



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

**OFFICE OF THE
REGIONAL ADMINISTRATOR**

JUN 29 2004

The Honorable Arnold Schwarzenegger
Governor of California
State Capitol Building
Sacramento, California 95814

Dear Governor Schwarzenegger:

Fine-particle pollution represents one of the most significant barriers to clean air facing our nation today. These tiny particles – about 1/30th the diameter of a human hair – have been scientifically linked to serious human health problems. Their ability to be suspended in air for long periods of time makes them a public health threat far beyond the source of emissions. An important part of our nation's commitment to clean, healthy air deals with reducing levels of this fine-particle or PM2.5 pollution.

In February, California submitted its recommended boundaries for PM2.5 attainment and nonattainment areas. We have thoroughly reviewed your recommendations and the technical information you have submitted to support your recommendations. We appreciate the effort California has made to develop this supporting information.

EPA agrees with your recommended nonattainment designations for all but one county, namely Imperial County. Whereas California recommended a nonattainment designation for part of Imperial County (the City of Calxico), the most recent air quality monitoring data indicate that Imperial County meets the fine-particle standard. Therefore we currently intend to designate Imperial County as attainment/unclassifiable. We will make our final decisions in November.

The Bush Administration has made the reduction of fine-particle pollution a critical element of a comprehensive national clean air strategy. This strategy includes EPA's recent rule to reduce pollution from nonroad diesel engines. This rule is an important component of EPA's efforts to help states and localities meet the more protective national fine-particle and 8-hour ozone air quality standards, and will allow many areas of the country to achieve cleaner air.

Should you have any questions, I invite you to contact me or have your staff call Deborah Jordan (415-947-8715) at our Regional Air Office. We look forward to a continued dialogue with you as we work together to implement the PM2.5 standard.

Sincerely,

A handwritten signature in black ink, appearing to read "Wayne Natri". The signature is fluid and cursive, with a prominent initial "W".

Wayne Natri
Regional Administrator

Enclosure 1 only

cc (Enclosures 1 and 2):

Terry Tamminen, Cal EPA
Alan Lloyd, ARB
Catherine Witherspoon, ARB
Stew Wilson, CAPCOA

Enclosure 1

The following table identifies the individual areas and counties comprising those areas within California that EPA intends to designate as nonattainment. EPA intends to designate as attainment/unclassifiable all California counties (or parts thereof) not identified in the table below.

Area	California Recommended Nonattainment Counties	EPA Intended Nonattainment Counties
South Coast Air Basin (Los Angeles)	Los Angeles (South Coast Air Basin portion which includes Santa Catalina and San Clemente Islands), Orange, San Bernardino (South Coast Air Basin portion), Riverside (South Coast Air Basin portion)	Same
San Joaquin Valley	San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, Kern (San Joaquin Air Basin portion)	Same
San Diego County	San Diego	Same
Imperial County	Imperial (Calexico portion)	None

ENCLOSURE 2

Analysis of California PM-2.5 Nonattainment Recommendations

This attachment to the modification letter to California contains EPA's preliminary evaluation of the state's recommended nonattainment PM-2.5 areas. The recommended areas have been evaluated to determine if they follow the guidance provided in EPA's memo of April 1, 2003, "Designations for the Fine Particle National Ambient Air Quality Standards" from Jeffrey R. Holmstead, Assistant Administrator of EPA.

In the April 1, 2003 memo, EPA states that for the purposes of designating PM-2.5 nonattainment areas, it "presumes the entire Metropolitan Statistical Area (MSA) should be designated as nonattainment." In areas where there are multiple MSA's comprising one larger Combined Metropolitan Statistical Area (CMSA), the entire CMSA is the presumptive nonattainment area. This is based on the assumption that "violations of the PM-2.5 NAAQS in urban areas may be presumed attributable at least in part to contributions from sources distributed throughout the Metropolitan Area."

The April 1, 2003 memo also states that in some cases, a State or Tribe may find that a violation of the PM-2.5 standard is attributed to a significant metropolitan-scale component and yet believe that the Metropolitan Area does not appropriately define the area that should be designated nonattainment. EPA will consider requests for urban nonattainment area definitions that deviate from OMB's metropolitan area definitions on a case-by-case basis, considering the factors described below:

- Emissions in areas potentially included versus excluded from the nonattainment area
- Air quality in potentially included versus excluded areas
- Population density and degree of urbanization including commercial development in included versus excluded areas
- Traffic and commuting patterns
- Expected growth (including extent, pattern and rate of growth)
- Meteorology (weather/transport patterns)
- Geography/topography (mountain ranges or other air basin boundaries)
- Jurisdictional boundaries (e.g., counties, air districts, Reservations, etc.)
- Level of control of emission sources

This attachment provides EPA's preliminary conclusions on California's recommended PM-2.5 nonattainment areas with respect to EPA's April 1, 2003 guidance and the nine factors that must be considered when designating an area smaller than the Metropolitan Statistical Area.

California has recommended four PM-2.5 nonattainment areas:

City of Calexico (Imperial County)

San Diego County

San Joaquin Valley

South Coast Air Basin

City Of Calexico, Imperial County, California

There are three PM_{2.5} monitoring sites in Imperial County that are being used to determine this area's compliance with the NAAQS: Calexico - Ethel Street, El Centro, and Brawley. When the State submitted their recommendations for PM_{2.5} nonattainment areas they used data from the years 2000 through 2002. This data set indicated that the monitor at Calexico - Ethel Street was in violation of the annual PM_{2.5} NAAQS, with a 3 year annual average of 15.6 µg/m³. The 2000 - 2002 three year annual averages for El Centro and Brawley were 11.3 µg/m³ and 14.7 µg/m³, respectively.

When the 2003 data set became available, EPA recalculated the three year annual averages for these monitoring locations. The most recent three years of data (2001 - 2003) indicate that while the three year annual averages are close to the NAAQS, none of the sites exceed the annual NAAQS of 15 µg/m³. The 2001 - 2003 year annual average for Calexico, El Centro, and Brawley are 14.3 µg/m³, 11.1 µg/m³, and 14.5 µg/m³.

It should be noted that the three monitoring sites did not have complete data sets for the 2001 - 2003 timeframe. In order to calculate the annual averages EPA used the data substitution procedures in "Guideline on Data Handling Conventions for the PM NAAQS" (EPA-454/R-99-008, 1999).

San Diego County

For the San Diego area, California recommended the San Diego County as the PM-2.5 nonattainment area. It includes the entire San Diego MSA.

The presumptive PM-2.5 nonattainment area for San Diego is the San Diego MSA which includes San Diego County in its entirety.

The state's recommended PM-2.5 nonattainment area is the same as EPA's presumptive nonattainment area.

Based on EPA's preliminary nine factor analysis of California's recommendation, the presumptive nonattainment area and all adjacent counties, EPA agrees that California's recommendation is an appropriate nonattainment area. We have included comments on each factor in the pages following.

Factor 1:**Emissions in areas potentially included versus excluded from the nonattainment area**

The presumptive boundary for the San Diego MSA is all of San Diego County. The State of California's state recommended PM-2.5 nonattainment area includes all of San Diego County, under the jurisdiction of the San Diego Air Pollution Control District. All potential emission sources in the San Diego MSA are included in the State's state recommended nonattainment area.

