

C.2 Air Quality

This section presents information on ambient air quality conditions in the vicinity of the Project site and identifies potential impacts to air quality as a result of the construction and operation of the proposed Project and alternatives, including the no action alternative.

C.2.1 Affected Environment

C.2.1.1 Meteorological Conditions

The climate of northwestern Los Angeles County is characterized by hot, dry summers and mild to cold winters with seasonally heavy precipitation that occur primarily during the winter months. Summer typically has clear skies, high temperatures, and low humidity. A monthly climate summary for Santa Clarita and Lancaster, California, either end of the Project route, was selected to characterize the climate of the study area. As described in Table C.2-1, average summer (June-August) high and low temperatures in the study area range from 95°F to 50°F, respectively. Average winter (December-March) high and low temperatures in the study area range from 68°F to 29°F. The average annual precipitation ranges from 7.4 inches to 14.0 inches with over 75 percent occurring between December and March. Little precipitation occurs during summer because a high-pressure cell blocks migrating storm systems over the eastern Pacific. The Project areas at higher altitudes may have temperatures and precipitation that vary somewhat from that experienced in Lancaster and Santa Clarita.

Month	Lancaster			Santa Clarita		
	Temperature, °F		Precipitation Inches	Temperature, °F		Precipitation Inches
	Maximum	Minimum		Maximum	Minimum	
January	57	31	1.60	64	36	2.99
February	61	35	1.62	66	37	3.50
March	65	39	1.44	68	38	3.03
April	71	45	0.32	74	41	0.63
May	79	53	0.12	79	45	0.22
June	89	60	0.05	88	50	0.01
July	95	66	0.10	94	54	0.01
August	95	64	0.14	95	55	0.11
September	88	57	0.20	91	52	0.27
October	78	46	0.30	82	46	0.36
November	65	35	0.50	72	39	1.22
December	57	29	1.01	65	36	1.61

Source: The Weather Channel 2005.

Note: Averaged over a minimum period of 30 years.

The northeastern end of the Project would be located in the Antelope Valley south and east of the Tehachapi Mountains within the Mojave Desert Air Basin (MDAB). The Project route travels in a general northeast to southwest direction crossing through the Angeles National Forest (ANF) with the southeastern end of the Project being located in the Santa Clarita Valley within the South Coast Air Basin (SCAB). Figure C.2-1 shows the proposed and alternative routes and shows the air basin and air district boundaries. The Sespe Wilderness and Condor Sanctuary area is located to the west, which consists of various mountains and the western San Gabriel Mountains are located to the south. These mountain ranges essentially block the region from the relatively cool marine air from the Pacific Ocean. Prevailing winds in the MDAB are out of the west and

southwest (AVAQMD, 2002), whereas prevailing winds in the northern portion of the SCAB are out of the south during the day and generally lower and turnaround out of the north at night (SCAQMD, 1993).

The two nearest mandatory Class I areas to the Project are the San Gabriel Wilderness, lying approximately 30 miles southeast of the project area and the San Rafael Wilderness, approximately about 60 miles in the opposite direction, west of the Project area.

C.2.1.2 Existing Air Quality

The United States Environmental Protection Agency (USEPA), California Air Resources Board (CARB), and the local air districts classify an area as attainment, unclassified, or nonattainment depending on whether or not the monitored ambient air quality data shows compliance, insufficient data available, or non-compliance with the ambient air quality standards, respectively. The National and California Ambient Air Quality Standards (NAAQS and CAAQS) relevant to the Project are provided in Table C.2-2.

Pollutant	Averaging Time	California Standards	National Standards
Ozone (O ₃)	1-hour	0.09 ppm	—
	8-hour	0.070 ppm	0.08 ppm
Respirable particulate matter (PM ₁₀)	24-hour	50 µg/m ³	150 µg/m ³
	Annual mean	20 µg/m ³	50 µg/m ³
Fine particulate matter (PM _{2.5})	24-hour	—	65 µg/m ³
	Annual mean	12 µg/m ³	15 µg/m ³
Carbon monoxide (CO)	1-hour	20 ppm	35 ppm
	8-hour	9.0 ppm	9.0 ppm
Nitrogen dioxide (NO ₂)	1-hour	0.25 ppm	—
	Annual mean	—	0.053 ppm
Sulfur dioxide (SO ₂)	1-hour	0.25 ppm	—
	24-hour	0.04 ppm	0.14 ppm
	Annual mean	—	0.03 ppm

Notes: ppm=parts per million; µg/m³= micrograms per cubic meter; “—” = no standard
 Source: CARB Ambient Air Quality Standards Table, 2005.

The proposed Project area would be located within both the MDAB, which is under the jurisdiction of the Antelope Valley Air Quality Management District (AVAQMD), and the South Coast Air Basin (SCAB), which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). Table C.2-3 summarizes the federal and State attainment status of criteria pollutants for the Project area based on the NAAQS and CAAQS, respectively.

Pollutant	Attainment Status South Coast Air Basin		Attainment Status Antelope Valley	
	Federal	State	Federal	State
Ozone – 1 Hour	N/A	Extreme Nonattainment	N/A	Extreme Nonattainment
Ozone – 8 Hour	Severe-17 Nonattainment	Not Available ^b	Moderate Nonattainment	Not Available ^b
CO	Attainment	Attainment	Unclassified/Attainment	Attainment
NO ₂	Attainment	Attainment	Unclassified/Attainment	Attainment
SO ₂	Attainment	Attainment	Attainment	Attainment
PM10	Serios Nonattainment	Nonattainment	Unclassified	Nonattainment
PM2.5	Nonattainment	Nonattainment	Unclassified	Unclassified

Source: CARB 2005b, USEPA 2005

- a. The Antelope Valley Air Quality Management District is classified as extreme nonattainment due to historical SCAB designation.
- b. The attainment status of the California 8-hour ozone standards, promulgated in 2005, have not yet been determined.

The Project site would be in northwestern Los Angeles County, between the cities of Lancaster and Santa Clarita. Ozone, CO, NO₂, PM₁₀, and PM_{2.5} concentrations are currently recorded at the Lancaster Division Street monitoring station, located approximately nine miles east of the Antelope Substation. Ozone, CO, NO₂, and PM₁₀ are currently recorded at the Santa Clarita monitoring station, located approximately four miles southeast of the Pardee Substation. PM_{2.5} is currently recorded at the Piru Pacific Avenue monitoring station located approximately 11 miles west of the Pardee Substation. The nearest operating monitoring station for SO₂ is in the City of Burbank about 20 miles from the proposed Project area.

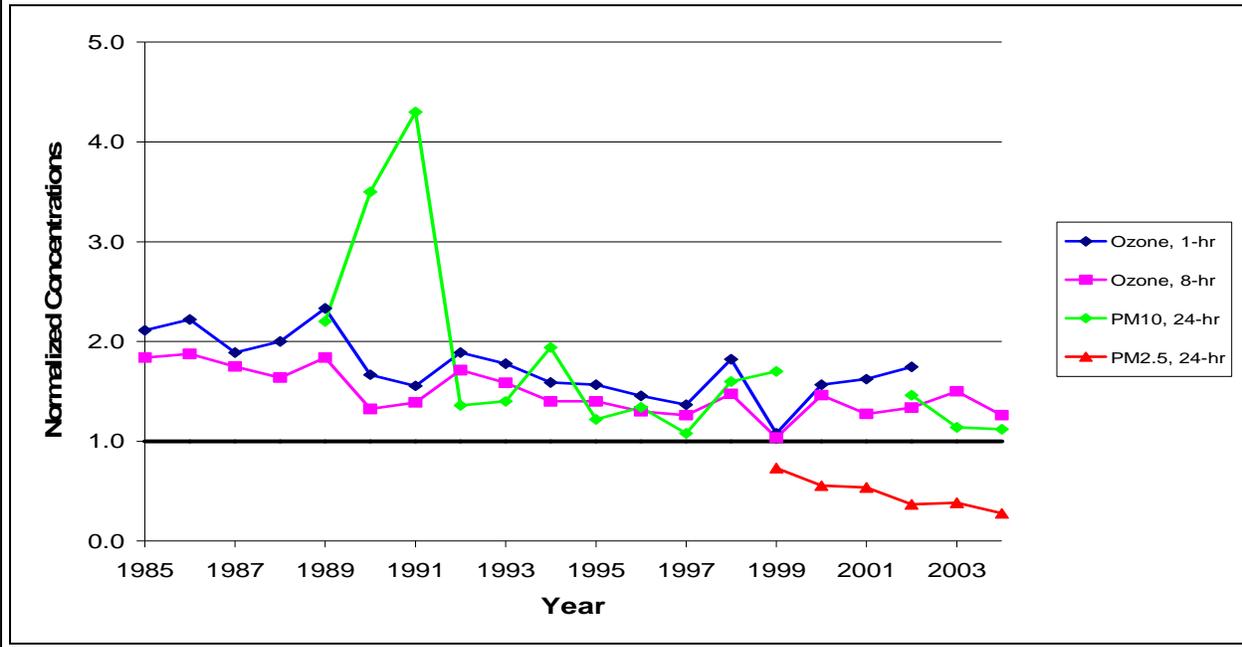
Figures C.2-1 and C.2-2 summarize the historical air quality data for the Project area collected at the nearest representative air quality monitoring stations in Lancaster and Santa Clarita, respectively. Various monitoring stations in the area were used to compile data from 1985 to 2004 (20-year period). For ozone in the Lancaster area, the following monitoring stations were used: Lancaster (1985-1989), Lancaster West Pondera Street (1990-2001), and Lancaster Division Street (2002-2004). For PM₁₀ in the Lancaster area, the following monitoring stations were used: Lancaster (1989), Lancaster West Pondera Street (1990-2001), and Lancaster Division Street (2002-2004). And for PM_{2.5} in the Lancaster area, the following monitoring stations were used: Lancaster West Pondera Street (1999-2001) and Lancaster Division Street (2002-2004). For ozone and PM₁₀ in the Santa Clarita area, the following monitoring stations were used: Santa Clarita County Fire Station (1985-2000) and Santa Clarita (2001-2004). For PM_{2.5}, the Piru Pacific Avenue monitoring station was used (2000-2004). In Figures C.2-1 and C.2-2, the short term normalized concentrations are provided from 1985 to 2004. Normalized concentrations represent the ratio of the highest measured concentrations in a given year to the most-stringent currently applicable national or State ambient air quality standard. Therefore, normalized concentrations lower than one indicates that the measured concentrations were lower than the most-stringent ambient air quality standard.

As shown in Figures C.2-2 and C.2-3, the Project area is above the State 1-hour and 8-hour ozone standards and the State 24-hour PM₁₀ standard. However, long term, there has been an overall gradual downward trend for the maximum ozone, PM₁₀, and PM_{2.5} concentrations.

Ozone

In the presence of ultraviolet radiation, both NO_x and VOCs go through a number of complex chemical reactions to form ozone. Table C.2-4 summarizes the best representative ambient ozone data for the Project area collected over the past ten years from monitoring stations in Lancaster and Santa Clarita. The table includes the maximum hourly concentration and the number of days above the National and State standards. As indicated in this table, ozone formation is generally higher in spring and summer and lower in the winter. The Antelope Valley and the SCAB are both classified as extreme nonattainment areas for the 1-hour CAAQS. Antelope Valley is classified as a moderate nonattainment area for the 8-hour ozone NAAQS, whereas the SCAB is classified as a severe nonattainment area. Classifications for the 8-hour ozone CAAQS have not yet been determined.

Figure C.2-2. Normalized Maximum Short-term Historical Air Pollutant Concentrations in Lancaster

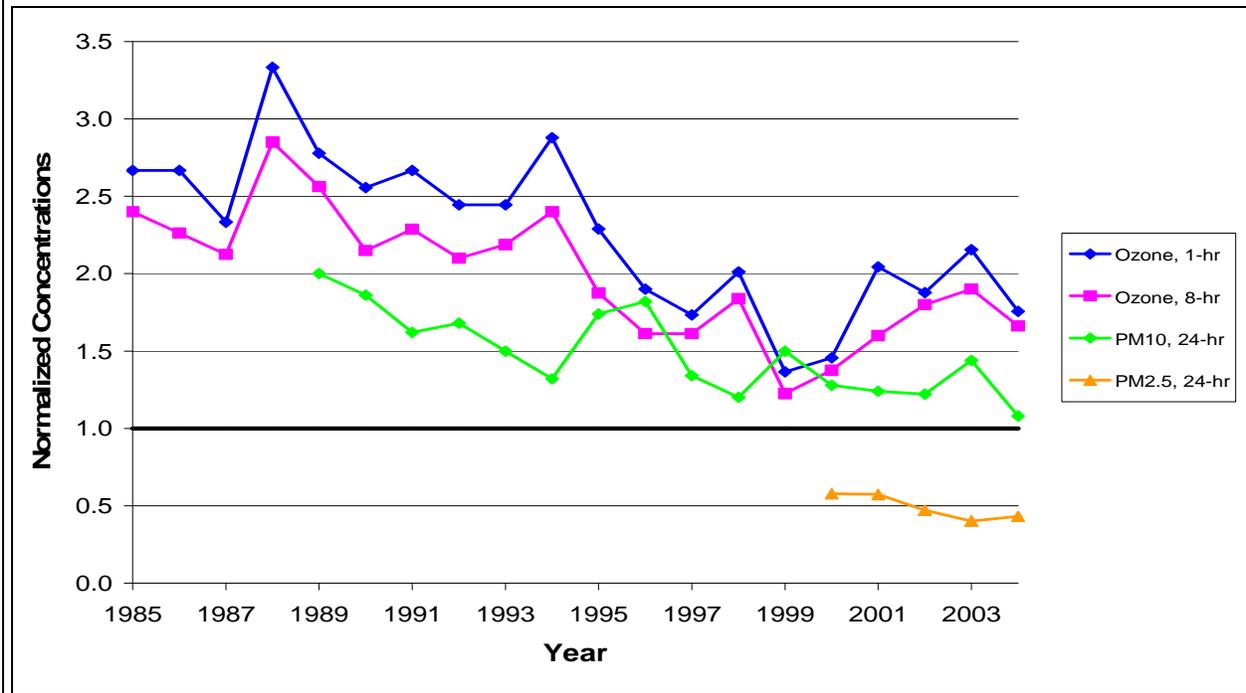


Source: CARB 2002, CARB 2005a.

a. A Normalized Concentration is the ratio of the highest measured concentration to the applicable most stringent air quality standard. For example, in 1990 the highest 1-hour average ozone concentration measured at Lancaster Pondera Street was 0.150 ppm. Since the most stringent ambient air quality standard is the State standard of 0.09 ppm, the 1990 normalized concentration is $0.150/0.09 = 1.67$.

b. The second highest maximum for PM10 in 1990 and 1991 are used since the highest maximums, which were 342 and 780 $\mu\text{g}/\text{m}^3$, respectively, likely occurred as a result of wind-related events.

Figure C.2-3. Normalized Maximum Short-term Historical Air Pollutant Concentrations in Santa Clarita



Source: CARB 2002, CARB 2005a.

