped trucks are required to manually shut down their engine when idling more than five minutes at any location within California.

Emission producing alternative technologies are also required to meet emission performance requirements. Diesel-fueled auxiliary power systems must include control devices that reduce particulate matter emissions by at least 85 percent. Fuel-fired heaters are required to meet the Ultra Low Emission Vehicle requirements.

California's "Diesel Vehicle Idling Rule" applies to diesel-fueled commercial vehicles with gross vehicular weight ratings greater than 10,000 pounds that are or must be licensed for operation on highways within the State of California. It prohibits drivers from: (1) idling the vehicle's primary diesel engine for more than five minutes at any location; and (2) operating a diesel-fueled auxiliary power system (APS) or any ancillary equipment during sleeping or resting in a sleeper berth for more than five minutes at any location when within 100 feet of a restricted area. Restricted areas include any real property zoned for individual or multifamily housing units that has one or more of such units on it.

The idling restrictions do not apply to periods during which a bus is idling with passengers onboard or a bus is idling up to ten minutes prior to passenger boarding. The idling restriction does not apply to emergency vehicles or idling when positioning or providing a power source for equipment or operations which involve a power take off for operating a lift, crane, pump, hoist, mixer (such as a ready mix concrete truck) or other auxiliary equipment. The idling restriction does not apply to periods during which a vehicle is forced to remain motionless due to: traffic conditions, adverse weather conditions, or mechanical difficulties over which the driver has no control. The idling restriction does not apply to periods during which a vehicle is idling when the vehicle is queuing (at all times beyond 100 feet from any restricted area) while waiting to perform work or a service when shutting the vehicle off would impede the progress of the queue and is not practicable. Queuing does not include the time drivers may wait in line in anticipation of the start of a workday or opening of a location where work or a service will be performed.

Many buses and heavy-duty vehicles operate at or near schools every day in California. Unnecessary idling by these vehicles at schools exposes children, teachers, parents, and residents who live nearby to diesel particulate matter and other toxic contaminants as well as the associated potential cancer risk and other adverse health effects. A statewide regulation limits idling at or near public and private schools engaged in the education of pupils at or below the 12th grade level, regardless of fuel type and whether or not children are present or school is in session.

Like school buses and transit buses, commercial motor drivers are required to turn off the engine upon arriving at a school and restart it no more than 30 seconds before departing. Transit buses and commercial motor vehicles are prohibited from idling for more than five minutes when within 100 feet of a school.

3. CARB Off-Road Diesel Vehicle Regulation

The CARB adopted a regulation in 2007 to reduce diesel particulate matter and NOx emissions from existing off-road heavy-duty diesel vehicles. The regulation applies to all self-propelled off-road diesel vehicles over 25 horsepower, including rental or leased fleets. Examples include: loaders, crawler tractors, skid steers, backhoes, forklifts, two-engine cranes, airport ground support equipment. This regulation does not apply to stationary equipment or portable equipment (generators). These vehicles are used primarily in construction and industrial operations.

The regulation's future performance requirements are based on a fleet's average NOx emissions. If a fleet cannot meet its NOx fleet target, it must comply with the regulation's Best Available Control Technology (BACT) requirements by cleaning up five to ten percent of its fleet each year that it cannot meet the target. BACT requirements can be met either by turnover (replacing older dirtier vehicles or repowering them) or by installing exhaust retrofits. These performance requirements take effect on January 1, 2014 (for large fleets) January 1, 2017 (for medium fleets) and January 1, 2019 (for small fleets).

This regulation imposes limits on unnecessary idling to five consecutive minutes. Vehicles being serviced, those in a queue waiting to accomplish work, and those that need to idle to perform (such as cranes providing hydraulic power to booms) are excepted. The off-road regulation requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (exhaust retrofits). The off-road regulation requires all vehicles to be reported to the CARB and labeled. The requirements and compliance dates vary by fleet size.

At present, a fleet may purchase a vehicle with any tier engine. Once the U.S. EPA issues authorization for the off-road regulation, restrictions on adding older vehicles to a fleet will go into effect that will become increasingly restrictive through the year 2023. Once the U.S. EPA authorization is received, only vehicles with Tier 1 or higher engines may be added to fleets. Beginning January 1, 2013, large and medium fleets may add only vehicles with a Tier 2 or higher engine. Starting in 2016, small fleets may only add vehicles with Tier 2 or higher engines. All vehicles added to large and medium fleets must have Tier 3 or higher engines starting in 2018. All vehicles added to small fleets must have Tier 3 or higher engines beginning in 2023.

Appendix D

CALIFORNIA EMISSIONS ESTIMATOR MODEL

ASSUMPTIONS AND OUTPUT SHEETS

Appendix D

CALIFORNIA EMISSIONS ESTIMATOR MODEL ASSUMPTIONS

1. Project Characteristics

Location: SCAQMD/Riverside County portion of Salton Sea Air Basin

Climate Zone: 15 (Palm Springs)

Land Use Setting For Trip Lengths: Rural [X] Urban [ ]

Operational Year: 2020

Utility: Southern California Edison

2. Land Use and Trip Generation

Trip Generation

CalEEMod default ITE average trip generation rates were assumed for the land uses proposed for a worst-case analysis. They resulted in a slightly higher weekday trip generation forecast (3,812 daily trips) than the 3,740 weekday trips estimated for the Preferred Alternative in the *Traffic Impact Study for Tentative Tract Map No. 36691* (Endo Engineering; February 10, 2014). The trip generation estimate in the traffic study was developed from the ITE *Trip Generation* (2008) regression equations.

Population

The CalEEMod statewide default value of 3.23 population per dwelling unit was assumed.

3. Construction Emissions

The default construction schedule in CalEEMod assumed one set of default equipment for each construction phase type and projected the length of time required to complete the proposed land uses. The default CalEEMod schedule arranged each of the construction phases sequentially without overlap. Since the default construction period of 14 years exceeded the 5-year proposed project development completion date, the construction schedule was shortened by assuming three sets of the default equipment and crew for the building construction phase to proportionately reduce the construction time. The construction crew and vendor trips for the building construction activities were determined based on the proposed land uses.

Estimates for the site preparation, grading, and trenching equipment and days of construction were provided by MSA Consulting, Inc., and were assumed to be sequential. Starting after these three construction phases, the building construction phase was assumed to extend to the end of the estimated construction period. The paving phase and the architectural coating phase were assumed to be sequential, but concurrent with the building construction phase. The equipment sets and the corresponding number of vendor and worker trips required for each construction activity type were consistent with the methodology outlined in the CalEEMod User's Guide.

Assumptions by Construction Phase Type

Demolition: No demolition will be required.

Site Preparation: Includes removal of clubhouse foundations, tennis courts, and parking areas.

Grading: Cut and fill will be balanced on-site.

Trenching Phase: This phase was added based on equipment and schedule information provided by MSA Consulting, Inc.

Building Construction: The building construction crew and equipment were tripled to reduce the length of the building activities to one-third of the default value.

Paving: CalEEMod single crew default values were assumed.

Architectural Coating: CalEEMod single crew default values were assumed.

4. Operational Emissions

Mobile Sources

CalEEMod default values were assumed.

Area Sources

Hearths: No propane or wood-burning stoves or fireplaces. Fifty percent of dwelling units will have natural gas fireplaces.

Architectural Coating: Low VOC coatings (250 g/l) per SCAQMD Rule 1113 were assumed for the unmitigated condition and 150 g/l were assumed for the mitigated condition.

Landscaping Equipment: Seventy-five percent electric mowers and leaf blowers.

Energy Use

High energy lighting (75% energy reduction) will be used.

Water and Wastewater Use

Water-efficient irrigation systems (50% reduction). Low-flow toilets (20% reduction). Low-flow faucets (30% reduction). Low-flow showers (30% reduction).

Solid Waste

Recycling and composting services (50% reduction).

Vegetation and Sequestration

Landscaping will be provided in each development phase. The type and final acreage of the vegetation is not known at present. No vegetation or new trees were assumed.

Palm Springs Country Club

Salton Sea Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	137.00	Dwelling Unit	28.00	137,000.00	443
Single Family Housing	304.00	Dwelling Unit	97.80	547,200.00	982

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	20
Climate Zone	15			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Off-road Equipment - Removal of existing concrete.

Off-road Equipment - MSA

Off-road Equipment - MSA

Off-road Equipment - Three crews

Off-road Equipment - Default

Off-road Equipment - Default

Trips and VMT -

On-road Fugitive Dust - Most roads are paved.

Road Dust - All roads will be paved with project.

Woodstoves - MSA

Area Coating - Rule 1113

Construction Off-road Equipment Mitigation - MSA

Mobile Land Use Mitigation -

Area Mitigation - MSA

Water Mitigation - MSA

Waste Mitigation - MSA

Project Characteristics -

Land Use - Area adjusted for Site Plan.

Construction Phase - Adjustments for increased crews.

Architectural Coating - Rule 1113

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	25
tblConstructionPhase	NumDays	3,100.00	1,033.00
tblConstructionPhase	NumDays	310.00	20.00
tblConstructionPhase	NumDays	120.00	15.00

tblConstructionPhase	PhaseEndDate	9/18/2015	9/28/2015
tblConstructionPhase	PhaseEndDate	8/17/2020	11/2/2018
tblConstructionPhase	PhaseEndDate	10/26/2015	10/28/2015
tblConstructionPhase	PhaseStartDate	8/22/2015	9/1/2015
tblConstructionPhase	PhaseStartDate	10/15/2019	1/1/2018
tblConstructionPhase	PhaseStartDate	9/29/2015	10/1/2015
tblFireplaces	NumberGas	137.00	69.00
tblFireplaces	NumberGas	258.40	152.00
tblFireplaces	NumberNoFireplace	0.00	68.00
tblFireplaces	NumberWood	30.40	0.00
tblGrading	AcresOfGrading	30.00	125.80
tblGrading	AcresOfGrading	0.00	3.00
tblGrading	MaterialExported	0.00	8,424.00
tblLandUse	LotAcreage	8.56	28.00
tblLandUse	LotAcreage	98.70	97.80
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	9.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	9.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOnRoadDust	HaulingPercentPave	50.00	95.00
tblOnRoadDust	HaulingPercentPave	50.00	95.00
tblOnRoadDust	HaulingPercentPave	50.00	95.00
tblOnRoadDust	HaulingPercentPave	50.00	95.00
tblOnRoadDust	HaulingPercentPave	50.00	95.00

tblOnRoadDust	HaulingPercentPave	50.00	95.00
tblOnRoadDust	VendorPercentPave	50.00	95.00
tblOnRoadDust	VendorPercentPave	50.00	95.00
tblOnRoadDust	VendorPercentPave	50.00	95.00
tblOnRoadDust	VendorPercentPave	50.00	95.00
tblOnRoadDust	VendorPercentPave	50.00	95.00
tblOnRoadDust	VendorPercentPave	50.00	95.00
tblOnRoadDust	WorkerPercentPave	50.00	95.00
tblOnRoadDust	WorkerPercentPave	50.00	95.00
tblOnRoadDust	WorkerPercentPave	50.00	95.00
tblOnRoadDust	WorkerPercentPave	50.00	95.00
tblOnRoadDust	WorkerPercentPave	50.00	95.00
tblOnRoadDust	WorkerPercentPave	50.00	95.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblRoadDust	RoadPercentPave	50	100
tblWoodstoves	NumberCatalytic	6.85	0.00
tblWoodstoves	NumberCatalytic	15.20	0.00
tblWoodstoves	NumberNoncatalytic	6.85	0.00
tblWoodstoves	NumberNoncatalytic	15.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.4179	3.5547	2.6926	3.7400e-003	5.2695	0.2198	5.4893	0.6234	0.2054	0.8288	0.0000	337.4536	337.4536	0.0705	0.0000	338.9333
2016	1.5130	11.7702	9.6215	0.0141	23.3155	0.7808	24.0963	2.3675	0.7333	3.1008	0.0000	1,230.3749	1,230.3749	0.2477	0.0000	1,235.5756
2017	1.3697	10.8450	9.2275	0.0140	23.2262	0.7040	23.9302	2.3584	0.6610	3.0194	0.0000	1,205.8915	1,205.8915	0.2414	0.0000	1,210.9615
2018	2.5779	11.5481	10.6024	0.0168	25.2566	0.7003	25.9569	2.5645	0.6563	3.2207	0.0000	1,436.8608	1,436.8608	0.3089	0.0000	1,443.3477
2019	6.0878	6.9883	7.0504	0.0117	21.2188	0.4134	21.6322	2.1544	0.3893	2.5437	0.0000	967.4585	967.4585	0.1865	0.0000	971.3753
Total	**11.9663**	**44.7062**	**39.1944**	**0.0604**	**98.2866**	**2.8182**	**101.1048**	**10.0681**	**2.6453**	**12.7134**	**0.0000**	**5,178.0393**	**5,178.0393**	**1.0549**	**0.0000**	**5,200.1932**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.4179	3.5547	2.6926	3.7400e-003	0.9191	0.2198	1.1388	0.1279	0.2054	0.3333	0.0000	337.4533	337.4533	0.0705	0.0000	338.9330
2016	1.5130	11.7702	9.6215	0.0141	3.8698	0.7808	4.6506	0.4169	0.7333	1.1503	0.0000	1,230.3738	1,230.3738	0.2477	0.0000	1,235.5744
2017	1.3697	10.8450	9.2275	0.0140	3.8550	0.7040	4.5590	0.4153	0.6610	1.0764	0.0000	1,205.8904	1,205.8904	0.2414	0.0000	1,210.9603
2018	2.5779	11.5481	10.6024	0.0168	4.1916	0.7003	4.8919	0.4515	0.6563	1.1078	0.0000	1,436.8594	1,436.8594	0.3089	0.0000	1,443.3463
2019	6.0878	6.9883	7.0504	0.0117	3.5213	0.4134	3.9347	0.3792	0.3893	0.7685	0.0000	967.4576	967.4576	0.1865	0.0000	971.3744
Total	**11.9663**	**44.7062**	**39.1944**	**0.0604**	**16.3568**	**2.8182**	**19.1750**	**1.7909**	**2.6453**	**4.4362**	**0.0000**	**5,178.0345**	**5,178.0345**	**1.0549**	**0.0000**	**5,200.1883**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**83.36**	**0.00**	**81.03**	**82.21**	**0.00**	**65.11**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.8601	0.0380	3.2863	1.7000e-004		0.0302	0.0302		0.0301	0.0301	0.0000	179.4194	179.4194	8.5500e-003	3.1900e-003	180.5883
Energy	0.0706	0.6031	0.2566	3.8500e-003		0.0488	0.0488		0.0488	0.0488	0.0000	1,557.7017	1,557.7017	0.0529	0.0210	1,565.3150
Mobile	3.7217	11.0664	40.0537	0.0505	3.2512	0.1808	3.4319	0.8689	0.1661	1.0350	0.0000	4,237.9737	4,237.9737	0.2009	0.0000	4,242.1918
Waste						0.0000	0.0000		0.0000	0.0000	94.5207	0.0000	94.5207	5.5860	0.0000	211.8270
Water						0.0000	0.0000		0.0000	0.0000	9.1156	164.6549	173.7705	0.9438	0.0237	200.9296
Total	**7.6524**	**11.7075**	**43.5966**	**0.0545**	**3.2512**	**0.2598**	**3.5109**	**0.8689**	**0.2449**	**1.1138**	**103.6363**	**6,139.7497**	**6,243.3860**	**6.7921**	**0.0478**	**6,400.8518**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.8346	0.0322	2.7209	1.3000e-004		0.0268	0.0268		0.0267	0.0267	0.0000	178.2796	178.2796	7.2400e-003	3.1900e-003	179.4209
Energy	0.0706	0.6031	0.2566	3.8500e-003		0.0488	0.0488		0.0488	0.0488	0.0000	1,557.7017	1,557.7017	0.0529	0.0210	1,565.3150
Mobile	3.7217	11.0664	40.0537	0.0505	3.2512	0.1808	3.4319	0.8689	0.1661	1.0350	0.0000	4,237.9737	4,237.9737	0.2009	0.0000	4,242.1918
Waste						0.0000	0.0000		0.0000	0.0000	47.2604	0.0000	47.2604	2.7930	0.0000	105.9135
Water						0.0000	0.0000		0.0000	0.0000	7.2925	139.7290	147.0215	0.7553	0.0190	168.7685
Total	**7.6268**	**11.7017**	**43.0312**	**0.0545**	**3.2512**	**0.2563**	**3.5075**	**0.8689**	**0.2415**	**1.1104**	**54.5529**	**6,113.6840**	**6,168.2369**	**3.8093**	**0.0432**	**6,261.6097**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.33	0.05	1.30	0.07	0.00	1.32	0.10	0.00	1.40	0.31	47.36	0.42	1.20	43.92	9.78	2.18

