

US EPA ARCHIVE DOCUMENT

Technical Support Document for 2008 Ozone NAAQS Designations

California Area Designations for the 2008 Ozone National Ambient Air Quality Standards

The table below identifies the areas and associated counties or parts of counties in California that EPA intends to designate as nonattainment for the 2008 ozone national ambient air quality standards (2008 NAAQS). In accordance with section 107(d) of the Clean Air Act, EPA must designate an area “nonattainment” if it is violating the 2008 ozone NAAQS or if it is contributing to a violation of the 2008 ozone NAAQS in a nearby area. The technical analyses supporting the boundaries for the individual nonattainment areas are provided below.

Intended Nonattainment Areas in California

| Area | California’s Recommended Nonattainment Counties | EPA’s Intended Nonattainment Counties |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Amador and Calaveras Counties (Central Mountain Counties)* | Calaveras County | Amador County and Calaveras County |
| Chico (Butte County)* | Butte County | Butte County |
| Imperial County* | Imperial County | Imperial County |
| Kern County (Eastern Kern, excluding Indian Wells Valley) | Kern County (Eastern Kern, excluding Indian Wells Valley) | Kern County (Eastern Kern, excluding Indian Wells Valley) |
| Los Angeles-San Bernardino (West Mojave Desert)* | San Bernardino County (Mojave Desert Air Basin portion) as a separate nonattainment area from Los Angeles County (Antelope Valley portion or Mojave Desert Air Basin portion) nonattainment area | San Bernardino County (Mojave Desert Air Basin portion), and Los Angeles County (Antelope Valley portion or Mojave Desert Air Basin portion) |
| Los Angeles-South Coast Air Basin* | Los Angeles County (South Coast Air Basin portion which includes Santa Catalina and San Clemente Islands), Orange County, San Bernardino County (South Coast Air Basin portion), Riverside County (South Coast Air Basin portion) | Los Angeles County (South Coast Air Basin portion which includes Santa Catalina and San Clemente Islands), Orange County, San Bernardino County (South Coast Air Basin portion), Riverside County (South Coast Air Basin portion) |
| Mariposa and Tuolumne Counties (Southern Mountain Counties)* | Mariposa County | Mariposa County and Tuolumne County |
| Nevada County (Western part) | Nevada County (Western part) | Nevada County (Western part) |
| Tuscan Buttes | Tehama County (Tuscan Buttes portion, above 1,800 feet elevation) | Tehama County (Tuscan Buttes portion, above 1,800 feet elevation) |

| | | |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Riverside County (Coachella Valley)* | Riverside County (Salton Sea Air Basin portion) | Riverside County (Salton Sea Air Basin portion) |
| Sacramento Metro* | Sacramento County, Yolo County, Solano County (Sacramento Valley Air Basin portion), Sutter County (southern portion), El Dorado County (Sacramento Valley Air Basin portion), Placer County (Sacramento Valley Air Basin portion) | Sacramento County, Yolo County, Solano County (Sacramento Valley Air Basin portion), Sutter County (southern portion), El Dorado County (Sacramento Valley Air Basin portion), Placer County (Sacramento Valley Air Basin portion) |
| San Diego County* | San Diego County | San Diego County |
| San Francisco Bay Area* | San Francisco County, Marin County, Sonoma County (San Francisco Bay Air Basin portion), Napa County, Solano County (San Francisco Bay Air Basin portion), Contra Costa County, Alameda County, Santa Clara County, San Mateo County | San Francisco County, Marin County, Sonoma County (San Francisco Bay Air Basin portion), Napa County, Solano County (San Francisco Bay Air Basin portion), Contra Costa County, Alameda County, Santa Clara County, San Mateo County |
| San Joaquin Valley* | San Joaquin County, Stanislaus County, Merced County, Madera County, Fresno County, Kings County, Tulare County, Kern County (San Joaquin Air Basin portion) | San Joaquin County, Stanislaus County, Merced County, Madera County, Fresno County, Kings County, Tulare County, Kern County (San Joaquin Air Basin portion) |
| San Luis Obispo (Eastern San Luis Obispo) | San Luis Obispo County (Eastern San Luis Obispo) | San Luis Obispo County (Eastern San Luis Obispo) |
| Ventura County (continental portion) | Continental portion of Ventura County (excludes Anacapa and San Nicolas islands) | Continental portion of Ventura County (excludes Anacapa and San Nicolas islands) |

EPA intended modifications to state recommendations are shown in **bold**.

