3.3 AIR QUALITY

Electrical transmission line alternatives are being considered to alleviate transmission line constraints for the transmission of electrical power into Imperial County. The construction of these transmission line alternatives may cause short and/or long term impacts to local air quality. The impacts to regional air quality are assessed in the following section.

3.3.1 Affected Environment

The Proposed Project and Alternatives A and C, described in Section 1.0 of this EIR, would cross approximately 118-linear miles of Eastern Riverside County while Alternative B would traverse approximately 79-linear miles and extend from Eastern Riverside County into Imperial County. Since the impacts to air quality from the project would be both regional and local in nature, this section examines the general climate and air quality of unique sections within the project area. Due to the remote and rugged nature of much of the project area and the lack of population centers, there are few air quality monitoring stations directly associated with the project region. The data used in the following sections is derived from available data sources that best represent different geographic portions of the project. Figure ES-1 presents the project area.

3.3.1.1 Regional Climate

The Proposed Project is located in the Mojave Desert region of Southern California. Elevations within the project area range from 94 to 1,972 feet above sea level for the Proposed Project, and Alternatives A and C, and –30 to 1,100 feet above sea level for Alternative B. Hot summers, mild winters, infrequent rainfall, variable winds, and very low humidity characterize the climate of the area encompassed by the project area. The average maximum temperatures in the project region vary from 67 ºF in winter to 109 ºF in summer. Minimum temperatures in the project area rarely drop below freezing.

Most rainfall in the area occurs within a three month winter season between December and February as Pacific storms move eastward. Typical rainfall in the area totals approximately 2.5 to 5.5 inches with over half of the annual rainfall falling between the November to February time period. By April, a strong high-pressure ridge begins to build over the Pacific Ocean and storm activity almost entirely ceases until late fall. Between April and September, dry, hot weather predominates. Occasional heavy thunderstorms, however, may bring brief heavy rains to the project area between July and September. Table 3.3-1 presents the average monthly temperature, rain, and wind summaries for various portions of the project area.

Wind patterns in the project area are influenced by dry desert climate, daily heat patterns, and the northwest/southeast orientations of the Coachella, Imperial, and Chuckwalla Valleys. The prevailing winds in the Coachella Valley and Imperial Valley portions of the Proposed Project and alternatives are north to northwesterly, respectively, for most months except when summer conditions generate winds blow from the south. Table 3.3-1 data shows, however, that the conditions that create southerly wind in the summer noticeably lose influence in the more northern locations in the Coachella Valley.

Table 3.3-1
Desert Southwest Project Monthly Climate Summary for Project Area
Period of Record: 1951 through 2001 Temp/Precip, 1981 through 2001 Wind

Parameter	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
Blythe Airport, California													
Avg. Maximum Temp. (°F)	67.5	72.8	79.3	87.4	95.5	103.8	108.4	106.7	101.9	90.5	76.4	67.6	88.1
Avg. Minimum Temp. (°F)	38.1	42.4	46.9	53.2	60.4	67.5	76.2	75.8	68.1	56.0	44.1	38.4	55.6
Avg. Wind Speed/Direction (mph)	4.51 N	4.80 N	5.07 N	5.29 SW	5.11 SW	5.11 SW	5.45 S	4.94 S	4.13 S	3.81 N	3.95 N	4.13 N	4.69 N
Avg. Total Precipitation (inches)	0.47	0.46	0.36	0.13	0.03	0.03	0.18	0.72	0.42	0.27	0.25	0.53	3.86
Yuma, Arizona													
Avg. Maximum Temp. (°F)	68.8	74.3	79.2	86.8	94.0	103.4	107.0	105.8	101.6	91.0	77.7	68.7	88.2
Avg. Minimum Temp. (°F)	44.2	47.0	51.0	57.0	63.8	72.1	80.4	79.9	73.8	62.4	51.0	44.4	60.6
Avg. Wind Speed/Direction (mph)	3.64 NE	4.09 SE	4.26 SE	4.63 SE	4.52 S	4.53 S	4.80 S	4.71 S	4.05 SE	3.71 SE	3.58 NE	3.76 NE	4.19 SE
Avg. Total Precipitation (inches)	0.39	0.22	0.23	0.11	0.05	0.01	0.22	0.51	0.27	0.29	0.19	0.43	2.91
Brawley, California													
Avg. Maximum Temp. (°F)	69.3	73.7	79.1	86.4	94.2	103.0	107.7	106.5	102.4	91.7	78.8	70.1	88.6
Avg. Minimum Temp. (°F)	39.1	43.2	47.7	53.3	59.9	66.7	75.1	75.9	69.7	58.3	45.9	39.5	56.2
Avg. Wind Speed/Direction (mph)	2.48 NW	3.87 NW	4.71 NW	5.18 NW	4.35 NW	4.12 SE	3.51 SE	3.63 SE	3.70 NW	3.78 NW	3.27 NW	2.63 NW	3.77 NW
Avg. Total Precipitation (inches)	0.40	0.36	0.26	0.08	0.03	0.01	0.06	0.34	0.30	0.23	0.16	0.45	2.67
Palm Springs, California													
Avg. Maximum Temp. (°F)	69.4	73.6	79.2	86.9	94.2	103.0	108.3	106.8	101.7	91.5	78.8	70.2	88.6
Avg. Minimum Temp. (°F)	41.8	45.1	48.3	53.8	59.8	66.3	74.5	73.8	67.5	58.9	48.5	41.9	56.7
Avg. Wind Speed/Direction (mph)	3.94 N	4.60 N	5.53 N	6.62 N	7.12 N	6.66 N	5.90 N	5.47 SE	5.24 N	4.62 N	4.04 N	3.65 N	5.28 N
Avg. Total Precipitation (inches)	1.16	1.00	0.61	0.17	0.05	0.07	0.21	0.31	0.36	0.22	0.46	0.95	5.57

Source: WRCC 2002.