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/1/2015	8/21/2015	5	15	
2	Grading	Grading	9/1/2015	9/28/2015	5	20	
3	Trenching	Trenching	10/1/2015	10/28/2015	5	20	
4	Building Construction	Building Construction	10/29/2015	10/14/2019	5	1033	
5	Paving	Paving	1/1/2018	11/2/2018	5	220	
6	Architectural Coating	Architectural Coating	11/3/2018	9/6/2019	5	220	

Acres of Grading (Site Preparation Phase): 3

Acres of Grading (Grading Phase): 125.8

Acres of Paving: 0

Residential Indoor: 1,385,505; Residential Outdoor: 461,835; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	0	8.00	162	0.38
Grading	Graders	3	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	0	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Excavators	1	8.00	162	0.38
Trenching	Off-Highway Trucks	1	8.00	400	0.38
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	3	7.00	226	0.29
Building Construction	Forklifts	9	8.00	89	0.20
Building Construction	Generator Sets	3	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	9	7.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Trenching	4	10.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	8	20.00	0.00	833.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	27	208.00	47.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	42.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1378	0.0000	0.1378	0.0748	0.0000	0.0748	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0448	0.4641	0.3483	3.4000e-004		0.0261	0.0261		0.0242	0.0242	0.0000	32.0083	32.0083	8.7800e-003	0.0000	32.1928
Total	**0.0448**	**0.4641**	**0.3483**	**3.4000e-004**	**0.1378**	**0.0261**	**0.1638**	**0.0748**	**0.0242**	**0.0990**	**0.0000**	**32.0083**	**32.0083**	**8.7800e-003**	**0.0000**	**32.1928**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.2000e-003	0.1169	0.1126	2.9000e-004	0.5864	2.6900e-003	0.5891	0.0597	2.4800e-003	0.0622	0.0000	27.0157	27.0157	1.7000e-004	0.0000	27.0193
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1000e-004	9.9000e-004	9.5600e-003	1.0000e-005	0.1160	1.0000e-005	0.1160	0.0118	1.0000e-005	0.0118	0.0000	1.1011	1.1011	7.0000e-005	0.0000	1.1026
Total	**9.9100e-003**	**0.1179**	**0.1221**	**3.0000e-004**	**0.7023**	**2.7000e-003**	**0.7050**	**0.0715**	**2.4900e-003**	**0.0740**	**0.0000**	**28.1168**	**28.1168**	**2.4000e-004**	**0.0000**	**28.1219**

3.2 Site Preparation - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0457	0.0000	0.0457	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0448	0.4641	0.3483	3.4000e-004		0.0261	0.0261		0.0242	0.0242	0.0000	32.0082	32.0082	8.7800e-003	0.0000	32.1927
Total	**0.0448**	**0.4641**	**0.3483**	**3.4000e-004**	**0.0457**	**0.0261**	**0.0717**	**0.0248**	**0.0242**	**0.0490**	**0.0000**	**32.0082**	**32.0082**	**8.7800e-003**	**0.0000**	**32.1927**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.2000e-003	0.1169	0.1126	2.9000e-004	0.0980	2.6900e-003	0.1007	0.0108	2.4800e-003	0.0132	0.0000	27.0157	27.0157	1.7000e-004	0.0000	27.0193
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1000e-004	9.9000e-004	9.5600e-003	1.0000e-005	0.0192	1.0000e-005	0.0192	2.0700e-003	1.0000e-005	2.0700e-003	0.0000	1.1011	1.1011	7.0000e-005	0.0000	1.1026
Total	**9.9100e-003**	**0.1179**	**0.1221**	**3.0000e-004**	**0.1173**	**2.7000e-003**	**0.1200**	**0.0128**	**2.4900e-003**	**0.0153**	**0.0000**	**28.1168**	**28.1168**	**2.4000e-004**	**0.0000**	**28.1219**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1269	0.0000	0.1269	0.0403	0.0000	0.0403	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0518	0.5386	0.3077	3.4000e-004		0.0304	0.0304		0.0280	0.0280	0.0000	32.2967	32.2967	9.6400e-003	0.0000	32.4992
Total	**0.0518**	**0.5386**	**0.3077**	**3.4000e-004**	**0.1269**	**0.0304**	**0.1574**	**0.0403**	**0.0280**	**0.0683**	**0.0000**	**32.2967**	**32.2967**	**9.6400e-003**	**0.0000**	**32.4992**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1000e-004	9.9000e-004	9.5600e-003	1.0000e-005	0.1160	1.0000e-005	0.1160	0.0118	1.0000e-005	0.0118	0.0000	1.1011	1.1011	7.0000e-005	0.0000	1.1026
Total	**7.1000e-004**	**9.9000e-004**	**9.5600e-003**	**1.0000e-005**	**0.1160**	**1.0000e-005**	**0.1160**	**0.0118**	**1.0000e-005**	**0.0118**	**0.0000**	**1.1011**	**1.1011**	**7.0000e-005**	**0.0000**	**1.1026**

3.3 Grading - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0421	0.0000	0.0421	0.0134	0.0000	0.0134	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0518	0.5386	0.3077	3.4000e-004		0.0304	0.0304		0.0280	0.0280	0.0000	32.2967	32.2967	9.6400e-003	0.0000	32.4992
Total	**0.0518**	**0.5386**	**0.3077**	**3.4000e-004**	**0.0421**	**0.0304**	**0.0725**	**0.0134**	**0.0280**	**0.0413**	**0.0000**	**32.2967**	**32.2967**	**9.6400e-003**	**0.0000**	**32.4992**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1000e-004	9.9000e-004	9.5600e-003	1.0000e-005	0.0192	1.0000e-005	0.0192	2.0700e-003	1.0000e-005	2.0700e-003	0.0000	1.1011	1.1011	7.0000e-005	0.0000	1.1026
Total	**7.1000e-004**	**9.9000e-004**	**9.5600e-003**	**1.0000e-005**	**0.0192**	**1.0000e-005**	**0.0192**	**2.0700e-003**	**1.0000e-005**	**2.0700e-003**	**0.0000**	**1.1011**	**1.1011**	**7.0000e-005**	**0.0000**	**1.1026**

3.4 Trenching - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0217	0.2387	0.1375	2.5000e-004		0.0124	0.0124		0.0114	0.0114	0.0000	23.5270	23.5270	7.0200e-003	0.0000	23.6745
Total	**0.0217**	**0.2387**	**0.1375**	**2.5000e-004**		**0.0124**	**0.0124**		**0.0114**	**0.0114**	**0.0000**	**23.5270**	**23.5270**	**7.0200e-003**	**0.0000**	**23.6745**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7000e-004	6.6000e-004	6.3700e-003	1.0000e-005	0.0773	1.0000e-005	0.0773	7.8500e-003	1.0000e-005	7.8500e-003	0.0000	0.7341	0.7341	5.0000e-005	0.0000	0.7351
Total	**4.7000e-004**	**6.6000e-004**	**6.3700e-003**	**1.0000e-005**	**0.0773**	**1.0000e-005**	**0.0773**	**7.8500e-003**	**1.0000e-005**	**7.8500e-003**	**0.0000**	**0.7341**	**0.7341**	**5.0000e-005**	**0.0000**	**0.7351**

3.4 Trenching - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0217	0.2387	0.1375	2.5000e-004		0.0124	0.0124		0.0114	0.0114	0.0000	23.5270	23.5270	7.0200e-003	0.0000	23.6745
Total	**0.0217**	**0.2387**	**0.1375**	**2.5000e-004**		**0.0124**	**0.0124**		**0.0114**	**0.0114**	**0.0000**	**23.5270**	**23.5270**	**7.0200e-003**	**0.0000**	**23.6745**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7000e-004	6.6000e-004	6.3700e-003	1.0000e-005	0.0128	1.0000e-005	0.0128	1.3800e-003	1.0000e-005	1.3800e-003	0.0000	0.7341	0.7341	5.0000e-005	0.0000	0.7351
Total	**4.7000e-004**	**6.6000e-004**	**6.3700e-003**	**1.0000e-005**	**0.0128**	**1.0000e-005**	**0.0128**	**1.3800e-003**	**1.0000e-005**	**1.3800e-003**	**0.0000**	**0.7341**	**0.7341**	**5.0000e-005**	**0.0000**	**0.7351**

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2525	2.0721	1.2934	1.8500e-003		0.1461	0.1461		0.1373	0.1373	0.0000	168.3561	168.3561	0.0422	0.0000	169.2432
Total	**0.2525**	**2.0721**	**1.2934**	**1.8500e-003**		**0.1461**	**0.1461**		**0.1373**	**0.1373**	**0.0000**	**168.3561**	**168.3561**	**0.0422**	**0.0000**	**169.2432**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0134	0.0900	0.1629	1.8000e-004	0.4110	1.8300e-003	0.4129	0.0419	1.6800e-003	0.0436	0.0000	16.1955	16.1955	1.2000e-004	0.0000	16.1980
Worker	0.0227	0.0317	0.3048	4.6000e-004	3.6982	2.7000e-004	3.6985	0.3753	2.5000e-004	0.3756	0.0000	35.1180	35.1180	2.2900e-003	0.0000	35.1660
Total	**0.0360**	**0.1217**	**0.4677**	**6.4000e-004**	**4.1093**	**2.1000e-003**	**4.1114**	**0.4173**	**1.9300e-003**	**0.4192**	**0.0000**	**51.3135**	**51.3135**	**2.4100e-003**	**0.0000**	**51.3640**

3.5 Building Construction - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2525	2.0721	1.2934	1.8500e-003		0.1461	0.1461		0.1373	0.1373	0.0000	168.3559	168.3559	0.0422	0.0000	169.2429
Total	**0.2525**	**2.0721**	**1.2934**	**1.8500e-003**		**0.1461**	**0.1461**		**0.1373**	**0.1373**	**0.0000**	**168.3559**	**168.3559**	**0.0422**	**0.0000**	**169.2429**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0134	0.0900	0.1629	1.8000e-004	0.0688	1.8300e-003	0.0707	7.6200e-003	1.6800e-003	9.3000e-003	0.0000	16.1955	16.1955	1.2000e-004	0.0000	16.1980
Worker	0.0227	0.0317	0.3048	4.6000e-004	0.6132	2.7000e-004	0.6135	0.0659	2.5000e-004	0.0661	0.0000	35.1180	35.1180	2.2900e-003	0.0000	35.1660
Total	**0.0360**	**0.1217**	**0.4677**	**6.4000e-004**	**0.6820**	**2.1000e-003**	**0.6841**	**0.0735**	**1.9300e-003**	**0.0754**	**0.0000**	**51.3135**	**51.3135**	**2.4100e-003**	**0.0000**	**51.3640**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.3335	11.1602	7.2454	0.0105		0.7702	0.7702		0.7237	0.7237	0.0000	948.0313	948.0313	0.2351	0.0000	952.9690
Total	**1.3335**	**11.1602**	**7.2454**	**0.0105**		**0.7702**	**0.7702**		**0.7237**	**0.7237**	**0.0000**	**948.0313**	**948.0313**	**0.2351**	**0.0000**	**952.9690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0641	0.4475	0.8227	1.0000e-003	2.3322	9.0400e-003	2.3412	0.2380	8.3100e-003	0.2463	0.0000	90.7549	90.7549	6.2000e-004	0.0000	90.7679
Worker	0.1153	0.1624	1.5535	2.6000e-003	20.9833	1.4900e-003	20.9848	2.1295	1.3600e-003	2.1308	0.0000	191.5887	191.5887	0.0119	0.0000	191.8387
Total	**0.1794**	**0.6100**	**2.3762**	**3.6000e-003**	**23.3155**	**0.0105**	**23.3260**	**2.3675**	**9.6700e-003**	**2.3771**	**0.0000**	**282.3436**	**282.3436**	**0.0125**	**0.0000**	**282.6066**

3.5 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.3335	11.1602	7.2453	0.0105		0.7702	0.7702		0.7237	0.7237	0.0000	948.0302	948.0302	0.2351	0.0000	952.9679
Total	**1.3335**	**11.1602**	**7.2453**	**0.0105**		**0.7702**	**0.7702**		**0.7237**	**0.7237**	**0.0000**	**948.0302**	**948.0302**	**0.2351**	**0.0000**	**952.9679**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0641	0.4475	0.8227	1.0000e-003	0.3905	9.0400e-003	0.3996	0.0432	8.3100e-003	0.0515	0.0000	90.7549	90.7549	6.2000e-004	0.0000	90.7679
Worker	0.1153	0.1624	1.5535	2.6000e-003	3.4793	1.4900e-003	3.4807	0.3737	1.3600e-003	0.3751	0.0000	191.5887	191.5887	0.0119	0.0000	191.8387
Total	**0.1794**	**0.6100**	**2.3762**	**3.6000e-003**	**3.8698**	**0.0105**	**3.8803**	**0.4169**	**9.6700e-003**	**0.4266**	**0.0000**	**282.3436**	**282.3436**	**0.0125**	**0.0000**	**282.6066**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.2099	10.2982	7.0704	0.0105		0.6947	0.6947		0.6525	0.6525	0.0000	933.9685	933.9685	0.2299	0.0000	938.7957
Total	**1.2099**	**10.2982**	**7.0704**	**0.0105**		**0.6947**	**0.6947**		**0.6525**	**0.6525**	**0.0000**	**933.9685**	**933.9685**	**0.2299**	**0.0000**	**938.7957**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0565	0.3995	0.7586	1.0000e-003	2.3233	7.8800e-003	2.3312	0.2371	7.2400e-003	0.2443	0.0000	88.8713	88.8713	5.8000e-004	0.0000	88.8835
Worker	0.1033	0.1473	1.3985	2.5900e-003	20.9029	1.4400e-003	20.9044	2.1213	1.3300e-003	2.1226	0.0000	183.0517	183.0517	0.0110	0.0000	183.2823
Total	**0.1598**	**0.5468**	**2.1571**	**3.5900e-003**	**23.2262**	**9.3200e-003**	**23.2355**	**2.3584**	**8.5700e-003**	**2.3670**	**0.0000**	**271.9230**	**271.9230**	**0.0116**	**0.0000**	**272.1658**