Table C.2-4. Ozone Air Quality Summary 1995-2004							
Year	Days Above NAAQS 1-Hr	Days Above CAAQS 1-Hr	Month of Max. 1-Hr Avg.	Max. 1-Hr Avg. (ppm)	Days Above NAAQS 8-Hr	Month of Max. 8-Hr Avg.	Max. 8-Hr Avg. (ppm)
Lancaster – West Pondera Street							
1995	5	61	JUN	0.141	35	JUL	0.112
1996	1	40	JUL	0.131	18	JUN	0.104
1997	0	14	JUN	0.123	7	JUN	0.101
1998	8	24	JUL	0.164	18	JUL	0.118
1999	0	1	JUN	0.097	0	JUN	0.083
2000	2	35	JUL	0.141	28	JUL	0.117
2001	3	37	AUG	0.146	24	AUG	0.102
Lancaster – 43301 Division Street							
2002	5	46	JUL	0.157	38	AUG	0.107
2003	4	50	JUL	0.156	33	JUL	0.120
2004	0	37	JUN	0.121	24	JUN	0.101
Santa Clarita – County Fire Station							
1995	26	71	JUN	0.206	48	JUN	0.150
1996	19	68	AUG	0.171	42	AUG	0.129
1997	13	54	JUL	0.156	25	JUL	0.129
1998	16	38	JUL	0.181	34	JUL	0.147
1999	0	18	JUN	0.123	11	AUG	0.098
2000	1	36	JUL	0.131	12	JUL	0.110
Santa Clarita							
2001	9	44	JUL	0.184	25	JUL	0.128
2002	32	81	JUL	0.169	52	JUL	0.144
2003	35	89	JUL	0.194	69	JUL	0.152
2004	13	69	JUN	0.158	52	JUN	0.133

Source: CARB 2005a.

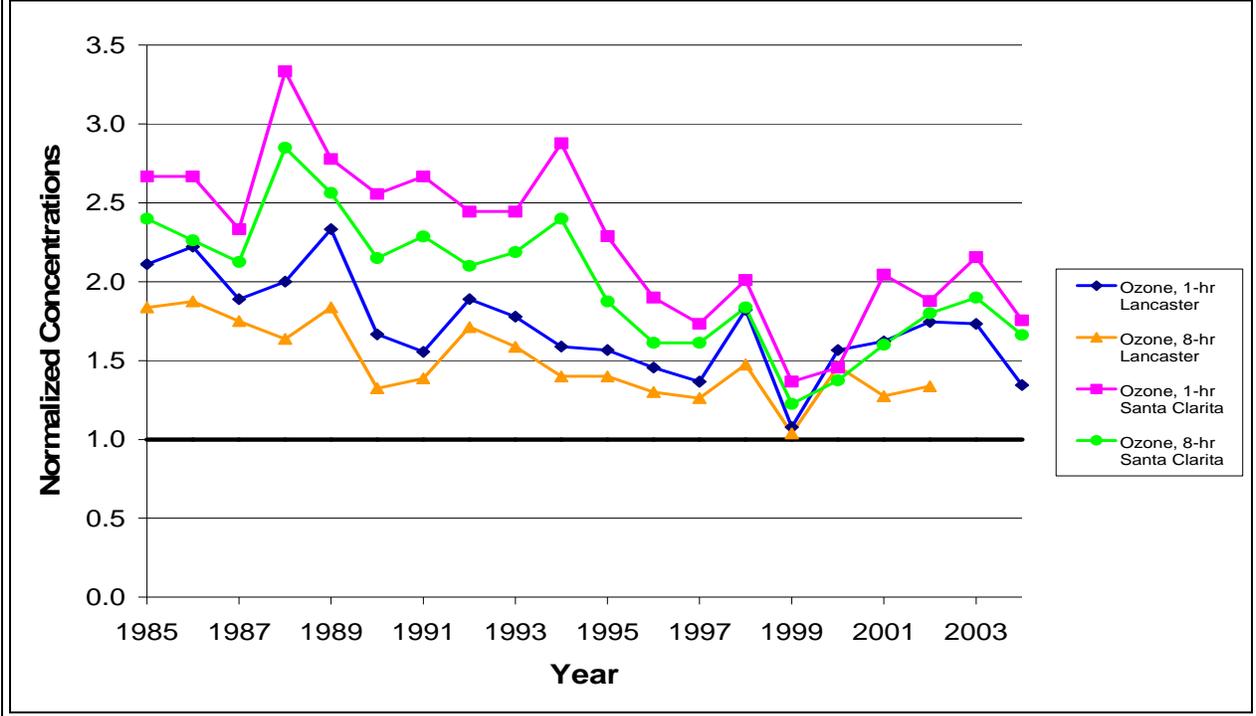
California Ambient Air Quality Standard (CAAQS): 1-hr, 0.09 ppm

National Ambient Air Quality Standard (NAAQS): 1-hr, 0.12 ppm; 8-hr, 0.08 ppm

The year 1985 to 2004 trends for the maximum 1-hour and 8-hour ozone concentrations, referenced to the most stringent standard, and the number of days exceeding the California 1-hour standard and the Federal 8-hour standard for the Lancaster and Santa Clarita areas are shown in Figures C.2-3 and C.2-4, respectively.

As shown in Figures C.2-4 and C.2-5, long-term trends in reduced emissions of ozone precursors have led to reduced ozone formation in the Project area through 1999. After 1999, ozone increased in the Project area although a downward trend between 2003 and 2004 is apparent. In general, ozone continues to be above the State 1-hour and federal 8-hour ozone standards.

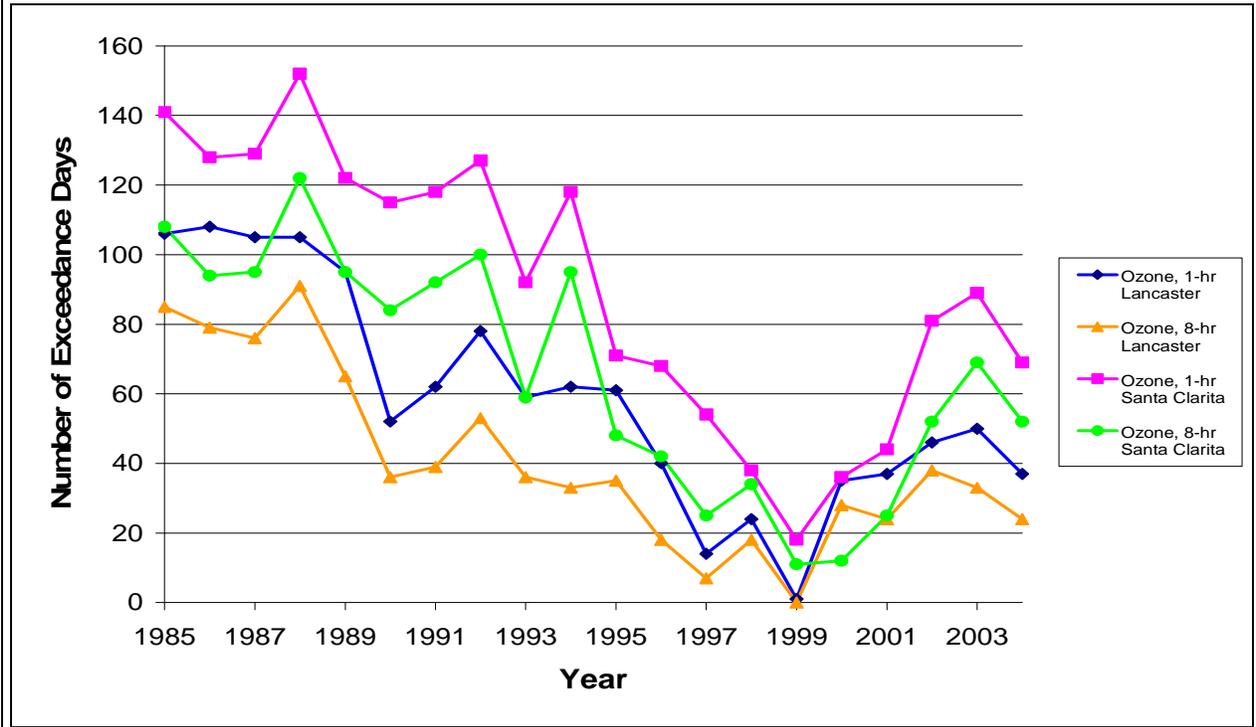
Figure C.2-4. Normalized Ozone Air Quality Maximum Concentrations (1985-2004)



Source: CARB 2002, CARB 2005a.

Note: A Normalized Concentration is the ratio of the highest measured concentration to the applicable most stringent air quality standard. The standard used for 1-hour ozone is the State standard of 0.09 ppm, and for 8-hr ozone is the national standard of 0.08 ppm.

Figure C.2-5. Ozone – Number of Days Exceeding the CAAQS for 1-Hr and NAAQS for 8-Hr (1985-2004)



Source: CARB 2002, CARB 2005a.

Carbon Monoxide (CO)

CO is generally found in high concentrations only near a significant source of emissions (i.e., freeway, busy intersection, etc.). The highest concentrations of CO occur when low wind speeds and a stable atmosphere trap the pollution emitted at or near ground level in what is known as the stable boundary layer. These conditions occur frequently in the wintertime late in the afternoon, persist during the night and may extend one or two hours after sunrise. Since mobile sources (motor vehicles) are the main cause of CO, ambient concentrations of CO are highly dependent on motor vehicle activity. In fact, the peak CO concentrations occur during the rush hour traffic in the morning and afternoon. Carbon monoxide concentrations in Los Angeles County and the rest of the State have declined significantly due to two Statewide programs: (1) the 1992 wintertime oxygenated gasoline program, and (2) Phases I and II of the reformulated gasoline program. Additionally, overall vehicle fleet turnover from higher-emitting older engines to lower-emitting new engines is a significant factor in the declining CO levels.

Table C.2-5 summarizes the best representative ambient carbon monoxide data for the Project area collected over the past ten years from Lancaster and Santa Clarita monitoring stations. The table includes the maximum 1-hour and 8-hour concentrations.

Table C.2-5. Carbon Monoxide Air Quality Summary 1995-2004			
Year	Maximum 1-Hr Avg. (ppm)	Month of Max. 8-Hr Avg.	Maximum 8-Hr Avg. (ppm)
Lancaster – West Pondera Street			
1995	7.5	DEC	5.05
1996	6.8	DEC	4.69
1997	5.9	DEC	3.99
1998	5.4	DEC	3.59
1999	7.2	JAN	5.41
2000	6.0	DEC	4.34
2001	---	JAN	3.33
Lancaster – 43301 Division Street			
2002	---	SEP	2.24
2003	---	DEC	1.88
2004	---	JAN	1.72
Santa Clarita – County Fire Station			
1995	6.7	NOV	4.13
1996	7.0	OCT	3.88
1997	7.4	NOV	6.73
1998	7.7	JAN	3.38
1999	7.0	JAN	3.56
2000	6.2	AUG	4.79
2001	5.5	JAN	3.13
Santa Clarita			
2002	---	FEB	1.74
2003	---	OCT	1.71
2004	---	JUL	3.70

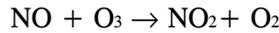
Source: CARB 2002, CARB 2005a.
 California Ambient Air Quality Standard (CAAQS): 1-hr, 20; 8-hr, 9.0 ppm
 National Ambient Air Quality Standard (NAAQS): 1-hr, 35 ppm; 8-hr, 9 ppm

Most of the proposed Project site route area, or alternative route areas, would be expected to have lower CO levels than those presented in Table C.2-5, as most of the route would be located in remote areas that would experience minimal or no nearby vehicle traffic, which is the major contributor to CO emissions. As indicated in the table, there have been no exceedances of CAAQS or NAAQS since at least 1995 for the 1-hour and the 8-

hour CO standards in Lancaster or Santa Clarita. While the Antelope Valley and SCAB are both designated attainment areas for carbon monoxide CAAQS and the Antelope Valley is designated an attainment area for the NAAQS, the entire SCAB is designated as a nonattainment area for the NAAQS.

Nitrogen Dioxide (NO₂)

The majority of the NO_x emitted from combustion sources is in the form of NO, while the balance is mainly NO₂. NO is oxidized by O₂ (oxygen) in the atmosphere to NO₂ but some level of photochemical activity is needed for this conversion. This is why the highest concentrations of NO₂ generally occur during the fall and not in the winter, when atmospheric conditions favor the trapping of ground level releases of NO but lack significant radiation intensity (less sunlight) to oxidize NO to NO₂. In the summer, the conversion rates of NO to NO₂ are high, but the relatively high temperatures and windy conditions (atmospheric unstable conditions) disperse pollutants, preventing the accumulation of NO₂ to levels approaching the 1-hour ambient air quality standard. NO is also oxidized by O₃ to form NO₂. The formation of NO₂ in the summer with the help of the ozone occurs according to the following reaction:



In urban areas, ozone concentration level is typically high. That level will drop substantially at night as the above reaction takes place between ozone and NO. This reaction explains why, in urban areas, ozone concentrations at ground level drop, while aloft and in downwind rural areas (without sources of fresh NO_x emissions) ozone concentrations can remain relatively high.

Table C.2-6 summarizes the best representative ambient nitrogen dioxide data for the Project area collected over the past ten years from various monitoring stations. The table includes the maximum 1-hour and annual concentrations. As indicated in the table, there have been no exceedances of California Ambient Air Quality Standards or National Ambient Air Quality Standards since at least 1995 for the 1-hour and the annual NO₂ standards. The Antelope Valley and the SCAB are either unclassified or in attainment for nitrogen dioxide.

Table C.2-6. Nitrogen Dioxide Air Quality Summary 1995-2004			
Year	Month of Max. 1-Hr Avg.	Maximum 1-Hr Avg. (ppm)	Maximum Annual Avg. (ppm)
Lancaster – West Pondera Street			
1995	APR	0.140	0.019
1996	DEC	0.080	0.015
1997	OCT	0.071	0.014
1998	NOV	0.077	0.016
1999	NOV	0.083	0.018
2000	NOV	0.065	0.016
2001	OCT	0.075	---
Lancaster – 43301 Division Street			
2002	JUN	0.101	0.016
2003	MAY	0.067	0.015
2004	AUG	0.103	0.015
Santa Clarita – County Fire Station			
1995	NOV	0.159	0.030
1996	---	---	---
1997	---	---	---
1998	---	---	---
1999	NOV	0.099	---
2000	OCT	0.096	0.025

Year	Month of Max. 1-Hr Avg.	Maximum 1-Hr Avg. (ppm)	Maximum Annual Avg. (ppm)
Santa Clarita			
2001	OCT	0.109	---
2002	FEB	0.086	0.019
2003	OCT	0.120	0.021
2004	JAN	0.090	0.020

Source: CARB 2005a.
California Ambient Air Quality Standard (CAAQS): 1-hr, 0.25 ppm
National Ambient Air Quality Standard (NAAQS): Annual, 0.053 ppm

Inhalable Particulate Matter (PM10)

PM10 can be emitted directly or it can be formed many miles downwind from emission sources when various precursor pollutants interact in the atmosphere. Gaseous emissions of pollutants like NO_x, SO_x, VOC, and ammonia, given the right meteorological conditions, can form particulate matter in the form of nitrates (NO₃), sulfates (SO₄), and organic particles. These pollutants are known as secondary particulates, because they are not directly emitted, but are formed through complex chemical reactions in the atmosphere.