In the Colorado River Region, typical of the eastern portion of the project area, the winds blow consistently from the north in the winter and the south in the summer. Wind speeds consistently average between three to five mph in the project area. Table 3.3-1 presents the average monthly wind velocities and directions in the various portions of the project area.

Meteorological conditions that exist in the area during the summer portions (light winds and shallow vertical mixing) and topographical features (surrounding mountain ranges) hinder the dispersal of air pollutants in the project area. The potential for elevated air pollution in lower elevations within the Mojave Desert is high due to frequent temperature inversions which can trap air pollutants near the ground, thereby hindering dispersion.

Evapotranspiration rates in the project area, which is defined as the evaporative water loss from both soil and vegetation, are exceedingly high due to the lack of vegetative cover and extreme sustained temperatures. The average evapotranspiration rates in the project area are among the highest in the United States (U.S.) and average as high as 110 inches per year as measured in Yuma, Arizona (WRCC 2002).

3.3.1.2 Existing Air Quality

National Ambient Air Quality Standards (NAAQS) have been established by the Federal Clean Air Act (CAA) and represent a maximum, or "threshold", concentration for many air pollutants. NAAQS represent the concentration of a pollutant above which humans or the environment may experience some adverse effects. NAAQS are based on epidemiological, health, and environmental research conducted by the U.S. Environmental Protection Agency (U.S. EPA). NAAQS are reviewed and updated periodically to incorporate existing knowledge and science for individual pollutants. The U.S. EPA has established two types of NAAQS: primary standards which are protective of human health, and secondary standards which are protective of human welfare.

Current primary NAAQS have been established for what is known as "criteria pollutants" which include ozone, PM_{10}, $PM_{2.5}$ (particular matter), carbon monoxide (CO), nitrogen dioxide (NO_2), lead, and sulfur dioxide (SO_2). Recent ozone and $PM_{2.5}$ NAAQS modifications, although effective since a 1997 revision of the CAA, have not yet been adopted.

The California Air Resources Board (CARB) has adopted additional standards, comparable to the NAAQS, known as the California Ambient Air Quality Standards (CAAQS). CAAQS are more restrictive than NAAQS, based on more conservative risk assumptions. A comparison of federal and state air quality standards is presented in Table 3.3-2.

Air quality in California is evaluated using air quality data collected from monitoring stations located throughout California and comparing against NAAQS and CAAQS values. The data are used to evaluate the nature and severity of the air quality problems in the state and to assess air quality issues. Ambient air monitoring stations are concentrated in populous regions in the state, and consequently, there are few active monitoring sites in the project area. Ambient air quality monitoring data is collected by CARB, the U.S. Park Service, local air pollution control districts, and private firms. Figure 3.3-1 presents the ambient air monitoring stations in the region of the project area.

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Figure 3.3-1 Air Monitoring Locations

Back page of figure.

Table 3.3-2 National and California Ambient Air Quality Standards
Page 1

Table 3.3-2 National and California Ambient Air Quality Standards
Page 2

Based on the information presented in Table 3.3-3 through Table 3.3-5, it is clear that the existing air quality is generally impaired in the project area relative to California standards for both ozone and PM_{10}. Ozone is a particular problem in the lower elevations of the western and southern portions of the project area, which would be located in the Coachella Valley. Ozone formation in this region is influenced by regional meteorological conditions that transport significant amounts of ozone forming pollutants into the region from the Los Angeles Basin. Ambient PM_{10} concentrations also exceed both federal and state standards in the Coachella Valley portions of the project area and are likely due to high levels of naturally produced particulate dust matter combined with regional man-made emissions. Based on the data from Palm Springs and in some part to the data from El Centro, the CO and NO_2 ambient levels do not exceed federal or state standards.

3.3.1.2.1 Ambient Air Quality – Western Region of the Project Area

There are only two active monitoring stations within 10 miles of the Proposed Project located at Palm Springs and Indio. Both of these stations are located at the far western portion of the project area and only the Palm Springs station collects data for all criteria pollutants. In the eastern portion of the project area, the closest active air monitoring station is located approximately 35 miles to the south in Yuma, Arizona.

The Palm Springs ambient air monitoring station is located approximately 5 miles from the Devers Substation. As such, the ambient air quality of the northwestern portion of the Proposed Project is well represented by the Palm Springs air quality data due to its proximity and geophysical and meteorological similarity with the Devers Substation. Table 3.3-3 presents the air monitoring data for the previous five years in the northwestern portion of the project area.