3.5 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.2099	10.2982	7.0704	0.0105		0.6947	0.6947		0.6525	0.6525	0.0000	933.9674	933.9674	0.2299	0.0000	938.7946
Total	**1.2099**	**10.2982**	**7.0704**	**0.0105**		**0.6947**	**0.6947**		**0.6525**	**0.6525**	**0.0000**	**933.9674**	**933.9674**	**0.2299**	**0.0000**	**938.7946**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0565	0.3995	0.7586	1.0000e-003	0.3890	7.8800e-003	0.3969	0.0431	7.2400e-003	0.0503	0.0000	88.8713	88.8713	5.8000e-004	0.0000	88.8835
Worker	0.1033	0.1473	1.3985	2.5900e-003	3.4659	1.4400e-003	3.4674	0.3723	1.3300e-003	0.3736	0.0000	183.0517	183.0517	0.0110	0.0000	183.2823
Total	**0.1598**	**0.5468**	**2.1571**	**3.5900e-003**	**3.8550**	**9.3200e-003**	**3.8643**	**0.4154**	**8.5700e-003**	**0.4239**	**0.0000**	**271.9230**	**271.9230**	**0.0116**	**0.0000**	**272.1658**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.0448	9.1066	6.8640	0.0105		0.5850	0.5850		0.5500	0.5500	0.0000	926.9533	926.9533	0.2268	0.0000	931.7170
Total	**1.0448**	**9.1066**	**6.8640**	**0.0105**		**0.5850**	**0.5850**		**0.5500**	**0.5500**	**0.0000**	**926.9533**	**926.9533**	**0.2268**	**0.0000**	**931.7170**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0506	0.3644	0.7109	1.0000e-003	2.3322	7.4100e-003	2.3396	0.2380	6.8100e-003	0.2448	0.0000	87.6124	87.6124	5.7000e-004	0.0000	87.6244
Worker	0.0937	0.1355	1.2770	2.5900e-003	20.9833	1.4200e-003	20.9847	2.1295	1.3100e-003	2.1308	0.0000	176.6624	176.6624	0.0103	0.0000	176.8783
Total	**0.1442**	**0.4999**	**1.9879**	**3.5900e-003**	**23.3155**	**8.8300e-003**	**23.3243**	**2.3675**	**8.1200e-003**	**2.3756**	**0.0000**	**264.2747**	**264.2747**	**0.0109**	**0.0000**	**264.5027**

3.5 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.0448	9.1066	6.8640	0.0105		0.5850	0.5850		0.5500	0.5500	0.0000	926.9522	926.9522	0.2268	0.0000	931.7159
Total	**1.0448**	**9.1066**	**6.8640**	**0.0105**		**0.5850**	**0.5850**		**0.5500**	**0.5500**	**0.0000**	**926.9522**	**926.9522**	**0.2268**	**0.0000**	**931.7159**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0506	0.3644	0.7109	1.0000e-003	0.3905	7.4100e-003	0.3979	0.0432	6.8100e-003	0.0500	0.0000	87.6124	87.6124	5.7000e-004	0.0000	87.6244
Worker	0.0937	0.1355	1.2770	2.5900e-003	3.4793	1.4200e-003	3.4807	0.3737	1.3100e-003	0.3750	0.0000	176.6624	176.6624	0.0103	0.0000	176.8783
Total	**0.1442**	**0.4999**	**1.9879**	**3.5900e-003**	**3.8698**	**8.8300e-003**	**3.8786**	**0.4169**	**8.1200e-003**	**0.4251**	**0.0000**	**264.2747**	**264.2747**	**0.0109**	**0.0000**	**264.5027**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.7231	6.4468	5.2645	8.2400e-003		0.3952	0.3952		0.3716	0.3716	0.0000	719.9275	719.9275	0.1752	0.0000	723.6059
Total	**0.7231**	**6.4468**	**5.2645**	**8.2400e-003**		**0.3952**	**0.3952**		**0.3716**	**0.3716**	**0.0000**	**719.9275**	**719.9275**	**0.1752**	**0.0000**	**723.6059**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0364	0.2616	0.5294	7.8000e-004	1.8318	5.4000e-003	1.8372	0.1869	4.9700e-003	0.1919	0.0000	67.5848	67.5848	4.4000e-004	0.0000	67.5941
Worker	0.0675	0.0983	0.9281	2.0400e-003	16.4812	1.1200e-003	16.4823	1.6726	1.0300e-003	1.6736	0.0000	133.5483	133.5483	7.6300e-003	0.0000	133.7085
Total	**0.1039**	**0.3599**	**1.4575**	**2.8200e-003**	**18.3129**	**6.5200e-003**	**18.3195**	**1.8595**	**6.0000e-003**	**1.8655**	**0.0000**	**201.1331**	**201.1331**	**8.0700e-003**	**0.0000**	**201.3026**

3.5 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.7231	6.4467	5.2645	8.2400e-003		0.3952	0.3952		0.3716	0.3716	0.0000	719.9267	719.9267	0.1752	0.0000	723.6051
Total	**0.7231**	**6.4467**	**5.2645**	**8.2400e-003**		**0.3952**	**0.3952**		**0.3716**	**0.3716**	**0.0000**	**719.9267**	**719.9267**	**0.1752**	**0.0000**	**723.6051**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0364	0.2616	0.5294	7.8000e-004	0.3067	5.4000e-003	0.3121	0.0339	4.9700e-003	0.0389	0.0000	67.5848	67.5848	4.4000e-004	0.0000	67.5941
Worker	0.0675	0.0983	0.9281	2.0400e-003	2.7328	1.1200e-003	2.7339	0.2935	1.0300e-003	0.2946	0.0000	133.5483	133.5483	7.6300e-003	0.0000	133.7085
Total	**0.1039**	**0.3599**	**1.4575**	**2.8200e-003**	**3.0395**	**6.5200e-003**	**3.0460**	**0.3275**	**6.0000e-003**	**0.3335**	**0.0000**	**201.1331**	**201.1331**	**8.0700e-003**	**0.0000**	**201.3026**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1773	1.8879	1.5944	2.4500e-003		0.1033	0.1033		0.0950	0.0950	0.0000	224.0562	224.0562	0.0698	0.0000	225.5210
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1773**	**1.8879**	**1.5944**	**2.4500e-003**		**0.1033**	**0.1033**		**0.0950**	**0.0950**	**0.0000**	**224.0562**	**224.0562**	**0.0698**	**0.0000**	**225.5210**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6900e-003	8.2400e-003	0.0776	1.6000e-004	1.2755	9.0000e-005	1.2756	0.1294	8.0000e-005	0.1295	0.0000	10.7388	10.7388	6.2000e-004	0.0000	10.7519
Total	**5.6900e-003**	**8.2400e-003**	**0.0776**	**1.6000e-004**	**1.2755**	**9.0000e-005**	**1.2756**	**0.1294**	**8.0000e-005**	**0.1295**	**0.0000**	**10.7388**	**10.7388**	**6.2000e-004**	**0.0000**	**10.7519**

3.6 Paving - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1773	1.8879	1.5944	2.4500e-003		0.1033	0.1033		0.0950	0.0950	0.0000	224.0559	224.0559	0.0698	0.0000	225.5207
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1773**	**1.8879**	**1.5944**	**2.4500e-003**		**0.1033**	**0.1033**		**0.0950**	**0.0950**	**0.0000**	**224.0559**	**224.0559**	**0.0698**	**0.0000**	**225.5207**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6900e-003	8.2400e-003	0.0776	1.6000e-004	0.2115	9.0000e-005	0.2116	0.0227	8.0000e-005	0.0228	0.0000	10.7388	10.7388	6.2000e-004	0.0000	10.7519
Total	**5.6900e-003**	**8.2400e-003**	**0.0776**	**1.6000e-004**	**0.2115**	**9.0000e-005**	**0.2116**	**0.0227**	**8.0000e-005**	**0.0228**	**0.0000**	**10.7388**	**10.7388**	**6.2000e-004**	**0.0000**	**10.7519**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.1968					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1200e-003	0.0411	0.0380	6.0000e-005		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	5.2342	5.2342	5.0000e-004	0.0000	5.2446
Total	**1.2029**	**0.0411**	**0.0380**	**6.0000e-005**		**3.0900e-003**	**3.0900e-003**		**3.0900e-003**	**3.0900e-003**	**0.0000**	**5.2342**	**5.2342**	**5.0000e-004**	**0.0000**	**5.2446**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9700e-003	4.3000e-003	0.0405	8.0000e-005	0.6656	5.0000e-005	0.6656	0.0676	4.0000e-005	0.0676	0.0000	5.6037	5.6037	3.3000e-004	0.0000	5.6105
Total	**2.9700e-003**	**4.3000e-003**	**0.0405**	**8.0000e-005**	**0.6656**	**5.0000e-005**	**0.6656**	**0.0676**	**4.0000e-005**	**0.0676**	**0.0000**	**5.6037**	**5.6037**	**3.3000e-004**	**0.0000**	**5.6105**

3.7 Architectural Coating - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.1968					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1200e-003	0.0411	0.0380	6.0000e-005		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	5.2342	5.2342	5.0000e-004	0.0000	5.2446
Total	**1.2029**	**0.0411**	**0.0380**	**6.0000e-005**		**3.0900e-003**	**3.0900e-003**		**3.0900e-003**	**3.0900e-003**	**0.0000**	**5.2342**	**5.2342**	**5.0000e-004**	**0.0000**	**5.2446**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9700e-003	4.3000e-003	0.0405	8.0000e-005	0.1104	5.0000e-005	0.1104	0.0119	4.0000e-005	0.0119	0.0000	5.6037	5.6037	3.3000e-004	0.0000	5.6105
Total	**2.9700e-003**	**4.3000e-003**	**0.0405**	**8.0000e-005**	**0.1104**	**5.0000e-005**	**0.1104**	**0.0119**	**4.0000e-005**	**0.0119**	**0.0000**	**5.6037**	**5.6037**	**3.3000e-004**	**0.0000**	**5.6105**

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2250					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0239	0.1643	0.1648	2.7000e-004		0.0115	0.0115		0.0115	0.0115	0.0000	22.8516	22.8516	1.9300e-003	0.0000	22.8922
Total	**5.2489**	**0.1643**	**0.1648**	**2.7000e-004**		**0.0115**	**0.0115**		**0.0115**	**0.0115**	**0.0000**	**22.8516**	**22.8516**	**1.9300e-003**	**0.0000**	**22.8922**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0119	0.0173	0.1636	3.6000e-004	2.9059	2.0000e-004	2.9060	0.2949	1.8000e-004	0.2951	0.0000	23.5463	23.5463	1.3500e-003	0.0000	23.5746
Total	**0.0119**	**0.0173**	**0.1636**	**3.6000e-004**	**2.9059**	**2.0000e-004**	**2.9060**	**0.2949**	**1.8000e-004**	**0.2951**	**0.0000**	**23.5463**	**23.5463**	**1.3500e-003**	**0.0000**	**23.5746**

3.7 Architectural Coating - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2250					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0239	0.1643	0.1648	2.7000e-004		0.0115	0.0115		0.0115	0.0115	0.0000	22.8516	22.8516	1.9300e-003	0.0000	22.8921
Total	**5.2489**	**0.1643**	**0.1648**	**2.7000e-004**		**0.0115**	**0.0115**		**0.0115**	**0.0115**	**0.0000**	**22.8516**	**22.8516**	**1.9300e-003**	**0.0000**	**22.8921**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0119	0.0173	0.1636	3.6000e-004	0.4818	2.0000e-004	0.4820	0.0518	1.8000e-004	0.0519	0.0000	23.5463	23.5463	1.3500e-003	0.0000	23.5746
Total	**0.0119**	**0.0173**	**0.1636**	**3.6000e-004**	**0.4818**	**2.0000e-004**	**0.4820**	**0.0518**	**1.8000e-004**	**0.0519**	**0.0000**	**23.5463**	**23.5463**	**1.3500e-003**	**0.0000**	**23.5746**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.7217	11.0664	40.0537	0.0505	3.2512	0.1808	3.4319	0.8689	0.1661	1.0350	0.0000	4,237.9737	4,237.9737	0.2009	0.0000	4,242.1918
Unmitigated	3.7217	11.0664	40.0537	0.0505	3.2512	0.1808	3.4319	0.8689	0.1661	1.0350	0.0000	4,237.9737	4,237.9737	0.2009	0.0000	4,242.1918

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	902.83	980.92	831.59	2,021,748	2,021,748
Single Family Housing	2,909.28	3,064.32	2666.08	6,479,657	6,479,657
Total	3,812.11	4,045.24	3,497.67	8,501,406	8,501,406

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	11.00	3.50	4.50	40.20	19.20	40.60	86	11	3
Single Family Housing	11.00	3.50	4.50	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.471820	0.065078	0.165905	0.156714	0.039906	0.006660	0.011603	0.072822	0.001486	0.001268	0.003790	0.000578	0.002369

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	859.2708	859.2708	0.0395	8.1700e-003	862.6335
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	859.2708	859.2708	0.0395	8.1700e-003	862.6335
NaturalGas Mitigated	0.0706	0.6031	0.2566	3.8500e-003		0.0488	0.0488		0.0488	0.0488	0.0000	698.4309	698.4309	0.0134	0.0128	702.6815
NaturalGas Unmitigated	0.0706	0.6031	0.2566	3.8500e-003		0.0488	0.0488		0.0488	0.0488	0.0000	698.4309	698.4309	0.0134	0.0128	702.6815

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	1.02651e+007	0.0554	0.4730	0.2013	3.0200e-003		0.0382	0.0382		0.0382	0.0382	0.0000	547.7872	547.7872	0.0105	0.0100	551.1209
Condo/Townhouse	2.82296e+006	0.0152	0.1301	0.0554	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	150.6438	150.6438	2.8900e-003	2.7600e-003	151.5606
Total		**0.0706**	**0.6031**	**0.2566**	**3.8500e-003**		**0.0488**	**0.0488**		**0.0488**	**0.0488**	**0.0000**	**698.4309**	**698.4309**	**0.0134**	**0.0128**	**702.6815**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	1.02651e+007	0.0554	0.4730	0.2013	3.0200e-003		0.0382	0.0382		0.0382	0.0382	0.0000	547.7872	547.7872	0.0105	0.0100	551.1209
Condo/Townhouse	2.82296e+006	0.0152	0.1301	0.0554	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	150.6438	150.6438	2.8900e-003	2.7600e-003	151.5606
Total		**0.0706**	**0.6031**	**0.2566**	**3.8500e-003**		**0.0488**	**0.0488**		**0.0488**	**0.0488**	**0.0000**	**698.4309**	**698.4309**	**0.0134**	**0.0128**	**702.6815**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	668081	191.1825	8.7900e-003	1.8200e-003	191.9307
Single Family Housing	2.33461e+006	668.0882	0.0307	6.3500e-003	670.7028
Total		**859.2708**	**0.0395**	**8.1700e-003**	**862.6335**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	668081	191.1825	8.7900e-003	1.8200e-003	191.9307
Single Family Housing	2.33461e+006	668.0882	0.0307	6.3500e-003	670.7028
Total		**859.2708**	**0.0395**	**8.1700e-003**	**862.6335**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.8346	0.0322	2.7209	1.3000e-004		0.0268	0.0268		0.0267	0.0267	0.0000	178.2796	178.2796	7.2400e-003	3.1900e-003	179.4209
Unmitigated	3.8601	0.0380	3.2863	1.7000e-004		0.0302	0.0302		0.0301	0.0301	0.0000	179.4194	179.4194	8.5500e-003	3.1900e-003	180.5883