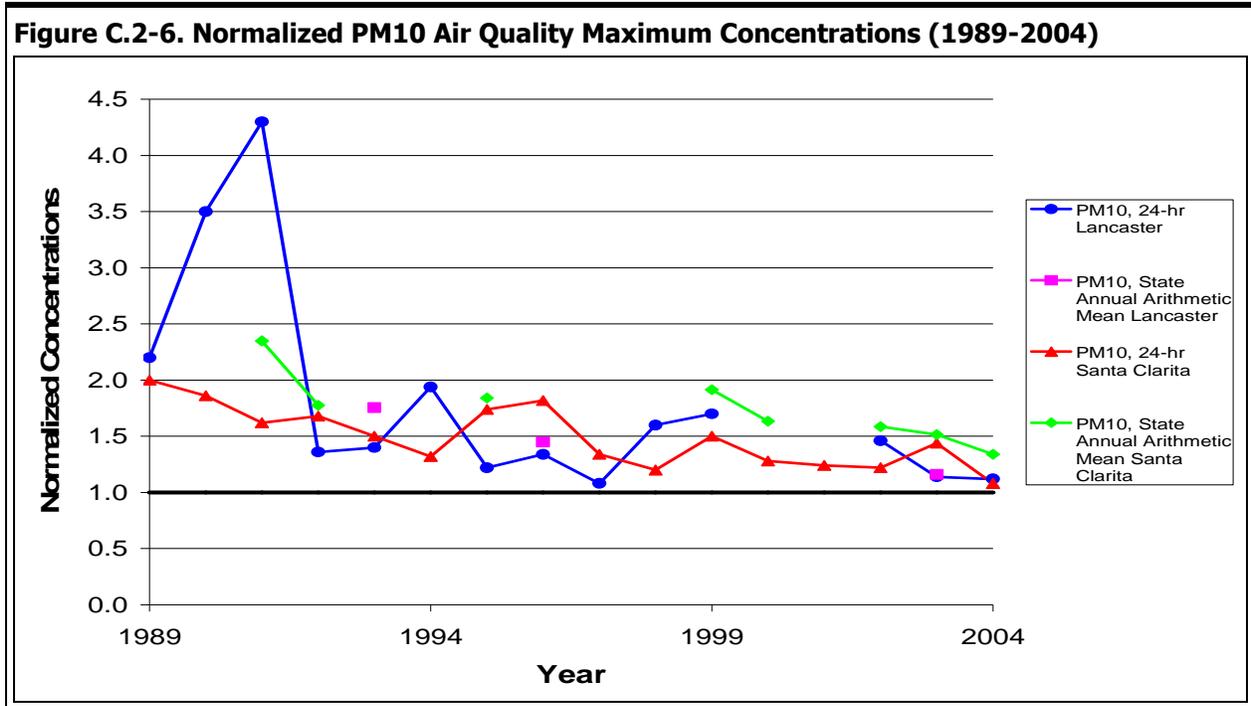
Table C.2-7 summarizes the ambient particulate matter data collected from various monitoring stations nearest the Project area. The table includes the maximum 24-hour and annual arithmetic average concentrations.

Year	Days * Above Daily NAAQS	Days * Above Daily CAAQS	Month of Max. Daily Avg.	Max. Daily Avg. (µg/m ³)	State Annual Arithmetic Mean (µg/m ³)
Lancaster – West Pondera Street					
1995	0	18	NOV	61	---
1996	0	12	SEP	67	29.0
1997	0	12	FEB	54	---
1998	0	---	DEC	80	---
1999	0	---	DEC	85	---
2000	---	---	---	---	---
2001	---	---	---	---	---
Lancaster – 43301 Division Street					
2002	0	---	DEC	73	---
2003	0	6	OCT	57	23.2
2004	0	---	SEP	56	---
Santa Clarita – County Fire Station					
1995	0	78	OCT	87	36.8
1996	0	30	NOV	91	----
1997	0	30	OCT	67	---
1998	0	18	JUL	60	---
1999	0	79	SEP	75	38.3
2000	0	25	DEC	64	32.7
Santa Clarita					
2001	0	24	JUL	62	---
2002	0	36	AUG	61	31.7
2003	0	47	FEB	72	30.3
2004	0	7	APR	54	26.8

Source: CARB 2005a.
California Ambient Air Quality Standard (CAAQS): 24-hr, 50 µg/m³, annual arithmetic, 20 µg/m³
National Ambient Air Quality Standard (NAAQS): 24-hr, 150 µg/m³, annual arithmetic, 50 µg/m³
* Days above the State and national standard (calculated): Because PM10 is monitored approximately once every six days, the potential number of exceedance days is calculated by multiplying the actual number of days of exceedance by six.

As shown in Table C.2-7, the Project area experiences exceedances of the State and 24-hour PM10 standards and the State annual arithmetic mean PM10 standards. The Antelope Valley is unclassified for the federal PM10 standard and in nonattainment of the State PM10 standard, whereas the SCAB is in serious nonattainment for the federal PM10 standard and in nonattainment of the State PM10 standard.

The year 1989 to 2004 trends for the maximum 24-hour PM10 and State annual arithmetic mean PM10, referenced to the most stringent standard, and the number of days exceeding the California 24-hour PM10 standard for the Lancaster (1989), Lancaster West Pondera Street (1990-2001), and Lancaster Division Street (2002-2004) monitoring stations are shown in Figures C.2-6 and C.2-7, respectively.



Source: CARB 2002, CARB 2005a.

- a. A Normalized Concentration is the ratio of the highest measured concentration to the applicable most stringent air quality standard. The standard used for 24-hour PM10 is the State standard of 50 $\mu\text{g}/\text{m}^3$, and for State annual arithmetic mean PM10 is the State standard of 20 $\mu\text{g}/\text{m}^3$.
- b. The second highest maximums for PM10 in 1990 and 1991 are used since the highest maximums, which were 342 and 780 $\mu\text{g}/\text{m}^3$, respectively, likely occurred as a result of wind-related events.

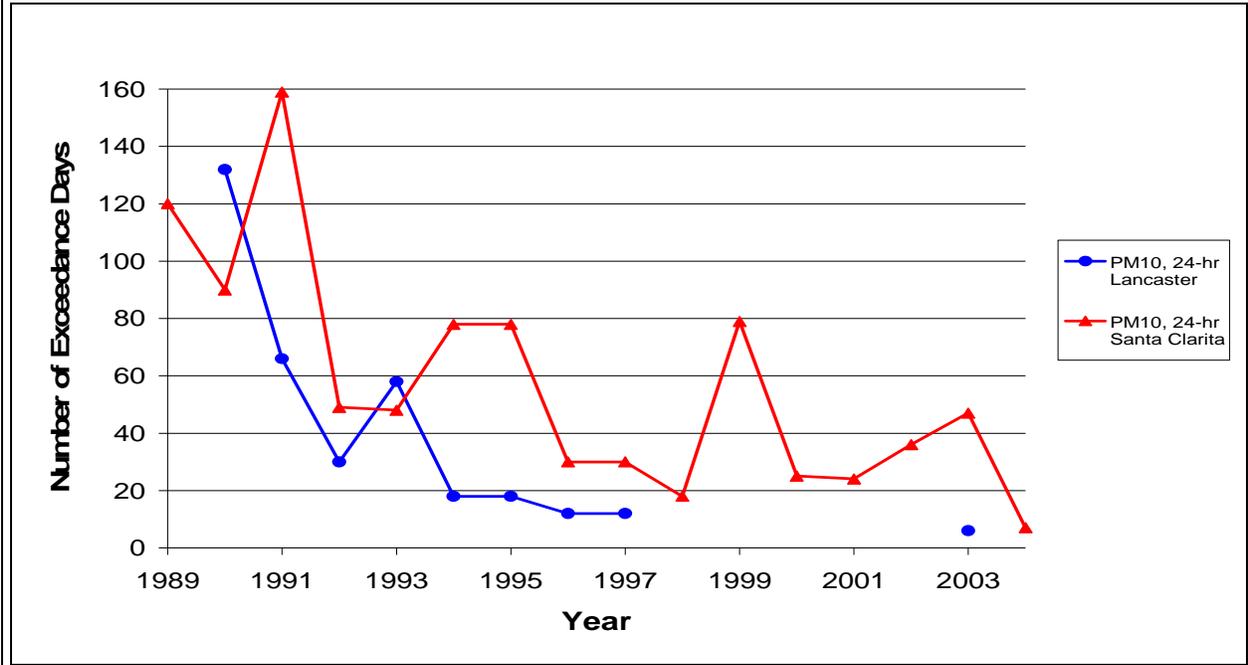
As the two figures show, there is an overall gradual downward trend for PM10 concentrations and number of exceedances of the California 24-Hour Standard; however, there has been little or no progress since 1993. Additionally, meeting the revised PM10 annual arithmetic mean State standard of 20 $\mu\text{g}/\text{m}^3$ will pose an even greater challenge than meeting the former annual geometric mean State standard of 30 $\mu\text{g}/\text{m}^3$.

Fine Particulate Matter (PM2.5)

Table C.2-8 summarizes the ambient fine particulate matter data collected over the past four years from Lancaster which is the only PM2.5 monitoring station located near the Project area.

As shown in Table C.2-8, the 98th percentile 24-hour average PM2.5 concentration levels are well below the NAAQS of 65 $\mu\text{g}/\text{m}^3$ within the Project area; however, 2004 data shows that the Piru monitoring station exceeds the State annual average of 12 $\mu\text{g}/\text{m}^3$. The Antelope Valley is unclassified for the federal and State PM2.5 standards, whereas the SCAB is designated nonattainment for the federal and State PM2.5 standards.

Figure C.2-7. PM10 24-Hour – Number of Days Exceeding the CAAQS (1989-2004)



Source: CARB 2002, CARB 2005a.

Table C.2-8 Fine Particulate Matter Air Quality Summary 1999-2004

Year	Month of Max. Daily Avg.	Max. Daily Avg. ($\mu\text{g}/\text{m}^3$)	98th Percentile of Max. Daily Avg. ($\mu\text{g}/\text{m}^3$)	Days Above 98th Percentile Daily NAAQS	3-Yr. Avg. 98th Percentile of Max. Daily Avg. ($\mu\text{g}/\text{m}^3$)	National Annual Avg. ($\mu\text{g}/\text{m}^3$)	3-Yr. Avg. of National Annual Avg. ($\mu\text{g}/\text{m}^3$)
Lancaster West Pondera Street							
1999	JUL	47.6	23.5	0	---	11.2	---
2000	DEC	36.0	21.0	0	---	10.5	---
2001	JAN	35.0	---	0	---	---	---
Lancaster – 43301 Division Street							
2002	OCT	24.0	20.0	0	---	10.4	---
2003	MAR	25.0	17.0	0	---	9.4	---
2004	JUL	18.0	15.0	0	17	8.5	9
Piru – 3301 Pacific Avenue							
2000	NOV	37.6	---	0	---	---	---
2001	OCT	37.2	---	0	---	---	---
2002	SEP	30.6	28.9	0	---	12.1	---
2003	OCT	26.1	23.0	0	---	11.0	---
2004	MAR	28.1	22.4	0	25	10.1	11

Source: CARB 2005a.

National Ambient Air Quality Standard: 3-Year Average - 98th Percentile of 24-Hr Avg. Conc., $65 \mu\text{g}/\text{m}^3$.

3-Year Average of Annual Arithmetic Mean (National Annual Average), $15 \mu\text{g}/\text{m}^3$; 3-Year Average of Annual Arithmetic Mean (State Annual Average), $12 \mu\text{g}/\text{m}^3$.

Sulfur Dioxide (SO₂)

Sulfur dioxide is typically emitted as a result of the combustion of a fuel containing sulfur. Fuels such as natural gas contain very little sulfur and consequently have very low SO₂ emissions when combusted. By contrast, fuels high in sulfur content such as coal or heavy fuel oils can emit very large amounts of SO₂ when combusted.

Sources of SO₂ emissions come from every economic sector and include a wide variety of fuels, gaseous, liquid and solid.

The SCAB and the MDAB are designated attainment or unclassified for all SO₂ State and federal ambient air quality standards. There are no monitoring stations near the Project site; therefore, no representative SO₂ ambient air quality data exists. The closest currently operating SO₂ monitoring station to the Project area is in Burbank, which has showed no exceedances of CAAQS or NAAQS between 1985 and 2004.

Summary

As discussed above and presented in Table C.2-3, the part of the Project area in Antelope Valley is in nonattainment for the State and federal 1-hour ozone standard, the federal 8-hour ozone standard, the State CO standard, and the State 24-hour PM₁₀ standard. Additionally, the part of the Project area within the SCAB is in nonattainment of the federal 1-hour and 8-hour ozone, CO, PM₁₀, and PM_{2.5} standards; and nonattainment with the State 1-hour ozone, CO, PM₁₀, and PM_{2.5} standards. The Project area is designated as attainment/unclassified for the nitrogen dioxide and sulfur dioxide for both state and federal standards; and the MDAB portion of the Project area (Antelope Valley) is designated as attainment/unclassified for the federal CO, PM₁₀ and PM_{2.5} standards, and is unclassified for the State PM_{2.5} standard. Long-term trends in reduced emissions of ozone precursors, specifically NO_x and VOCs, have led to reduced ozone formation in the Project area; however, the area continues to exceed the State 1-hour and federal 8-hour ozone standards. In addition, while there is an overall gradual downward trend for PM₁₀ concentrations, there has been little or no progress since 1993. As such, any increase in emissions of ozone precursors and particulate matter would cause or contribute to existing air quality violations, causing a significant air quality impact.

C.2.1.3 Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill and the chronically ill, especially those with cardio-respiratory diseases.

Residential areas are also considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

A land use survey was conducted to identify sensitive receptors (e.g., local residences, schools, hospitals, churches, recreational facilities) in the general vicinity of the proposed Project alignment. In the Antelope Valley (northern portion) and through Angeles National Forest, the transmission lines would travel through generally undeveloped areas where only a few rural residences have been identified. However, south of where the transmission line would exit Angeles National Forest (Santa Clarita area), residences would be located near/adjacent to the proposed route and construction sites. Additional information about specific sensitive

receptors that may be impacted by the proposed Project will be provided with the evaluation of impacts for each of the Project alternatives.

C.2.2 Regulatory Framework

The proposed Project includes construction but does not include any stationary emission sources, so there are very few direct air quality regulations that specifically regulate the Project's air quality emission sources. The regulations that do apply, such as fugitive dust regulations, tend to be general and allow multiple means of achieving compliance. A description of the specific and general regulations that apply to the Project is provided below.

C.2.2.1 Federal

The United States Environmental Protection Agency (USEPA) has issued a number of National Ambient Air Quality Standards (NAAQS). Pollutants regulated under these standards include ozone, nitrogen dioxide (NO₂), carbon monoxide (CO), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), and sulfur dioxide (SO₂). Additional information regarding the NAAQS that are relevant to the Project is provided Section C.2.1.2. The South Coast Air Quality Management District (SCAQMD) and the California Air Resources Board (CARB) are the responsible agencies for providing attainment plans and meeting attainment with these standards; and the USEPA reviews and approves these plans and regulations that are designed to attain and maintain attainment with the NAAQS.

USEPA has a number of other regulations under the authority of the federal Clean Air Act (such as New Source Review (NSR), Prevention of Significant Deterioration (PSD), Title V permitting program, etc.); however, none of these regulations apply to this Project because the Project would have no operating stationary emission sources. Therefore, a PSD air quality impact analysis of the proposed Project's impacts to the nearest mandatory Class I areas is not required.

The USEPA does have on-road and off-road engine emission reduction programs that indirectly affect the Project's emissions through the phasing in of cleaner on-road and off-road equipment engines.