*Indicates multi-jurisdictional nonattainment area or areas that include Indian country. Table 1, contained in the Technical Analysis section of each nonattainment area discussion, identifies the areas of Indian country that EPA intends to designate as part of the nonattainment area.

Designation of a state area may also affect Indian country. Areas of Indian country are located within the boundaries of the following intended nonattainment areas: Amador and Calaveras Counties (Central Mountain Counties), Chico (Butte County), Imperial County, Los Angeles-San Bernardino (West

Mojave Desert), Los Angeles-South Coast Air Basin, Mariposa and Tuolumne Counties (Southern Mountain Counties), Riverside County (Coachella Valley), Sacramento Metro, San Diego County, San Francisco Bay Area, and San Joaquin Valley.¹ Designation of areas of Indian country is discussed in the technical analyses for each intended nonattainment area.

EPA intends to designate the remaining counties, portions of counties, and areas of Indian country in California as “unclassifiable/attainment” for the 2008 ozone NAAQS.

The analysis below provides the basis for intended nonattainment area boundaries. It relies on our analysis of which monitors are violating the 2008 ozone NAAQS and an evaluation of whether nearby areas are contributing to such violations. California Air Resources Board (ARB) sent revised designation recommendations in 2011 that relied upon preliminary 2011 monitoring data for several areas. (Letter from Lynn Terry, Deputy Executive Officer, California Air Resources Board, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, dated October 12, 2011.) These areas include the following counties: Amador and Calaveras (intended Central Mountain Counties nonattainment area), Mariposa and Tuolumne (intended Southern Mountain Counties nonattainment area), Monterey, Nevada (intended Nevada County (Western part) nonattainment area), Sacramento County (included as part of the intended Sacramento Metro nonattainment area), San Benito, San Diego (intended San Diego County nonattainment area), San Luis Obispo (intended San Luis Obispo (Eastern San Luis Obispo) nonattainment area), Santa Barbara, Santa Cruz, Shasta, Sutter, and Tehama (intended Tuscan Buttes nonattainment area).

For each of the intended nonattainment areas, we are basing our designation recommendation on certified 2008-2010 data, while incorporating consideration of these preliminary 2011 data into the Technical Analysis for each area listed above, per the state’s request. In addition, 2008-2010 data from San Benito County, Santa Barbara County and Sutter County show these areas to be violating the 2008 ozone NAAQS. Preliminary 2009-2011 data show these three counties to be attaining the NAAQS. EPA anticipates designating San Benito County, Santa Barbara County, and the northern portion of Sutter County unclassifiable/attainment based on 2009-2011 data. Should the 2011 data not be certified in time to be used with EPA’s final designations, or should the 2011 data show the areas to be violating the standard, EPA will reconsider its designation. Data for Monterey, Santa Cruz, and Shasta counties show attainment using both 2010 data and preliminary 2011 data; therefore EPA intends to designate these areas unclassifiable/attainment.

EPA has evaluated contributions from nearby areas based on a weight of evidence analysis considering the factors identified below. EPA issued guidance on December 4, 2008 that identified these factors as ones EPA would consider in determining nonattainment area boundaries and recommended that states consider these factors in making their designations recommendations to EPA.²

¹ Bishop Paiute is a federally recognized tribe that is located in Inyo County. Currently, 2008-2010 monitoring data as well as preliminary 2009-2011 data show Inyo County attaining the 2008 ozone NAAQS. In February 2009, the Bishop Paiute Reservation recommended that the portions of Bishop Paiute in Inyo County be designated as “attainment/unclassifiable” for the 2008 ozone NAAQS. (Letter from Monty Bengochia, Tribal Chairman, Bishop Paiute Tribe, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, February 26, 2009.) EPA agrees that the portions of Bishop Paiute located in Inyo County should be designated as unclassifiable/attainment, consistent with the surrounding area.

² The December 4, 2008 guidance memorandum “Area Designations for the 2008 Revised Ozone National Ambient Air Quality Standards” refers to 9 factors. In this technical support document we have grouped the emissions-related factors together under the heading of “Emissions and Emissions-Related Data,” which results in 5 categories of factors.