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0703					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.6721					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0176	0.0000	9.6000e-004	0.0000		0.0122	0.0122		0.0120	0.0120	0.0000	174.0706	174.0706	3.3400e-003	3.1900e-003	175.1300
Landscaping	0.1000	0.0380	3.2854	1.7000e-004		0.0181	0.0181		0.0181	0.0181	0.0000	5.3488	5.3488	5.2200e-003	0.0000	5.4583
Total	**3.8601**	**0.0380**	**3.2863**	**1.7000e-004**		**0.0302**	**0.0302**		**0.0301**	**0.0301**	**0.0000**	**179.4194**	**179.4194**	**8.5600e-003**	**3.1900e-003**	**180.5883**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0703					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.6721					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0176	0.0000	9.6000e-004	0.0000		0.0122	0.0122		0.0120	0.0120	0.0000	174.0706	174.0706	3.3400e-003	3.1900e-003	175.1300
Landscaping	0.0745	0.0322	2.7199	1.3000e-004		0.0146	0.0146		0.0146	0.0146	0.0000	4.2090	4.2090	3.9000e-003	0.0000	4.2909
Total	**3.8346**	**0.0322**	**2.7209**	**1.3000e-004**		**0.0268**	**0.0268**		**0.0267**	**0.0267**	**0.0000**	**178.2796**	**178.2796**	**7.2400e-003**	**3.1900e-003**	**179.4209**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	147.0215	0.7553	0.0190	168.7685
Unmitigated	173.7705	0.9438	0.0237	200.9296

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	8.9261 / 5.62732	53.9831	0.2932	7.3500e-003	62.4203
Single Family Housing	19.8068 / 12.4869	119.7874	0.6506	0.0163	138.5093
Total		**173.7705**	**0.9438**	**0.0237**	**200.9296**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	7.14088 / 5.28406	45.6734	0.2346	5.9000e-003	52.4292
Single Family Housing	15.8455 / 11.7252	101.3482	0.5207	0.0131	116.3393
Total		**147.0215**	**0.7553**	**0.0190**	**168.7685**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	47.2604	2.7930	0.0000	105.9135
Unmitigated	94.5207	5.5860	0.0000	211.8270

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	63.02	12.7925	0.7560	0.0000	28.6688
Single Family Housing	402.62	81.7282	4.8300	0.0000	183.1582
Total		**94.5207**	**5.5860**	**0.0000**	**211.8270**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	31.51	6.3963	0.3780	0.0000	14.3344
Single Family Housing	201.31	40.8641	2.4150	0.0000	91.5791
Total		**47.2604**	**2.7930**	**0.0000**	**105.9135**

9.0 Operational Offroad

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

10.0 Vegetation

Palm Springs Country Club

Salton Sea Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	137.00	Dwelling Unit	28.00	137,000.00	443
Single Family Housing	304.00	Dwelling Unit	97.80	547,200.00	982

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	20
Climate Zone	15			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Off-road Equipment - Removal of existing concrete.

Off-road Equipment - MSA

Off-road Equipment - MSA

Off-road Equipment - Three crews

Off-road Equipment - Default

Off-road Equipment - Default

Trips and VMT -

On-road Fugitive Dust - Most roads are paved.

Road Dust - All roads will be paved with project.

Woodstoves - MSA

Area Coating - Rule 1113

Construction Off-road Equipment Mitigation - MSA

Mobile Land Use Mitigation -

Area Mitigation - MSA

Water Mitigation - MSA

Waste Mitigation - MSA

Project Characteristics -

Land Use - Area adjusted for Site Plan.

Construction Phase - Adjustments for increased crews.

Architectural Coating - Rule 1113

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	25
tblConstructionPhase	NumDays	3,100.00	1,033.00
tblConstructionPhase	NumDays	310.00	20.00
tblConstructionPhase	NumDays	120.00	15.00

tblConstructionPhase	PhaseEndDate	9/18/2015	9/28/2015
tblConstructionPhase	PhaseEndDate	8/17/2020	11/2/2018
tblConstructionPhase	PhaseEndDate	10/26/2015	10/28/2015
tblConstructionPhase	PhaseStartDate	8/22/2015	9/1/2015
tblConstructionPhase	PhaseStartDate	10/15/2019	1/1/2018
tblConstructionPhase	PhaseStartDate	9/29/2015	10/1/2015
tblFireplaces	NumberGas	137.00	69.00
tblFireplaces	NumberGas	258.40	152.00
tblFireplaces	NumberNoFireplace	0.00	68.00
tblFireplaces	NumberWood	30.40	0.00
tblGrading	AcresOfGrading	30.00	125.80
tblGrading	AcresOfGrading	0.00	3.00
tblGrading	MaterialExported	0.00	8,424.00
tblLandUse	LotAcreage	8.56	28.00
tblLandUse	LotAcreage	98.70	97.80
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	9.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	9.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOnRoadDust	HaulingPercentPave	50.00	95.00
tblOnRoadDust	HaulingPercentPave	50.00	95.00
tblOnRoadDust	HaulingPercentPave	50.00	95.00
tblOnRoadDust	HaulingPercentPave	50.00	95.00
tblOnRoadDust	HaulingPercentPave	50.00	95.00

tblOnRoadDust	HaulingPercentPave	50.00	95.00
tblOnRoadDust	VendorPercentPave	50.00	95.00
tblOnRoadDust	VendorPercentPave	50.00	95.00
tblOnRoadDust	VendorPercentPave	50.00	95.00
tblOnRoadDust	VendorPercentPave	50.00	95.00
tblOnRoadDust	VendorPercentPave	50.00	95.00
tblOnRoadDust	VendorPercentPave	50.00	95.00
tblOnRoadDust	WorkerPercentPave	50.00	95.00
tblOnRoadDust	WorkerPercentPave	50.00	95.00
tblOnRoadDust	WorkerPercentPave	50.00	95.00
tblOnRoadDust	WorkerPercentPave	50.00	95.00
tblOnRoadDust	WorkerPercentPave	50.00	95.00
tblOnRoadDust	WorkerPercentPave	50.00	95.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblRoadDust	RoadPercentPave	50	100
tblWoodstoves	NumberCatalytic	6.85	0.00
tblWoodstoves	NumberCatalytic	15.20	0.00
tblWoodstoves	NumberNoncatalytic	6.85	0.00
tblWoodstoves	NumberNoncatalytic	15.20	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	12.7717	95.0931	77.9080	0.1086	188.9341	6.4413	195.3754	20.0380	6.0548	25.2243	0.0000	10,563.308 2	10,563.308 2	2.1397	0.0000	10,608.241 9
2016	11.7979	89.9437	74.8255	0.1085	188.9341	5.9824	194.9165	19.1695	5.6191	24.7886	0.0000	10,426.952 3	10,426.952 3	2.0918	0.0000	10,470.879 5
2017	10.7207	83.2034	71.9001	0.1084	188.9341	5.4149	194.3491	19.1695	5.0845	24.2540	0.0000	10,258.146 3	10,258.146 3	2.0470	0.0000	10,301.133 5
2018	68.1366	90.6496	83.8829	0.1322	223.2685	5.4896	227.9714	22.6513	5.1406	27.0802	0.0000	12,448.951 8	12,448.951 8	2.7129	0.0000	12,505.923 3
2019	67.0328	68.2465	70.1286	0.1154	223.2684	4.0494	227.3178	22.6512	3.8140	26.4652	0.0000	10,513.229 8	10,513.229 8	2.0108	0.0000	10,555.456 7
Total	**170.4597**	**427.1363**	**378.6450**	**0.5730**	**1,013.3392**	**27.3776**	**1,039.9301**	**103.6795**	**25.7130**	**127.8123**	**0.0000**	**54,210.588 3**	**54,210.588 3**	**11.0022**	**0.0000**	**54,441.635 0**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	12.7717	95.0931	77.9080	0.1086	31.3039	6.4413	37.7452	5.0990	6.0548	9.4156	0.0000	10,563.3082	10,563.3082	2.1397	0.0000	10,608.2419
2016	11.7979	89.9437	74.8255	0.1085	31.3039	5.9824	37.2863	3.3608	5.6191	8.9799	0.0000	10,426.9523	10,426.9523	2.0918	0.0000	10,470.8795
2017	10.7207	83.2034	71.9001	0.1084	31.3039	5.4149	36.7189	3.3608	5.0845	8.4453	0.0000	10,258.1463	10,258.1463	2.0470	0.0000	10,301.1335
2018	68.1366	90.6496	83.8829	0.1322	36.9872	5.4896	41.6901	3.9691	5.1406	8.7186	0.0000	12,448.9518	12,448.9518	2.7129	0.0000	12,505.9233
2019	67.0328	68.2465	70.1286	0.1154	36.9871	4.0494	41.0365	3.9691	3.8140	7.7831	0.0000	10,513.2298	10,513.2298	2.0108	0.0000	10,555.4567
Total	**170.4597**	**427.1363**	**378.6450**	**0.5730**	**167.8860**	**27.3776**	**194.4770**	**19.7588**	**25.7130**	**43.3425**	**0.0000**	**54,210.5883**	**54,210.5883**	**11.0022**	**0.0000**	**54,441.6349**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	83.43	0.00	81.30	80.94	0.00	66.09	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	22.0471	0.4222	36.5274	1.9200e-003		0.4971	0.4971		0.4940	0.4940	0.0000	4,745.5116	4,745.5116	0.1536	0.0858	4,775.3348
Energy	0.3867	3.3045	1.4062	0.0211		0.2672	0.2672		0.2672	0.2672		4,218.5661	4,218.5661	0.0809	0.0773	4,244.2396
Mobile	25.3047	61.0609	249.4711	0.3000	19.2390	1.0549	20.2939	5.1370	0.9690	6.1061		27,712.5764	27,712.5764	1.2955		27,739.7810
Total	**47.7386**	**64.7877**	**287.4047**	**0.3231**	**19.2390**	**1.8192**	**21.0582**	**5.1370**	**1.7302**	**6.8672**	**0.0000**	**36,676.6540**	**36,676.6540**	**1.5299**	**0.1631**	**36,759.3554**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	21.7635	0.3580	30.2448	1.4500e-003		0.4591	0.4591		0.4560	0.4560	0.0000	4,731.5515	4,731.5515	0.1375	0.0858	4,761.0360
Energy	0.3867	3.3045	1.4062	0.0211		0.2672	0.2672		0.2672	0.2672		4,218.5661	4,218.5661	0.0809	0.0773	4,244.2396
Mobile	25.3047	61.0609	249.4711	0.3000	19.2390	1.0549	20.2939	5.1370	0.9690	6.1061		27,712.5764	27,712.5764	1.2955		27,739.7810
Total	**47.4550**	**64.7234**	**281.1221**	**0.3226**	**19.2390**	**1.7812**	**21.0202**	**5.1370**	**1.6922**	**6.8292**	**0.0000**	**36,662.6940**	**36,662.6940**	**1.5138**	**0.1631**	**36,745.0566**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.59	0.10	2.19	0.15	0.00	2.09	0.18	0.00	2.20	0.55	0.00	0.04	0.04	1.05	0.00	0.04

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/1/2015	8/21/2015	5	15	
2	Grading	Grading	9/1/2015	9/28/2015	5	20	
3	Trenching	Trenching	10/1/2015	10/28/2015	5	20	
4	Building Construction	Building Construction	10/29/2015	10/14/2019	5	1033	
5	Paving	Paving	1/1/2018	11/2/2018	5	220	
6	Architectural Coating	Architectural Coating	11/3/2018	9/6/2019	5	220	

Acres of Grading (Site Preparation Phase): 3

Acres of Grading (Grading Phase): 125.8

Acres of Paving: 0

Residential Indoor: 1,385,505; Residential Outdoor: 461,835; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	0	8.00	162	0.38
Grading	Graders	3	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	0	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Excavators	1	8.00	162	0.38
Trenching	Off-Highway Trucks	1	8.00	400	0.38
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	3	7.00	226	0.29
Building Construction	Forklifts	9	8.00	89	0.20
Building Construction	Generator Sets	3	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	9	7.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Trenching	4	10.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	8	20.00	0.00	833.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	27	208.00	47.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	42.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.3668	0.0000	18.3668	9.9670	0.0000	9.9670			0.0000			0.0000
Off-Road	5.9732	61.8840	46.4351	0.0454		3.4762	3.4762		3.2292	3.2292		4,704.4101	4,704.4101	1.2911		4,731.5241
Total	**5.9732**	**61.8840**	**46.4351**	**0.0454**	**18.3668**	**3.4762**	**21.8431**	**9.9670**	**3.2292**	**13.1962**		**4,704.4101**	**4,704.4101**	**1.2911**		**4,731.5241**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.2160	14.6075	14.6348	0.0391	82.6690	0.3587	83.0277	8.4130	0.3299	8.7429		3,974.7894	3,974.7894	0.0251		3,975.3159
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1170	0.1236	1.4294	1.9500e-003	16.3497	1.1500e-003	16.3509	1.6580	1.0500e-003	1.6591		164.8819	164.8819	0.0105		165.1031
Total	**1.3330**	**14.7311**	**16.0642**	**0.0411**	**99.0188**	**0.3599**	**99.3786**	**10.0710**	**0.3310**	**10.4020**		**4,139.6712**	**4,139.6712**	**0.0356**		**4,140.4190**

3.2 Site Preparation - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0886	0.0000	6.0886	3.3041	0.0000	3.3041			0.0000			0.0000
Off-Road	5.9732	61.8840	46.4351	0.0454		3.4762	3.4762		3.2292	3.2292	0.0000	4,704.4101	4,704.4101	1.2911		4,731.5241
Total	**5.9732**	**61.8840**	**46.4351**	**0.0454**	**6.0886**	**3.4762**	**9.5648**	**3.3041**	**3.2292**	**6.5332**	**0.0000**	**4,704.4101**	**4,704.4101**	**1.2911**		**4,731.5241**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.2160	14.6075	14.6348	0.0391	13.7908	0.3587	14.1495	1.5052	0.3299	1.8351		3,974.7894	3,974.7894	0.0251		3,975.3159
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1170	0.1236	1.4294	1.9500e-003	2.7064	1.1500e-003	2.7075	0.2897	1.0500e-003	0.2908		164.8819	164.8819	0.0105		165.1031
Total	**1.3330**	**14.7311**	**16.0642**	**0.0411**	**16.4972**	**0.3599**	**16.8571**	**1.7949**	**0.3310**	**2.1259**		**4,139.6712**	**4,139.6712**	**0.0356**		**4,140.4190**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.6926	0.0000	12.6926	4.0305	0.0000	4.0305			0.0000			0.0000
Off-Road	5.1794	53.8547	30.7697	0.0339		3.0417	3.0417		2.7984	2.7984		3,560.1061	3,560.1061	1.0628		3,582.4257
Total	**5.1794**	**53.8547**	**30.7697**	**0.0339**	**12.6926**	**3.0417**	**15.7344**	**4.0305**	**2.7984**	**6.8289**		**3,560.1061**	**3,560.1061**	**1.0628**		**3,582.4257**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0878	0.0927	1.0721	1.4700e-003	12.2623	8.6000e-004	12.2632	1.2435	7.9000e-004	1.2443		123.6614	123.6614	7.9000e-003		123.8273
Total	**0.0878**	**0.0927**	**1.0721**	**1.4700e-003**	**12.2623**	**8.6000e-004**	**12.2632**	**1.2435**	**7.9000e-004**	**1.2443**		**123.6614**	**123.6614**	**7.9000e-003**		**123.8273**

3.3 Grading - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.2076	0.0000	4.2076	1.3361	0.0000	1.3361			0.0000			0.0000
Off-Road	5.1794	53.8547	30.7697	0.0339		3.0417	3.0417		2.7984	2.7984	0.0000	3,560.1061	3,560.1061	1.0628		3,582.4257
Total	**5.1794**	**53.8547**	**30.7697**	**0.0339**	**4.2076**	**3.0417**	**7.2493**	**1.3361**	**2.7984**	**4.1345**	**0.0000**	**3,560.1061**	**3,560.1061**	**1.0628**		**3,582.4257**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0878	0.0927	1.0721	1.4700e-003	2.0298	8.6000e-004	2.0307	0.2173	7.9000e-004	0.2181		123.6614	123.6614	7.9000e-003		123.8273
Total	**0.0878**	**0.0927**	**1.0721**	**1.4700e-003**	**2.0298**	**8.6000e-004**	**2.0307**	**0.2173**	**7.9000e-004**	**0.2181**		**123.6614**	**123.6614**	**7.9000e-003**		**123.8273**