The USDA Forest Service regulates the portion of the Project's route that goes through the Angeles National Forest (ANF) and the Forest Service has prepared a Land Management Plan (Forest Plan) for the ANF (USDA Forest Service, 2005a). The Angeles National Forest Plan Strategy does not include any air quality strategies that would be significantly impacted by the construction or operation of the proposed Project. The Angeles National Forest air quality strategies are limited to the following:

AIR 1: Minimize Smoke and Dust

AIR 2: Forest Air Quality Emissions

The Angeles National Forest strategy AIR 1 is very general and is directed to "Control and reduce fugitive dust to protect human health, improve safety and moderate or eliminate environmental impacts." The only action item of this of this strategy is to "Incorporate visibility requirements into project plans." The Angeles National Forest air quality strategy AIR 2 relates to providing an air quality inventory for prescribed burns and wildfires and therefore does not directly relate to the proposed Project's construction and operation emissions.

Per Section 176(c) of the Clean Air Act Amendments (CAAA) of 1990, the Forest Service must make a determination of whether the proposed Project (i.e., Proposed Action) and project alternatives "conforms" with the State Implementation Plan (SIP). However, if the total direct and indirect emissions from the proposed

Project and project alternatives are below the General Conformity Rule *de minimis* emission levels, the proposed Project would be exempt from performing a comprehensive Air Quality Conformity Analysis and Determination, and would be considered to be in conformity with the SIP. If an Air Quality Conformity Analysis is necessary it must be certified prior to the Project's Record of Decision (ROD).

C.2.2.2 State

CARB has issued a number of California Ambient Air Quality Standards (CAAQS). These standards include pollutants not covered under the NAAQS and also require more stringent standards than provided under the NAAQS. Pollutants regulated under these standards include ozone, nitrogen dioxide (NO₂), carbon monoxide (CO), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), sulfur dioxide (SO₂), lead, sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. Additional information regarding the CAAQS that are relevant to the Project is provided Section C.2.1.2.

CARB, like USEPA, also has on-road and off-road engine emission reduction programs that indirectly affect the Project's emissions through the phasing in of cleaner on-road and off-road equipment engines. Additionally, CARB has a Portable Equipment Registration Program that allows owners or operators of portable engines and associated equipment to register their units under a Statewide portable program to operate their equipment, which must meet specified program emission requirements, throughout California without having to obtain individual permits from local air districts.

C.2.2.3 Local

The proposed Project is routed through two separate local jurisdictions, the SCAQMD and the AVAQMD. The local jurisdictions are responsible for planning, implementing, and enforcing federal and State ambient standards within their jurisdictions. The regulations of these agencies are focused on stationary sources; therefore, most of the local agency regulations are not relevant to this Project. However, portable engines used during construction that are larger than 50 hp and that are not registered under the CARB Portable Equipment Registration Program would need to be obtain permits from the SCAQMD and AVAQMD.

Both agencies have visible emissions, nuisance, and fugitive dust regulations with which the Project's construction will need to comply. The specific regulations are as follows:

AVAQMD Rule 401 – Visible Emissions

AVAQMD Rule 402 – Nuisance

AVAQMD Rule 403 – Fugitive Dust

SCAQMD Rule 401 – Visible Emissions

SCAQMD Rule 402 – Nuisance

SCAQMD Rule 403 – Fugitive Dust

These rules limit the visible dust emissions from the project construction sites, prohibit emissions that can cause a public nuisance, and require the prevention and reduction of fugitive dust emissions. One or more measures are required by the Fugitive Dust rules reduce fugitive dust emissions from specific dust causing activities. These measures may include, adding freeboard to haul vehicles, covering loose material on haul vehicles, watering, using chemical stabilizers and/or ceasing all activities (such as during periods of high winds).

C.2.3 Significance Criteria

The air quality significance criteria were developed considering the CEQA significance criteria developed by the local air quality districts in the project area, approved CEQA air quality checklists, and considering other federal criteria. NEPA regulations do not provide specific air quality significance criteria, and the local air quality district CEQA significance criteria is more stringent than the air quality significance criteria generally used in EIS documents (such as the PSD 250 ton/year emission thresholds).

Regional Air Quality Significance Criteria

CEQA allows for the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. The SCAQMD and the AVAQMD have established regional thresholds of significance for construction activities and for project operations as shown below in Table C.2-9. As a conservative approach, the most stringent of these standards would apply to the proposed Project.

Criteria Pollutant	Antelope Valley AQMD		South Coast AQMD	
	Construction or Operation		Construction	Operation
	tons/year	lbs/day	lbs/day	lbs/day
Carbon Monoxide (CO)	100	548	550	550
Oxides of Nitrogen (NOx)	25	137	100	55 100
Particulate Matter (PM10)	15	82	150	150
Oxides of Sulfur (SOx)	25	137	150	150
Volatile Organic Compounds (VOC)	25	137	75	55

Source: SCAQMD 2006 and AVAQMD 2002.

Localized Air Quality Significance Criteria

In addition to the thresholds provided in Table C.2-9, the SCAQMD provides additional localized significance thresholds (LSTs) for toxic air contaminants (TACs), odors, and ambient air quality (see Table C.2-10).

Criteria Pollutant	Toxic Air Contaminants (TACs) and Odor Thresholds
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk \geq 10 in 1 million Hazard Index \geq 1.0 (project increment) Hazard Index \geq 3.0 (facility-wide)
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402
Ambient Air Quality for Criteria Pollutants ^a	
NO ₂	Project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.25 ppm (State) 0.053 ppm (federal)
PM ₁₀ 24-Hour Average	10.4 $\mu\text{g}/\text{m}^3$ (recommended for construction) ^b 2.5 $\mu\text{g}/\text{m}^3$ (operation)
CO	Project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (State) 9.0 ppm (State/federal)
1-Hour Average 8-Hour Average	

Source: SCAQMD 2006.

Notes: lbs/day = pounds per day; ppm = parts per million; $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter; \geq greater than or equal to
a. Ambient air quality threshold for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.

b. Ambient air quality threshold based on SCAQMD Rule 403.

Note that ozone and PM_{2.5} are not included in Table C.2-9 and C.2-10. Ozone is not directly emitted from stationary or mobile sources; rather it is formed as the result of chemical reactions in the atmosphere between directly emitted air pollutants, specifically oxides of nitrogen (NO_x) and hydrocarbons (VOCs). Therefore, it cannot be directly regulated, like its precursors, NO_x and VOCs. PM_{2.5} is not included as it is currently in the beginning stages of becoming regulated, and as such, thresholds have not yet been developed¹.

Federal General Conformity Significance Criteria

In addition to the regional and local significance criteria, the General Conformity Rule applicability emission levels are shown in Table C.2-11 would apply to those areas in nonattainment of the NAAQS.

Area	NO _x and VOC	PM ₁₀	CO and PM _{2.5} and SO ₂
South Coast Air Basin	25 tons/year	70 tons/year	100 tons/year
Antelope Valley Portion of MDAB	100 tons/year	na	na

na – not applicable.

Significance Criteria Summary

For this analysis, the Project may result in significant impacts if:

- Criterion AIR1: The Project would be inconsistent with the current approved Air Quality Management Plan.
- Criterion AIR2: The Project would generate emissions of air pollutants that would exceed any SCAQMD or AVAQMD regional air quality standard as defined in Table C.2-9.
- Criterion AIR3: The Project would generate emissions of air pollutants that would exceed any SCAQMD localized significance threshold as defined in Table C.2-10.
- Criterion AIR4: The Project would result in non-compliance with the Federal General Conformity Rule (40 CFR Parts 6, 51, and 93) requirements.
- Criterion AIR5: The Project would expose a substantial number of people to objectionable odors.
- Criterion AIR6: The Project would conflict with air quality provisions of the Angeles National Forest Strategy.

The proposed Project’s emissions, specifically the construction dust emissions, could also impact sensitive plant species and create temporary visual impacts; however, implementing mitigation as required to address these criteria will effectively mitigate air quality impacts on biological communities and visual resources.

C.2.4 Applicant-Proposed Measures

The Applicant-Proposed Measures (APMs) are shown in Table C.2-12 (SCE, 2004).

Measure Number	SCE-Proposed Measure
APM AQ-1	Use low sulfur fuel. (see Mitigation Measure A-1ca).
APM AQ-2	Use of clean burning on-road and off-road diesel engines. Where feasible, heavy-duty diesel powered construction equipment manufactured after 1996 (with federally-mandated “clean” diesel engines) would be utilized. (see Mitigation Measure A-1fg).
APM AQ-3	Construction workers will carpool when possible.

¹ SCAQMD is in the process of developing both regional and LST thresholds for PM_{2.5} and have published preliminary values of 55 lbs/day for the regional significance threshold and a value of 2.5 ug/m³ for both operation and construction for the localized significance threshold for PM_{2.5}. The Final EIR/EIS will identify any approved PM_{2.5} significance criteria available by the time of preparation of the Final EIR.

Table C.2-12. Applicant-Proposed Measures – Air Quality	
APM AQ-4	Vehicle idling time would be minimized. (see Mitigation Measure A-1d).
APM AQ-5	Water all active construction areas, access roads, and staging areas as needed. (see Mitigation Measure A-1a).
APM AQ-6	Cover all trucks hauling soils and other loose material, or require at least 2 feet of freeboard. (see Mitigation Measure A-1a).
APM AQ-7	Construction vehicles would use paved roads to access the construction site when possible. (see Mitigation Measure A-1a).
APM AQ-8	Limit vehicle speeds to 15 mph on unpaved roads. (see Mitigation Measure A-1a).
APM AQ-9	Sweep paved streets daily with water sweepers if visible soil material is carried onto adjacent public streets.
APM AQ-10	Stabilize soils in inactive construction areas on an as-needed basis. (see Mitigation Measure A-1a).
APM AQ-11	Enclose, cover, water twice daily, or add soil binders to exposed stockpiles of soil and other excavated materials. (see Mitigation Measure A-1a).
APM AQ-12	Allow natural revegetation to occur on temporarily disturbed areas following the completion of construction. (see Mitigation Measure A-1a).

C.2.5 Impact Analysis: Proposed Project/Action

The air quality impacts of the proposed Project are discussed below under subheadings corresponding to each of the significance criterion presented in the preceding section. The analysis describes the impacts of the proposed Project related to air quality and, for each criterion, determines whether implementation of the proposed Project would result in significant impacts.

The operating emissions from the proposed project and all project alternatives are comprised of occasional inspection and maintenance activities and no new stationary source operating emission sources will be constructed/operated as part of this Project. The overhead line inspection and maintenance activities currently occur on the existing 66 kV line that this project would affectively replace. Therefore, the proposed project would not create incremental operating emissions, nor create the potential for significant operating emission impacts. The operating emissions are essentially identical for most of the project alternatives with some increase for substantially longer routes and some increase for maintaining underground transmission routes. The Project would also indirectly reduce emissions in the SCAB or elsewhere by reducing the amount of power that would have to be generated using polluting technologies. Additionally, not considering the indirect emission reduction of the project, the normal operating emissions would only include an hour or two of incremental small helicopter use or the use of a crew truck for underground maintenance activities, and these incremental maintenance activities would be well below SCAQMD and AVAQMD emission significance criteria; therefore, operating emissions for the project have not been estimated and are not discussed further in this document.

Air Quality Management Plan Conformance (Criterion AIR1)

The proposed Project is located in the SCAB under the jurisdiction of the SCAQMD and the MDAB under the jurisdiction of the AVAQMD. The conformance with the air quality management plans for each local air basin/district are discussed separately.

South Coast Air Basin

The South Coast Air Basin (SCAB) is designated as non-attainment for both federal and State ozone and PM10 standards. One-hour ozone is classified under State standards as extreme non-attainment. Eight-hour ozone is classified under federal standards as severe non-attainment. PM10 is designated as serious non-attainment and non-attainment under federal and State standards, respectively. The SCAB is designated as nonattainment of the

federal CO standard. The SCAB is also designated as nonattainment of the federal and State PM_{2.5} standard, and is proposed to be designated as nonattainment of the federal and State PM_{2.5} standards. All other federal and State criteria pollutants (NO₂ and SO₂) are considered to be in attainment by the State, and unclassified/attainment by federal standards.

The SCAQMD is the lead agency for attaining timely compliance with federal standards within the South Coast Air Basin. The District is responsible for developing those portions of the State Implementation Plan (SIP), and the Air Quality Management Plan (AQMP), that deal with certain stationary and area source controls and, in cooperation with the transportation planning agencies (TPAs), the development of transportation control measures (TCMs). The California Air Resources Board (CARB) is responsible for submitting the SIP to USEPA.

Ozone

The SCAQMD Governing Board adopted the 2003 Air Quality Management Plan (AQMP) on August 1, 2003 (SCAQMD, 2006a). The 2003 AQMP updates the attainment demonstration for the federal 1-hour ozone standard (The initial attainment demonstration for the 8-hour ozone standard is not yet due to EPA). The 2003 AQMP is consistent with and builds upon the approaches taken in the 1997 AQMP and the 1999 Amendments to the Ozone SIP for the Air Basin for the attainment of the federal ozone air quality standard. However, this revision points to the urgent need for additional emission reductions (beyond those incorporated in the 1997/99 Plan) from all sources, specifically those under the jurisdiction of CARB and the USEPA, which account for approximately 80 percent of the ozone precursor emissions in the Air Basin.

The AQMP identifies increasing the penetration/use of renewable power generation technologies as a potential long-term strategy. One of the purposes for the Project is for the proposed Project to provide the mechanism to increase the use of renewable power generation within the SCAB. Additionally, the proposed Project would not result in additional operations emissions and indirectly, with the use of renewable power generation, could cause an overall emission increase due to project operations. Therefore, the proposed Project would not conflict with the Ozone attainment plan.

PM₁₀

The SCAQMD Governing Board adopted the 2003 Air Quality Management Plan (AQMP) on August 1, 2003. The 2003 AQMP updates the attainment demonstration for the federal PM₁₀ standards. The 2003 AQMP is consistent with and builds upon the approaches taken in the 1997 AQMP. Two new control measures listed in the 2003 AQMP could be applicable to the construction of the proposed Project: 1) BCM-07 Further PM₁₀ Reductions from Fugitive Dust Sources (which may be reflected in the recent revision to District Rule 403); and 2) FSS-06 Further Emission Reductions from In-Use Off-Road Equipment and Vehicles. The proposed Project's construction contractor would have to comply with the most recent version of the fugitive dust control Rule 403. However, the other AQMP control measure has not yet undergone rulemaking. The incorporation of the proposed Mitigation Measures A-1f through A-1i (see below under Criterion AIR2) should meet the intent of control measures BCM-07 and FSS-06 by requiring mitigation of fugitive dust emissions beyond current Rule 403 requirements and requiring the use of offroad equipment with newer lower emission engines. Therefore, the Project would not conflict with the PM₁₀ attainment plan.

Carbon Monoxide

The District's 2003 AQMP updated the CO attainment demonstration provided in the 1997 AQMP (SCAQMD, 2006a), which in turn updated the attainment demonstration given in the 1994 AQMP. No major changes in the

CO attainment strategy given in the 1994 AQMP have been proposed by the 1997 and 2003 AQMPs. The CO attainment strategy is primarily focused on emission reductions from onroad mobile sources (SCAQMD, 2006a). While the entire non-desert portion of the SCAB is designated as a federal CO non-attainment area, the Project area does not actually experience any exceedances of the federal CO standards. The Project is located too far away from the sole remaining south central Los Angeles area that has most recently exceeded (Lynwood in 2002) the federal CO 8-hour standard to have an adverse impact. The CO emissions from the Project construction would not be concentrated and would occur over a large area (26 mile long project route with miles of associated access roads) and would occur over a one to two year time frame, so the proposed Project's CO emission would not have the potential to cause a significant localized CO hot spot. The proposed Project would not conflict or obstruct the implementation of the 1994, 1997, or 2003 AQMPs.