Adjacent counties to San Diego include Orange, Riverside, and Imperial Counties. Emissions generated in Orange County and Riverside County are included in the state recommended South Coast nonattainment area. Emissions originating in Imperial County do not contribute to elevated PM-2.5 concentrations in San Diego County because Imperial County is separated from the San Diego area by the Laguna Mountains and miles of desert.

EPA concludes that analysis of this factor supports designating San Diego County as the nonattainment area for the San Diego Metropolitan Area.

Factor 2:**Air Quality in potentially included versus excluded areas**

The State's recommended boundary includes all violating monitoring sites. Violating monitors in Orange county and Riverside County are included in the state recommended South Coast nonattainment area. There are no monitors in Imperial County that are currently in violation of the either the 24 hour or annual PM-2.5 NAAQS.

EPA concludes that analysis of this factor supports designating San Diego County as the nonattainment area for the San Diego Metropolitan Area.

Factor 3:**Population density and degree of urbanization including commercial development in included versus excluded areas**

All urbanized areas in the San Diego MSA are included in the State's state recommended boundary and exist west of the Laguna Mountains, which bisect San Diego County from the north to the south. Urbanized areas in the adjacent counties of Orange and Riverside fall within the South Coast nonattainment area. The nearest urbanized area in Imperial County is the El Centro area which is separated from the San Diego area by the Laguna Mountains and miles of desert. The El Centro area is currently not violating either the 24 hour or annual PM-2.5 NAAQS.

EPA concludes that analysis of this factor supports designating San Diego County as the nonattainment area for the San Diego Metropolitan Area.

**Factor 4:
Traffic and commuting patterns**

California's recommended PM-2.5 nonattainment area, San Diego County, contains most of the Vehicle Miles Traveled (VMT) for the San Diego MSA. The amount of commuting traffic between San Diego and Orange or Riverside Counties is minimal and would not contribute significantly to air quality problems in San Diego County.

Because of the great distance between San Diego and Imperial County, traffic and commuting patterns in Imperial County do not contribute to air quality violations in San Diego County.

EPA concludes that analysis of this factor supports designating San Diego County as the nonattainment area for the San Diego Metropolitan Area.

Factor 5: Expected growth (including extent, pattern and rate of growth)

Expected growth in the San Diego MSA will be contained in San Diego County. Expected growth in the adjacent counties of Orange and Riverside will be accounted for in the state recommended South Coast nonattainment area. Growth in urban areas of Imperial County will not impact the San Diego MSA due to the great distance between these areas.

EPA concludes that analysis of this factor supports designating San Diego County as the nonattainment area for the San Diego Metropolitan Area.

**Factor 6:
Meteorology (weather/transport patterns)**

The distribution of high PM-2.5 concentrations within the San Diego area appear to be dependent upon calm-to-light winds and not as dependent upon wind direction. This suggests, as in the South Coast area, that there is enough activity within the San Diego area to generate high PM-2.5 concentrations under many conditions and that high concentrations are not being caused by adjacent areas such as Orange, Riverside and Imperial Counties.

Because high PM-2.5 concentrations occur during periods of calm-to-light wind conditions, the source of the high PM-2.5 concentrations is likely within San Diego County itself. Under these conditions, it's unlikely that transport is bringing precursors into the County in levels significant enough to cause violations there.

EPA concludes that analysis of this factor supports designating San Diego County as the nonattainment area for the San Diego Metropolitan Area.

**Factor 7:
Geography/topography (mountain ranges or other air basin boundaries)**

The San Diego MSA is bounded by the Laguna Mountains to the east, which bisect San Diego County into a western portion, where the San Diego MSA is located, and an eastern portion which is rural and adjacent to Imperial County. To the west is the Pacific Ocean. Orange and Riverside counties are to the north and the US Mexico border forms the southern boundary.

Emissions originating in Imperial County do not contribute to elevated PM-2.5 concentrations in San Diego County because Imperial County is separated from the San Diego area by the Laguna Mountains and miles of desert. While there could be some transport of emissions from Orange or Riverside counties, these areas are included in the state recommended South Coast nonattainment area. Any emissions emanating from across the US Mexico border will need to be dealt with through the planning process.

EPA concludes that analysis of this factor supports designating San Diego County as the nonattainment area for the San Diego Metropolitan Area.

**Factor 8:
Jurisdictional boundaries (e.g., counties, air districts, Reservations, etc.)**

The state recommended San Diego County nonattainment area is entirely under the jurisdiction of the San Diego Air Pollution Control District. To the north of San Diego County is Orange and Riverside Counties, which are included in the state recommended South Coast nonattainment area. Imperial County to the east is under the jurisdiction of the Imperial County Air Pollution Control District. Imperial county contributes minimally if at all to PM-2.5 air quality in San Diego County because of the distance between the San Diego urban area and Imperial County and the Laguna Mountain range which effectively separates the San Diego urban area from Imperial County. San Diego urban area and Imperial County.

EPA concludes that analysis of this factor supports designating San Diego County as the nonattainment area for the San Diego Metropolitan Area.

**Factor 9:
Level of control of emissions sources**

Imperial county does not contribute to violations in San Diego county because of the low level of emissions in the western half of Imperial County, the intervening mountains (extending to over 4000 ft. in height), and the prevailing westerly winds. There is no significant commute pattern linking the two areas, since the urbanized portions of San Diego and Imperial County are separated by more than 100 miles of relatively sparsely populated mountains and desert (the highway distance from San Diego to El Centro is 117 miles). The two counties are under separate air quality jurisdictions (San Diego County Air Pollution Control District and Imperial County Air Pollution Control District) and in separate State air basin planning areas (San Diego Air Basin and Salton Sea Air Basin). While the coastal portion of San Diego County is highly urbanized with a population of approximately 3,000,000, the entire Imperial County is rural and

primarily agricultural, with a total County population of approximately 150,000 (population density of 35 per square mile). San Diego's average daily VMT is over 75,000,000, compared to Imperial County's average daily VMT of approximately 4,215,000.

San Joaquin Valley

For the San Joaquin Valley, California recommended the San Joaquin Valley as the PM-2.5 nonattainment area.

This area includes the San Joaquin Valley Air Basin portion of Kern County, and all of Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus and Tulare counties.