3.4 Trenching - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1680	23.8677	13.7505	0.0247		1.2411	1.2411		1.1418	1.1418		2,593.4103	2,593.4103	0.7742		2,609.6694
Total	**2.1680**	**23.8677**	**13.7505**	**0.0247**		**1.2411**	**1.2411**		**1.1418**	**1.1418**		**2,593.4103**	**2,593.4103**	**0.7742**		**2,609.6694**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0585	0.0618	0.7147	9.8000e-004	8.1749	5.7000e-004	8.1754	0.8290	5.2000e-004	0.8295		82.4409	82.4409	5.2700e-003		82.5516
Total	**0.0585**	**0.0618**	**0.7147**	**9.8000e-004**	**8.1749**	**5.7000e-004**	**8.1754**	**0.8290**	**5.2000e-004**	**0.8295**		**82.4409**	**82.4409**	**5.2700e-003**		**82.5516**

3.4 Trenching - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1680	23.8677	13.7505	0.0247		1.2411	1.2411		1.1418	1.1418	0.0000	2,593.4103	2,593.4103	0.7742		2,609.6694
Total	**2.1680**	**23.8677**	**13.7505**	**0.0247**		**1.2411**	**1.2411**		**1.1418**	**1.1418**	**0.0000**	**2,593.4103**	**2,593.4103**	**0.7742**		**2,609.6694**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0585	0.0618	0.7147	9.8000e-004	1.3532	5.7000e-004	1.3538	0.1449	5.2000e-004	0.1454		82.4409	82.4409	5.2700e-003		82.5516
Total	**0.0585**	**0.0618**	**0.7147**	**9.8000e-004**	**1.3532**	**5.7000e-004**	**1.3538**	**0.1449**	**5.2000e-004**	**0.1454**		**82.4409**	**82.4409**	**5.2700e-003**		**82.5516**

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	10.9772	90.0898	56.2336	0.0805		6.3502	6.3502		5.9712	5.9712		8,068.7314	8,068.7314	2.0245		8,111.2449
Total	**10.9772**	**90.0898**	**56.2336**	**0.0805**		**6.3502**	**6.3502**		**5.9712**	**5.9712**		**8,068.7314**	**8,068.7314**	**2.0245**		**8,111.2449**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5778	3.7182	6.8082	7.7600e-003	18.8969	0.0791	18.9760	1.9263	0.0727	1.9990		779.8052	779.8052	5.6900e-003		779.9246
Worker	1.2168	1.2851	14.8661	0.0203	170.0373	0.0119	170.0492	17.2432	0.0109	17.2541		1,714.7716	1,714.7716	0.1096		1,717.0724
Total	**1.7946**	**5.0033**	**21.6743**	**0.0281**	**188.9341**	**0.0911**	**189.0252**	**19.1695**	**0.0837**	**19.2531**		**2,494.5768**	**2,494.5768**	**0.1153**		**2,496.9970**

3.5 Building Construction - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	10.9772	90.0898	56.2336	0.0805		6.3502	6.3502		5.9712	5.9712	0.0000	8,068.7314	8,068.7314	2.0245		8,111.2449
Total	**10.9772**	**90.0898**	**56.2336**	**0.0805**		**6.3502**	**6.3502**		**5.9712**	**5.9712**	**0.0000**	**8,068.7314**	**8,068.7314**	**2.0245**		**8,111.2449**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5778	3.7182	6.8082	7.7600e-003	3.1574	0.0791	3.2366	0.3478	0.0727	0.4205		779.8052	779.8052	5.6900e-003		779.9246
Worker	1.2168	1.2851	14.8661	0.0203	28.1465	0.0119	28.1584	3.0130	0.0109	3.0239		1,714.7716	1,714.7716	0.1096		1,717.0724
Total	**1.7946**	**5.0033**	**21.6743**	**0.0281**	**31.3039**	**0.0911**	**31.3950**	**3.3608**	**0.0837**	**3.4444**		**2,494.5768**	**2,494.5768**	**0.1153**		**2,496.9970**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	10.2187	85.5190	55.5199	0.0804		5.9022	5.9022		5.5454	5.5454		8,007.8592	8,007.8592	1.9861		8,049.5671
Total	**10.2187**	**85.5190**	**55.5199**	**0.0804**		**5.9022**	**5.9022**		**5.5454**	**5.5454**		**8,007.8592**	**8,007.8592**	**1.9861**		**8,049.5671**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4866	3.2635	5.9607	7.7300e-003	18.8969	0.0688	18.9657	1.9263	0.0633	1.9895		770.1803	770.1803	5.1300e-003		770.2880
Worker	1.0927	1.1611	13.3448	0.0203	170.0373	0.0114	170.0486	17.2432	0.0105	17.2537		1,648.9129	1,648.9129	0.1006		1,651.0245
Total	**1.5792**	**4.4247**	**19.3055**	**0.0280**	**188.9341**	**0.0802**	**189.0143**	**19.1695**	**0.0737**	**19.2432**		**2,419.0931**	**2,419.0931**	**0.1057**		**2,421.3125**

3.5 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	10.2187	85.5190	55.5199	0.0804		5.9022	5.9022		5.5454	5.5454	0.0000	8,007.8592	8,007.8592	1.9861		8,049.5670
Total	**10.2187**	**85.5190**	**55.5199**	**0.0804**		**5.9022**	**5.9022**		**5.5454**	**5.5454**	**0.0000**	**8,007.8592**	**8,007.8592**	**1.9861**		**8,049.5670**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4866	3.2635	5.9607	7.7300e-003	3.1574	0.0688	3.2262	0.3478	0.0633	0.4110		770.1803	770.1803	5.1300e-003		770.2880
Worker	1.0927	1.1611	13.3448	0.0203	28.1465	0.0114	28.1579	3.0130	0.0105	3.0235		1,648.9129	1,648.9129	0.1006		1,651.0245
Total	**1.5792**	**4.4247**	**19.3055**	**0.0280**	**31.3039**	**0.0802**	**31.3841**	**3.3608**	**0.0737**	**3.4345**		**2,419.0931**	**2,419.0931**	**0.1057**		**2,421.3125**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	9.3071	79.2170	54.3874	0.0804		5.3437	5.3437		5.0189	5.0189		7,919.4160	7,919.4160	1.9491		7,960.3471
Total	**9.3071**	**79.2170**	**54.3874**	**0.0804**		**5.3437**	**5.3437**		**5.0189**	**5.0189**		**7,919.4160**	**7,919.4160**	**1.9491**		**7,960.3471**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4296	2.9287	5.4631	7.7100e-003	18.8969	0.0602	18.9571	1.9263	0.0554	1.9817		757.1124	757.1124	4.8200e-003		757.2137
Worker	0.9841	1.0578	12.0496	0.0203	170.0373	0.0111	170.0483	17.2432	0.0102	17.2534		1,581.6179	1,581.6179	0.0931		1,583.5727
Total	**1.4136**	**3.9865**	**17.5127**	**0.0280**	**188.9341**	**0.0713**	**189.0054**	**19.1695**	**0.0656**	**19.2351**		**2,338.7303**	**2,338.7303**	**0.0979**		**2,340.7865**

3.5 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	9.3071	79.2170	54.3874	0.0804		5.3437	5.3437		5.0189	5.0189	0.0000	7,919.4160	7,919.4160	1.9491		7,960.3471
Total	**9.3071**	**79.2170**	**54.3874**	**0.0804**		**5.3437**	**5.3437**		**5.0189**	**5.0189**	**0.0000**	**7,919.4160**	**7,919.4160**	**1.9491**		**7,960.3471**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4296	2.9287	5.4631	7.7100e-003	3.1574	0.0602	3.2177	0.3478	0.0554	0.4032		757.1124	757.1124	4.8200e-003		757.2137
Worker	0.9841	1.0578	12.0496	0.0203	28.1465	0.0111	28.1575	3.0130	0.0102	3.0232		1,581.6179	1,581.6179	0.0931		1,583.5727
Total	**1.4136**	**3.9865**	**17.5127**	**0.0280**	**31.3039**	**0.0713**	**31.3752**	**3.3608**	**0.0656**	**3.4264**		**2,338.7303**	**2,338.7303**	**0.0979**		**2,340.7865**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	8.0061	69.7825	52.5980	0.0804		4.4828	4.4828		4.2143	4.2143		7,829.8168	7,829.8168	1.9161		7,870.0551
Total	**8.0061**	**69.7825**	**52.5980**	**0.0804**		**4.4828**	**4.4828**		**4.2143**	**4.2143**		**7,829.8168**	**7,829.8168**	**1.9161**		**7,870.0551**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3826	2.6641	5.0501	7.6900e-003	18.8968	0.0565	18.9532	1.9262	0.0519	1.9782		743.5409	743.5409	4.7300e-003		743.6403
Worker	0.8896	0.9703	10.9507	0.0203	170.0373	0.0109	170.0481	17.2432	0.0101	17.2533		1,520.6614	1,520.6614	0.0869		1,522.4852
Total	**1.2722**	**3.6344**	**16.0008**	**0.0280**	**188.9340**	**0.0674**	**189.0014**	**19.1695**	**0.0620**	**19.2314**		**2,264.2024**	**2,264.2024**	**0.0916**		**2,266.1255**

3.5 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	8.0061	69.7825	52.5980	0.0804		4.4828	4.4828		4.2143	4.2143	0.0000	7,829.8168	7,829.8168	1.9161		7,870.0551
Total	**8.0061**	**69.7825**	**52.5980**	**0.0804**		**4.4828**	**4.4828**		**4.2143**	**4.2143**	**0.0000**	**7,829.8168**	**7,829.8168**	**1.9161**		**7,870.0551**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3826	2.6641	5.0501	7.6900e-003	3.1573	0.0565	3.2138	0.3477	0.0519	0.3997		743.5409	743.5409	4.7300e-003		743.6403
Worker	0.8896	0.9703	10.9507	0.0203	28.1465	0.0109	28.1574	3.0130	0.0101	3.0231		1,520.6614	1,520.6614	0.0869		1,522.4852
Total	**1.2722**	**3.6344**	**16.0008**	**0.0280**	**31.3038**	**0.0674**	**31.3711**	**3.3607**	**0.0620**	**3.4227**		**2,264.2024**	**2,264.2024**	**0.0916**		**2,266.1255**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	7.0549	62.8951	51.3610	0.0804		3.8551	3.8551		3.6248	3.6248		7,742.2853	7,742.2853	1.8837		7,781.8437
Total	**7.0549**	**62.8951**	**51.3610**	**0.0804**		**3.8551**	**3.8551**		**3.6248**	**3.6248**		**7,742.2853**	**7,742.2853**	**1.8837**		**7,781.8437**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3501	2.4384	4.7572	7.6700e-003	18.8967	0.0524	18.9491	1.9262	0.0482	1.9744		730.2682	730.2682	4.6400e-003		730.3656
Worker	0.8163	0.8966	10.1247	0.0203	170.0373	0.0109	170.0481	17.2432	0.0101	17.2533		1,463.6779	1,463.6779	0.0821		1,465.4017
Total	**1.1665**	**3.3350**	**14.8818**	**0.0279**	**188.9339**	**0.0633**	**188.9972**	**19.1694**	**0.0583**	**19.2277**		**2,193.9461**	**2,193.9461**	**0.0867**		**2,195.7673**

3.5 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	7.0549	62.8951	51.3610	0.0804		3.8551	3.8551		3.6248	3.6248	0.0000	7,742.2853	7,742.2853	1.8837		7,781.8437
Total	**7.0549**	**62.8951**	**51.3610**	**0.0804**		**3.8551**	**3.8551**		**3.6248**	**3.6248**	**0.0000**	**7,742.2853**	**7,742.2853**	**1.8837**		**7,781.8437**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3501	2.4384	4.7572	7.6700e-003	3.1572	0.0524	3.2097	0.3477	0.0482	0.3959		730.2682	730.2682	4.6400e-003		730.3656
Worker	0.8163	0.8966	10.1247	0.0203	28.1465	0.0109	28.1574	3.0130	0.0101	3.0231		1,463.6779	1,463.6779	0.0821		1,465.4017
Total	**1.1665**	**3.3350**	**14.8818**	**0.0279**	**31.3037**	**0.0633**	**31.3670**	**3.3607**	**0.0583**	**3.4190**		**2,193.9461**	**2,193.9461**	**0.0867**		**2,195.7673**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6114**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**		**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0642	0.0700	0.7897	1.4600e-003	12.2623	7.8000e-004	12.2631	1.2435	7.3000e-004	1.2442		109.6631	109.6631	6.2600e-003		109.7946
Total	**0.0642**	**0.0700**	**0.7897**	**1.4600e-003**	**12.2623**	**7.8000e-004**	**12.2631**	**1.2435**	**7.3000e-004**	**1.2442**		**109.6631**	**109.6631**	**6.2600e-003**		**109.7946**

3.6 Paving - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6114**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**	**0.0000**	**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0642	0.0700	0.7897	1.4600e-003	2.0298	7.8000e-004	2.0306	0.2173	7.3000e-004	0.2180		109.6631	109.6631	6.2600e-003		109.7946
Total	**0.0642**	**0.0700**	**0.7897**	**1.4600e-003**	**2.0298**	**7.8000e-004**	**2.0306**	**0.2173**	**7.3000e-004**	**0.2180**		**109.6631**	**109.6631**	**6.2600e-003**		**109.7946**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	58.3801					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**58.6788**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1796	0.1959	2.2112	4.1000e-003	34.3344	2.2000e-003	34.3366	3.4818	2.0300e-003	3.4838		307.0566	307.0566	0.0175		307.4249
Total	**0.1796**	**0.1959**	**2.2112**	**4.1000e-003**	**34.3344**	**2.2000e-003**	**34.3366**	**3.4818**	**2.0300e-003**	**3.4838**		**307.0566**	**307.0566**	**0.0175**		**307.4249**

3.7 Architectural Coating - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	58.3801					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**58.6788**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1796	0.1959	2.2112	4.1000e-003	5.6834	2.2000e-003	5.6856	0.6084	2.0300e-003	0.6104		307.0566	307.0566	0.0175		307.4249
Total	**0.1796**	**0.1959**	**2.2112**	**4.1000e-003**	**5.6834**	**2.2000e-003**	**5.6856**	**0.6084**	**2.0300e-003**	**0.6104**		**307.0566**	**307.0566**	**0.0175**		**307.4249**

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	58.3801					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		281.9473
Total	**58.6466**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**281.9473**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1648	0.1810	2.0444	4.0900e-003	34.3344	2.2000e-003	34.3366	3.4818	2.0400e-003	3.4838		295.5503	295.5503	0.0166		295.8984
Total	**0.1648**	**0.1810**	**2.0444**	**4.0900e-003**	**34.3344**	**2.2000e-003**	**34.3366**	**3.4818**	**2.0400e-003**	**3.4838**		**295.5503**	**295.5503**	**0.0166**		**295.8984**