PM2.5

The SCAQMD has not yet prepared its AQMP for PM2.5. Rules may be modified based on the control strategies developed in the future PM2.5 AQMP, which would have to be complied with by the Project construction contractor.

Mojave Desert Air Basin

The Antelope Valley portion of the MDAB is in non-attainment of the federal and State ozone standards and the State PM10 standard. The AVAQMD has developed a 2004 Ozone Attainment Plan (State and federal attainment) and has prepared a list of measures to reduce PM emissions to meet State planning requirements.

Ozone

The AVAQMD 2004 Ozone Attainment Plan (AVAQMD, 2004) does not propose any new control measures beyond those identified in the former SCAQMD 1997 Air Quality Management Plan (SCAQMD, 2006a) that included the Antelope Valley, prior to its split into a separate jurisdiction in 1997. Of the control measures presented in the 1997 plan, the only measure that appears relevant to the proposed Project is FIP-11, which proposes a strategy to regulate emissions from non-road internal combustion engines greater than or equal to 50 horsepower (hp). As noted above, the incorporation of the recommended Mitigation Measures A-1f through A-1i (see below under Criterion AIR2) should meet the intent of control measure FIP-11. Therefore, the proposed Project would be consistent with the Ozone Air Quality Management Plan for Antelope Valley.

PM10

The AVAQMD prepared a list of measures to reduce PM emissions in 2005 (AVAQMD, 2005). Of the new control measures listed, the only applicable measures are fugitive dust control measures that would be integrated into Rule 403 – Fugitive Dust. The construction contractor will be required to comply with all AVAQMD rules and regulations; therefore, the Project would comply with the AVAQMD State PM attainment control measures.

Summary

The proposed Project would have to comply with all rules and regulations applicable at the time of the Project's construction and operation. Additionally, the mitigation measures required below under Criterion AIR2 would meet the intent of all relevant AQMP control measures for the SCAB and MDAB. Therefore, the proposed Project would not trigger this air quality significance criterion.

Regional Emission Thresholds (Criterion AIR2)

Impact A-1: Construction emissions would exceed the SCAQMD and AVAQMD regional emission thresholds.

Construction of the proposed Project would result in short-term impacts to ambient air quality. Construction is tentatively scheduled for March 2008 to April 2009. Temporary construction emissions would result from on-site activities, such as surface clearing, excavation, foundation construction, steel construction, etc.; and from off-site activities such as construction related haul trips and construction worker commuting. Pollutant emissions would vary from day to day depending on the level of activity, the specific operations, and the prevailing weather.

Construction equipment would include machinery such as water trucks, compactors, dump trucks, graders, bulldozers, loaders, cranes, diggers, tension machines, and concrete pump trucks (SCE, 2004, 2005). Tables B.2-1 through B.2-4 provide the general construction schedule, the list of the types of equipment used for each construction activity, and the construction crew requirements for each activity anticipated for the proposed Project. More detailed construction schedule, equipment use, and vehicle trip assumptions are provided in Appendix 3. A considerable number of the off-site truck trips are associated with importing concrete and structural steel and exporting wastes from tower demolition.

Air emissions for the proposed Project were calculated using the latest standard calculation methodologies accepted by such agencies as the SCAQMD and incorporating applicant proposed measures, and additional appropriate mitigation measures, such as fugitive dust controls. For on-road and off-road vehicles (except helicopters), SCAQMD approved emission factors for the year 2008 (SCAQMD, 2006) were used. Fugitive dust emissions were calculated using the USEPA's AP-42 emission factors (USEPA, 2003) and various SCAQMD CEQA Handbook (SCAQMD, 1993) guideline parameters (e.g., silt content, precipitation, etc.) were used as inputs into the USEPA emission factor calculations. Helicopter emission factors are based on values from the FAEED database (FAA, 2001).

It is assumed that the worst-case day would occur sometime in the 3rd or 4th calendar quarter of 2008, and that the maximum annual emissions would occur in 2008. Maximum daily and maximum annual construction emission calculations and assumptions are presented in Appendix 3, and a comparison of those emissions with the SCAQMD and AVAQMD significance criteria are presented in Table C.2-13.

Based on the data provided in Table C.12-13, daily construction emissions would be expected to exceed the Air District Regional planning thresholds for significance for NO_x and PM₁₀ in the SCAB and MDAB, but would not be exceeded them for CO, SO_x, and VOC on a daily basis in the SCAB or MDAB or significant for any pollutant on an annual basis in the MDAB. The major source of the maximum daily NO_x emissions is the offroad equipment, including the helicopters. The maximum daily PM₁₀ emissions are dominated by the unpaved road dust emissions due to the long round trip travel distances to the more remote tower construction sites.

		Emissions (daily – lbs/day, annual - tons/year)					
Air Basin		NOx	VOC	CO	PM10	PM2.5	SO ₂
SCAB	Maximum Daily Emissions	551	66	413	677	146	3
	Significance Threshold	100	75	550	150	--	150
	Exceeds (YES/NO)	YES	NO	NO	YES	--	NO
MDAB	Maximum Daily Emissions	534	64	403	324	91	3
	Significance Threshold	137	137	548	82	--	137
	Exceeds (YES/NO)	YES	NO	NO	YES	--	NO
MDAB	2008 Annual Emissions	5.28	0.79	4.22	2.18	0.74	0.02
	Significance Threshold	25	25	150	15	--	25
	Exceeds (YES/NO)	NO	NO	NO	NO	--	NO

The CO and VOC emissions estimate include the use of USEPA Phase 2 compliant gasoline-fueled portable construction equipment. Without control the portable gasoline-fueled equipment the CO and VOC emissions would also have caused the Proposed project’s emissions to exceed the daily regional significance criteria (for VOC only the daily SCAQMD thresholds). Application of Mitigation Measure V-4a (Construct, Operate, and Maintain with Helicopters - see Section C.15, Visual Resources) would require additional use of helicopters during construction, operation, and maintenance of the proposed transmission line, which would result in increased regional NOx and PM2.5 emissions.

Implementation of recommended Mitigation Measures A-1a through A-1i would reduce construction impacts to air quality to the maximum degree feasible but would not eliminate all significant impacts. Mitigation measure A-1a will reduce fugitive dust through the reduction of the creation of emissions by stabilizing unpaved road surfaces and using water to bind active soil handling activities among other measures. The most important of the recommended dust mitigation measures is the use of CARB approved soil-binders on unpaved roads, parking areas, and staging areas that will provide an estimated 84 percent control of PM10 emissions. Mitigation measures A-1b to A-1i would reduce the construction equipment exhaust emissions to the extent feasible by requiring equipment with new cleaner engines, requiring the cleanest diesel fuel available, and requiring that engines be maintained properly and operated in a manner so that they can perform their necessary tasks with the lowest possible emission levels.

The proposed Project’s NOx and PM10 emissions, even after implementation of all feasible mitigation measures listed below, will remain above the SCAQMD and AVAQMD daily significance threshold values. Therefore, the daily emissions from the proposed Project would cause significant and unavoidable impacts (**Class I**).

Mitigation Measures for Impact A-1

A-1a Implement Construction Fugitive Dust Control Plan. SCE shall develop a Fugitive Dust Emission Control Plan (FDECP) for construction work. Measures to be incorporated into the plan include, but are not limited to the following:

- Water the disturbed areas of the active construction sites at least three times per day and more often if uncontrolled fugitive dust is noted.
- Enclose, cover, water twice daily, and/or apply non-toxic soil binders according to manufacturer’s specifications to exposed piles with a five percent or greater silt content.
- CARB certified and ANF approved (on NFS lands) non-toxic soil binders shall be applied per manufacturer recommendations to active unpaved roadways, unpaved staging areas, and unpaved

parking area(s) throughout construction (as allowed by responsible agencies such as the Forest Service) to reduce fugitive dust emissions. Other non-toxic soil binder products, selected from lists available from EPA's Environmental Technology Verification program or the SCAQMD, may be applied per manufacturer recommendations in place of the CARB certified soil binders if such products can be reasonably demonstrated to be as effective as the CARB certified non-toxic soil binders.

- Maintain unpaved road vehicle travel to the lowest practical speeds, and no greater than 15 mph, to reduce fugitive dust emissions.
- All vehicle tires shall be inspected, are to be free of dirt, and washed as necessary prior to entering paved roadways.
- Install wheel washers or wash the wheels of trucks and other heavy equipment where vehicles exit the site.
- Cover all trucks hauling soil and other loose material, or require at least two feet of freeboard.
- Establish a vegetative ground cover (in compliance with biological resources impact mitigation measures) or otherwise create stabilized surfaces on all unpaved areas at each of the construction sites within 21 days after active construction operations have ceased.
- Increase the frequency of watering, or implement other additional fugitive dust mitigation measures, to all active disturbed fugitive dust emission sources when wind speeds (as instantaneous wind gusts) exceed 25 miles per hour (mph).
- Travel routes to each construction site shall be developed to minimize unpaved road travel.

A-1b Properly Maintain Mechanical Equipment. The construction contractor shall ensure that all mechanical equipment associated with project construction is properly tuned and maintained in accordance with the manufacturer's specifications.

A-1c Use Ultra Low-sulfur Diesel Fuel. CARB-certified ultra low-sulfur diesel (ULSD) fuel containing 15 ppm sulfur or less shall be used in all diesel-powered construction equipment.

A-1d Restrict Engine Idling to 10 Minutes. Diesel engine idle time shall be restricted to no more than 10 minutes.

A-1e Schedule Deliveries Outside of Peak Traffic Hours. All material deliveries to the marshalling yards and from the marshalling yards to the construction sites shall be scheduled outside of peak traffic hours (6:00 to 9:30 am and 3:30 to 6:30 pm) to the extent feasible, and other truck trips during peak traffic hours shall be minimized to the extent feasible.

A-1f Offroad Diesel-fueled Equipment Standards. All offroad construction diesel engines not registered under CARB's Statewide Portable Equipment Registration Program, which have a rating of 50 hp or more, shall meet, at a minimum, the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, section 2423(b)(1) unless that such engine is not available for a particular item of equipment. In the event a Tier 2 engine is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a Tier 1 engine. In the event a Tier 1 engine is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a catalyzed diesel particulate filter (soot filter), unless certified by engine manufacturers that the use of such devices is not practical for specific engine types. Equipment properly registered under and in compliance with CARB's Statewide Portable Equipment Registration Program are in compliance with this mitigation measure.

- A-1g On-road Vehicles Standards.** All on-road construction vehicles shall meet all applicable California on-road emission standards ~~and shall be licensed in the State of California~~. This does not apply to construction worker personal vehicles.
- A-1h Offroad Gasoline-fueled Equipment Standards.** All offroad stationary and portable gasoline powered equipment shall have EPA Phase 1/Phase 2 compliant engines, where the specific engine requirement shall be based on the new engine standard in affect two years prior to initiating project construction.
- A-1i Reduction of Helicopter Emissions.** Helicopter use will be limited to the extent feasible and helicopters with low emitting engines shall be used to the extent practical.

These mitigation measures are focused on reducing NOx and PM10 emissions and providing mitigation as assumed in the emission calculations to assure that the CO and VOC emissions would remain below the SCAQMD and AVAQMD regional emission significance criteria. The use of emission offsets to further mitigate the significant daily construction emissions is not considered feasible, due to lack of availability and prohibitive cost.

SCAQMD Localized Significance Thresholds (Criterion AIR3)

Impact A-2: Construction of the Project would expose sensitive receptors to substantial pollutant concentrations.

Most of the construction route through the SCAB and MDAB are in remote areas that would not affect sensitive receptors. The portion of the route within the MDAB has a very low residential population and there are no schools located near any of the construction sites with the MDAB. The closest residences to the Antelope Valley Substation are more than 150 meters (492 feet) away. The closest residential structure to any of the tower construction sites within the MDAB is more than 140 meters (460 feet) away (there is one tower removal site about 90 meters from a residence) and there are no residences within 500 meters (1,640 feet) of the secondary staging area currently proposed within the MDAB on Elizabeth Lake Road. Due to the lack of sensitive receptors, their distance from each construction site, the mitigation measures recommended under Impact A-1, and the relatively low amount of emissions that would occur at each tower construction site the impacts to sensitive receptors located in the MDAB are determined to be less than significant.

The construction route traverses SCAQMD Source Receptor Areas (SRAs) 13 and 15. However, most of the Project construction sites, particularly the tower construction sites, are remote. There are no known residences near any of the tower construction sites within SRA area 15. Only the construction activities at the Pardee Substation, the secondary staging areas and a few of the tower structures located in the southern area of the route (SRA 13) are located near any human receptors.

Table C.2-14 shows the SCAQMD significant emission thresholds determined for small construction sites (1- and 2-acre sites) at various distances from sensitive receptors within either SRA 13 and SRA 15.

Table C.2-14. SCAQMD Localized Significance Threshold Values (lbs/day)										
	1-acre Site					2-acre Site				
Pollutant	25 m	50 m	100 m	200 m	500 m	25 m	50 m	100 m	200 m	500 m
CO	423	654	988	1,911	6,294	623	885	1,356	2,356	6,852
NOx	147	151	173	225	353	208	208	224	265	377
PM10	3	11	74	137	201	6	18	82	145	209

m = meters from site to closest receptor

The closest sensitive receptor to the Pardee Substation is over 500 meters (1,640 feet) from the substation. Therefore, no localized impacts due to the construction work at the substation would be anticipated considering the emission thresholds shown in Table C.2-14. Of the proposed secondary staging yard locations most are located in remote areas; however, one is located within 25 meters (82 feet) of residences on Bouquet Canyon Road. Additionally, there are a few tower construction sites located approximately 50 meters (164 feet) from residences. Both the secondary staging areas and the tower construction sites are one acre or less and are therefore comparable with the 1-acre site thresholds. Table C.2-15 compares the worst-case daily on-site emissions from the staging yards and the tower construction sites to the emission thresholds presented in Table C.2-14.

The PM10 emission estimates are limited to the on-site emission sources only and do not include the unpaved road travel needed to get to personnel and materials to the tower sites and do not include the road construction emissions which do not occur at a single site but rather over a one-half mile stretch of road per day.

Table C.2-15. Proposed Project Localized Impact Emissions Comparison			
	CO	NOx	PM10
Staging Area Worst Case Daily Emissions	7.77 lbs/day	9.16 lbs/day	2.88
Localized Significance Thresholds (25 meters)	423 lbs/day	147 lbs/day	3 lbs/day
Exceeds (YES/NO)	NO	NO	NO
Tower Construction Worst Case Daily Emissions	35.72 lbs/day	34.27 lbs/day	6.79 lbs/day
Localized Significance Thresholds (50 meters)	654 lbs/day	151 lbs/day	11 lbs/day
Exceeds (YES/NO)	NO	NO	NO

The onsite construction emissions are estimated, after implementation of Mitigation Measures A-1a through A-1i required to mitigate Impact A-1 to be below the SCAQMD localized significance thresholds. The implementation of Mitigation Measure V-4a would require additional steel tower construction activities to occur in locations away from the tower sites²; however, this activity results in emissions that remain below applicable LST thresholds. Therefore, it is determined that the proposed Project would result in less-than-significant impacts to sensitive receptors after mitigation (Class II).

Federal General Conformity Rule (Criterion AIR4)

Impact A-3: The Project would not conform to Federal General Conformity Rules.