1. Air quality data (including the design value calculated for each federal reference method (FRM) or federal equivalent method (FEM) monitor in the area);
2. Emissions and emissions-related data (including location of sources and population, amount of emissions and emissions controls, and urban growth patterns);
3. Meteorology (weather/transport patterns);
4. Geography and topography (mountain ranges or other basin boundaries); and
5. Jurisdictional boundaries (e.g., counties, air districts, existing nonattainment areas, Indian country, metropolitan planning organizations (MPOs)).

Ground-level ozone generally is not emitted directly into the air, but is created by chemical reactions between oxides of nitrogen (NO_x) and volatile organic compounds (VOC) in the presence of sunlight. Because NO_x and VOC emissions from a broad range of sources over a wide area typically contribute to violations of the ozone standards, EPA believes it is important to consider whether there are contributing emissions from a broad geographic area. Accordingly, EPA chose to examine the 5 factors with respect to the larger of the Combined Statistical Area (CSA) or Core Based Statistical Area (CBSA) associated with the violating monitor(s).³ All data and information used by EPA in this evaluation are the latest available to EPA and/or provided to EPA by states or tribes.

In EPA's designations guidance for the 2008 ozone NAAQS EPA recommended examining CSA/CBSAs because certain factors used to establish CSAs and CBSAs are similar to the factors EPA is using in this technical analysis to determine if a nearby area is contributing to a violation of the 2008 ozone NAAQS. Congress required a similar approach in 1990 for areas classified as serious or above for the 1-hour ozone standard and EPA used the same basic approach in the designation process for the 1997 ozone NAAQS. Where a violating monitor is not located in a CSA or CBSA, EPA's guidance recommended using the boundary of the county containing the violating monitor as the starting point for considering the nonattainment area's boundary.

³ Lists of CBSAs and CSAs and their geographic components are provided at www.census.gov/population/www/metroareas/metrodef.html. The lists are periodically updated by the Office of Management and Budget. EPA used the most recent update, based on 2008 population estimates, issued on December 1, 2009 (OMB Bulletin No. 10-02).

Technical Support Document for 2008 Ozone NAAQS Designations

California Area Designations for the 2008 Ozone National Ambient Air Quality Standards

Technical Analysis for Amador and Calaveras Counties (Central Mountain Counties)

Figure 1 is a map of the Central Mountain Counties intended nonattainment area. The map provides other relevant information including the locations and design values of air quality monitors, county names and boundaries and indicates EPA's intended nonattainment designation. Also shown is the boundary of the existing area that is designated nonattainment for the 1997 8-hour ozone NAAQS.