3.7 Architectural Coating - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	58.3801					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		281.9473
Total	**58.6466**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**281.9473**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1648	0.1810	2.0444	4.0900e-003	5.6834	2.2000e-003	5.6856	0.6084	2.0400e-003	0.6104		295.5503	295.5503	0.0166		295.8984
Total	**0.1648**	**0.1810**	**2.0444**	**4.0900e-003**	**5.6834**	**2.2000e-003**	**5.6856**	**0.6084**	**2.0400e-003**	**0.6104**		**295.5503**	**295.5503**	**0.0166**		**295.8984**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	25.3047	61.0609	249.4711	0.3000	19.2390	1.0549	20.2939	5.1370	0.9690	6.1061		27,712.576 4	27,712.576 4	1.2955		27,739.781 0
Unmitigated	25.3047	61.0609	249.4711	0.3000	19.2390	1.0549	20.2939	5.1370	0.9690	6.1061		27,712.576 4	27,712.576 4	1.2955		27,739.781 0

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	902.83	980.92	831.59	2,021,748	2,021,748
Single Family Housing	2,909.28	3,064.32	2666.08	6,479,657	6,479,657
Total	3,812.11	4,045.24	3,497.67	8,501,406	8,501,406

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	11.00	3.50	4.50	40.20	19.20	40.60	86	11	3
Single Family Housing	11.00	3.50	4.50	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.471820	0.065078	0.165905	0.156714	0.039906	0.006660	0.011603	0.072822	0.001486	0.001268	0.003790	0.000578	0.002369

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.3867	3.3045	1.4062	0.0211		0.2672	0.2672		0.2672	0.2672		4,218.5661	4,218.5661	0.0809	0.0773	4,244.2396
NaturalGas Unmitigated	0.3867	3.3045	1.4062	0.0211		0.2672	0.2672		0.2672	0.2672		4,218.5661	4,218.5661	0.0809	0.0773	4,244.2396

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	7734.13	0.0834	0.7128	0.3033	4.5500e-003		0.0576	0.0576		0.0576	0.0576		909.8977	909.8977	0.0174	0.0167	915.4352
Single Family Housing	28123.7	0.3033	2.5918	1.1029	0.0165		0.2096	0.2096		0.2096	0.2096		3,308.6684	3,308.6684	0.0634	0.0607	3,328.8044
Total		**0.3867**	**3.3045**	**1.4062**	**0.0211**		**0.2672**	**0.2672**		**0.2672**	**0.2672**		**4,218.5661**	**4,218.5661**	**0.0809**	**0.0773**	**4,244.2396**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	28.1237	0.3033	2.5918	1.1029	0.0165		0.2096	0.2096		0.2096	0.2096		3,308.6684	3,308.6684	0.0634	0.0607	3,328.8044
Condo/Townhouse	7.73413	0.0834	0.7128	0.3033	4.5500e-003		0.0576	0.0576		0.0576	0.0576		909.8977	909.8977	0.0174	0.0167	915.4352
Total		**0.3867**	**3.3045**	**1.4062**	**0.0211**		**0.2672**	**0.2672**		**0.2672**	**0.2672**		**4,218.5661**	**4,218.5661**	**0.0809**	**0.0773**	**4,244.2396**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	21.7635	0.3580	30.2448	1.4500e-003		0.4591	0.4591		0.4560	0.4560	0.0000	4,731.5515	4,731.5515	0.1375	0.0858	4,761.0360
Unmitigated	22.0471	0.4222	36.5274	1.9200e-003		0.4971	0.4971		0.4940	0.4940	0.0000	4,745.5116	4,745.5116	0.1536	0.0858	4,775.3348

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.8647					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	14.6419					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4290	2.0000e-005	0.0234	0.0000		0.2964	0.2964		0.2933	0.2933	0.0000	4,680.0000	4,680.0000	0.0897	0.0858	4,708.4817
Landscaping	1.1116	0.4222	36.5040	1.9200e-003		0.2007	0.2007		0.2007	0.2007		65.5116	65.5116	0.0639		66.8531
Total	**22.0471**	**0.4222**	**36.5274**	**1.9200e-003**		**0.4971**	**0.4971**		**0.4940**	**0.4940**	**0.0000**	**4,745.5116**	**4,745.5116**	**0.1536**	**0.0858**	**4,775.3348**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.8647					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	14.6419					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4290	2.0000e-005	0.0234	0.0000		0.2964	0.2964		0.2933	0.2933	0.0000	4,680.0000	4,680.0000	0.0897	0.0858	4,708.4817
Landscaping	0.8280	0.3580	30.2214	1.4500e-003		0.1627	0.1627		0.1627	0.1627		51.5515	51.5515	0.0478		52.5543
Total	**21.7635**	**0.3580**	**30.2448**	**1.4500e-003**		**0.4591**	**0.4591**		**0.4560**	**0.4560**	**0.0000**	**4,731.5515**	**4,731.5515**	**0.1375**	**0.0858**	**4,761.0360**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Vegetation

Palm Springs Country Club

Salton Sea Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	137.00	Dwelling Unit	28.00	137,000.00	443
Single Family Housing	304.00	Dwelling Unit	97.80	547,200.00	982

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	20
Climate Zone	15			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Off-road Equipment - Removal of existing concrete.

Off-road Equipment - MSA

Off-road Equipment - MSA

Off-road Equipment - Three crews

Off-road Equipment - Default

Off-road Equipment - Default

Trips and VMT -

On-road Fugitive Dust - Most roads are paved.

Road Dust - All roads will be paved with project.

Woodstoves - MSA

Area Coating - Rule 1113

Construction Off-road Equipment Mitigation - MSA

Mobile Land Use Mitigation -

Area Mitigation - MSA

Water Mitigation - MSA

Waste Mitigation - MSA

Project Characteristics -

Land Use - Area adjusted for Site Plan.

Construction Phase - Adjustments for increased crews.

Architectural Coating - Rule 1113

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	25
tblConstructionPhase	NumDays	3,100.00	1,033.00
tblConstructionPhase	NumDays	310.00	20.00
tblConstructionPhase	NumDays	120.00	15.00

tblConstructionPhase	PhaseEndDate	9/18/2015	9/28/2015
tblConstructionPhase	PhaseEndDate	8/17/2020	11/2/2018
tblConstructionPhase	PhaseEndDate	10/26/2015	10/28/2015
tblConstructionPhase	PhaseStartDate	8/22/2015	9/1/2015
tblConstructionPhase	PhaseStartDate	10/15/2019	1/1/2018
tblConstructionPhase	PhaseStartDate	9/29/2015	10/1/2015
tblFireplaces	NumberGas	137.00	69.00
tblFireplaces	NumberGas	258.40	152.00
tblFireplaces	NumberNoFireplace	0.00	68.00
tblFireplaces	NumberWood	30.40	0.00
tblGrading	AcresOfGrading	30.00	125.80
tblGrading	AcresOfGrading	0.00	3.00
tblGrading	MaterialExported	0.00	8,424.00
tblLandUse	LotAcreage	8.56	28.00
tblLandUse	LotAcreage	98.70	97.80
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	9.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	9.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOnRoadDust	HaulingPercentPave	50.00	95.00
tblOnRoadDust	HaulingPercentPave	50.00	95.00
tblOnRoadDust	HaulingPercentPave	50.00	95.00
tblOnRoadDust	HaulingPercentPave	50.00	95.00
tblOnRoadDust	HaulingPercentPave	50.00	95.00

tblOnRoadDust	HaulingPercentPave	50.00	95.00
tblOnRoadDust	VendorPercentPave	50.00	95.00
tblOnRoadDust	VendorPercentPave	50.00	95.00
tblOnRoadDust	VendorPercentPave	50.00	95.00
tblOnRoadDust	VendorPercentPave	50.00	95.00
tblOnRoadDust	VendorPercentPave	50.00	95.00
tblOnRoadDust	VendorPercentPave	50.00	95.00
tblOnRoadDust	WorkerPercentPave	50.00	95.00
tblOnRoadDust	WorkerPercentPave	50.00	95.00
tblOnRoadDust	WorkerPercentPave	50.00	95.00
tblOnRoadDust	WorkerPercentPave	50.00	95.00
tblOnRoadDust	WorkerPercentPave	50.00	95.00
tblOnRoadDust	WorkerPercentPave	50.00	95.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblRoadDust	RoadPercentPave	50	100
tblWoodstoves	NumberCatalytic	6.85	0.00
tblWoodstoves	NumberCatalytic	15.20	0.00
tblWoodstoves	NumberNoncatalytic	6.85	0.00
tblWoodstoves	NumberNoncatalytic	15.20	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	12.5347	95.4684	76.6739	0.1070	188.9341	6.4425	195.3766	20.0380	6.0560	25.2255	0.0000	10,430.786 2	10,430.786 2	2.1399	0.0000	10,475.725 0
2016	11.5787	90.2680	73.9229	0.1069	188.9341	5.9834	194.9175	19.1695	5.6200	24.7895	0.0000	10,298.969 9	10,298.969 9	2.0920	0.0000	10,342.902 1
2017	10.5195	83.4893	71.2256	0.1069	188.9341	5.4158	194.3499	19.1695	5.0852	24.2548	0.0000	10,134.892 6	10,134.892 6	2.0473	0.0000	10,177.884 8
2018	67.9049	90.9119	83.2646	0.1305	223.2685	5.4903	227.9721	22.6513	5.1413	27.0809	0.0000	12,322.082 3	12,322.082 3	2.7132	0.0000	12,379.058 9
2019	66.8193	68.4945	69.4137	0.1135	223.2684	4.0501	227.3184	22.6512	3.8146	26.4658	0.0000	10,376.875 2	10,376.875 2	2.0111	0.0000	10,419.107 2
Total	**169.3570**	**428.6320**	**374.5007**	**0.5648**	**1,013.3392**	**27.3820**	**1,039.9345**	**103.6795**	**25.7171**	**127.8164**	**0.0000**	**53,563.606 1**	**53,563.606 1**	**11.0034**	**0.0000**	**53,794.677 9**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	12.5347	95.4684	76.6739	0.1070	31.3039	6.4425	37.7464	5.0990	6.0560	9.4167	0.0000	10,430.786 2	10,430.786 2	2.1399	0.0000	10,475.725 0
2016	11.5787	90.2680	73.9229	0.1069	31.3039	5.9834	37.2873	3.3608	5.6200	8.9808	0.0000	10,298.969 9	10,298.969 9	2.0920	0.0000	10,342.902 1
2017	10.5195	83.4893	71.2256	0.1069	31.3039	5.4158	36.7197	3.3608	5.0852	8.4460	0.0000	10,134.892 6	10,134.892 6	2.0473	0.0000	10,177.884 8
2018	67.9049	90.9119	83.2646	0.1305	36.9872	5.4903	41.6909	3.9691	5.1413	8.7193	0.0000	12,322.082 3	12,322.082 3	2.7132	0.0000	12,379.058 9
2019	66.8193	68.4945	69.4137	0.1135	36.9871	4.0501	41.0372	3.9691	3.8146	7.7837	0.0000	10,376.875 2	10,376.875 2	2.0111	0.0000	10,419.107 2
Total	**169.3570**	**428.6320**	**374.5007**	**0.5648**	**167.8860**	**27.3820**	**194.4814**	**19.7588**	**25.7171**	**43.3465**	**0.0000**	**53,563.606 1**	**53,563.606 1**	**11.0034**	**0.0000**	**53,794.677 9**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	83.43	0.00	81.30	80.94	0.00	66.09	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	22.0471	0.4222	36.5274	1.9200e-003		0.4971	0.4971		0.4940	0.4940	0.0000	4,745.5116	4,745.5116	0.1536	0.0858	4,775.3348
Energy	0.3867	3.3045	1.4062	0.0211		0.2672	0.2672		0.2672	0.2672		4,218.5661	4,218.5661	0.0809	0.0773	4,244.2396
Mobile	21.4761	66.0557	239.6706	0.2846	19.2390	1.0634	20.3025	5.1370	0.9769	6.1139		26,341.3785	26,341.3785	1.2978		26,368.6320
Total	**43.9099**	**69.7824**	**277.6042**	**0.3076**	**19.2390**	**1.8277**	**21.0668**	**5.1370**	**1.7380**	**6.8751**	**0.0000**	**35,305.4562**	**35,305.4562**	**1.5322**	**0.1631**	**35,388.2063**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	21.7635	0.3580	30.2448	1.4500e-003		0.4591	0.4591		0.4560	0.4560	0.0000	4,731.5515	4,731.5515	0.1375	0.0858	4,761.0360
Energy	0.3867	3.3045	1.4062	0.0211		0.2672	0.2672		0.2672	0.2672		4,218.5661	4,218.5661	0.0809	0.0773	4,244.2396
Mobile	21.4761	66.0557	239.6706	0.2846	19.2390	1.0634	20.3025	5.1370	0.9769	6.1139		26,341.3785	26,341.3785	1.2978		26,368.6320
Total	**43.6263**	**69.7182**	**271.3216**	**0.3071**	**19.2390**	**1.7897**	**21.0287**	**5.1370**	**1.7000**	**6.8371**	**0.0000**	**35,291.4961**	**35,291.4961**	**1.5161**	**0.1631**	**35,373.9075**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.65	0.09	2.26	0.15	0.00	2.08	0.18	0.00	2.19	0.55	0.00	0.04	0.04	1.05	0.00	0.04

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/1/2015	8/21/2015	5	15	
2	Grading	Grading	9/1/2015	9/28/2015	5	20	
3	Trenching	Trenching	10/1/2015	10/28/2015	5	20	
4	Building Construction	Building Construction	10/29/2015	10/14/2019	5	1033	
5	Paving	Paving	1/1/2018	11/2/2018	5	220	
6	Architectural Coating	Architectural Coating	11/3/2018	9/6/2019	5	220	

Acres of Grading (Site Preparation Phase): 3

Acres of Grading (Grading Phase): 125.8

Acres of Paving: 0

Residential Indoor: 1,385,505; Residential Outdoor: 461,835; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	0	8.00	162	0.38
Grading	Graders	3	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	0	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Excavators	1	8.00	162	0.38
Trenching	Off-Highway Trucks	1	8.00	400	0.38
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	3	7.00	226	0.29
Building Construction	Forklifts	9	8.00	89	0.20
Building Construction	Generator Sets	3	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	9	7.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Trenching	4	10.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	8	20.00	0.00	833.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	27	208.00	47.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	42.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.3668	0.0000	18.3668	9.9670	0.0000	9.9670			0.0000			0.0000
Off-Road	5.9732	61.8840	46.4351	0.0454		3.4762	3.4762		3.2292	3.2292		4,704.4101	4,704.4101	1.2911		4,731.5241
Total	**5.9732**	**61.8840**	**46.4351**	**0.0454**	**18.3668**	**3.4762**	**21.8431**	**9.9670**	**3.2292**	**13.1962**		**4,704.4101**	**4,704.4101**	**1.2911**		**4,731.5241**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3251	15.7796	16.7362	0.0390	82.6690	0.3596	83.0286	8.4130	0.3307	8.7437		3,964.8775	3,964.8775	0.0255		3,965.4127
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0881	0.1374	1.1833	1.8100e-003	16.3497	1.1500e-003	16.3509	1.6580	1.0500e-003	1.6591		152.9662	152.9662	0.0105		153.1874
Total	**1.4132**	**15.9170**	**17.9195**	**0.0408**	**99.0188**	**0.3607**	**99.3795**	**10.0710**	**0.3317**	**10.4027**		**4,117.8437**	**4,117.8437**	**0.0360**		**4,118.6001**