The proposed Project would result in significant impacts if the Project were to cause annual emissions that exceed the General Conformity de minimus thresholds. Based on the current proposed Project schedule, the Project’s maximum annual construction emissions would occur in 2008. The estimated annual emissions for 2008 (peak construction year) in the SCAB and MDAB, compared to the respective General Conformity de minimus thresholds are provided in Table C.2-16.

² The staging area emissions comparison for LST purposes is for the secondary staging yards were the Primary Staging (aka Marshalling Yard) emissions were conservatively used for comparison. The steel fabrication required for helicopter construction is assumed to occur at the primary staging yards, which have a greater distance to the closest receptor, or at other unidentified staging areas closer to the tower sites that would only be used for steel tower fabrication, and steel tower fabrication emissions (see Appendix 3) are well below the Localized Significance Threshold for the minimum receptor distance of 25 meters.

Table C.2-16. Proposed Project Emissions/General Conformity Emissions Threshold Comparison							
Air Basin		Emissions (Tons/year)					
		NO _x	VOC	CO	PM10	PM2.5 ^a	SO ₂ ^a
SCAB	2008 Emissions	14.35	1.88	11.09	12.89	3.08	0.06
	Applicability Trigger	25 ^b	25	100	70	100	100
	Exceeds (YES/NO)	NO	NO	NO	NO	NO	NO
MDAB	2008 Emissions	5.28	0.79	4.22	2.18	0.74	0.02
	Applicability Trigger ^c	100	100	na	na	na	Na
	Exceeds (YES/NO)	NO	NO	na	na	na	Na

Table Notes: na – not applicable

a- Currently only proposed, final regulations should be completed in early 2006.

b- NO_x emission trigger as a PM2.5 precursor is 100 tons/year.

c- Antelope Valley portion of the MDAB.

Table C.2-16 shows that the proposed Project's estimated construction emissions are less than the General Conformity applicability thresholds for the SCAB and MDAB. The annual emissions calculations and assumptions are provided in Appendix 3. The proposed Project's emission estimate considers the implementation of Mitigation Measures A-1a through A-1f, and it is possible that without these measures the proposed Project could exceed the PM General Conformity emission threshold. Therefore, the proposed Project's General Conformity construction and operation impacts will be less than significant (**Class II**) after mitigation required under Impact A-1, and no additional mitigation measures would be required.

This emission analysis does not include emissions that would be generated due to application of Mitigation Measure V-4a (Construct, Operate, and Maintain with Helicopters - see Section C.15, Visual Resources). This measure would increase the use of helicopters during construction of the proposed transmission line, and reduce the use of certain construction vehicles within the SCAB. However, the overall impact of measure V-4a, which would create a small increase in the project's overall annual NO_x and CO emissions and decrease the particulate (PM10 and PM2.5) emissions, would not cause the annual emissions within the SCAB to exceed the General Conformity emission thresholds.

A complete conformity analysis is only required for projects that exceed the General Conformity applicability thresholds. The proposed Project's estimated emissions have been determined to be below the General Conformity applicability thresholds; therefore, by statute the proposed Project is presumed to conform with the SIP.

Odors (Criterion AIR5)

Impact A-4: The Project would create objectionable odors.

Construction equipment and construction operations, such as the potential for some small areas of asphalt paving; and maintenance/inspection equipment may create mildly objectionable odors. These odors would be temporary and would not affect a substantial number of people. Therefore, the odor impacts from the proposed Project's construction and operation would be less than significant (**Class III**) and no mitigation measures would be required.

Angeles National Forest Strategy Conformance (Criterion AIR6)

Impact A-5: The Project would not conform to Angeles National Forest air quality strategies.

The Angeles National Forest Strategy does not include any air quality strategies that would be significantly impacted by the construction or operation of the proposed Project. The Angeles National Forest air quality strategies are limited to the following:

AIR 1: Minimize Smoke and Dust

AIR 2: Forest Air Quality Emissions

The Angeles National Forest strategy AIR 1 is very general and is directed to “Control and reduce fugitive dust to protect human health, improve safety and moderate or eliminate environmental impacts.” The only action item of this of this strategy is to “Incorporate visibility requirements into project plans.” The proposed Project construction smoke and dust would be reduced through conformance with SCAQMD and AVAQMD fugitive dust rules and additionally mitigated to the extent feasible by the additional mitigation measures listed for Impact A-1, including the requirement for a construction fugitive emission control plan (Mitigation Measure A-1a). Therefore, with the incorporation of the air quality Mitigation Measures A-1a through A-1i, this ANF air quality strategy would be complied with and impacts would be less than significant (**Class II**).

The Angeles National Forest air quality strategy AIR 2 relates to providing an air quality inventory for prescribed burns and wildfires and therefore does not directly relate to the proposed Project’s construction and operation emissions. The proposed Project’s fire safety requirements are addressed separately in Section C.7.

C.2.6 Alternative 1: Partial Undergrounding of Antelope-Pardee Transmission Line

The alternatives are described in detail in Section B. A summary of the alternative’s parameters related to air quality are provided below, along with a prediction of the emissions and an assessment of impacts for this alternative.

C.2.6.1 Affected Environment

This alternative remains within the same local air district jurisdictions, air basins, and SCAQMD SRAs; and so does not change the affected regional environment from that of the proposed Project, as described in Section C.2.1.

C.2.6.2 Impacts and Mitigation Measures

This alternative requires the use of construction methods that are very different than those of the proposed Project. The proposed route for this alternative does not change from that of the proposed Project within the AVAQMD jurisdiction and MDAB; therefore, the construction emissions for this alternative are only presented numerically for the SCAQMD jurisdiction and SCAB.

This alternative would cause construction activities similar to those of the proposed Project, except it would:

- Decrease the number of new towers by 34 and shorten the overhead construction schedule by three months.
- Require the construction of 7.5 miles of underground transmission line over a 29 month construction schedule that would begin six months after the overhead line construction starts.
- Requires an assumed five additional miles/ten days of road work³

The maximum daily and annual emissions during the maximum years of construction in this section of the route, assumed to be 2008 and 2009 (based on Table B.4-1, Alternative 1 Construction Schedule), are impacted by this alternative. Additionally, the site specific emissions generated near sensitive receptors within the SCAQMD jurisdiction will increase along the underground transmission line route that passes adjacent to sensitive receptors in Santa Clarita. Appendix 3 provides the emission assumptions and detailed worst-case annual emission summary for this alternative and shows a comparison with the annual emissions estimated for the proposed Project.

Air Quality Management Plan Conformance (Criterion AIR1)

The construction methods are somewhat different than the proposed Project, including a substantial amount of excavation and waste hauling and concrete use. However, the regulatory requirements associated with this alternative are identical to those identified for the proposed Project, so like the proposed Project this alternative will also inherently conform with the AQMP.

Regional Emission Thresholds (Criterion AIR2)

Construction of this alternative, similar to the proposed Project would result in short-term impacts to ambient air quality. Construction of this alternative, the overhead portion, is assumed to start at the same time as the proposed Project (March 2008), and the underground construction would start six months later. The maximum daily emissions in this section of the route, assumed to be in late 2008, are impacted by this alternative. The estimated maximum daily emissions for the SCAQMD area of the route are shown in Table C.2-17.

Based on the data in Table C2-17, this alternative would cause both new impacts (VOC) and significantly increased impacts, but the impacts are still classified the same as the proposed Project (Impact A-1 - **Class I** for SCAQMD and AVAQMD). As such, no additional air quality mitigation measures are required for this alternative. This alternative would cause a significant increase of the proposed Project's construction emissions within SCAQMD jurisdiction. However, any emission offsets, which are not generally considered a reasonable mitigation measure to offset daily construction emissions found to be significant, that might be required for General Conformity purposes (please see the Criterion AIR4 discussion below) would partially mitigate the increased daily NO_x emission impacts that would occur with this alternative. Application of Mitigation Measure V-4a (Construct, Operate, and Maintain with Helicopters - see Section C.15, Visual Resources) would require additional use of helicopters during construction, operation, and maintenance of the proposed transmission line, which would contribute to regional NO_x and PM_{2.5} emissions.

³ The road construction identified for air quality calculations includes both new and rehabilitated (weeding and reconditioning) roads, and this should not be confused with the new and improved road information presented in Table B.2-7 of the project description that is meant to show increases in the amount of disturbed lands but is not meant to show the total length of the accessed unpaved road network necessary for project construction.

Air Basin		Emissions (daily – lbs/day)					
		NOx	VOC	CO	PM10	PM2.5	SO ₂
SCAB	Maximum Daily Emissions	665	78	489	886	189	3
	Significance Threshold	100	75	550	150	--	150
	Exceeds (YES/NO)	YES	YES	NO	YES	--	NO

SCAQMD Localized Significance Thresholds (Criterion AIR3)

The overhead emission activities and locations are identical to the proposed Project. However, the underground southern route variation of this alternative is in a more populated area than the northern underground route variation, and the undergrounding will be done in areas essentially adjacent to residences and other sensitive receptor. Therefore, the worst case daily emissions for the undergrounding construction activities has been estimated and are shown in Table C.2-18.

	CO	NOx	PM10
Trenching Worst Case Daily Emissions	18.40 lbs/day	35.71 lbs/day	3.84 lbs/day
Localized Significance Thresholds (25 meters)	423 lbs/day	147 lbs/day	3 lbs/day
Exceeds (YES/NO)	NO	NO	YES

The onsite construction emissions are estimated, after implementation of Mitigation Measures A-1a through A-1i required to mitigate Impact A-1 to be below the SCAQMD localized significance thresholds for CO and NOx, but exceed the SCAQMD localized significance threshold for PM10. Recommended Mitigation Measures A-1a through A-1i represent mitigation to the extent feasible for construction emissions sources and no additional mitigation measures would appreciably reduce these emission impacts any further. The implementation of Mitigation Measure V-4a would require additional steel tower construction activities to occur in locations away from the tower sites⁴; however, this activity results in emissions that remain below applicable LST thresholds. Therefore, it is determined that Alternative 1 would have significant impacts to sensitive receptors in the Santa Clarita project area even with the implementation of Mitigation Measures A-1a through A-1i (Impact A-2 – Class I).

Federal General Conformity Rule (Criterion AIR4)

This alternative would cause, in comparison to the proposed Project, an increase in the maximum annual emissions within the SCAQMD jurisdiction (SCAB) over a three year period. Therefore, the maximum annual emissions in 2008, 2009, and 2010 have been calculated and are shown in Table C.2-19.

⁴ The staging area emissions comparison for LST purposes is for the secondary staging yards were the Primary Staging (aka Marshalling Yard) emissions were conservatively used for comparison. The steel fabrication required for helicopter construction is assumed to occur at the primary staging yards, which have a greater distance to the closest receptor, or at other unidentified staging areas closer to the tower sites that would only be used for steel tower fabrication, and steel tower fabrication emissions (see Appendix 3) are well below the Localized Significance Threshold for the minimum receptor distance of 25 meters.

Table C.2-19. Alternative 1 General Conformity Emissions Threshold Comparison							
Air Basin		Emissions (Tons/year)					
		NOx	VOC	CO	PM10	PM2.5	SO ₂
SCAB	2008 Emissions	16.43	2.09	11.82	17.71	4.06	0.05
	2009 Emissions	26.37	3.27	18.42	30.82	7.15	0.04
	2010 Emissions	11.62	1.53	9.37	15.39	3.53	0.02
	Applicability Trigger	25	25	100	70	100	100
	Exceeds (YES/NO)	YES	NO	NO	NO	NO	NO

Table C.2-19 shows that Alternative 1’s estimated NOx construction emissions in 2009, during the bulk of the underground construction work, are greater than the General Conformity applicability thresholds for the SCAB. The alternative’s emission estimate considers the implementation of Mitigation Measures A-1a through A-1i. Therefore, this alternative’s construction will be significant after applying the mitigation required for the proposed Project. If proposed this alternative would require a full conformity analysis and determination, and an additional mitigation measure (A-34a) to offset the NOx emissions during the years that the de minimus threshold is exceeded in order to mitigate this impact to a less-than-significant level (Impact A-3 – Class II).

This emission analysis does not include emissions that would be generated due to application of Mitigation Measure V-4a (Construct, Operate, and Maintain with Helicopters - see Section C.15, Visual Resources). This measure would increase the use of helicopters during construction of the proposed transmission line, and reduce the use of certain construction vehicles within the SCAB. However, the overall impact of measure V-4a, which would create a small increase in the project’s overall annual NOx and CO emissions and decrease the particulate (PM10 and PM2.5) emissions, would not cause the annual emissions within the SCAB to exceed the General Conformity emission thresholds.

A-34a Emission Offsets. Emission offsets shall be obtained at a minimum 1:1 ratio to offset NOx annual emissions that are forecast to exceed the General Conformity NOx de minimus threshold for the SCAB. Offsets will be obtained in as close proximity to the project area as possible.

Odors (Criterion AIR5)

The construction methods and odor producing activities associated with this alternative are identical to those of the proposed Project, so the potential odor impacts of this alternative are identical to those identified for the proposed Project (Impact A-4 – Class III).

Angeles National Forest Strategy Conformance (Criterion AIR6)

The construction methods and regulatory requirements associated with this alternative are identical to those identified for the proposed Project, so the ANF Strategy Conformance impacts of this alternative are identical to those identified for the proposed Project (Impact A-5 – Class II).

C.2.7 Alternative 2: Antelope-Pardee East Mid-Slope

The alternatives are described in detail in Section B. A summary of the alternative’s parameters related to air quality are provided below, along with a prediction of the emissions and an assessment of impacts for this alternative.

C.2.7.1 Affected Environment

This alternative remains within the same local air district jurisdictions, air basins, and SCAQMD SRAs; and so does not change the affected regional environment from that of the proposed Project, as described in Section C.2.1.

C.2.7.2 Impacts and Mitigation Measures

The proposed route for this alternative does not change from that of the proposed Project within the AVAQMD jurisdiction and MDAB; therefore, the emissions for this alternative are only presented numerically for the SCAQMD jurisdiction and SCAB.

This alternative would cause construction activities similar to those of the proposed Project, except it would:

- Increase the number of new towers by 8 and lengthen the overhead construction schedule by one month
- Require the construction of 37 towers by helicopter
- Requires an assumed eight fewer miles and 16 fewer days of road work due to the access roads to the 37 towers constructed by helicopter not needing to be constructed or rehabilitated
- Increase the total length of the route by 1.1 miles

The maximum daily and annual emissions during the maximum years of construction in this section of the route, assumed to be 2008, are impacted by this alternative. Appendix 3 provides the emission assumptions and detailed worst-case annual emission summary for this alternative and shows a comparison with the annual emissions estimated for the proposed Project.

The worst-case impacts to sensitive receptors are assumed to be identical to the proposed project as the construction activities that occur near sensitive receptors and the distance to the closest sensitive receptors do not change as a result of this alternative.

Air Quality Management Plan Conformance (Criterion AIR1)

The construction methods and regulatory requirements associated with this alternative are identical to those identified for the proposed Project, so like the proposed Project this alternative will also inherently conform with the AQMP.

Regional Emission Thresholds (Criterion AIR2)

Construction of this alternative, similar to the proposed Project, would result in short-term impacts to ambient air quality. Construction of this alternative would include additional helicopter use which increases the maximum daily emissions in the SCAB but not the MDAB, assuming that the helicopters used for the 37 towers to be constructed with helicopter within the SCAB are accessed by helicopters that are based in the SCAB. The estimated maximum daily emissions for the alternative are shown in Table C.2-20.