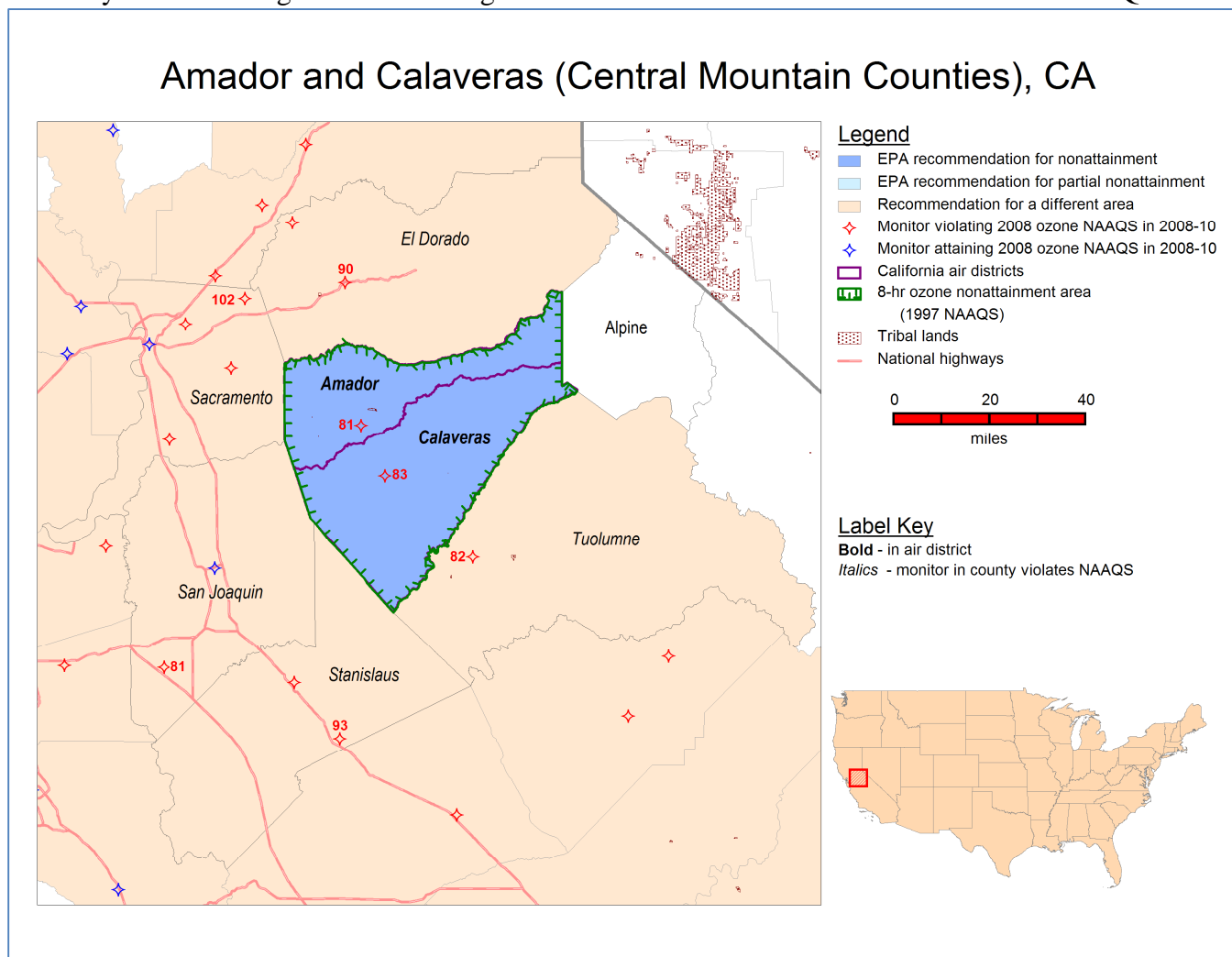


Figure 1

Note: The map shown in Figure 1 provides 8-hour ozone design values in parts per billion (ppb) based on data from the 2008-2010 period (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. For each particular area, Factor 1 and Appendix 3 describe the air quality data relevant for our intended nonattainment decisions.

The Central Mountain Counties area has previously-established nonattainment boundaries associated with the 1997 8-hour ozone NAAQS. EPA had proposed in December 2003 that these counties, along with two other violating mountain counties, be designated as part of the San Joaquin Valley nonattainment area for the 1997 ozone standard. EPA believed, as we still believe, that the strongest contribution to the violations in the mountain counties comes from the San Joaquin Valley. However, the state requested grouping Amador and Calaveras as one nonattainment area, separate from the San Joaquin Valley area, citing existing inter-county coordination, similarities in pollution transport paths, and support from the other factors analyzed. EPA accepted the state's recommendations and in 2004 designated Amador and Calaveras Counties as one multi-jurisdictional nonattainment area (Central Mountain Counties). Several areas of Indian country were included in the nonattainment area. These are the same tribes that are listed in Table 1, below.

In March 2009, California recommended that the same counties be designated as "nonattainment" for the 2008 ozone NAAQS based on air quality data from 2006-2008. (Letter from James Goldstene, Executive Officer, California Air Resources Board, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, dated March 11, 2009.) California provided an update to the original recommendation in October 2011 based on air quality data from 2008-2010 and preliminary 2009-2011 data. Based on preliminary 2011 air quality data, California revised its recommendation for the intended Central Mountain Counties nonattainment area to include only Calaveras County and to exclude Amador County. The 2009 and 2011 recommendations are based on data from Federal Equivalent Method (FEM) monitors sited and operated in accordance with 40 CFR Part 58. (Letter from Lynn Terry, Deputy Executive Officer, California Air Resources Board, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, dated October 12, 2011.)