3.2 Site Preparation - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0886	0.0000	6.0886	3.3041	0.0000	3.3041			0.0000			0.0000
Off-Road	5.9732	61.8840	46.4351	0.0454		3.4762	3.4762		3.2292	3.2292	0.0000	4,704.4101	4,704.4101	1.2911		4,731.5241
Total	**5.9732**	**61.8840**	**46.4351**	**0.0454**	**6.0886**	**3.4762**	**9.5648**	**3.3041**	**3.2292**	**6.5332**	**0.0000**	**4,704.4101**	**4,704.4101**	**1.2911**		**4,731.5241**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3251	15.7796	16.7362	0.0390	13.7908	0.3596	14.1504	1.5052	0.3307	1.8359		3,964.8775	3,964.8775	0.0255		3,965.4127
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0881	0.1374	1.1833	1.8100e-003	2.7064	1.1500e-003	2.7075	0.2897	1.0500e-003	0.2908		152.9662	152.9662	0.0105		153.1874
Total	**1.4132**	**15.9170**	**17.9195**	**0.0408**	**16.4972**	**0.3607**	**16.8579**	**1.7949**	**0.3317**	**2.1267**		**4,117.8437**	**4,117.8437**	**0.0360**		**4,118.6001**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.6926	0.0000	12.6926	4.0305	0.0000	4.0305			0.0000			0.0000
Off-Road	5.1794	53.8547	30.7697	0.0339		3.0417	3.0417		2.7984	2.7984		3,560.1061	3,560.1061	1.0628		3,582.4257
Total	**5.1794**	**53.8547**	**30.7697**	**0.0339**	**12.6926**	**3.0417**	**15.7344**	**4.0305**	**2.7984**	**6.8289**		**3,560.1061**	**3,560.1061**	**1.0628**		**3,582.4257**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0660	0.1031	0.8875	1.3600e-003	12.2623	8.6000e-004	12.2632	1.2435	7.9000e-004	1.2443		114.7246	114.7246	7.9000e-003		114.8905
Total	**0.0660**	**0.1031**	**0.8875**	**1.3600e-003**	**12.2623**	**8.6000e-004**	**12.2632**	**1.2435**	**7.9000e-004**	**1.2443**		**114.7246**	**114.7246**	**7.9000e-003**		**114.8905**

3.3 Grading - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.2076	0.0000	4.2076	1.3361	0.0000	1.3361			0.0000			0.0000
Off-Road	5.1794	53.8547	30.7697	0.0339		3.0417	3.0417		2.7984	2.7984	0.0000	3,560.1061	3,560.1061	1.0628		3,582.4257
Total	**5.1794**	**53.8547**	**30.7697**	**0.0339**	**4.2076**	**3.0417**	**7.2493**	**1.3361**	**2.7984**	**4.1345**	**0.0000**	**3,560.1061**	**3,560.1061**	**1.0628**		**3,582.4257**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0660	0.1031	0.8875	1.3600e-003	2.0298	8.6000e-004	2.0307	0.2173	7.9000e-004	0.2181		114.7246	114.7246	7.9000e-003		114.8905
Total	**0.0660**	**0.1031**	**0.8875**	**1.3600e-003**	**2.0298**	**8.6000e-004**	**2.0307**	**0.2173**	**7.9000e-004**	**0.2181**		**114.7246**	**114.7246**	**7.9000e-003**		**114.8905**

3.4 Trenching - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1680	23.8677	13.7505	0.0247		1.2411	1.2411		1.1418	1.1418		2,593.4103	2,593.4103	0.7742		2,609.6694
Total	**2.1680**	**23.8677**	**13.7505**	**0.0247**		**1.2411**	**1.2411**		**1.1418**	**1.1418**		**2,593.4103**	**2,593.4103**	**0.7742**		**2,609.6694**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0440	0.0687	0.5917	9.1000e-004	8.1749	5.7000e-004	8.1754	0.8290	5.2000e-004	0.8295		76.4831	76.4831	5.2700e-003		76.5937
Total	**0.0440**	**0.0687**	**0.5917**	**9.1000e-004**	**8.1749**	**5.7000e-004**	**8.1754**	**0.8290**	**5.2000e-004**	**0.8295**		**76.4831**	**76.4831**	**5.2700e-003**		**76.5937**

3.4 Trenching - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1680	23.8677	13.7505	0.0247		1.2411	1.2411		1.1418	1.1418	0.0000	2,593.4103	2,593.4103	0.7742		2,609.6694
Total	**2.1680**	**23.8677**	**13.7505**	**0.0247**		**1.2411**	**1.2411**		**1.1418**	**1.1418**	**0.0000**	**2,593.4103**	**2,593.4103**	**0.7742**		**2,609.6694**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0440	0.0687	0.5917	9.1000e-004	1.3532	5.7000e-004	1.3538	0.1449	5.2000e-004	0.1454		76.4831	76.4831	5.2700e-003		76.5937
Total	**0.0440**	**0.0687**	**0.5917**	**9.1000e-004**	**1.3532**	**5.7000e-004**	**1.3538**	**0.1449**	**5.2000e-004**	**0.1454**		**76.4831**	**76.4831**	**5.2700e-003**		**76.5937**

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	10.9772	90.0898	56.2336	0.0805		6.3502	6.3502		5.9712	5.9712		8,068.7314	8,068.7314	2.0245		8,111.2449
Total	**10.9772**	**90.0898**	**56.2336**	**0.0805**		**6.3502**	**6.3502**		**5.9712**	**5.9712**		**8,068.7314**	**8,068.7314**	**2.0245**		**8,111.2449**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.6419	3.9493	8.1335	7.7000e-003	18.8969	0.0804	18.9772	1.9263	0.0739	2.0001		771.2067	771.2067	5.9300e-003		771.3312
Worker	0.9157	1.4293	12.3067	0.0188	170.0373	0.0119	170.0492	17.2432	0.0109	17.2541		1,590.8481	1,590.8481	0.1096		1,593.1488
Total	**1.5575**	**5.3786**	**20.4402**	**0.0265**	**188.9341**	**0.0923**	**189.0264**	**19.1695**	**0.0848**	**19.2543**		**2,362.0548**	**2,362.0548**	**0.1155**		**2,364.4800**

3.5 Building Construction - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	10.9772	90.0898	56.2336	0.0805		6.3502	6.3502		5.9712	5.9712	0.0000	8,068.7314	8,068.7314	2.0245		8,111.2449
Total	**10.9772**	**90.0898**	**56.2336**	**0.0805**		**6.3502**	**6.3502**		**5.9712**	**5.9712**	**0.0000**	**8,068.7314**	**8,068.7314**	**2.0245**		**8,111.2449**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.6419	3.9493	8.1335	7.7000e-003	3.1574	0.0804	3.2378	0.3478	0.0739	0.4216		771.2067	771.2067	5.9300e-003		771.3312
Worker	0.9157	1.4293	12.3067	0.0188	28.1465	0.0119	28.1584	3.0130	0.0109	3.0239		1,590.8481	1,590.8481	0.1096		1,593.1488
Total	**1.5575**	**5.3786**	**20.4402**	**0.0265**	**31.3039**	**0.0923**	**31.3962**	**3.3608**	**0.0848**	**3.4456**		**2,362.0548**	**2,362.0548**	**0.1155**		**2,364.4800**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	10.2187	85.5190	55.5199	0.0804		5.9022	5.9022		5.5454	5.5454		8,007.8592	8,007.8592	1.9861		8,049.5671
Total	**10.2187**	**85.5190**	**55.5199**	**0.0804**		**5.9022**	**5.9022**		**5.5454**	**5.5454**		**8,007.8592**	**8,007.8592**	**1.9861**		**8,049.5671**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5406	3.4594	7.3733	7.6700e-003	18.8969	0.0698	18.9667	1.9263	0.0642	1.9904		761.6339	761.6339	5.3600e-003		761.7465
Worker	0.8194	1.2896	11.0297	0.0188	170.0373	0.0114	170.0486	17.2432	0.0105	17.2537		1,529.4768	1,529.4768	0.1006		1,531.5885
Total	**1.3600**	**4.7490**	**18.4030**	**0.0265**	**188.9341**	**0.0812**	**189.0153**	**19.1695**	**0.0746**	**19.2441**		**2,291.1107**	**2,291.1107**	**0.1059**		**2,293.3350**

3.5 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	10.2187	85.5190	55.5199	0.0804		5.9022	5.9022		5.5454	5.5454	0.0000	8,007.8592	8,007.8592	1.9861		8,049.5670
Total	**10.2187**	**85.5190**	**55.5199**	**0.0804**		**5.9022**	**5.9022**		**5.5454**	**5.5454**	**0.0000**	**8,007.8592**	**8,007.8592**	**1.9861**		**8,049.5670**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5406	3.4594	7.3733	7.6700e-003	3.1574	0.0698	3.2272	0.3478	0.0642	0.4119		761.6339	761.6339	5.3600e-003		761.7465
Worker	0.8194	1.2896	11.0297	0.0188	28.1465	0.0114	28.1579	3.0130	0.0105	3.0235		1,529.4768	1,529.4768	0.1006		1,531.5885
Total	**1.3600**	**4.7490**	**18.4030**	**0.0265**	**31.3039**	**0.0812**	**31.3851**	**3.3608**	**0.0746**	**3.4354**		**2,291.1107**	**2,291.1107**	**0.1059**		**2,293.3350**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	9.3071	79.2170	54.3874	0.0804		5.3437	5.3437		5.0189	5.0189		7,919.4160	7,919.4160	1.9491		7,960.3471
Total	**9.3071**	**79.2170**	**54.3874**	**0.0804**		**5.3437**	**5.3437**		**5.0189**	**5.0189**		**7,919.4160**	**7,919.4160**	**1.9491**		**7,960.3471**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4774	3.0994	6.8968	7.6500e-003	18.8969	0.0611	18.9579	1.9263	0.0561	1.9824		748.6727	748.6727	5.0600e-003		748.7789
Worker	0.7350	1.1729	9.9414	0.0188	170.0373	0.0111	170.0483	17.2432	0.0102	17.2534		1,466.8039	1,466.8039	0.0931		1,468.7588
Total	**1.2124**	**4.2723**	**16.8382**	**0.0264**	**188.9341**	**0.0721**	**189.0062**	**19.1695**	**0.0663**	**19.2358**		**2,215.4766**	**2,215.4766**	**0.0982**		**2,217.5377**

3.5 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	9.3071	79.2170	54.3874	0.0804		5.3437	5.3437		5.0189	5.0189	0.0000	7,919.4160	7,919.4160	1.9491		7,960.3471
Total	**9.3071**	**79.2170**	**54.3874**	**0.0804**		**5.3437**	**5.3437**		**5.0189**	**5.0189**	**0.0000**	**7,919.4160**	**7,919.4160**	**1.9491**		**7,960.3471**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4774	3.0994	6.8968	7.6500e-003	3.1574	0.0611	3.2185	0.3478	0.0561	0.4039		748.6727	748.6727	5.0600e-003		748.7789
Worker	0.7350	1.1729	9.9414	0.0188	28.1465	0.0111	28.1575	3.0130	0.0102	3.0232		1,466.8039	1,466.8039	0.0931		1,468.7588
Total	**1.2124**	**4.2723**	**16.8382**	**0.0264**	**31.3039**	**0.0721**	**31.3760**	**3.3608**	**0.0663**	**3.4271**		**2,215.4766**	**2,215.4766**	**0.0982**		**2,217.5377**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	8.0061	69.7825	52.5980	0.0804		4.4828	4.4828		4.2143	4.2143		7,829.8168	7,829.8168	1.9161		7,870.0551
Total	**8.0061**	**69.7825**	**52.5980**	**0.0804**		**4.4828**	**4.4828**		**4.2143**	**4.2143**		**7,829.8168**	**7,829.8168**	**1.9161**		**7,870.0551**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4248	2.8151	6.5038	7.6200e-003	18.8968	0.0572	18.9540	1.9262	0.0526	1.9788		735.2211	735.2211	4.9700e-003		735.3255
Worker	0.6617	1.0741	9.0180	0.0188	170.0373	0.0109	170.0481	17.2432	0.0101	17.2533		1,410.0860	1,410.0860	0.0869		1,411.9098
Total	**1.0865**	**3.8891**	**15.5219**	**0.0264**	**188.9340**	**0.0681**	**189.0021**	**19.1695**	**0.0627**	**19.2321**		**2,145.3071**	**2,145.3071**	**0.0918**		**2,147.2353**

3.5 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	8.0061	69.7825	52.5980	0.0804		4.4828	4.4828		4.2143	4.2143	0.0000	7,829.8168	7,829.8168	1.9161		7,870.0551
Total	**8.0061**	**69.7825**	**52.5980**	**0.0804**		**4.4828**	**4.4828**		**4.2143**	**4.2143**	**0.0000**	**7,829.8168**	**7,829.8168**	**1.9161**		**7,870.0551**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4248	2.8151	6.5038	7.6200e-003	3.1573	0.0572	3.2145	0.3477	0.0526	0.4003		735.2211	735.2211	4.9700e-003		735.3255
Worker	0.6617	1.0741	9.0180	0.0188	28.1465	0.0109	28.1574	3.0130	0.0101	3.0231		1,410.0860	1,410.0860	0.0869		1,411.9098
Total	**1.0865**	**3.8891**	**15.5219**	**0.0264**	**31.3038**	**0.0681**	**31.3719**	**3.3607**	**0.0627**	**3.4234**		**2,145.3071**	**2,145.3071**	**0.0918**		**2,147.2353**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	7.0549	62.8951	51.3610	0.0804		3.8551	3.8551		3.6248	3.6248		7,742.2853	7,742.2853	1.8837		7,781.8437
Total	**7.0549**	**62.8951**	**51.3610**	**0.0804**		**3.8551**	**3.8551**		**3.6248**	**3.6248**		**7,742.2853**	**7,742.2853**	**1.8837**		**7,781.8437**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3884	2.5724	6.2081	7.6000e-003	18.8967	0.0531	18.9498	1.9262	0.0488	1.9750		722.0683	722.0683	4.8800e-003		722.1709
Worker	0.6069	0.9914	8.3227	0.0188	170.0373	0.0109	170.0481	17.2432	0.0101	17.2533		1,357.0532	1,357.0532	0.0821		1,358.7770
Total	**0.9953**	**3.5638**	**14.5308**	**0.0264**	**188.9339**	**0.0640**	**188.9979**	**19.1694**	**0.0589**	**19.2284**		**2,079.1215**	**2,079.1215**	**0.0870**		**2,080.9478**

3.5 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Off-Road	7.0549	62.8951	51.3610	0.0804		3.8551	3.8551		3.6248	3.6248	0.0000	7,742.2853	7,742.2853	1.8837		7,781.8437
Total	**7.0549**	**62.8951**	**51.3610**	**0.0804**		**3.8551**	**3.8551**		**3.6248**	**3.6248**	**0.0000**	**7,742.2853**	**7,742.2853**	**1.8837**		**7,781.8437**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3884	2.5724	6.2081	7.6000e-003	3.1572	0.0531	3.2103	0.3477	0.0488	0.3965		722.0683	722.0683	4.8800e-003		722.1709
Worker	0.6069	0.9914	8.3227	0.0188	28.1465	0.0109	28.1574	3.0130	0.0101	3.0231		1,357.0532	1,357.0532	0.0821		1,358.7770
Total	**0.9953**	**3.5638**	**14.5308**	**0.0264**	**31.3037**	**0.0640**	**31.3677**	**3.3607**	**0.0589**	**3.4196**		**2,079.1215**	**2,079.1215**	**0.0870**		**2,080.9478**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6114**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**		**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0477	0.0775	0.6503	1.3500e-003	12.2623	7.8000e-004	12.2631	1.2435	7.3000e-004	1.2442		101.6889	101.6889	6.2600e-003		101.8204
Total	**0.0477**	**0.0775**	**0.6503**	**1.3500e-003**	**12.2623**	**7.8000e-004**	**12.2631**	**1.2435**	**7.3000e-004**	**1.2442**		**101.6889**	**101.6889**	**6.2600e-003**		**101.8204**