Table C.2-20. Alternative 2 Maximum Daily Emissions							
		Emissions (daily – lbs/day)					
Air Basin		NOx	VOC	CO	PM10	PM2.5	SO₂
SCAB	Maximum Daily Emissions	866	101	654	695	163	6
	Significance Threshold	100	75	550	150	--	150
	Exceeds (YES/NO)	YES	YES	YES	YES	--	NO

This alternative would create both new significant impacts (VOC and CO in the SCAB and CO in the MDAB) and increase the NOx and CO significant emission impacts identified for the proposed Project: however, the air quality impacts are still classified the same as the proposed Project (Impact A-1 – **Class I** for SCAQMD and AVAQMD). All feasible mitigation was recommended for the proposed project (Mitigation Measures A-1a through A-1i), so no additional air quality mitigation measures are required for this alternative. Application of Mitigation Measure V-4a (Construct, Operate, and Maintain with Helicopters - see Section C.15, Visual Resources) would require additional use of helicopters during construction, operation, and maintenance of the proposed transmission line, which would contribute to regional NOx and PM2.5 emissions.

SCAQMD Localized Significance Thresholds (Criterion AIR3)

This alternative does not change the worst case daily emissions at any given site and does not change the estimated closest receptor distances from those assumed for the proposed Project. The implementation of Mitigation Measure V-4a would require additional steel tower construction activities to occur in locations away from the tower sites⁵; however, this activity results in emissions that remain below applicable LST thresholds. Therefore, the LST impacts are identical to those identified for the proposed Project (Impact A-2 – **Class II**).

Federal General Conformity Rule (Criterion AIR4)

This alternative would cause, due to the additional towers and increased helicopter construction in comparison to the proposed Project, an increase in the maximum annual emissions for some pollutants within the SCAQMD jurisdiction (SCAB). Therefore, the maximum annual emissions in 2008 have been calculated and are shown in Table C.2-21.

Table C.2-21. Alternative 2 General Conformity Emissions Threshold Comparison							
		Emissions (Tons/year)					
Air Basin		NOx	VOC	CO	PM10	PM2.5	SO₂
SCAB	2008 Emissions	16.56	2.17	13.09	10.59	2.81	0.09
	Applicability Trigger	25	25	100	70	100	100
	Exceeds (YES/NO)	NO	NO	NO	NO	NO	NO

Table C.2-21 shows that the alternative’s estimated construction emissions in 2008 remain below General Conformity applicability thresholds for the SCAB. The alternative’s emission estimate considers the implementation of Mitigation Measures A-1a through A-1i. Therefore, this alternative’s construction will be less than significant after mitigation (**Class II**) for Impact A-3.

This emission analysis does not include emissions that would be generated due to application of Mitigation Measure V-4a (Construct, Operate, and Maintain with Helicopters - see Section C.15, Visual Resources). This measure would increase the use of helicopters during construction of the proposed transmission line, and reduce the use of certain construction vehicles within the SCAB. However, the overall impact of measure V-4a, which would create a small increase in the project’s overall annual NOx and CO emissions and decrease the particulate (PM10 and PM2.5) emissions, would not cause the annual emissions within the SCAB to exceed the General Conformity emission thresholds.

⁵ The staging area emissions comparison for LST purposes is for the secondary staging yards were the Primary Staging (aka Marshalling Yard emissions were conservatively used for comparison. The steel fabrication required for helicopter construction is assumed to occur at the primary staging yards, which have a greater distance to the closest receptor, or at other unidentified staging areas closer to the tower sites that would only be used for steel tower fabrication, and steel tower fabrication emissions (see Appendix 3) are well below the Localized Significance Threshold for the minimum receptor distance of 25 meters.

Odors (Criterion AIR5)

The construction methods and odor producing activities associated with this alternative are identical to those of the proposed Project, so the potential odor impacts of this alternative are identical to those identified for the proposed Project (Impact A-4 – Class III).

Angeles National Forest Strategy Conformance (Criterion AIR6)

The construction methods and regulatory requirements associated with this alternative are identical to those identified for the proposed Project, so the ANF Strategy Conformance impacts of this alternative are identical to those identified for the proposed Project (Impact A-5 – Class II).

C.2.8 Alternative 3: Antelope-Pardee Single-Circuit 500-kV Towers between Haskell Canyon and Pardee Substation

The alternatives are described in detail in Section B. A summary of the alternative's parameters related to air quality are provided below, along with a prediction of the emissions and an assessment of impacts for this alternative.

C.2.8.1 Affected Environment

This alternative remains within the same local air district jurisdictions, air basins, and SCAQMD SRAs; and so does not change the affected regional environment from that of the proposed Project, as described in Section C.2.1.

C.2.8.2 Impacts and Mitigation Measures

The proposed route for this alternative does not change from that of the proposed Project within the AVAQMD jurisdiction and MDAB; therefore, the emissions for this alternative are only presented numerically for the SCAQMD jurisdiction and SCAB.

This alternative would cause construction activities similar to those of the proposed Project, except it would:

- Reduce the amount of wreckout and associated waste/recycle trips, this alternative does not require the removal of 21-500 kV towers
- Require a few additional steel delivery trips due to the change to double circuit towers from single circuit towers

The maximum daily emissions are not impacted by this alternative as the construction methods and worst-case daily activity are not assumed to change from those of the proposed Project. The annual emissions during the maximum year of construction, assumed to be 2008, decrease by a few percent (see Appendix 3) for this alternative. The worst-case impacts to sensitive receptors are assumed to be identical to the proposed project as the construction activities that occur near sensitive receptors and the distance to the closest sensitive receptors do not change as a result of this alternative. Appendix 3 provides the emission assumptions and detailed worst-case annual emission summary for this alternative and shows a comparison with the annual emissions estimated for the proposed Project.

Air Quality Management Plan Conformance (Criterion AIR1)

The construction methods and regulatory requirements associated with this alternative are identical to those identified for the proposed Project, so like the proposed Project this alternative will also inherently conform with the AQMP.

Regional Emission Thresholds (Criterion AIR2)

The maximum daily construction activity assumptions for this alternative are identical to those of the proposed Project, and the maximum daily emissions in either the SCAQMD or AVAQMD jurisdiction are estimated to be the same as those of the proposed Project (see Table C.2-13). Therefore, the recommended mitigation measures and regional impacts are identical to those identified for the proposed Project (Impact A-1 – Class I). Application of Mitigation Measure V-4a (Construct, Operate, and Maintain with Helicopters - see Section C.15, Visual Resources) would require additional use of helicopters during construction, operation, and maintenance of the proposed transmission line, which would contribute to regional NOx and PM2.5 emissions.

SCAQMD Localized Significance Thresholds (Criterion AIR3)

This alternative does not change the worst case daily emissions at any given site and does not change the estimated closest receptor distances from assumed for the proposed Project. Therefore, the LST impacts are identical to those identified for the proposed Project (Impact A-2 – Class II). The implementation of Mitigation Measure V-4a would require additional steel tower construction activities to occur in locations away from the tower sites⁶; however, this activity results in emissions that remain below applicable LST thresholds.

Federal General Conformity Rule (Criterion AIR4)

This alternative would cause, in comparison to the proposed Project, a minor reduction in the maximum annual emissions for some pollutants within the SCAQMD jurisdiction (SCAB). The maximum annual emissions in 2008 have been calculated and are shown in Table C.2-22.

Air Basin		Emissions (Tons/year)					
		NOx	VOC	CO	PM10	PM2.5	SO ₂
SCAB	2008 Emissions	14.16	1.85	10.92	12.70	3.02	0.06
	Applicability Trigger	25	25	100	70	100	100
	Exceeds (YES/NO)	NO	NO	NO	NO	NO	NO

Table C.2-22 shows that the alternative’s estimated construction emissions in 2008 remain below General Conformity applicability thresholds for the SCAB. The alternative’s emission estimate considers the implementation of Mitigation Measures A-1a through A-1i. Therefore, this alternative’s construction will be less than significant after mitigation (**Class II**) for Impact A-3.

This emission analysis does not include emissions that would be generated due to application of Mitigation Measure V-4a (Construct, Operate, and Maintain with Helicopters - see Section C.15, Visual Resources). This measure would increase the use of helicopters during construction of the proposed transmission line, and reduce the use of certain construction vehicles within the SCAB. However, the overall impact of measure V-4a, which would create a small increase in the project’s overall annual NOx and CO emissions and decrease the particulate (PM10 and PM2.5) emissions, would not cause the annual emissions within the SCAB to exceed the General Conformity emission thresholds.

⁶ The staging area emissions comparison for LST purposes is for the secondary staging yards were the Primary Staging (aka Marshalling Yard) emissions were conservatively used for comparison. The steel fabrication required for helicopter construction is assumed to occur at the primary staging yards, which have a greater distance to the closest receptor, or at other unidentified staging areas closer to the tower sites that would only be used for steel tower fabrication, and steel tower fabrication emissions (see Appendix 3) are well below the Localized Significance Threshold for the minimum receptor distance of 25 meters.

Odors (Criterion AIR5)

The construction methods and odor producing activities associated with this alternative are identical to those of the proposed Project, so the potential odor impacts of this alternative are identical to those identified for the proposed Project (Impact A-4 – Class III).

Angeles National Forest Strategy Conformance (Criterion AIR6)

The construction methods and regulatory requirements associated with this alternative are identical to those identified for the proposed Project, so the ANF Strategy Conformance impacts of this alternative are identical to those identified for the proposed Project (Impact A-5 – Class II).

C.2.9 Alternative 4: Antelope-Pardee Re-Routing of New Right-of-Way along Haskell Canyon

The alternatives are described in detail in Section B. A summary of the alternative's parameters related to air quality are provided below, along with a prediction of the emissions and an assessment of impacts for this alternative.

C.2.9.1 Affected Environment

This alternative remains within the same local air district jurisdictions, air basins, and SCAQMD SRAs; and so does not change the affected regional environment from that of the proposed Project, as described in Section C.2.1.

C.2.9.2 Impacts and Mitigation Measures

The proposed route for this alternative does not change from that of the proposed Project within the AVAQMD jurisdiction and MDAB; therefore, the emissions for this alternative are only presented numerically for the SCAQMD jurisdiction and SCAB.

This alternative would cause construction activities similar to those of the proposed Project, except it would:

- Increase the number of new towers by one
- Requires an assumed three additional miles/six days of road work
- Increase the route length by 0.3 miles

The maximum daily emissions are not impacted by this alternative as the construction methods and worst-case daily activity are not assumed to change from those of the proposed Project. The annual emissions during the maximum year of construction, assumed to be 2008, increase by approximately one to two percent (see Appendix 3) for this alternative. The worst-case impacts to sensitive receptors are assumed to be identical to the proposed project as the construction activities that occur near sensitive receptors and the distance to the closest sensitive receptors do not change as a result of this alternative. Appendix 3 provides the emission assumptions and detailed worst-case annual emission summary for this alternative and shows a comparison with the annual emissions estimated for the proposed Project.

Air Quality Management Plan Conformance (Criterion AIR1)

The construction methods and regulatory requirements associated with this alternative are identical to those identified for the proposed Project, so like the proposed Project this alternative will also inherently conform with the AQMP.

Regional Emission Thresholds (Criterion AIR2)

The maximum daily construction activity assumptions for this alternative are identical to those of the proposed Project, and the maximum daily emissions in either the SCAQMD or AVAQMD jurisdiction are estimated to be the same as those of the proposed Project (see Table C.2-13). Therefore, the recommended mitigation measures and regional impacts are identical to those identified for the proposed Project (Impact A-1 – Class I). Application of Mitigation Measure V-4a (Construct, Operate, and Maintain with Helicopters - see Section C.15, Visual Resources) would require additional use of helicopters during construction, operation, and maintenance of the proposed transmission line, which would contribute to regional NOx and PM2.5 emissions.

SCAQMD Localized Significance Thresholds (Criterion AIR3)

This alternative does not change the worst case daily emissions at any given site and does not change the estimated closest receptor distances from those assumed for the proposed Project. Therefore, the LST impacts are identical to those identified for the proposed Project (Impact A-2 – Class II). The implementation of Mitigation Measure V-4a would require additional steel tower construction activities to occur in locations away from the tower sites⁷; however, this activity results in emissions that remain below applicable LST thresholds.

Federal General Conformity Rule (Criterion AIR4)

This alternative would cause, in comparison to the proposed Project, a minor change in the maximum annual emissions for some pollutants within the SCAQMD jurisdiction (SCAB). The maximum annual emissions in 2008 have been calculated and are shown in Table C.2-23.

Air Basin		Emissions (Tons/year)					
		NOx	VOC	CO	PM10	PM2.5	SO ₂
SCAB	2008 Emissions	14.54	1.90	11.22	13.05	3.13	0.07
	Applicability Trigger	25	25	100	70	100	100
	Exceeds (YES/NO)	NO	NO	NO	NO	NO	NO

Table C.2-23 shows that the alternative’s estimated construction emissions in 2008 remain below General Conformity applicability thresholds for the SCAB. The alternative’s emission estimate considers the implementation of Mitigation Measures A-1a through A-1i. Therefore, this alternative’s construction will be less than significant after mitigation (**Class II**) for Impact A-3.

This emission analysis does not include emissions that would be generated due to application of Mitigation Measure V-4a (Construct, Operate, and Maintain with Helicopters - see Section C.15, Visual Resources). This measure would increase the use of helicopters during construction of the proposed transmission line, and reduce the use of certain construction vehicles within the SCAB. However, the overall impact of measure V-4a, which would create a small increase in the project’s overall annual NOx and CO emissions and decrease the particulate (PM10 and PM2.5) emissions, would not cause the annual emissions within the SCAB to exceed the General Conformity emission thresholds.

⁷ The staging area emissions comparison for LST purposes is for the secondary staging yards were the Primary Staging (aka Marshalling Yard) emissions were conservatively used for comparison. The steel fabrication required for helicopter construction is assumed to occur at the primary staging yards, which have a greater distance to the closest receptor, or at other unidentified staging areas closer to the tower sites that would only be used for steel tower fabrication, and steel tower fabrication emissions (see Appendix 3) are well below the Localized Significance Threshold for the minimum receptor distance of 25 meters.

Odors (Criterion AIR5)

The construction methods and odor producing activities associated with this alternative are identical to those of the proposed Project, so the potential odor impacts of this alternative are identical to those identified for the proposed Project (Impact A-4 – Class III).

Angeles National Forest Strategy Conformance (Criterion AIR6)

The construction methods and regulatory requirements associated with this alternative are identical to those identified for the proposed Project, so the ANF Strategy Conformance impacts of this alternative are identical to those identified for the proposed Project (Impact A-5 – Class II).

C.2.10 Alternative 5: Antelope-Pardee Sierra-Pelona Re-Route

The alternatives are described in detail in Section B. A summary of the alternative's parameters related to air quality are provided below, along with a prediction of the emissions and an assessment of impacts for this alternative.

C.2.10.1 Affected Environment

The project route would continue to cross some NFS lands, but would now also cross a portion of BLM lands. Otherwise this alternative remains within the same local air district jurisdictions, air basins, and SCAQMD SRAs as described in Section C.2.1 for the proposed Project.

C.2.10.2 Impacts and Mitigation Measures

The proposed route length for this alternative changes from that of the proposed Project within both the AVAQMD jurisdiction and MDAB and the SCAQMD jurisdiction and SCAB.