3.3.1.2.2 Ambient Air Quality – Eastern Region of the Project Area

The ambient air quality monitoring station located in Yuma, Arizona is located approximately 35 miles south of the eastern terminus of the Proposed Project at the Blythe Substation and is also located adjacent to the Colorado River. As such, the ambient air quality of the eastern portion of the Proposed Project and alternatives is best represented by the Yuma air quality data due to its proximity and geophysical and meteorological similarity with the Blythe Substation. Table 3.3-4 presents the air monitoring data for the previous five years in the Eastern portion of the Proposed Project and alternatives.

3.3.1.2.3 Ambient Air Quality – Southern Region of the Project Area

There is only one active monitoring station within 10 miles of Alternative B at Niland. The Niland monitoring station, however, only collects Ozone and particulate data. There are no active ambient air quality monitoring stations that monitor for all criteria pollutants within 35 miles of Alternative B. The air quality issues of the region, however, are related to ozone and particulate matter; therefore, the Niland data presents data for the relevant air issues of the southern portion of the project area.

Table 3.3-3
Desert Southwest Project Existing Air Quality
Western Region – Palm Springs, CA

Pollutant	1997	1998	1999	2000	2001
Ozone					
Days over State Standard – 1 hr (0.09 ppm)	45	40	27	40	53
Days over Federal Standard – 1 hr (0.12 ppm)	4	8	1	0	6
Maximum 1 hr (ppm)	0.155	0.173	0.126	0.124	0.137
% Observation[a]	98	96	96	100	100
CO					
Days over State Standard – 8 hr/1 hr (9.0/20 ppm)	0	0	0	0	0
Days over Federal Standard – 8 hr/1 hr (9/35 ppm)	0	0	0	0	0
Maximum 8 hr ppm	1.34	1.66	1.75	1.59	1.41
% Observation [a]	99	93	98	99	43
NO_2					
Days over State Standard – 1 hr (0.25 ppm)	0	0	0	0	0
Maximum 1 hr ppm	0.069	0.070	0.068	0.064	0.081
Annual Average ppm	0.015	0.016	0.018	0.016	--
% Observation [a]	78	96	100	100	35
PM_{10}					
Days over State Standard – 24 hr (50 $\mu g/m^3$)	1	3	3	0	2
Days over Federal Standard – 24 hr (150 $\mu g/m^3$)	0	0	0	0	1
Maximum $\mu g/m^3$	63.0	72.0	104.0	44.0	432.0
% Observation [a]	92	95	94	90	76

Source: CARB 2002.
[a] Completeness of data set for given year.

Table 3.3-4
Desert Southwest Project Existing Air Quality
Eastern Region – Yuma, AZ

Pollutant	1997	1998	1999	2000	2001
Ozone					
Days over State Standard – 1 hr (0.09 ppm)	0	0	0	0	0
Days over Federal Standard – 1 hr (0.12 ppm)	0.098	0.109	0.103	0.077	0.089
Maximum 1 hr (ppm)	226	165	221	181	59
PM_{10}					
Days over State Standard – 24 hr (50 $\mu g/m^3$)	0	0	0	0	0
Days over Federal Standard – 24 hr (150 $\mu g/m^3$)	108	112	100	132	45
Maximum $\mu g/m^3$	34	58	30	43	10

Source: CARB 2002.

As a result, the best air monitoring station data, relative to the southern portion of the project area, is data from the El Centro monitoring station which is located approximately 25 miles south of the southern terminus of Alternative B at the Midway Substation. Even at El Centro, however, the data coverage is less than 50 percent in some cases. Table 3.3-5 presents the air monitoring data for the previous five years in the Southern portion of the project area.

Table 3.3-5
Desert Southwest Project Existing Air Quality
Southern Region – El Centro, CA

Pollutant	1997	1998	1999	2000	2001
Ozone					
Ozone	29	12	9	--	0
Days over State Standard – 1 hr (0.09 ppm)	2	1	2	--	0
Days over Federal Standard – 1 hr (0.12 ppm)	0.130	.0130	0.140	--	0.057
Maximum 1 hr (ppm)	95	88	37	--	0
CO					
Days over State Standard – 8 hr/1 hr (9.0/20 ppm)	0	0	--	--	--
Days over Federal Standard – 8 hr/1 hr (9/35 ppm)	0	0	--	--	--
Maximum 8 hr ppm	3.71	3.50	--	--	--
% Observation [a]	100	75	--	--	--
PM_{10}					
Days over State Standard – 24 hr (50 $\mu g/m^3$)	9	9	18	19	18
Days over Federal Standard – 24 hr (150 $\mu g/m^3$)	0	0	0	1	1
Maximum $\mu g/m^3$	120.0	90.0	92.0	180.0	383.0
% Observation [a]	96	92	93	95	87

Source: CARB 2002.
[a] Completeness of data set for given year.
-- Not Reported by CARB

3.3.2 Applicable Regulations, Plans, and Policies

CAA (42 U.S.C. § 7401) is the foundation for which all federal, state, and district air quality rules and regulations are based. The CAA sets a framework for air regulation, but overall implementation and control is delegated to each state that meets the minimum standards. State and federal air quality rules and regulations are implemented through local air management agencies with broad authority.