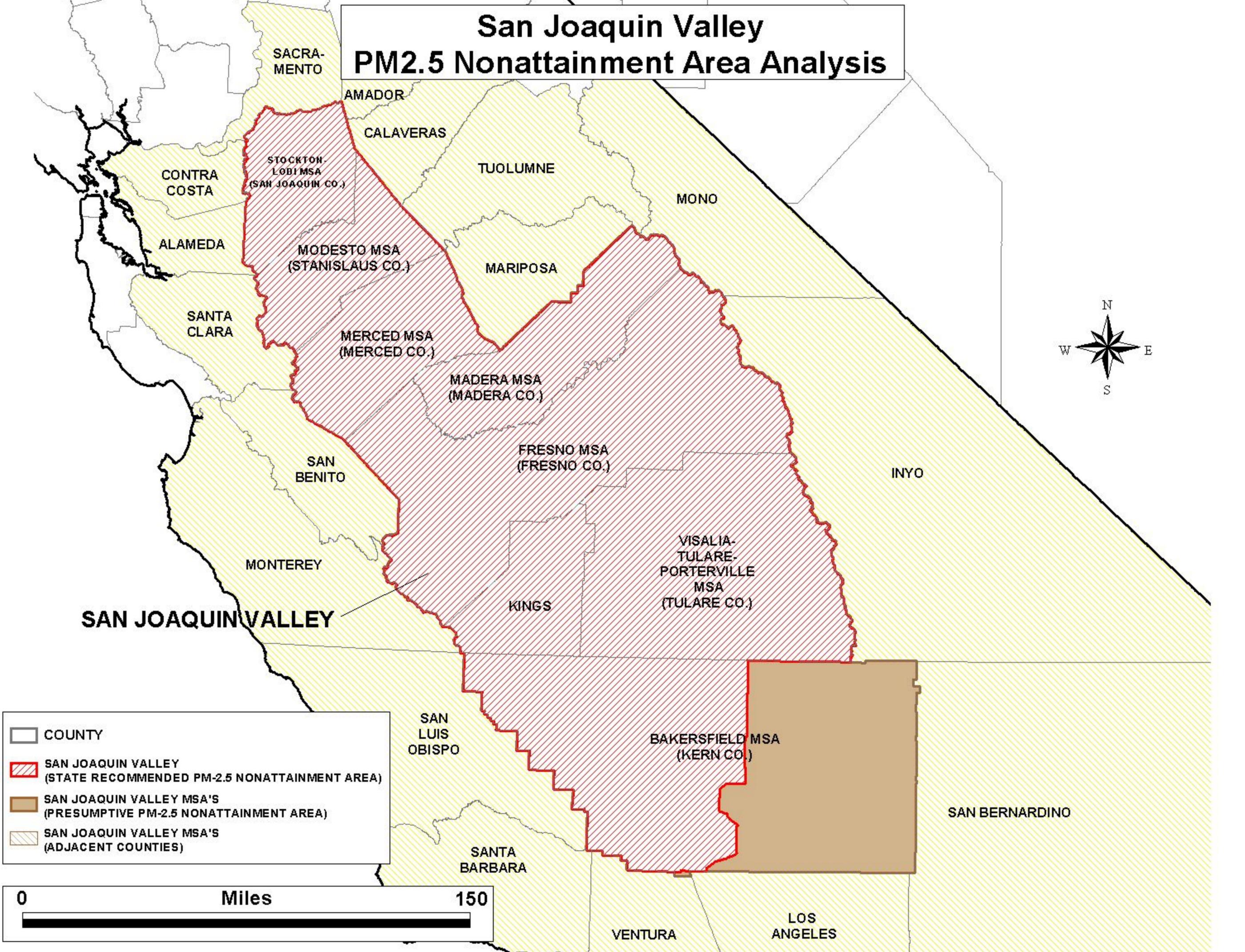
The presumptive nonattainment area includes the MSA's that have violations of the PM-2.5 NAAQS. These include the following MSA's: Bakersfield (Kern County), Fresno (Fresno County), Merced (Merced County), Modesto (Stanislaus County), and Visalia-Tulare-Porterville (Tulare County).

The only portion of the presumptive nonattainment area excluded from the state's San Joaquin Valley recommendation is Eastern Kern County (EKC), which is in a separate air basin (Mojave Desert) and is separated from the San Joaquin Valley by the Sierra Nevada and Tehachapi mountains and significant distance.

The seventeen counties adjacent to the presumptive area and excluded from the state's recommendation (Alameda, Amador, Calaveras, Contra Costa, Inyo, Los Angeles, Mariposa, Mono, Monterey, Sacramento, San Benito, San Bernardino, San Luis Obispo, Santa Barbara, Santa Clara, Tuolumne, Ventura) are not in the San Joaquin Valley. These areas are either mountainous, separated from SJV by mountains, separated from SJV by significant distance or a combination of all of three. Thus, this indicates that these counties should not be included in the San Joaquin Valley nonattainment area.

Based on the following nine factor analysis, EPA concurs with the State's recommendation to include San Joaquin and Kings counties and to exclude that portion of Kern County east of the Tehachapi and Sierra Nevada Mountains. The excluded portion of Kern County is a rural, desert area in a separate State air basin (Mojave Desert) from the San Joaquin Valley (SJV). We have included comments on each factor in the pages following.

San Joaquin Valley PM2.5 Nonattainment Area Analysis



Factor 1:

Emissions in areas potentially included versus excluded from the nonattainment area

The EKC emissions are a tiny fraction of SJV emissions, as shown in the table below.

Comparison of PM2.5 and PM2.5 Precursor Emissions Eastern Kern County vs. San Joaquin Valley Source: California Air Resources Board, 2004 California Almanac of Emissions & Air Quality, 2003 Estimated Annual Average Emissions in Tons per Day				
	VOC	NOx	SOx	PM2.5
Eastern Kern County	13.2	37.9	3.9	9.5
San Joaquin Valley	396.7	504.9	26.6	150.5

California’s recommended PM-2.5 nonattainment area only excludes the EKC which contributes only a tiny fraction of the emissions in the presumptive nonattainment area. This excluded area is separated from the San Joaquin Valley by the Tehachapi and Sierra Nevada mountains. Thus, the excluded area does not cause violations of the NAAQS in the San Joaquin Valley.

Counties adjacent to the presumptive area and excluded from the state’s recommendation are separated from the San Joaquin Valley by topography and/or distance. Based on their location and this factor, these counties should not be included in the San Joaquin Valley nonattainment area.

EPA concludes that analysis of this factor supports designating the San Joaquin Valley as the nonattainment area for PM-2.5.

Factor 2:

Air Quality in potentially included versus excluded areas

California’s recommended PM-2.5 nonattainment area, the San Joaquin Valley, contains all violating monitors. Thus, violations are not occurring in the excluded portions of the metropolitan area.

With respect to adjacent counties, the only monitors that violate the NAAQS in an adjacent county are in counties that have been recommended as part of the Los Angeles nonattainment area and are separated from the San Joaquin Valley by mountains.

EPA concludes that analysis of this factor supports designating the San Joaquin Valley as the nonattainment area for PM-2.5.

**Factor 3:
Population density and degree of urbanization including commercial development in included versus excluded areas**

The population of the EKC is approximately 120,000, compared to the SJV population of approximately 3,500,000. EKC has a very low population density (47 per square mile), degree of urbanization, and projected population growth, since the major source of EKC employment is the military.

Counties adjacent to the presumptive area and excluded from the state's recommendation are separated from the San Joaquin Valley by topography and/or distance. Based on their location and this factor, these counties should not be included in the San Joaquin Valley nonattainment area.

EPA concludes that analysis of this factor supports designating the San Joaquin Valley as the nonattainment area for PM-2.5.

**Factor 4:
Traffic and commuting patterns**

Average daily VMT for EKC is approximately 4,200,000 compared to SJV VMT of approximately 85,000,000. There is an insignificant volume of daily commute traffic between EKC and SJV.

Counties adjacent to the presumptive area and excluded from the state's recommendation are separated from the San Joaquin Valley by topography and/or distance. Based on their location and this factor, these counties should not be included in the San Joaquin Valley nonattainment area.

EPA concludes that analysis of this factor supports designating the San Joaquin Valley as the nonattainment area for PM-2.5.

Factor 5: Expected growth (including extent, pattern and rate of growth)

Counties adjacent to the presumptive area and excluded from the state's recommendation are separated from the San Joaquin Valley by topography and/or distance. Based on their location and this factor, these counties should not be included in the San Joaquin Valley nonattainment area.