After considering these recommendations and based on EPA's technical analysis described below, EPA intends to designate both Amador and Calaveras Counties (identified in Table 1 below) as "nonattainment" for the 2008 ozone NAAQS, comprising the Central Mountain Counties multi-jurisdictional nonattainment area.

Table 1. State's or Tribe's Recommended and EPA's Intended Designated Nonattainment Counties or Areas of Indian country for the Central Mountain Counties.

| Central Mountain Counties | State or Tribe-Recommended Nonattainment Counties or Areas in Indian country | EPA Intended Nonattainment Counties or Areas in Indian Country |
|-------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------|
| Amador County | Attainment | Amador County |
| Calaveras County | Calaveras County | Calaveras County |
| Buena Vista Rancheria of Me-Wuk Indians of California | N/A | Buena Vista Rancheria of Me-Wuk Indians of California |
| California Valley Miwok Tribe ¹ | N/A | California Valley Miwok Tribe |
| Jackson Rancheria of Me-Wuk Indians ² | N/A | Jackson Rancheria of Me-Wuk Indians |
| Ione Band of Miwok Indians of California | N/A | Ione Band of Miwok Indians of California |

p = partial

EPA intended modifications to state or tribe recommendations are shown in **bold**.

N/A = Tribe did not submit a recommendation.

¹California Valley Miwok Tribe has lands in the Central Mountain Counties and San Joaquin Valley nonattainment areas. Non-contiguous lands of the California Valley Miwok Tribe will be designated with the surrounding nonattainment areas. This technical analysis addresses only those areas of Indian country within the intended Central Mountain Counties nonattainment area.

²Jackson Rancheria has land in both the Central Mountain Counties and the Southern Mountain Counties. Non-contiguous lands of the Jackson Rancheria will be designated with the surrounding nonattainment areas. This technical analysis addresses only those areas of Indian country within the intended Central Mountain Counties nonattainment area.

Factor Assessment

Factor 1: Air Quality Data

For this factor, we considered 8-hour ozone design values in parts per million (ppm) for air quality monitors in counties in the existing Central Mountain Counties nonattainment area, based on data from the 2008-2010 period (i.e., the 2010 design value, or DV) and preliminary data from the 2009-2011 period (i.e., the preliminary 2011 DV). A monitor's DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2008 ozone NAAQS are met at a monitor when the annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years, is 0.075 ppm (75 parts per billion (ppb)) or less. A DV is only valid if minimum data completeness criteria are met. See 40 CFR part 50 Appendix P. Where several monitors are located in a county (or a designated nonattainment area or maintenance area), the DV for the county or area is determined by the monitor with the highest level.

[Note: Monitors that are eligible for providing design value data generally include State and Local Air Monitoring Stations (SLAMS) that are sited in accordance with 40 CFR Part 58, Appendix D (Section 4.1) and operating with a federal reference method (FRM) or federal equivalent method (FEM) monitor that meets the requirements of 40 CFR part 58, appendix A. All data from a special purpose monitor (SPM) using an FRM or FEM which has operated for more than 24 months is eligible for comparison to

the NAAQS unless the monitoring agency demonstrates that the data came from a particular period during which the requirements of appendix A (quality assurance requirements) or appendix E (probe and monitoring path siting criteria) were not met.]

Certified, quality assured data are available in EPA's Air Quality System (AQS) for all areas through calendar year 2010. Ozone monitors relevant for comparison to the NAAQS and information from additional data sources within the existing Central Mountain Counties nonattainment area are shown in Appendix 1. The 2010 DVs for the ozone NAAQS for counties in the existing Central Mountain Counties nonattainment area are shown in Table 2.

Table 2. Air Quality Data.