The Proposed Project would be responsible to meet District rules and requirements of the Mojave Desert Air Quality Management District (MDAQMD), South Coast Air Quality Management District (SCAQMD), and Imperial County Air Pollution Control District (ICAPCD). Each district has the responsibility to promulgate local rules and regulation, monitor air pollution, issue air permits, control the emissions of air pollutants within its jurisdiction, and prevent adverse human and environmental impacts.

3.3.2.1 Air Basins and Air Pollution Control Districts

As presented in Figure 3.3-2, the Proposed Project and alternatives would be situated within several air basins, local air pollution control districts, and counties. The Proposed Project, and Alternatives A and C would traverse the Mojave Desert Air Basin (MDAB) and the Salton Sea Air Basin (SSAB), and Alternative B would be entirely located within the SSAB. The Proposed Project and, Alternatives A and C would be located within the jurisdictional boundaries of the MDAQMD and the SCAQMD while Alternative B would be subject to MDAQMD and ICAPCD jurisdiction.

3.3.2.2 Compliance with Air Quality Standards

As discussed, the concentrations of criteria pollutants are officially monitored at locations throughout California (and throughout the U.S.) and the data is reviewed by U.S. EPA and CARB. If monitoring data at a given location indicates that the concentrations of any criteria pollutant exceeds either the NAAQS or the CAAQS for more than one day per calendar year, then the area in which the monitoring location is located would be considered “non-attainment” for that pollutant. Federal and state air quality standards are set by U.S. EPA and CARB, respectively. California standards are more restrictive; as such, there are generally more state than federal areas classified as non-attainment. A non-attainment classification leads to more restrictive rules and regulations governing the emissions for the pollutant in which the NAAQS or CAAQS were exceeded. The majority of regulations that an industry is subject to depends on whether it is located in an attainment or non-attainment area. Because area designation is based on a pollutant-by-pollutant analysis, it is common for an area to be in attainment for some pollutants and non-attainment for others. Those areas not classified as non-attainment for specific criteria pollutants are either classified as in attainment or have not yet been classified and therefore are treated as attainment areas. Table 3.3-6 presents the federal and state designations for each of the areas for which the project area is associated.

Significant portions of the Proposed Project and alternatives are located in areas that are designated by CARB and U.S. EPA as non-attainment for both ozone and PM_{10}. As such, the Proposed Project would face tightened emission restrictions for these compounds by the local air pollution control districts.

There are segments of the Proposed Project and alternatives that are located within regions classified federally as attainment or unclassified attainment and designated by CARB as non-attainment. The federal designations, however, do not supercede the California designations and, as such, the local air districts would implement the tighter restrictions mandated by the CARB listings.

3.3.3 Environmental Consequences

3.3.3.1 Permits and Authorizations

Construction and operation of the Proposed Project or alternatives would not require any air quality permits from SCAQMD or MDAQMD, but permits to operate (PTO) would be required by ICAPCD for each mobile air pollutant source that cannot move under its own power, such as air compressors.

Figure 3.3-2 Air Basins/Districts

Back page of figure.

**Table 3.3-6
Federal and California State Attainment Designations
For Proposed Project and Alternative Areas**

Pollutants	Salton Sea Air Basin				Mojave Desert Air Basin	
	Imperial County ICAPCD		Western Riverside County SCAQMD		Eastern Riverside County MDAQMD	
	State	Federal	State	Federal	State	Federal
Ozone	Non-attainment	Non-attainment, Serious	Non-attainment	U/A – East Non-attainment – West, Severe	Non-attainment	U/A
CO	Unclassified	U/A	Attainment	U/A	Unclassified	U/A
PM_{10}	Non-attainment	U/A – East Non-attainment – West, Moderate	Non-attainment	Non-attainment, Moderate	Non-attainment	U/A
SO_2	Attainment	--	Attainment	--	Attainment	--
H_2S	Unclassified	--	Unclassified	--	Unclassified	--

U/A Unclassified/Attainment
-- No federal standard

3.3.3.2 Potential Types of Impacts and Significance Criteria

Air pollutant emissions from the project area would exist solely as short-term emissions during construction. The operation of electrical transmission lines does not produce air pollutant emissions. General maintenance activities related to transmission line operation are minimal and, as such, would exert negligible overall impact to air quality. The principal sources of emissions of the Proposed Project would occur during construction. Construction emissions would include the exhaust from construction equipment (including vehicles transporting personnel, equipment, and supplies); fugitive dust and PM_{10} from grading, earth moving, and equipment traveling on paved and unpaved roads; and construction crew vehicle traffic. The impacts to local air quality in the project area would be restricted to those during the course of construction, and the following impact analysis focuses on these emissions.

3.3.3.3 Significance Criteria

Air impacts from the construction of the Proposed Project or alternatives would be considered significant under NEPA or CEQA if any of the following conditions were met:

- Cause or contribute to any new violation of NAAQS or CAAQS in the project area;
- Interfere with the maintenance or attainment of NAAQS or CAAQS;
- Increase the frequency or severity of any existing violations of NAAQS or CAAQS;
- Delay the timely attainment of any standard, interim emission reduction, or other air quality milestone promulgated by the U.S. EPA, CARB, or local air quality agency.