EPA concludes that analysis of this factor supports designating the San Joaquin Valley as the nonattainment area for PM-2.5.

**Factor 6:
Meteorology (weather/transport patterns)**

There are typically westerly winds in the southern SJV, which have the potential to carry some levels of PM_{2.5} precursors from SJV to EKC, although the mountains (elevations from 4,064 ft. at the Tehachapi Pass in the south to 9,875 ft. at Sunday Peak in the north) serve as a barrier to transport. Attainment of the PM_{2.5} and 8-hour ozone NAAQS within SJV will require adoption of Statewide and SJV controls at a level of stringency sufficient to ensure that transport from SJV to EKC will be further minimized. Transport from EKC to SJV is insignificant, because of the high mountains, the prevailing wind direction, and the insignificant level of emissions in EKC.

Counties adjacent to the presumptive area and excluded from the state's recommendation are separated from the San Joaquin Valley by topography and/or distance. Based on their location and this factor, these counties should not be included in the San Joaquin Valley nonattainment area.

EPA concludes that analysis of this factor supports designating the San Joaquin Valley as the nonattainment area for PM-2.5.

**Factor 7:
Geography/topography (mountain ranges or other air basin boundaries)**

California's recommended PM-2.5 nonattainment area, the San Joaquin Valley, is bounded on the west by the Coast Ranges, on the south by the Tehachapi mountains, and on the east by the Sierra Nevada mountains. These mountains act as a barrier to pollution. Violations of the PM_{2.5} NAAQS are not caused by areas outside the San Joaquin Valley.

Counties adjacent to the presumptive area and excluded from the state's recommendation are separated from the San Joaquin Valley by topography and/or distance. Based on their location and this factor, these counties should not be included in the San Joaquin Valley nonattainment area.

EPA concludes that analysis of this factor supports designating the San Joaquin Valley as the nonattainment area for PM-2.5.

**Factor 8:
Jurisdictional boundaries (e.g., counties, air districts, Reservations, etc.)**

The EKC is under the jurisdiction of the Kern County Air Pollution Control District, and is associated with the Mojave Desert Air Basin planning group, whereas the SJV is under the jurisdiction of the San Joaquin Valley Unified Air Pollution Control District. The California Air Resources Board coordinates Statewide planning, oversees implementation of intra-state planning requirements (including transport mitigation), and coordinates inter-basin planning, to the extent necessary.

Counties adjacent to the presumptive area and excluded from the state's recommendation are

separated from the San Joaquin Valley by topography and/or distance. Based on their location and this factor, these counties should not be included in the San Joaquin Valley nonattainment area.

EPA concludes that analysis of this factor supports designating the San Joaquin Valley as the nonattainment area for PM-2.5.

Factor 9:

Level of control of emissions sources

Both the EKC and SJV are designated nonattainment for 8-hour ozone NAAQS (with the exception of the extreme northeastern corner of EKC, which is designated attainment). Control measures developed to attain the 8-hour ozone NAAQS in both the EKC and SJV will likely focus on coordinated State initiatives to reduce precursor emissions from mobile sources. The State also is aggressively pursuing Statewide controls on primary PM emitted by mobile sources as part of a diesel risk reduction initiative.

Counties adjacent to the presumptive area and excluded from the state's recommendation are separated from the San Joaquin Valley by topography and/or distance. Based on their location and this factor, these counties should not be included in the San Joaquin Valley nonattainment area.

EPA concludes that analysis of this factor supports designating the San Joaquin Valley as the nonattainment area for PM

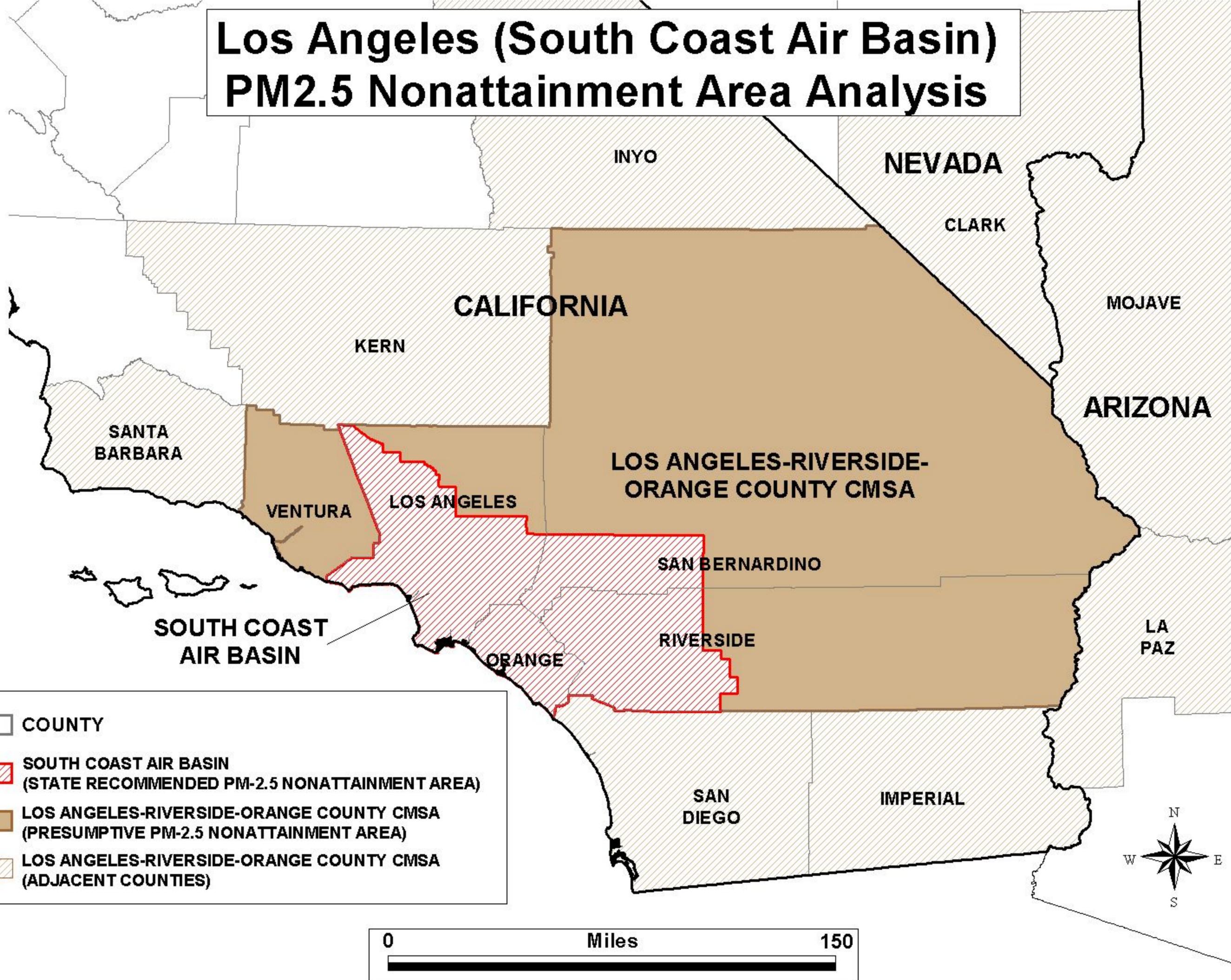
South Coast Air Basin

For the Los Angeles area, California recommended the South Coast Air Basin as the PM-2.5 nonattainment area. This area includes the South Coast Air Basin portions of Los Angeles, Orange, Riverside and San Bernardino counties.