3.6 Paving - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6114**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**	**0.0000**	**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0477	0.0775	0.6503	1.3500e-003	2.0298	7.8000e-004	2.0306	0.2173	7.3000e-004	0.2180		101.6889	101.6889	6.2600e-003		101.8204
Total	**0.0477**	**0.0775**	**0.6503**	**1.3500e-003**	**2.0298**	**7.8000e-004**	**2.0306**	**0.2173**	**7.3000e-004**	**0.2180**		**101.6889**	**101.6889**	**6.2600e-003**		**101.8204**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	58.3801					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**58.6788**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1336	0.2169	1.8210	3.7900e-003	34.3344	2.2000e-003	34.3366	3.4818	2.0300e-003	3.4838		284.7289	284.7289	0.0175		285.0972
Total	**0.1336**	**0.2169**	**1.8210**	**3.7900e-003**	**34.3344**	**2.2000e-003**	**34.3366**	**3.4818**	**2.0300e-003**	**3.4838**		**284.7289**	**284.7289**	**0.0175**		**285.0972**

3.7 Architectural Coating - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	58.3801					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**58.6788**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1336	0.2169	1.8210	3.7900e-003	5.6834	2.2000e-003	5.6856	0.6084	2.0300e-003	0.6104		284.7289	284.7289	0.0175		285.0972
Total	**0.1336**	**0.2169**	**1.8210**	**3.7900e-003**	**5.6834**	**2.2000e-003**	**5.6856**	**0.6084**	**2.0300e-003**	**0.6104**		**284.7289**	**284.7289**	**0.0175**		**285.0972**

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	58.3801					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		281.9473
Total	**58.6466**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**281.9473**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1225	0.2002	1.6806	3.7900e-003	34.3344	2.2000e-003	34.3366	3.4818	2.0400e-003	3.4838		274.0204	274.0204	0.0166		274.3684
Total	**0.1225**	**0.2002**	**1.6806**	**3.7900e-003**	**34.3344**	**2.2000e-003**	**34.3366**	**3.4818**	**2.0400e-003**	**3.4838**		**274.0204**	**274.0204**	**0.0166**		**274.3684**

3.7 Architectural Coating - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	58.3801					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		281.9473
Total	**58.6466**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**281.9473**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1225	0.2002	1.6806	3.7900e-003	5.6834	2.2000e-003	5.6856	0.6084	2.0400e-003	0.6104		274.0204	274.0204	0.0166		274.3684
Total	**0.1225**	**0.2002**	**1.6806**	**3.7900e-003**	**5.6834**	**2.2000e-003**	**5.6856**	**0.6084**	**2.0400e-003**	**0.6104**		**274.0204**	**274.0204**	**0.0166**		**274.3684**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	21.4761	66.0557	239.6706	0.2846	19.2390	1.0634	20.3025	5.1370	0.9769	6.1139		26,341.378 5	26,341.378 5	1.2978		26,368.632 0
Unmitigated	21.4761	66.0557	239.6706	0.2846	19.2390	1.0634	20.3025	5.1370	0.9769	6.1139		26,341.378 5	26,341.378 5	1.2978		26,368.632 0

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	902.83	980.92	831.59	2,021,748	2,021,748
Single Family Housing	2,909.28	3,064.32	2666.08	6,479,657	6,479,657
Total	3,812.11	4,045.24	3,497.67	8,501,406	8,501,406

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	11.00	3.50	4.50	40.20	19.20	40.60	86	11	3
Single Family Housing	11.00	3.50	4.50	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.471820	0.065078	0.165905	0.156714	0.039906	0.006660	0.011603	0.072822	0.001486	0.001268	0.003790	0.000578	0.002369

4.4 Fleet Mix / 5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.3867	3.3045	1.4062	0.0211		0.2672	0.2672		0.2672	0.2672		4,218.5661	4,218.5661	0.0809	0.0773	4,244.2396
NaturalGas Unmitigated	0.3867	3.3045	1.4062	0.0211		0.2672	0.2672		0.2672	0.2672		4,218.5661	4,218.5661	0.0809	0.0773	4,244.2396

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	7734.13	0.0834	0.7128	0.3033	4.5500e-003		0.0576	0.0576		0.0576	0.0576		909.8977	909.8977	0.0174	0.0167	915.4352
Single Family Housing	28123.7	0.3033	2.5918	1.1029	0.0165		0.2096	0.2096		0.2096	0.2096		3,308.6684	3,308.6684	0.0634	0.0607	3,328.8044
Total		**0.3867**	**3.3045**	**1.4062**	**0.0211**		**0.2672**	**0.2672**		**0.2672**	**0.2672**		**4,218.5661**	**4,218.5661**	**0.0809**	**0.0773**	**4,244.2396**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	28.1237	0.3033	2.5918	1.1029	0.0165		0.2096	0.2096		0.2096	0.2096		3,308.6684	3,308.6684	0.0634	0.0607	3,328.8044
Condo/Townhouse	7.73413	0.0834	0.7128	0.3033	4.5500e-003		0.0576	0.0576		0.0576	0.0576		909.8977	909.8977	0.0174	0.0167	915.4352
Total		**0.3867**	**3.3045**	**1.4062**	**0.0211**		**0.2672**	**0.2672**		**0.2672**	**0.2672**		**4,218.5661**	**4,218.5661**	**0.0809**	**0.0773**	**4,244.2396**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	21.7635	0.3580	30.2448	1.4500e-003		0.4591	0.4591		0.4560	0.4560	0.0000	4,731.5515	4,731.5515	0.1375	0.0858	4,761.0360
Unmitigated	22.0471	0.4222	36.5274	1.9200e-003		0.4971	0.4971		0.4940	0.4940	0.0000	4,745.5116	4,745.5116	0.1536	0.0858	4,775.3348

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.8647					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	14.6419					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4290	2.0000e-005	0.0234	0.0000		0.2964	0.2964		0.2933	0.2933	0.0000	4,680.0000	4,680.0000	0.0897	0.0858	4,708.4817
Landscaping	1.1116	0.4222	36.5040	1.9200e-003		0.2007	0.2007		0.2007	0.2007		65.5116	65.5116	0.0639		66.8531
Total	**22.0471**	**0.4222**	**36.5274**	**1.9200e-003**		**0.4971**	**0.4971**		**0.4940**	**0.4940**	**0.0000**	**4,745.5116**	**4,745.5116**	**0.1536**	**0.0858**	**4,775.3348**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.8647					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	14.6419					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4290	2.0000e-005	0.0234	0.0000		0.2964	0.2964		0.2933	0.2933	0.0000	4,680.0000	4,680.0000	0.0897	0.0858	4,708.4817
Landscaping	0.8280	0.3580	30.2214	1.4500e-003		0.1627	0.1627		0.1627	0.1627		51.5515	51.5515	0.0478		52.5543
Total	**21.7635**	**0.3580**	**30.2448**	**1.4500e-003**		**0.4591**	**0.4591**		**0.4560**	**0.4560**	**0.0000**	**4,731.5515**	**4,731.5515**	**0.1375**	**0.0858**	**4,761.0360**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Vegetation

Appendix E

CALINE4 Assumptions and Output Sheets

Appendix E

CALINE 4 ASSUMPTIONS

Traffic Data - was taken from the *Traffic Impact Study for Tentative Tract Map No. 36691* (Endo Engineering; February 10, 2014). Traffic volumes were provided representing future conditions in the year 2020 with and without the Preferred Alternative. Cumulative traffic was included in the traffic projections and evaluated with the CALINE 4 model.

Roadway Speeds - Average speeds for the approach and departure segments were developed from Table B.13 and Table B.14 from the *Transportation Project-Level Carbon Monoxide Protocol,* revised December, 1997. The percent red time and traffic volume were taken from the traffic study.

Meteorological Conditions - included 0.5 mph winds, stability class G for one-hour values, a persistence factor of 0.60 for eight-hour values and wind directions determined by iterative runs of the computer model to insure that carbon monoxide concentrations are maximized (greatest concentration for the nearest receptor).

Highway Widths - were derived for existing roadway cross-sections. Future cross-sections were based upon the master planned classifications. The widths included 3 meters per side as specified for the CALINE 4 model input.

Receptor Placement and Height - the receptors modeled was located on the southeast corner of the intersection. The height assumed was 1.8 meters, as specified by the EPA and Caltrans receptor height guidance presented in the *Transportation Project-Level Carbon Monoxide Protocol,* revised December, 1997.

Emission Factors - were developed from the project-level assessment tool entitled (EMFAC2011-PL version 1.1).

Background Concentrations - for the year 2020 were taken from the AQMD website *CEQA Air Quality Handbook* CO html for CO hotspots analysis (updated March 11, 2005). The background concentration, when added to the CO concentration near the intersection, yields the total CO concentration projected to occur in the vicinity.

Region_Typ	Region	CalYr	Season	Veh	Fuel	Veh & Tech	MdlYr	Speed	ROG_RUNEX	TOG_RUNEX	CO_RUNEX
Air Basin	Salton Sea	2020	Winter	AllVehicles (	GAS	AllVehicles (	AllMYr	05 MPH	0.212628	0.308434	2.572748
Air Basin	Salton Sea	2020	Winter	AllVehicles (	GAS	AllVehicles (	AllMYr	10 MPH	0.109099	0.164387	1.992853
Air Basin	Salton Sea	2020	Winter	AllVehicles (	GAS	AllVehicles (	AllMYr	15 MPH	0.085408	0.124354	1.819057
Air Basin	Salton Sea	2020	Winter	AllVehicles (	GAS	AllVehicles (	AllMYr	20 MPH	0.07102	0.100345	1.70837
Air Basin	Salton Sea	2020	Winter	AllVehicles (	GAS	AllVehicles (	AllMYr	25 MPH	0.050448	0.071699	1.483876
Air Basin	Salton Sea	2020	Winter	AllVehicles (	GAS	AllVehicles (	AllMYr	30 MPH	0.04618	0.063897	1.440267
Air Basin	Salton Sea	2020	Winter	AllVehicles (	GAS	AllVehicles (	AllMYr	35 MPH	0.040513	0.055431	1.349857
Air Basin	Salton Sea	2020	Winter	AllVehicles (	GAS	AllVehicles (	AllMYr	40 MPH	0.04218	0.056284	1.373017
Air Basin	Salton Sea	2020	Winter	AllVehicles (	GAS	AllVehicles (	AllMYr	45 MPH	0.041258	0.054539	1.327349
Air Basin	Salton Sea	2020	Winter	AllVehicles (	GAS	AllVehicles (	AllMYr	50 MPH	0.042584	0.055821	1.300212
Air Basin	Salton Sea	2020	Winter	AllVehicles (	GAS	AllVehicles (	AllMYr	55 MPH	0.048233	0.06247	1.336161
Air Basin	Salton Sea	2020	Winter	AllVehicles (	GAS	AllVehicles (	AllMYr	60 MPH	0.038898	0.051667	1.092968
Air Basin	Salton Sea	2020	Winter	AllVehicles (	GAS	AllVehicles (	AllMYr	65 MPH	0.067532	0.08598	1.453273
Air Basin	Salton Sea	2020	Winter	AllVehicles (	GAS	AllVehicles (	AllMYr	70 MPH	0.043431	0.057426	1.096209

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: PSCC Sunrise @ S.Rafael
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 0. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 20. DEGREES	TEMP= 7.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NTA	311	300	311	150	AG	228	2.0	.0	16.7
B. NLA	300	292	300	267	AG	264	2.6	.0	10.0
C. SD	289	300	289	150	AG	407	1.4	.0	16.7
D. STA	289	300	288	450	AG	231	2.0	.0	18.2
E. SLA	300	308	300	333	AG	3	2.6	.0	10.0
F. ND	311	300	312	450	AG	267	1.4	.0	18.2
G. ETA	300	292	150	290	AG	289	2.6	.0	15.8
H. WD	300	308	150	310	AG	339	1.7	.0	15.8
I. WTA	300	308	450	305	AG	63	2.6	.0	11.5
J. ED	300	292	450	295	AG	65	1.8	.0	11.5
K. NAE	311	150	311	0	AG	492	2.0	.0	16.7
L. NDE	312	450	312	600	AG	267	1.4	.0	18.2
M. SAE	288	450	288	600	AG	234	2.0	.0	18.2
N. SDE	289	150	289	0	AG	407	1.4	.0	16.7
O. EAE	150	290	0	290	AG	289	2.6	.0	15.8
P. EDE	450	295	600	295	AG	65	1.8	.0	11.5
Q. WAE	450	305	600	305	AG	63	2.6	.0	11.5
R. WDE	150	310	0	310	AG	339	1.7	.0	15.8

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	315	285	1.8
2. Recpt 2	330	270	1.8
3. Recpt 3	346	254	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION

JOB: PSCC Sunrise @ S.Rafael
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	280.	.2	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	286.	.1	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	293.	.0	.0	.0	.0	.0	.0	.0	.0	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R
1. Recpt 1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

Appendix F

CLIMATE ACTION PLAN FRAMEWORK

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CLIMATE ACTION PLAN FRAMEWORK

In 2009, the *CEQA Guidelines* were amended to add Section 15183.5, which provides a framework for programmatic greenhouse gas emissions reduction plans. An adequate plan must:

- Quantify existing and projected community-wide greenhouse gas emissions;
- Establish greenhouse gas emissions reduction targets over the life of the plan which, if achieved, would render the community's greenhouse gas emissions to be less than significant;
- Identify and analyze the greenhouse gas emissions resulting from sources in the community;
- Identify a set of specific, enforceable measures that, collectively, will achieve the emissions targets;
- Establish a mechanism to monitor the plan's progress and to require amendment if the plan is falling short; and
- Be adopted in a public process following environmental review.

Mitigating greenhouse gas emissions under CEQA can be achieved by developing a Climate Action Plan for the project with site-specific design features and development standards to achieve sustainable decreases in GHG emissions. To substantially reduce GHG emissions, all of the measures below that are found to be feasible should be incorporated in the Climate Action Plan.

- Reuse and recycle construction waste.
- Follow and enforce idling time limits for construction vehicles and commercial delivery vehicles.
- Integrate a reuse and recycling program in the project.
- Ensure consistency with "smart growth" policies and meet recognized benchmarks (i.e., mixed-use, higher-density projects that provide alternatives to individual vehicle travel and promote the efficient delivery of goods and services).
- Preserve and create open space and parks and plant trees.
- Incorporate public transit into the project design.
- Incorporate pedestrian and bicycle facilities in the project design.
- Provide amenities to encourage non-motorized transportation (such as secure and convenient bicycle parking).
- Create bike lanes and shared walking/bike paths that connect neighborhoods to parks and open space design elements.
- Incorporate green building practices and design elements.
- Meet recognized green building and energy efficiency benchmarks.
- Include energy efficient indoor and outdoor lighting, heating and cooling systems, appliances, equipment, and control systems.
- Incorporate passive solar design (e.g., orient buildings and incorporate landscaping to maximize passive solar heating in cool months, minimize solar heat gain in hot months, and enhance natural ventilation).
- Incorporate light colored roofs and cool pavement materials.

- Incorporate solar power systems with energy storage and solar hot water heaters.
- Incorporate solar panels on unused roof space and over parking areas.
- Incorporate water reducing features into building and landscape design.
- Create water efficient landscapes.
- Incorporate water-efficient irrigation systems and devices.
- Make effective use of gray water for landscape irrigation.
- Retain storm water runoff on-site to reduce the need for imported water.
- Design buildings to be water-efficient (install water-efficient fixtures and appliances).
- Build or contribute to the cost of a transit stop near the development.
- Provide the necessary facilities and infrastructure to encourage the use of low or zero-emission vehicles.