This alternative would cause construction activities similar to those of the proposed Project, except it would:

- Increase the number of new towers by 54 and increases the construction schedule by three months
- Require an estimated 68 additional days of road construction and rehabilitation (34 miles of new or rehabilitated unpaved road)
- Increase the route length by 11.6 miles
- Route the line almost entirely outside of the ANF (1.5 miles on NFS lands)

The maximum daily emissions are not impacted by this alternative as the construction methods and worst-case daily activity are not assumed to change from those of the proposed Project. The annual emissions during the maximum year of construction, assumed to be 2008, increase by 20 percent or more in the SCAB and MDAB (see Appendix 3) for this alternative. The worst-case impacts to sensitive receptors are assumed to be identical to the proposed project as the construction activities that occur near sensitive receptors and the distance to the closest sensitive receptors do not change as a result of this alternative. Appendix 3 provides the emission assumptions and detailed worst-case annual emission summary for this alternative and shows a comparison with the annual emissions estimated for the proposed Project.

Air Quality Management Plan Conformance (Criterion AIR1)

The construction methods and regulatory requirements associated with this alternative are identical to those identified for the proposed Project, so like the proposed Project this alternative will also inherently conform with the AQMP.

Regional Emission Thresholds (Criterion AIR2)

The maximum daily construction activity assumptions for this alternative are identical to those of the proposed Project, and the maximum daily emissions in either the SCAQMD or AVAQMD jurisdiction are estimated to be the same as those of the proposed Project (see Table C.2-13). Therefore, the recommended mitigation measures and regional impacts are identical to those identified for the proposed Project (Impact A-1 – Class I).

SCAQMD Localized Significance Thresholds (Criterion AIR3)

This alternative does not change the worst case daily emissions at any given site and does not change the estimated closest receptor distances from those assumed for the proposed Project. Therefore, the LST impacts are identical to those identified for the proposed Project (Impact A-2 – Class II).

Federal General Conformity Rule (Criterion AIR4)

This alternative would cause, in comparison to the proposed Project, a minor change in the maximum annual emissions for some pollutants within the SCAQMD jurisdiction (SCAB). The maximum annual emissions in 2008 have been calculated and are shown in Table C.2-24.

Table C.2-24 shows that the alternative’s estimated construction emissions in 2008 remain below General Conformity applicability thresholds for the SCAB and MDAB. The alternative’s emission estimate considers the implementation of Mitigation Measures A-1a through A-1i. Therefore, this alternative’s construction will be less than significant after mitigation (**Class II**) for Impact A-3.

Table C.2-24. Alternative 5 General Conformity Emissions Threshold Comparison							
Air Basin		Emissions (Tons/year)					
		NOx	VOC	CO	PM10	PM2.5	SO ₂
SCAB	2008 Emissions	16.91	2.19	13.13	15.98	3.77	0.08
	Applicability Trigger	25	25	100	70	100	100
	Exceeds (YES/NO)	NO	NO	NO	NO	NO	NO
MDAB	2008 Emissions	9.08	1.24	7.15	5.36	1.46	0.04
	Applicability Trigger ^c	100	100	na	na	na	na
	Exceeds (YES/NO)	NO	NO	na	na	na	na

Table Notes: na – not applicable

Odors (Criterion AIR5)

The construction methods and odor producing activities associated with this alternative are identical to those of the proposed Project, so the potential odor impacts of this alternative are identical to those identified for the proposed Project (Impact A-4 – Class III).

Angeles National Forest Strategy Conformance (Criterion AIR6)

The construction methods and regulatory requirements associated with this alternative are identical to those identified for the proposed Project, so the ANF Strategy Conformance impacts of this alternative are identical to those identified for the proposed Project (Impact A-5 – Class II). This alternative would also pass through BLM lands; however, the BLM has not approved any air quality policies or plans that require mitigation above that required by the local air quality jurisdictions (SCAQMD and AVAQMD).

C.2.11 No Project/Action Alternative

Under the No Project/Action Alternative, the Project would not be implemented and, therefore, the impacts associated with the proposed Project and alternatives described in Sections C.2.5 through C.2.10 above would not occur. As a result, the No Project/Action alternative would result in no new construction emissions and no additional direct operating emissions.

The No Project/Action alternative could restrict the potential amount of new renewable energy resources that could supply the power needs of the Los Angeles area. This additional renewable energy might reduce the use of generating sources powered by fossil fuels (turbine, boilers, etc.) that would otherwise be needed to supply the same energy, whether they would be located within the Los Angeles area, elsewhere in California, or in surrounding states. The exact amount of power displacement and corresponding amount and location of emission reductions that would result indirectly from the proposed Project are not known, but the proposed Project would allow for some power plant emission reductions within the SCAB. Reducing emissions in the SCAB is necessary to meet attainment goals in both the SCAB and downwind in the Antelope Valley portion of the MDAB. Regional Haze would likewise be similarly affected, with a small reduction being expected to occur indirectly due to the Project. Whereas an increase in regional fossil fuel uses that might be necessary to produce power without the Project would have the opposite result.

Additionally, as identified in Section B.4.8.2, in the absence of the proposed Project, other indirect actions would occur. Some wind projects would be postponed or cancelled, or alternative renewable energy sources and transmission lines developed that would help meet future RPS goals. For any alternative renewable energy sources developed SCE would need to accommodate the power load by upgrading existing transmission infrastructure or building new transmission facilities along different alignments. Construction methods, resulting impacts, and regulatory requirements associated with these potential transmission projects that might occur without the Project would be similar to those identified for the proposed Project, so the impacts from such projects would be expected to be similar to those identified for the proposed Project, dependant on the specific affected local air district’s air quality significance criteria.

C.2.12 Impact and Mitigation Summary

Table C.2-25 presents a summary of the impacts and proposed mitigation measures for air quality. Applicable mitigation measures are listed below the impact significance classification for each alternative.

Impact	Impact Significance					
	Proposed Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
A-1: Construction emissions would exceed the SCAQMD and AVAQMD regional emission thresholds.	Class I A-1a thru A-1i	Class I A-1a thru A-1i	Class I A-1a thru A-1i	Class I A-1a thru A-1i	Class I A-1a thru A-1i	Class I A-1a thru A-1i
A-2: Construction of the Project would expose sensitive receptors to substantial pollutant concentrations.	Class II A-1a thru A-1i	Class I A-1a thru A-1i	Class II A-1a thru A-1i	Class II A-1a thru A-1i	Class II A-1a thru A-1i	Class II A-1a thru A-1i
A-3: The Project would not conform to Federal General Conformity Rules.	Class II A-1a thru A-1i	Class II A-1a thru A-1i and A-34a	Class II A-1a thru A-1i			
A-4: The Project would create objectionable odors.	Class III No mitigation	Class III No mitigation	Class III No mitigation	Class III No mitigation	Class III No mitigation	Class III No mitigation
A-5: The Project would not conform to	Class II	Class II	Class II	Class II	Class II	Class II

Table C.2-25. Impact and Mitigation Summary – Air Quality

Angeles National Forest air quality strategies.	Impact Significance					
	A-1a thru A-1i	A-1a thru A-1i	A-1a thru A-1i	A-1a thru A-1i	A-1a thru A-1i	A-1a thru A-1i

Class I = Significant and unavoidable impact; **Class II** = Significant but mitigated to a less-than-significant level; **Class III** = Less-than-significant impact; **Class IV** = Beneficial impact.

C.2.13 Cumulative Effects

C.2.13.1 Geographic Scope

For air quality, the potential geographic extent of the cumulative impact area for the project alternatives covers the air basins as the proposed project. Since the proposed Project has very minor operating emissions, the cumulative impact discussion is focused on construction impacts. Construction impacts are localized and of short duration. Therefore, only projects within one mile of the project route are considered projects that could, with the proposed Project, cause cumulative impacts. Additionally, only projects that are scheduled concurrently within this one-mile radius of the proposed Project are considered as projects that could contribute to cumulative impacts.

Only those projects listed in Tables B.5-1 and B.5-3 that have been identified within one mile of the proposed Project (see Figures B.5-1a and B.5-1b) and that have the potential for temporally overlapping emissions with the proposed Project are considered potentially cumulative projects. There are a large number of projects shown in Table B.5-1 that are within one mile of the Project route. However, the construction schedule of many of these cumulative projects is uncertain or will be complete prior to the construction of the proposed Project, so there is the potential that most of these projects will not have construction periods coincident with that of the proposed Project, but there is also the likelihood of a number of additional projects not currently known and listed that would meet the cumulative project criteria for air quality.

C.2.13.2 Existing Cumulative Conditions

Past development and population growth within the cities of Santa Clarita, Palmdale, and Lancaster and in adjacent unincorporated areas have expanded the potential to contribute to increased air emissions within the air basins traversed by the proposed Project. The part of the proposed Project area in Antelope Valley is in the MDAB which is nonattainment for the State and federal 8-hour ozone standard and the State 24-hour PM10 standard. Additionally, the part of the proposed Project area within the ANF and Santa Clarita valley is in the SCAB which is nonattainment of the federal 8-hour ozone, CO, PM10, and PM2.5 standards; and nonattainment with the State 1-hour ozone, PM10, and PM2.5 standards. The proposed Project area is designated as attainment/unclassified for the nitrogen dioxide and sulfur dioxide for both state and federal standards, and attainment/unclassified for the state CO standards; and the MDAB portion of the Project area (Antelope Valley) is also designated as attainment/unclassified for the federal CO, PM10 and PM2.5 standards, and unclassified for the State PM2.5 standard. Long-term trends in reduced emissions of ozone precursors, specifically NO_x and VOCs, have led to reduced ozone formation in the proposed Project area; however, the area continues to exceed the State 1-hour and federal 8-hour ozone standards. Additionally, while there is an overall gradual downward trend for PM10 concentrations, there has been little or no progress since 1993. As such, any increase in emissions of ozone precursors and particulate matter (and particulate matter precursors) would cause an adverse Air Quality impact.

C.2.13.3 Cumulative Impact Analysis

Since the proposed Project would have very minor operating emissions, the cumulative impact analysis focuses on construction impacts, which are localized and of short duration. Therefore, only projects within one mile of the project route, as well as projects that could impact traffic during construction of the proposed Project are considered for analysis of cumulative impacts. Additionally, only new projects with construction or operating emissions that would occur at the same time as the proposed Project's construction are considered as part of this cumulative impact analysis; existing emission sources are considered part of the existing ambient background cumulative condition. The cumulative project lists that include projects that may be within one mile of the project route are provided in Tables B.5-1 and B.5-3. Although a large number of projects within one mile of the proposed or alternative Project routes are listed in Tables B.5-1 and B.5-3, the construction schedules of many of these projects are uncertain, making it possible that construction of many of these projects would not occur coincident with construction of the proposed Project. Should construction activities from related projects within one mile of the proposed transmission route occur concurrent with construction of the proposed Project, cumulative Air Quality impacts could occur.

- **Construction emissions would exceed the SCAQMD and AVAQMD regional emission thresholds (Impact A-1).** Construction activities associated with the proposed Project and all Project Alternatives would result in air emissions that exceed the SCAQMD and AVAQMD regional emission thresholds. For cumulative assessment purposes the potential existence of nearby concurrent cumulative projects would only add to these significant emission totals. The cumulative project lists (Tables B.5-1 and B.5-3) show over a dozen projects within one mile of the proposed Project route. While not all of these projects would occur at the same time as the proposed Project it can be assumed that one or more other projects will be in construction or will start operations and cause emissions that are cumulatively significant with those of the proposed Projects Construction. Therefore, the combined effect of construction emissions from the proposed Project and other projects construction and/or operating emissions would be cumulatively significant at various times during construction (**Class I**). This determination is identical for all active Project Alternatives.
- **Construction of the proposed Project would expose sensitive receptors to substantial pollutant concentrations (Impact A-2).** Construction activities associated with the Project would expose sensitive receptors in the populated areas along the construction route. The SCAQMD Localized Significance Threshold (LST) lookup tables used to determine project significance do not apply to cumulative project evaluation; however, the significance criteria is based on downwind pollutant concentrations causing a new exceedance (NO_x and CO) of an air quality standard, substantially increasing current exceedances (PM₁₀) of an air quality standard, or cause an unacceptable air toxic risk, and these general criteria are applicable standards for localized impact cumulative project analysis. For the emissions of any two projects to have the potential for significant cumulative downwind concentrations they must both be in close proximity to limit the downwind dispersion from one site to the other and generally one of the projects must be able to cause an air quality standard exceedance on it own (conservation of mass principles dictate that two exhaust plumes of stable criteria pollutants do not add concentration, they mix concentration with the plume of highest concentration being diluted by the plume with the lower concentration). This would not be true for air toxic pollutants that may have synergistic effects; however, the air toxic emissions impacts from the project would be very low at any one location and would not be of a magnitude to significantly contribute to cumulative impacts. Therefore, it can be assumed that the potential for cumulative impacts to sensitive receptors is the same as the project impacts to sensitive receptors, so the proposed Project and Alternatives 2 through 5 would have less than significant cumulative impacts to sensitive receptors after mitigation (**Class II**), and Alternative 1 would have significance impacts to sensitive receptors after mitigation (**Class I**).
- **The Project would not conform to Federal General Conformity Rules (Impact A-3).** Conformance with General Conformity regulations are on a project by project basis, and only involve federally permitted, approved, or funded projects. Therefore, this impact does not include the potential for cumulative project impacts.
- **The Project would create objectionable odors (Impact A-4).** Construction equipment and operations, such as asphalt paving, may create temporary and mildly objectionable odors. Since most of the proposed route is located in unpopulated ANF land and low density residential areas, odors would not affect a substantial number of people. To have the potential to combine with odors from the Project, odor-generating activities from other current and

proposed projects would have to occur concurrently, occur in very close proximity with the odor-generating activities of the Project, and result in a cumulatively worse odor condition. Given the temporary nature and relative mildness of the Project's construction odors, odor impacts related to the Project would be adverse but not cumulatively significant (**Class III**). This determination is identical for all Project Alternatives.

- **The Project would not conform to Angeles National Forest air quality strategies (Impact A-5).** This impact is applicable within the ANF and other NFS lands, so this impact is discussed separately in the following section.

There are no additional feasible mitigation measures that could be imposed on the proposed Project, or Project Alternatives to further reduce its contribution to cumulative air quality effects. All feasible construction emission mitigation measures have been recommended to mitigate Impact A-1.

C.2.13.4 Cumulative Effects on National Forest System Lands

The Angeles National Forest Strategy (Impact A-5) does not include any air quality strategies that would be significantly impacted by the construction or operation of the proposed Project. The Angeles National Forest Strategy is very general and is directed to control and reduce fugitive dust to protect human health and safety, and moderate or prevent environmental impacts. The proposed Project construction smoke and dust emissions would be reduced through conformance with SCAQMD and AVAQMD fugitive dust rules and additionally mitigated to the extent feasible by the additional mitigation measures listed for Impact A-1, including the requirement to implement a construction fugitive emission control plan (Mitigation Measure A-1a). Any other current or proposed construction project within the ANF would be required to conform to the same regulatory standards, if not the same level of additional mitigation. Therefore, the Project and all Project Alternatives along with all cumulative projects would conform with the Angeles National Forest air quality strategies and have a less than significant (**Class III**) cumulative impact.

Very few cumulative projects have been identified on National Forest System (NFS) lands (see Figures B.5-1a and B.5-1b and Table B.5-3), and of those few only a couple are identified to be within one mile of the proposed Project or Alternative Project routes, and those two projects were not identified to occur currently with the proposed Project. However, there are listed cumulative projects (see Figure B.5-1b) located within one mile of the project route and one mile of the southern ANF boundary. Therefore, the cumulative air quality impacts on NFS lands would be identical to those discussed for the project as a whole in Section C.2.13.3.