The presumptive nonattainment area is the Los Angeles CMSA, which includes the counties of Los Angeles, Orange, Riverside, San Bernardino and Ventura.

Based on EPA's preliminary nine factor analysis of California's recommendation, the presumptive nonattainment area and all adjacent counties, EPA agrees that California's recommendation is an appropriate nonattainment area. We have included comments on each factor in the pages following.

Los Angeles (South Coast Air Basin) PM2.5 Nonattainment Area Analysis



COUNTY

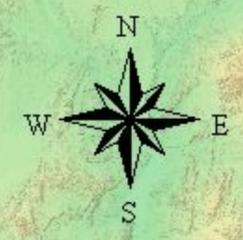
SOUTH COAST AIR BASIN
(STATE RECOMMENDED PM-2.5 NONATTAINMENT AREA)

LOS ANGELES-RIVERSIDE-ORANGE COUNTY CMSA
(PRESUMPTIVE PM-2.5 NONATTAINMENT AREA)

LOS ANGELES-RIVERSIDE-ORANGE COUNTY CMSA
(ADJACENT COUNTIES)



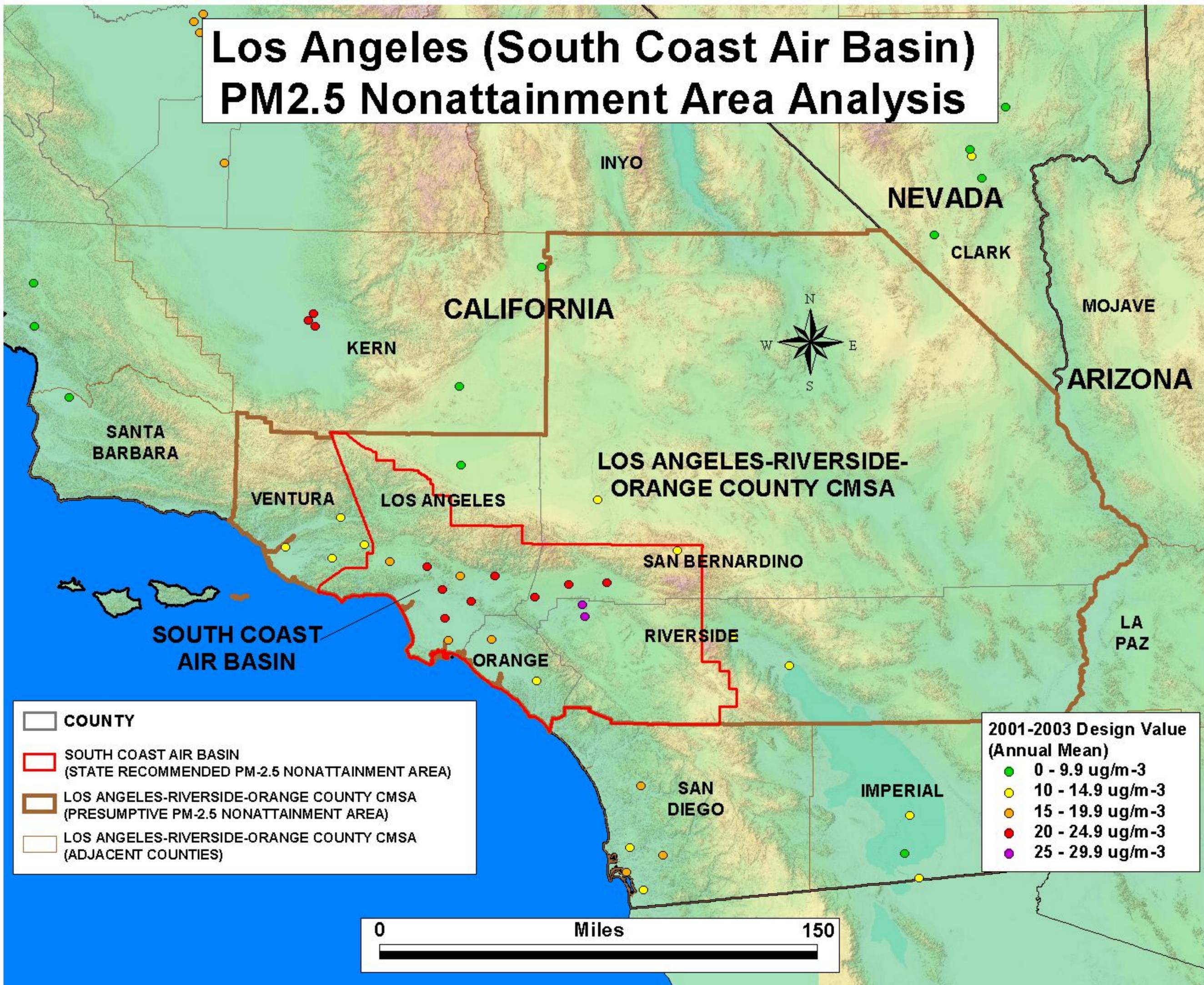
Los Angeles (South Coast Air Basin) PM2.5 Nonattainment Area Analysis



- COUNTY
- SOUTH COAST AIR BASIN (STATE RECOMMENDED PM-2.5 NONATTAINMENT AREA)
- LOS ANGELES-RIVERSIDE-ORANGE COUNTY CMSA (PRESUMPTIVE PM-2.5 NONATTAINMENT AREA)
- LOS ANGELES-RIVERSIDE-ORANGE COUNTY CMSA (ADJACENT COUNTIES)



Los Angeles (South Coast Air Basin) PM2.5 Nonattainment Area Analysis



COUNTY

SOUTH COAST AIR BASIN
(STATE RECOMMENDED PM-2.5 NONATTAINMENT AREA)

LOS ANGELES-RIVERSIDE-ORANGE COUNTY CMSA
(PRESUMPTIVE PM-2.5 NONATTAINMENT AREA)

LOS ANGELES-RIVERSIDE-ORANGE COUNTY CMSA
(ADJACENT COUNTIES)

2001-2003 Design Value
(Annual Mean)

- 0 - 9.9 ug/m-3
- 10 - 14.9 ug/m-3
- 15 - 19.9 ug/m-3
- 20 - 24.9 ug/m-3
- 25 - 29.9 ug/m-3



Factor 1:

Emissions in areas potentially included versus excluded from the nonattainment area