Under state and federal rules and regulations, emission sources are exempt from conformity if the Proposed Project emission rates do not exceed established thresholds, known as *de minimis* limits. Under these rules, construction emissions from the Proposed Project or alternatives would be considered insignificant if they were to be less that *de minimis* limits, and as such would be considered to have no significant impact on existing air quality in the area. Due to the nature of this project, only construction *de minimis* levels are applicable if such limits have been established.

In cases where emissions exceed *de minimis* thresholds, emissions from the Proposed Project or alternatives are potentially significant and the local agencies cannot proceed with approval of the Proposed Project or alternatives on the basis of a negative declaration of impact. The Proposed Project or alternatives may then have to implement mitigation measures to reduce impacts to a level acceptable by the agency.

3.3.3.4 Conformity

General conformity requirements were adopted by Congress as part of the CAA Amendments of 1990, and were implemented by U.S. EPA regulations in 1993. General conformity requires that all federal actions must "conform" with the State Implementation Plan (SIP). U.S. EPA regulations exempt projects in nonattainment areas from general conformity requirements if the projected emissions do not exceed specified *de minimis* levels which are based on a regions specific nonattainment classification. The *de minimis* thresholds for SSAB and MDAB are presented in Table 3.3-7 and are based on the federal designation of the particular region.

If the projected emissions for a proposed emission source are shown to be less than the *de minimis* thresholds, then the impact for NEPA evaluation may be presumed to be less than significant and exempt from conformity. For areas that are considered to be attainment for given pollutants, a *de minimus* threshold does not exist. For these areas, the non-attainment *de mimimis* threshold can be used for significance determination under NEPA guidelines. If calculated emissions from project related activities exceeded *de mimimis* thresholds, IID would be required by the General Conformity Rule to implement mitigation measures. Calculated emissions are compared to *de minimus* threshold levels in Section 3.3.4 of this EIR.

Table 3.3-7
***De Minimis* Emission Thresholds For Conformity**

Air Basin (County)		Pollutant			
		CO	ROC[a,b]	NO_X[a]	PM_{10}
SSAB (West Riverside)	*De minimis* emissions (tons per year)	N/A	25	25	100
SSAB (Imperial)	*De minimis* emissions (tons per year)	N/A	50	50	100
MDAB (East Riverside)	*De minimis* emissions (tons per year)	N/A	N/A	N/A	N/A

[a] Ozone precursor compounds – attainment status determined by ozone classification.
[b] ROC – Reactive organic compounds; equivalent to volatile organic compound (VOC).
N/A – Conformity threshold not applicable – region is federally designated unclassified/attainment.

3.3.3.5 State Significance Criteria

Individual air quality management districts are responsible, under CEQA, for interpreting thresholds of significance for emissions. CEQA guidelines give some latitude in regards to levels of significance and rely on interpretation and implementation by local air quality management districts. Emission threshold levels that are considered significant can vary between agencies. In addition, it is accepted by many agencies that operational emissions are different in nature to construction emissions. As a result, some districts set construction levels of significance higher than normal operational levels under the assumption that construction emissions are short term in nature. The operational phase of the Proposed Project and alternatives would not produce any significant emissions and, therefore, construction emissions values, when established, would be the only threshold values applicable.

Each of the three local air quality control districts that are associated with the Proposed Project and alternatives were contacted to verify specific significant threshold levels and to determine if the districts had established specific construction thresholds. Table 3.3-8 presents the SCAQMD, MDAQMD, and ICAPCD significance thresholds applicable to the Proposed Project.

Table 3.3-8
Air Pollution Control District
Significance Impact Emission Thresholds (Construction)

Air Pollution Control District		Pollutant				
		CO	ROC	NO_X	SO_X	PM_{10}
SCAQMD	tons per year	99	10	10	27	27
	tons per quarter	25	2.5	2.5	7	7
	pound per day	413	42	42	113	113
MDAQMD	tons per year	75	25	25	25	15
	tons per quarter	19	6	6	6	4
	pound per day	313	104	104	104	63
ICAPCD	tons per year	*	*	*	*	*
	tons per quarter					
	pound per day					

Source: SCAQMD 2002; MDAQMD 2002; ICAPCD 2002.
* ICAPCD considers project emissions less than significant if mitigation factors listed in Section 3.3.6 are applied and applicable air permits are secured.

3.3.4 Project Emissions

During construction of the Proposed Project and alternatives, vehicles and internal combustion powered equipment such as graders, excavators, dozers, scrapers, tractors, water trucks, tractors, and associated equipment would generate exhaust emissions of CO, NO_X, SO_2, and PM_{10}. These emissions are referred to as "tailpipe emissions" since they are directly related to the combustion of petroleum required to operate the equipment at the sites.

PM_{10} would be generated as fugitive dust emissions from earth clearing and grading, and vehicle traffic at the sites of activity. Fugitive dust represents the particles of dust generated and introduced into the atmosphere that do not readily fall back to the ground due to their size or mass (including PM_{10}). Although fugitive dust related to construction activities is temporary in nature, the resulting airborne particulate matter may have a measurable impact on the air quality in the local region of the construction area in question. Fugitive dust emissions are variable depending on the construction schedules, activities being performed at the site, and the site location relative to paved access roads. In addition, soil conditions and meteorological conditions also influence the creation and dispersal of fugitive dust.