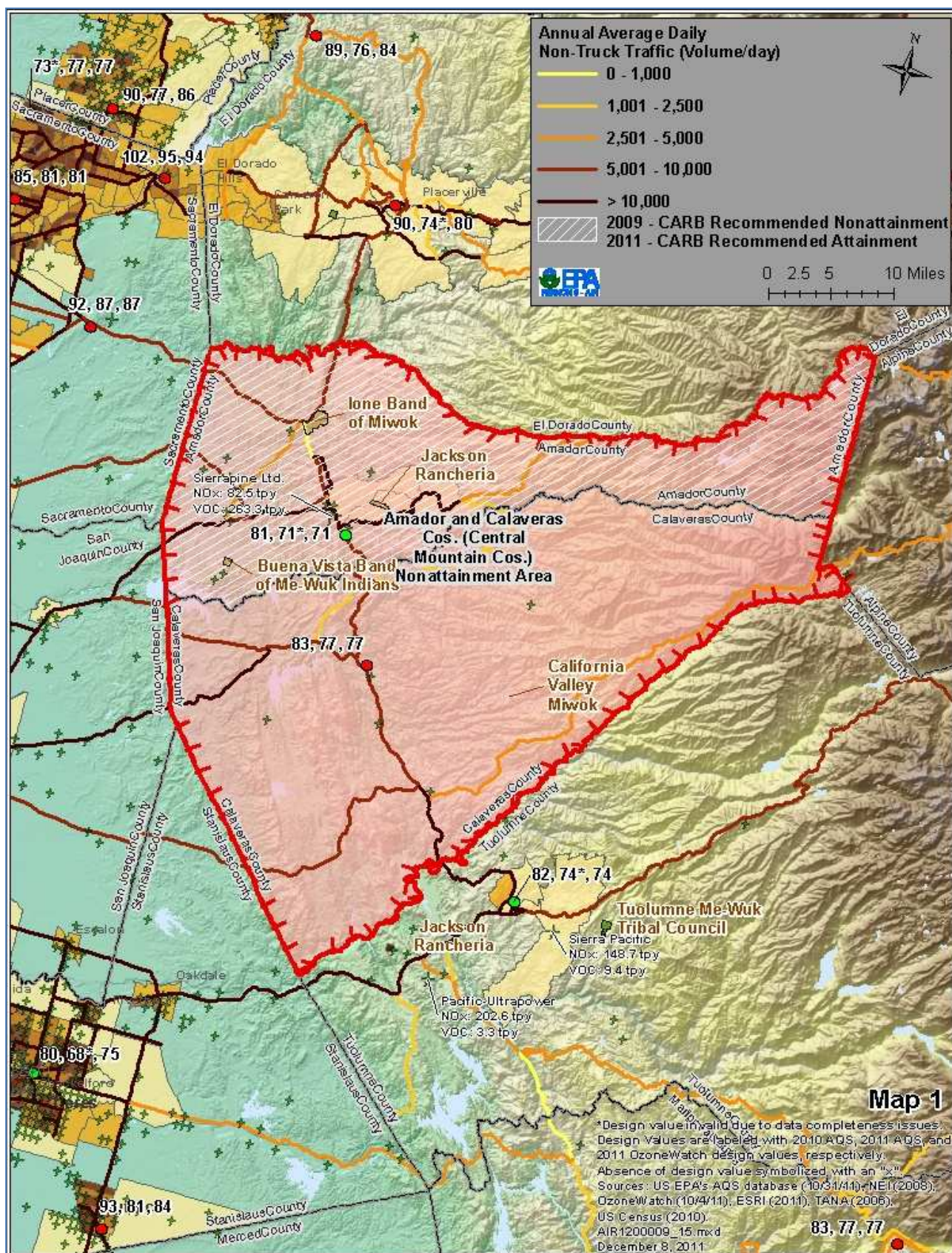
| County | State Recommended Nonattainment? | 2008-2010 Design Value (parts per billion) |
|---------------|----------------------------------|--------------------------------------------|
| Amador, CA | No | 81 |
| Calaveras, CA | Yes | 83 |

California Air Resources Board (ARB) based its 2011 designation recommendation for Amador and Calaveras Counties on preliminary 2011 data. California's ozone season encompasses the entire year. Preliminary data from part of calendar year 2011 is available in AQS for most areas, however, these data have not yet been certified and quality assured. States are required to certify data by May 1st of the following year. ARB has indicated that it plans to certify 2011 data early for Amador and Calaveras Counties. EPA's designation recommendation for this area is therefore based on certified 2008-2010 data and is further informed by preliminary 2009-2011 data.

Maps contained in Appendix 1 show the geographic distribution of monitors. Maps 1 and 1b show monitor locations for the existing Central Mountain Counties nonattainment area. For each monitor, Appendix 1 lists the monitor, the 2008-2010 DV (certified and quality assured in AQS), the preliminary 2009-2011 DV (as available in AQS as of October 31, 2011), and a preliminary 2009-2011 DV using 2011 data from OzoneWatch¹. Absence of a DV is symbolized with an "x".