(Figure 1.1)Source: U.S. EPA Emission Inventory, 2001

ST	COU	Total Emissions, 2001 (tons)									Weighted Emissions	
		PM	SO2	NOX	VOC	Arm	Carbon	Crustal	SO2 - ExPt	NOx - ExPt	L-Score	Cumulative L-Score
	C/MSA Total	69,872	22,119	530,780	465,495	61,094	41,151	23,840	10,900	476,347		
CA	Los Angeles	28,855	16,629	276,002	251,469	14,252	19,365	7,097	7,460	254,668	53.4	53.4
CA	San Bernardino	17,741	3,246	109,488	50,278	21,541	8,147	8,022	1,602	81,597	19.7	73.1
CA	Orange	8,585	1,129	73,846	89,987	7,330	5,714	2,466	974	71,374	12.7	85.8
CA	Riverside	10,476	674	52,809	46,232	16,164	5,280	4,921	575	51,315	10.0	95.8
CA	Ventura	4,215	441	18,635	27,529	1,807	2,645	1,334	289	17,393	4.2	100.0
NV	Clark	13,408	48,089	76,295	50,366	2,362	3,897	8,880	4,583	45,594	40.5	
CA	Kern	13,712	5,468	71,174	41,469	11,496	7,469	5,296	1,651	54,604	16.5	
CA	San Diego	12,683	2,007	76,341	95,358	6,015	7,297	4,827	1,748	73,046	14.8	
CA	Santa Barbara	4,201	1,301	14,919	24,755	2,032	2,764	1,292	280	13,355	4.5	
CA	Imperial	4,931	264	16,683	11,254	8,473	2,151	2,523	195	15,887	3.6	
AZ	Mohave	3,037	695	12,691	12,837	1,231	2,021	959	688	11,935	3.3	
CA	Inyo	2,764	394	1,694	3,247	747	2,133	564	173	1,424	2.0	
AZ	La Paz	810	142	3,100	2,407	503	319	483	142	3,062	0.7	
	Area Total	125,418	80,479	803,677	707,188	93,953	69,202	48,664	20,360	695,254		

(Figure 1.2)Source: California Air Resources Board, "2003 Estimated Annual Average Emissions"

2003 Estimated Non-Natural Emissions (tons per day)								
County	South Coast Air Basin portion of Los Angeles CMSA (area included in nonattainment area)				non-South Coast Air Basin portion of Los Angeles CMSA (area excluded from nonattainment area)			
	Emissions (included area)				Emissions (excluded area)			
	ROG*	NOX	SOX	PM2.5	ROG*	NOX	SOX	PM2.5
Los Angeles	480.80	630.10	52.00	55.90	20.90	26.90	0.60	8.90
(As a percentage)	48.8%	48.0%	71.5%	34.7%	2.1%	2.0%	0.8%	5.5%
Orange	159.40	174.10	6.90	17.80				
(As a percentage)	16.2%	13.3%	9.5%	11.0%				
Riverside	79.00	125.00	1.90	16.00	17.20	29.90	0.40	7.40
(As a percentage)	8.0%	9.5%	2.6%	9.9%	1.7%	2.3%	0.6%	4.6%
San Bernardino	85.00	115.50	2.20	16.00	87.30	160.90	7.40	28.40
(As a percentage)	8.6%	8.8%	3.0%	9.9%	8.9%	12.3%	10.2%	17.6%
Ventura (land area)					54.71	50.75	1.31	10.80
(As a percentage)					5.6%	3.9%	1.8%	6.7%
Total	804.20	1044.70	63.00	105.70	180.11	268.45	9.71	55.50
(As a percentage)	81.7%	79.6%	86.6%	65.6%	18.3%	20.4%	13.4%	34.4%
*(excluding non-anthropogenic, aka "natural" emissions) ROG is defined as "Reactive Organic Gas"								

Factor 1 (continued):

Emissions in areas potentially included versus excluded from the nonattainment area

In the review of this factor, data from EPA's Emission Inventory and California Air Resources Board (CARB) has been used. This data is displayed in Figures 1.1 and 1.2. The CARB data was useful because it allowed calculation of included and excluded areas' emission inventories. Also, EPA produced a weighted emission index, referred to as an "L-score" for each county, which is another method of examining emission levels in various counties.

California's recommended PM-2.5 nonattainment area, the South Coast Air Basin, contains most of the anthropogenic emissions in the Los Angeles CMSA. The only excluded areas with significant emissions are population centers (Palm Springs, Lancaster-Palmdale and Victorville-Apple Valley-Hesperia) significantly north or east of Los Angeles. These areas are separated from the Los Angeles area by the San Gabriel, San Bernardino and San Jacinto mountain ranges, which contain the Los Angeles PM2.5 problem to the Los Angeles area. It is not a problem in the excluded areas and prevailing winds in the excluded areas are generally away from the Los Angeles area. Thus, emissions in the excluded areas are not causing or contributing to violations in the Los Angeles area.

The other excluded area is Ventura county, which produces a small portion of the emissions in the Los Angeles CMSA. Most of the development and population in Ventura county is located away from the Los Angeles area and much of the county is separated from the Los Angeles area by mountains.

Six counties adjacent to the Los Angeles CMSA (Clark, NV; Imperial, CA; Inyo, CA; La Paz, AZ; Mohave, AZ; and Santa Barbara, CA) are separated from the Los Angeles area by great distance, mountain ranges, desert or a combination of all three. Thus, this indicates that these counties should not be included in the Los Angeles nonattainment area.

Two counties adjacent to the Los Angeles CMSA are in separate nonattainment areas (e.g. Kern, San Diego) and are separated from the Los Angeles area by mountain ranges. Thus, they are not included in the Los Angeles nonattainment area for those reasons.

EPA concludes that analysis of this factor supports designating the South Coast Air Basin as the nonattainment area for the Los Angeles Metropolitan Area.

Factor 2:

Air Quality in potentially included versus excluded areas

Figure 2.1 (Source: U.S. EPA, Air Quality Subsystem (AQS Database 1999-2003))

ST	COU	Design Values					
		'01-'03		'00-'02		'99-'01	
	C/MSA Total	27.4	NA	28.9	NA	29.8	NA
CA	Los Angeles	22.8	NA	24.4	NA	25.9	NA
CA	San Bernardino	24.5	NA	25.9	NA	25.8	NA
CA	Orange	18.6	NA	20.3	NA	22.4	NA
CA	Riverside	27.4	NA	28.9	NA	29.8	NA
CA	Ventura	14.5	A	14.8	A	14.5	A
NV	Clark	11.0	A	10.9	A	11.0	A
CA	Kern	21.8	NA	22.8	NA	23.7	NA
CA	San Diego	15.9	NA	16.4	NA	17.1	NA
CA	Santa Barbara	9.5	A	9.9	A	13.0	a
CA	Imperial	9.1	A	15.6	NA	15.7	NA
AZ	Mohave						
CA	Inyo	6.2	A	7.8	a	7.6	a
AZ	La Paz						
	Area Total	27.4	NA	28.9	NA	29.8	NA

California's recommended PM-2.5 nonattainment area, the South Coast Air Basin, contains all violating monitors of the Los Angeles CMSA. Thus, violations are not occurring in the excluded portions of the metropolitan area. With respect to adjacent counties, the only monitor that violates in an adjacent county is in Kern county which will be part of the San Joaquin Valley nonattainment area. This area is separated from the Los Angeles area by two mountain ranges.

EPA concludes that analysis of this factor supports designating the South Coast Air Basin as the nonattainment area for the Los Angeles Metropolitan Area.

Factor 3:

Population density and degree of urbanization including commercial development in included versus excluded areas

(Figure 3.1) Source: U.S. Census, 2000 and U.S. EPA Nonattainment Area boundaries.

Population and Population Density				
county	South Coast Air Basin portion of Los Angeles CMSA (area included in nonattainment area)		non-South Coast Air Basin portion of Los Angeles CMSA (area excluded from nonattainment area)	
	Population (included area)	Pop Density (included area)	Population (excluded area)	Population Density (excluded area)
Los Angeles	*9222000	*3693	*298000	*190
Orange	2846289	3607	---	---
Riverside	*1199000	*544	*347000	*68
San Bernardino	*1330000	*1057	*379000	*20
Ventura	---	---	753197	425
Total	*14596289	*2164	*1777000	*65
Source: U.S. Census, 2000 *figure based on estimate of partial county population and/or population density				

California’s recommended nonattainment area has a population density of 2164 persons per square mile. The excluded portion of the Los Angeles CMSA has a population density of 65 persons per square mile. The recommended nonattainment area contains the densely populated portions of the Los Angeles CMSA. It also contains 89% of the CMSA’s population. Furthermore, the excluded areas consist of areas separated from the included areas by topography, and/or sparsely populated deserts.