Emissions related to the Proposed Project and alternatives would be short-term in duration and only last during the construction phase. Long-term operation and maintenance of electrical transmission lines would not produce significant impacts to air quality in the region.

The Proposed Project and alternatives emissions were estimated using established methodologies; emission factors approved by federal, state, and local agencies; projected construction activities; equipment use projections; and construction schedules.

3.3.4.1 Construction Emissions

The Proposed Project and alternatives would require mobilization of a variety of equipment and personnel in order to complete the various construction or reconductoring related tasks. Activities necessary for the construction of the Proposed Project and alternatives include site surveying, environmental compliance monitoring, site access layout, material staging, and foundation excavation and installation. Equipment that relies on the combustion of fossil fuel is necessary for each of the tasks to complete construction. As such, the emission of criteria pollutants is a direct consequence of project construction.

Construction related emissions were calculated for each of the alternatives based on construction schedules and construction related activities presented in Section 2.0 of this EIR. The information in this section provides the input parameters used to calculate impacts to air quality by selected alternatives.

Emission factors used in the tailpipe emission calculations are based on emission factors selected from the SCAQMD CEQA Air Quality Handbook (SCAQMD 1993). Emission factors used to determine fugitive dust emissions were selected from El Dorado County Air Pollution Control District (EDAPCD) Air Quality Assessment CEQA Guide (EDAPCD 2002). Conservative estimations were used to produce a "worst case" construction emission scenario for comparison against district significance criteria. Project emission calculations, including fugitive emissions, are based on the above referenced assumptions and U.S. EPA emission factors from 5th edition AP-42 (U.S. EPA 1996) and are available upon request.

3.3.4.2 Construction Related Fugitive Dust

Clearing, grading, excavating, using heavy equipment on unpaved surfaces, and loading/unloading of trucks will create fugitive dust at the specific construction points. Reasonably available control measures will be implemented to reduce construction related fugitive dust. These measures include the use of chemical dust suppressants to stabilize exposed surfaces impacted by construction activities. Upon completion of construction activities at each power pole site, natural conditions will be restored and fugitive dust emissions will match those that existed prior to project activities.

Construction related fugitive dust generated by the construction of the Proposed Project and alternatives were estimated using guidelines and emission factors established by the SCAQMD (SCAQMD 1993). Several assumptions were made in order to estimate construction related fugitive dust. The assumptions are as follows:

- The expected number of power poles is 3.4 per mile and a temporary expected total exposed graded surface per power pole is 0.92 acres. The total temporary exposed graded surface due to power pole construction is 3.1 acres/mile.
- Exposed storage piles will not permanently exist at the power pole sites. Subsurface material would be used to restore the site to natural contours. Excess material would be transported off-site by the contractor and properly disposed.
- Pulling and tensioning sites will be located every 2 to 3 miles. Each tensioning site will disturb approximately 0.69 acre and each pulling site will disturb approximately 0.11 acre. The average disturbance due to pulling and tensioning would be approximately 0.4 acre/mile.

Based on the assumptions presented above, construction related fugitive emissions were calculated for each of the alternatives. Construction related emission calculations, including fugitive emissions, are based on the above referenced assumptions and U.S. EPA emission factors from 5th edition AP-42 (U.S. EPA 1996) and are available upon request.

3.3.4.3 Transportation Related Fugitive Dust

As mentioned, access roads of existing adjacent transmission lines would provide principle access to the construction areas of the Proposed Project and alternatives. The use of existing maintenance roads within existing transmission lines right-of-way would minimize potential impacts associated with new access road construction. Numerous locations along paved roadways would provide access to and from existing roads in the construction site areas. Consequently, reduction in the impacts of fugitive dust would be accomplished by using paved roads to the greatest extent possible to minimize unpaved road travel. Potential impacts related to related would be reduced further by using crew transport vehicles that would pick up construction personnel off-site, thereby greatly minimizing vehicular traffic.

Fugitive dust emissions from vehicle transport over the unpaved access roads are detailed in U.S. EPA AP-42, Section 13.2.2, Unpaved Roads. AP-42 emission factors provide a very conservative estimate of fugitive dust emissions. Transportation related fugitive dust is the primary source of PM_{10} emissions during the construction of the Project and alternatives, and as such, reasonably available control measures will be implemented to reduce these emissions. Emission reduction measures include a vehicle speed limit of 15 mph, and the use of approved chemical dust suppressants on unpaved roads. AP-42 cites 80 percent control efficiency for PM_{10} on unpaved roads when chemical suppression is properly applied and maintained.

Fugitive dust emission calculations related to vehicle travel are based on the following assumptions:

- All of the mitigation measures described in Section 3.3.5 would be implemented;
- Personnel transport vehicles would only travel one time in and one time out on any given day;
- Vehicle use of unpaved roadways would be kept to a practical minimum.

Based on the assumptions presented above, transportation related fugitive emissions were calculated for each of the alternatives. Transportation related emission calculations, including fugitive emissions, are based on the above referenced assumptions and EPA emission factors from AP-42 (5^{th} ed.) and are available upon request.