Counties adjacent to the CMSA are separated from the Los Angeles area by deserts and great distance and are not included in the nonattainment area for that reason.

EPA concludes that analysis of this factor supports designating the South Coast Air Basin as the nonattainment area for the Los Angeles Metropolitan Area.

**Factor 4:
Traffic and commuting patterns**

(Figure 4.1) Source: California Air Resources Board, The 2001 California Almanac of Emissions and Air Quality, Appendix C: Surface Area, Population, and Average Daily Vehicle Miles Traveled.

Vehicle Miles Traveled				
county	South Coast Air Basin portion of Los Angeles CMSA (area included in nonattainment area)		non-South Coast Air Basin portion of Los Angeles CMSA (area excluded from nonattainment area)	
	Average Daily Vehicle Miles Traveled (included area)	VMT as a percentage of LA CMSA (included area)	Average Daily Vehicle Miles Traveled (excluded area)	VMT as a percentage of LA CMSA (excluded area)
Los Angeles	179875902	47.5	3935115	1.0
Orange	67855304	17.9	---	---
Riverside	37266851	9.8	18478676	4.9
San Bernardino	35448320	9.4	17872337	4.7
Ventura	---	---	18215281	4.8
Total	320446377	84.6	58501409	15.4

California's recommended PM-2.5 nonattainment area, the South Coast Air Basin, contains most (84.6%) of the Vehicle Miles Traveled (VMT) for the Los Angeles CMSA.

Other portions of the Los Angeles CMSA outside the South Coast Air Basin account for 15.4% of the VMT for the Los Angeles CMSA. The areas outside the South Coast Air Basin in Los Angeles, Riverside and San Bernardino counties account for 10.6% of the VMT in the Los Angeles CMSA, however, these areas are for the most part, only sparsely populated desert areas separated from the Los Angeles area by the San Gabriel, San Bernardino, and San Jacinto Mountains. The area outside the South Coast Air Basin in Ventura county accounts for 4.8% of the VMT in the Los Angeles CMSA. Most of the population in Ventura county is in the Ventura-Oxnard area. We believe that the distribution of VMT in Ventura county is similar to population and thus that most of the VMT in Ventura county is in the Ventura-Oxnard area. This area is approximately 35 miles from the nearest violating monitor in the Los Angeles area and is separated from the Los Angeles area by the Santa Monica Mountains and Simi Hills and thus does not contribute to violations in the Los Angeles area. The Ventura county community closest to Los Angeles county is Simi Valley, however, its population is only 15% of the entire county and is separated from the Los Angeles area by the Santa Susana mountains, Simi Hills and other topography in the area. We believe that a similarly small proportion of Ventura county VMT is in Simi Valley. Based on VMT data for Ventura county, we believe that this factor does not show that Ventura areas are causing violations in the Los Angeles area.

There are several counties adjacent to the Los Angeles CMSA (Clark, NV; Imperial, CA; Inyo, CA; Kern, CA; La Paz, AZ; Mohave, AZ; Santa Barbara, CA; San Diego, CA) . None of these counties will be included in the Los Angeles nonattainment area based on this factor because these areas are too distant from the Los Angeles area, there is little, if any commuting to the Los Angeles area from these counties, and they are separated by geography from the Los Angeles area. With respect to this factor, these areas do not cause or contribute to violations in the Los Angeles area.

EPA concludes that analysis of this factor supports designating the South Coast Air Basin as the nonattainment area for the Los Angeles Metropolitan Area.

Factor 5: Expected growth (including extent, pattern and rate of growth)

ST	COU	Population & Area					Additional Population Info			
		2002	Area (sq miles)	Density '02	Growth '90-'00	Pct chng '90-'00	1990	2000	Growth '02-'10	Pct chng '02-'10
	C/MSA Total	17,044,188	33,966	502	1,842,116	13	14,531,529	16,373,645	1891964	11
CA	Los Angeles	9,806,577	4,060	2,415	656,174	7	8,863,164	9,519,338	797875	8
CA	San Bernardino	1,816,072	20,062	91	291,054	21	1,418,380	1,709,434	371735	20
CA	Orange	2,938,507	790	3,720	435,733	18	2,410,556	2,846,289	225269	8
CA	Riverside	1,699,112	7,208	236	374,974	32	1,170,413	1,545,387	426425	25
CA	Ventura	783,920	1,846	425	84,181	13	669,016	753,197	70660	9
NV	Clark	1,522,164	7,911	192	634,306	86	741,459	1,375,765	447184	29
CA	Kern	694,059	8,142	85	118,168	22	543,477	661,645	165759	24
CA	San Diego	2,906,660	4,205	691	315,817	13	2,498,016	2,813,833	534776	18
CA	Santa Barbara	403,084	2,739	147	29,739	8	369,608	399,347	65373	16
CA	Imperial	146,248	4,175	35	33,058	30	109,303	142,361	75337	52
AZ	Mohave	165,593	13,312	12	61,535	66	93,497	155,032	28810	17
CA	Inyo	18,214	10,192	2	-336	-2	18,281	17,945	1233	7
AZ	La Paz	19,517	4,500	4	5,871	42	13,844	19,715	5579	29
	Area Total	22,919,727	89,142	257	3,040,274	16	18,919,014	21,959,288	3216015	14

(Figure 5.1) Source: U.S. Census.

California's recommended PM-2.5 nonattainment area, the South Coast Air Basin, contains most of the expected growth for the Los Angeles CMSA. The areas in the Los Angeles CMSA experiencing the greatest population growth during the 1990's were Riverside and San Bernardino counties with growth rates of 21% and 32% respectively. This high rate of growth is expected to continue in these counties. The recommended nonattainment area contains the portions of these counties on the edge and beyond the Los Angeles suburbs, so likely growth and expansion of the populated areas will occur within the recommended nonattainment area.

Ventura county is outside the recommended area, but inside the Los Angeles CMSA. Ventura's growth rate is projected to be 9% through 2010 compared to the slowest growth areas, Los Angeles and Orange counties where growth rates of 8% are projected. Furthermore, Simi Valley, the area of Ventura in closest proximity to Los Angeles, has experienced a slowing of growth and appears to be largely built-out. Thus, we do not expect high rates of growth in this area either.

Some counties adjacent to the CMSA have high rates of growth and/or are projected to, however these counties are separated from the Los Angeles area and its suburbs by some or all of the following: great distances, mountain ranges, deserts and sparsely populated areas and thus do not contribute or cause violations in the Los Angeles area.

Based on analysis of this factor, the recommended area includes the Los Angeles area and nearby areas of expected growth, so the recommended area is appropriate. EPA concludes that analysis of this factor supports designating the South Coast Air Basin as the nonattainment area for the Los Angeles Metropolitan Area.

**Factor 6:
Meteorology (weather/transport patterns)**

California's recommended PM-2.5 nonattainment area, the South Coast Air Basin, experiences high PM-2.5 concentrations throughout the area and these concentrations may occur any time of year. Generally, the highest concentrations occur when winds are light and the atmosphere is stable.