3.3.5 Impacts and Mitigation

Impacts to regional air quality from the Proposed Project and alternatives were calculated based on assumptions that the only appreciable impacts will be construction related and that operational impacts from a transmission line are negligible. These assumptions are consistent with similar projects throughout California. Calculated emissions were then compared to *de minimis* thresholds to determine if the Proposed Project and alternatives emissions presented a significant impact to local air quality. Significance thresholds are published as annual emission rates (tons per year) by U.S. EPA while air quality control districts publish significance thresholds in average pounds/day or tons/quarter limits. Project emissions are presented in this document as both annualized, quarterly, and daily rates for the purpose of comparison with federal and district standards. Mitigation measures are presented based on significance findings. Implementation of the recommended mitigation measures will impacts to the extent practical.

Even with the implementation of reasonable and practical mitigation measures, however, mitigated project emissions may remain unavoidably significant. The most common form of fugitive dust suppression involves the application of large volumes of water. Water is not available in the project region. Mitigation measures using large volumes of water or water-soluble compounds were evaluated. When practical, these measures would be implemented. For most of the project area, however, these forms of fugitive dust mitigations were not considered practical or cost effective due to the requirements to transport water over long distances. In many cases, the impacts to air quality due to the transport of water offset the benefits of dust suppression of the water being transported.

3.3.5.1 Proposed Project Impacts and Mitigation Measures

Air Quality Impact 1: *Construction of the Proposed Project would result in significant exhaust and fugitive dust emissions.*

As shown in Table 3.3-9, mitigated pollutant emissions produced during the construction of the Proposed Project would exceed MDAQMD and/or SCAQMD significant thresholds for CO, NO_X, Volatile Organic Compounds (VOCs), and PM_{10}. VOCs are equivalent for the purposes of threshold evaluation to Reactive Organic Compounds (ROCs). Additionally, the Proposed Project construction emissions exceed federal *de minimus* thresholds established by the General Conformity rule. Consequently, the practical and reasonable mitigation measures presented below would be implemented during the construction of the Proposed Project. These measures will reduce emissions of CO, NO_X, VOC, and PM_{10} to the extent practical for a project of this nature.

Table 3.3-9
Proposed Project
Project Emissions Summary

Project Emissions					
Mitigated Emissions	**Emissions**				
	CO	**ROC**	**NO_X**	**SO_X**	**PM_{10}**
Tailpipe Emissions	422	66	586	49	38
Fugitive PM^{10} Emissions					2,718
Total Construction Emissions (pounds/day average)	422	66	386	49	2,751
Total Construction Emissions (tons/year equivalent)	77	12	107	9	503
District Significance Thresholds					
	Pounds/day				
	CO	**ROC**	**NO_X**	**SO_X**	**PM_{10}**
MDAQMD significant impact thresholds	313	104	104	104	63
SCAQMD significant impact thresholds	413	42	42	113	113
Federal *De Minimis* Thresholds					
	Tons/year				
	CO	**ROC**	**NO_X**	**SO_X**	**PM_{10}**
MDAB *de minimis* and NEPA impact thresholds	N/A	N/A	N/A	N/A	N/A
SSAB *de minimis and* NEPA impact thresholds	N/A	25	25	N/A	100

Air Quality Impact 1 Mitigation: *The following mitigation measures would be implemented during the construction of the Proposed Project to reduce the exhaust emissions of CO, NO_X, VOC, SO_X, and PM_{10}:*

- Heavy duty off road diesel engines will be properly tuned and maintained to manufacturers' specifications to ensure minimum emissions under normal operations;
- Visible emissions from all heavy duty off road diesel equipment shall not exceed 40 percent opacity for more than three minutes in any hour of operation;
- A comprehensive inventory (i.e. make, model, year, emission rating) of all heavy-duty off-road equipment (50 horsepower or greater) that will be used an aggregate of 40 hours per week or more during the duration of the construction project will be submitted to the Districts.
- Within Coachella Valley, measures would be implemented to protect blow sand areas from compaction, including not using chemical dust suppressants.

Due to the remote locations, dry desert environment, and unique wildlife hazard issues specific to the project region, a combination of both water and chemical dust suppression would be utilized. Controlling dust in the desert is further complicated by the fact that water is an attractant to desert wildlife including the endangered Desert Tortoise. The use of petroleum and related products create potential soil and water pollution in sensitive desert environments.

Water will be used for dust suppression when reasonably available and when water will not create wildlife hazard in construction zones. In cases where water is not feasible, chemical dust suppression methods, such as organic polymers or wood derivative compounds, will be implemented when dust suppression is warranted. These compounds will be applied as needed but are expected to require limited application.

The following mitigation measures would be implemented for the Proposed Project to reduce emission fugitive dust (including PM_{10}):

- Apply water or chemical dust suppressants to unstabilized disturbed areas and/or unpaved roadways in sufficient quantity and frequency to maintain a stabilized surface.
- Water or water-based chemical additives will be used in such quantities to control dust on areas with extensive traffic including unpaved access roads. Water, organic polymers, lignin compounds, or conifer resin compounds will be used depending on availability, cost, and soil type.
- Surfaces permanently disturbed by construction activities will be covered or treated with a dust suppressant within five days of the completion of activities at each site of disturbance.
- Vehicle speeds on unpaved roadways will be restricted to 15 mph.
- Vehicles hauling dirt will be covered with tarp or other means.
- Site construction workers will be staged off-site at or near paved intersections and workers will be shuttled in crew vehicles to construction sites.