Based on an analysis of wind strength and direction associated with PM-2.5 concentrations, high concentrations are found throughout the South Coast Air Basin, and they tend to occur when winds are light, especially when the average wind speed is below 4 mph. At most monitors, high PM-2.5 concentrations can occur regardless of the wind direction, in fact, most monitors have a bi-modal distribution of high PM-2.5 concentrations with respect to wind direction. Most of these monitors have the same bi-modal distribution of average winds as well, generally from the west to northwest and also from the southeast. It appears that calm to light winds are a more important factor than the direction from which those winds originate.

The abundance of sources in the South Coast Air Basin and widespread distribution of high PM-2.5 concentrations, dependent upon calm-to-light winds and not as dependent upon wind direction suggests that there is enough activity within the basin to generate high PM-2.5 concentrations under many conditions and that high concentrations are not being caused by adjacent areas.

Because mountains nearly surround the South Coast Air Basin, and high PM-2.5 concentrations occur during periods of calm-to-light wind conditions, the source of the high PM-2.5 concentrations is likely within South Coast Air Basin itself. Under these conditions, it's unlikely that transport is bringing precursors into the basin in levels significant enough to cause violations there.

EPA concludes that analysis of this factor supports designating the South Coast Air Basin as the nonattainment area for the Los Angeles Metropolitan Area.

Factor 7:**Geography/topography (mountain ranges or other air basin boundaries)**

California's recommended PM-2.5 nonattainment area, the South Coast Air Basin, is bounded on the southwest by the Pacific Ocean, on the west by the Santa Monica, Santa Susana Mountains and Simi Hills, on the north by the San Gabriel Mountains, on the northeast by the San Bernardino, on the east by the San Jacinto Mountains and on the south by the Santa Ana and coast range mountains. These hills and mountain ranges have elevations of 2,000 to well over 10,000 feet and act as barriers to pollution. Thus, violations in the Los Angeles area are not caused or contributed to by areas outside the South Coast Air Basin.

The excluded areas of the Los Angeles CMSA are separated from the Los Angeles area by the aforementioned mountains and also great distances, and/or deserts.

EPA concludes that analysis of this factor supports designating the South Coast Air Basin as the nonattainment area for the Los Angeles Metropolitan Area.

Factor 8:**Jurisdictional boundaries (e.g., counties, air districts, Reservations, etc.)**

The five counties of the Los Angeles CMSA comprise 33,954 square miles. This area is equivalent to a square that is 184 miles long and 184 miles wide. The Los Angeles metropolitan and urbanized areas, although large, are only a small fraction of the entire Los Angeles CMSA, however, since Los Angeles' development occupies small portions of the area's very large counties, especially Riverside, San Bernardino and Ventura counties, and because CMSA's are comprised of units no smaller than counties (except in New England), this CMSA is much larger than the Los Angeles area. Although this is the presumptive nonattainment area, it is much larger than the Los Angeles area. Furthermore, it is much larger than the area with PM-2.5 NAAQS violations and its accompanying source areas.

The CMSA encompasses fully five different counties, four different local air districts, coastal regions, alpine mountain regions as well as both low and high deserts.

California's recommended PM-2.5 nonattainment area, the South Coast Air Basin, is under the jurisdiction of the South Coast Air Quality Management District and includes Los Angeles and its adjacent urban areas, including those in other counties.

The other air districts within the Los Angeles CMSA are separate agencies that due to geography and distance from Los Angeles, are not included in the Los Angeles nonattainment area.

To the west of the South Coast Air Basin is the Ventura County Air Pollution Control District, which has been a separate air quality planning entity, with its own board of elected officials and distinct responsibilities for all air quality planning, regulatory development, enforcement, and public participation activities, with the exception of those programs that are conducted under the jurisdiction of a State agency (mobile source standards, consumer products, pesticides, motor vehicle inspection and maintenance, etc.). Because of the long history of effective statewide planning and independent agency planning, and because of differences in structure and approach between the air pollution control boards of the Ventura and South Coast, it is likely that compelling the two areas to share jurisdictional responsibility for air quality planning in an expanded nonattainment area would interfere with, rather than promote, harmonious and efficient air quality planning. Ventura County, although given an attainment designation for PM-2.5, would nonetheless continue its efforts to reduce direct and indirect emissions, as explained further in the analysis of Factor 9.

To the northeast of South Coast Air Basin are the Antelope Valley Air Pollution Control District and the Mojave Desert Air Quality Management District. These areas, although part of the Los Angeles CMSA, are separated from the Los Angeles area by the San Gabriel and San Bernardino mountain ranges, which have elevations over 10,000 feet. For that reason, these areas should not be included in the Los Angeles nonattainment area.

Moreover, the South Coast AQMD has a long history of analyzing and addressing existing and potential transport problems affecting downwind jurisdictions. Finally, coordinated rule development and transport mitigation occurs throughout California because of various provisions of the California Clean Air Act and subsequent legislation, along with the activities of the California Air Pollution Control Officers Association.

EPA concludes that analysis of this factor supports designating the South Coast Air Basin as the nonattainment area for the Los Angeles Metropolitan Area.

**Factor 9:
Level of control of emissions sources**

California's recommended PM-2.5 nonattainment area, the South Coast Air Basin, is currently the only area in the nation with an extreme designation for the 1-hour ozone standard. It has also been designated 'severe-17' for the 8-hour ozone standard. The area has some of the most stringent controls in the nation.

This factor is not relevant for other Los Angeles CMSA areas in the Mojave Desert because they are separated from the Los Angeles area by mountains.

Ventura county is also in large part, separate from the Los Angeles area by topography and distance, with just one community near Los Angeles county (although this area, Simi Valley, is also separated from Los Angeles by a mountain pass). Nevertheless, the level of control of emissions sources in Ventura county is already high and expected to become more stringent, even without a nonattainment designation in Ventura county. The nature of this control is summarized below:

- (1) Ventura County APCD and South Coast AQMD already have a very high level of control of PM precursor emissions, and the agencies are undertaking further progressive control strategy development activities to achieve further control as needed to attain and maintain the NAAQS.
 - (2) Although it is not proposed to be designated nonattainment for the federal PM2.5 NAAQS, Ventura is designated nonattainment for the extremely stringent California PM10 NAAQS and must therefore pursue feasible controls to reduce PM concentrations.
 - (3) The County is also classified as a moderate nonattainment area for the Federal 8-hour ozone NAAQS. Since the two principal ozone precursors are also PM precursors in Ventura, the Ventura County APCD must continue to pursue stringent controls of NOx and VOC in order to attain the 8-hour ozone NAAQS and these controls will benefit PM concentrations.
 - (4) A large part of the PM precursors are under the State's jurisdiction, and the involved State agencies are planning to adopt additional stringent emission controls on a Statewide basis.
 - (5) Attaining the PM2.5 NAAQS is expected to require the South Coast AQMD and the State to adopt a level of emissions control far in excess of what would be needed to ensure continued maintenance in Ventura County.
- Thus, designating Ventura County as part of the South Coast PM2.5 nonattainment area is not likely to affect the level of emissions control applicable in the area or upwind in the South Coast.

EPA concludes that analysis of this factor supports designating the South Coast Air Basin as the nonattainment area for the Los Angeles Metropolitan Area.