3.3.5.2 Alternative A Impacts and Mitigation Measures

Air Quality impacts associated with Alternatives A are similar to these identified above the Proposed Project, and mitigation measures identified for the Proposed Project would also be appropriate for Alternative A impacts. Mitigation measures are expected to be sufficient to reduce potentially significant impacts to a less than significant level.

3.3.5.3 Alternative B Impacts and Mitigation Measures

Air Quality Impact B1: *Construction of Alternative B would result in significant fugitive dust emissions.*

As shown in Table 3.3-10, mitigated pollutant emissions produced during the construction of Alternative B exceed MDAQMD and/or SCAQMD significant thresholds for CO, NO_X, VOCs, and PM_{10}. VOCs are equivalent for the purposes of threshold evaluation to ROCs. Additionally, Alternative B construction emissions exceed federal *de minimis* thresholds established by the General Conformity rule. Consequently, the practical and reasonable mitigation measures presented below would be implemented during the construction of Alternative B. These measures will reduce emissions of CO, NO_X, VOC, and PM_{10} to the extent practical for a project of this nature.

Air Quality Impact B1 Mitigation:

The mitigation measures implemented during the construction of Alternative B would be identical to the mitigation measures recommended for the Proposed Project. Mitigation measures are expected to be sufficient to reduce potentially significant impacts to a less than significant level.

Table 3.3-10
Alternative B
Project Emissions Summary

Project Emissions					
Mitigated Emissions	**Emissions**				
	CO	**ROC**	**NO_X**	**SO_X**	**PM_{10}**
Tailpipe Emissions	422	66	586	49	38
Fugitive PM^{10} Emissions					2,718
Total Construction Emissions (pounds/day average)	422	66	386	49	2,751
Total Construction Emissions (tons/year equivalent)	77	12	107	9	503
District Significance Thresholds					
	Pounds/day				
	CO	**ROC**	**NO_X**	**SO_X**	**PM_{10}**
MDAQMD significant impact thresholds	313	104	104	104	63
ICAPCD significant impact thresholds	Note 1	Note 1	Note 1	Note 1	Note 1
Federal *De Minimus* Thresholds					
	Tons/year				
	CO	**ROC**	**NO_X**	**SO_X**	**PM_{10}**
MDAB *de minimis* and NEPA impact thresholds	N/A	N/A	N/A	N/A	N/A
SSAB *de minimis* and NEPA impact thresholds	N/A	25	25	N/A	100

Note 1: No numerical threshold value. ICAPCD prescribes that the project will be deemed less than significant when the project procures the necessary stationary permits.

3.3.5.4 Alternative C Impacts and Mitigation Measures

Air Quality Impact C1: *Construction of Alternative C would result in significant fugitive dust emissions.*

As shown in Table 3.3-11, mitigated pollutant emissions produced during the construction of the Alternative C exceed MDAQMD and/or SCAQMD significant thresholds for CO, NO_X, VOCs, and PM_{10}. VOCs are equivalent for the purposes of threshold evaluation to ROCs. Additionally, Alternative C construction emissions exceed federal *de minimis* thresholds established by the General Conformity rule. Consequently, the practical and reasonable mitigation measures presented below would be implemented during the construction of Alternative C. These measures will reduce emissions of CO, NO_X, VOC, and PM_{10} to the extent practical for a project of this nature.

Air Quality Impact C1 Mitigation:

The mitigation measures implemented during the construction of Alternative C would be identical to the mitigation measures recommended for the Proposed Project. Mitigation measures are expected to be sufficient to reduce potentially significant impacts to a less than significant level.

Table 3.3-11 Alternative C Project Emissions Summary					
Project Emissions					
Mitigated Emissions	**Emissions**				
	CO	**ROC**	**NO_X**	**SO_X**	**PM_{10}**
Tailpipe Emissions	422	66	586	49	38
Fugitive PM10 Emissions					2,718
Total Construction Emissions (pounds/day average)	422	66	386	49	2,751
Total Construction Emissions (tons/year equivalent)	77	12	107	9	503
District Significance Thresholds					
	Pounds/day				
	CO	**ROC**	**NO_X**	**SO_X**	**PM_{10}**
MDAQMD significant impact thresholds	313	104	104	104	63
SCAQMD significant impact thresholds	413	42	42	113	113
Federal *De Minimus* Thresholds					
	Tons/year				
	CO	**ROC**	**NO_X**	**SO_X**	**PM_{10}**
MDAB *de minimis* and NEPA impact thresholds	N/A	N/A	N/A	N/A	N/A
SSAB *de minimis* and NEPA impact thresholds	N/A	25	25	N/A	100

3.3.5.5 No Project Alternative Impacts and Mitigation

Under the No Project Alternative, the Project would not be constructed, eliminating any air quality impacts due to the construction of the project. Without construction of the Project, however, there would still be a need for increased electrical transmission capacity. A rapidly increasing population in Southern California generates the need for increased electrical transmission capacity. Several major power generation facilities in the region, including the Blythe Energy Project, have been recently constructed or are currently under construction. New electrical transmission lines or major upgrades to existing lines will be required to carry the electrical power currently being generated by market plants to the Southern California populations. The resultant upgrades or new construction would produce impacts similar to the impacts of the proposed alternatives of the Project.