Appendix 3 lists preliminary 2009-2011 DVs for Amador and Calaveras Counties, either from AQS (as available in AQS as of October 31, 2011) or from OzoneWatch (as calculated on October 4, 2011). Appendix 3 lists the higher of these two preliminary 2009-2011 DVs. Monitors shown in bold are the DV monitors (i.e., the monitor with the highest DV) for each individual county. Monitors shown in red font are the DV monitor for the nonattainment area. Values with an asterisk do not meet data completeness, and therefore those DVs are not relevant for comparison to the NAAQS and are solely provided for informational purposes.

¹ The preliminary 2009-2011 design values indicated by OzoneWatch are based on AQS ozone data from 2009, 2010, and 2011, supplemented with 2011 data reported to AirNow (<http://airnow.gov/>) on days for which no data currently exist in the AQS database. 2009 and 2010 AQS data were retrieved on July 20, 2011; 2011 AQS and AirNow data were compiled on October 4, 2011. Ultimately, attainment of the 8-hour ozone NAAQS will be determined entirely from data in AQS.



From Appendix 1, Map 1: For map legend describing monitors, emissions, traffic, population, and boundaries, see Appendix 1.

2010 DV data indicate that both Amador County and Calaveras County contain violating monitors. Preliminary 2011 DV data indicate that Calaveras continues to violate the 2008 ozone standard, while the monitor in Amador County may be attaining. The variable nature of the DV trend observed in Amador and Calaveras Counties over the past decade makes it difficult to determine whether Amador County will continue to attain the standard. Additionally, the sparse monitoring network in these two counties makes it difficult to determine solely from air quality data whether Amador County is contributing to ozone levels in Calaveras. EPA notes that the monitor in Amador County is upwind of the sources we expect may contribute to ozone in both Amador and Calaveras Counties.

Based on 2008-2010 data, monitors in both Amador County and Calaveras County are violating the 2008 standard and are thus included in the intended Central Mountain Counties nonattainment area. A county (or partial county) must also be designated nonattainment if it contributes to a violation in a nearby area. Each county without a violating monitor that is located near a county with a violating monitor has been evaluated based on the weight of evidence of the five factors to determine whether it contributes to the nearby violation.

Factor 2: Emissions and Emissions-Related Data

EPA evaluated emissions of ozone precursors, nitrogen oxides (NO_x) and volatile organic compounds (VOC), and other emissions-related data that provide information on areas contributing to violating monitors.

Emissions data

EPA evaluated county-level emission data for NO_x and VOC derived from the 2008 National Emissions Inventory (NEI), version 1.5. This is the most recently available NEI. (See <http://www.epa.gov/ttn/chief/net/2008inventory.html>) Emissions in a nearby area indicate the potential for the area to contribute to observed violations. We will also consider any additional information we receive on changes to emissions levels that are not reflected in recent inventories. These changes include emissions reductions due to permanent and enforceable emissions controls that will be in place before final designations are issued, and emissions increases due to new sources.

Table 3 shows emissions of NO_x and VOC (given in tons per year) for violating and nearby counties that we considered for inclusion in the intended Central Mountain Counties nonattainment area.

Table 3. Total 2008 NO_x and VOC Emissions.

| County | State Recommended Nonattainment? | NO _x (tpy) | VOC (tpy) |
|---------------|----------------------------------|-----------------------|-----------|
| Amador, CA | No | 1,785 | 2,496 |
| Calaveras, CA | Yes | 1,792 | 3,558 |
| Areawide: | | 3,578 | 6,054 |

Both NO_x and VOC are precursors to formation of ozone in ambient air. Although Calaveras County has slightly higher emissions of VOC than Amador County, the two counties are similar to each other in terms of their emissions of NO_x. Map 1 in Appendix 1 indicates that stationary sources of ozone precursor emissions are mostly located in Amador County, including SierraPine Ltd., the largest source of VOC in the existing Central Mountain Counties nonattainment area. However, emissions of ozone

precursors in the adjacent counties in the Sacramento and San Joaquin Valleys bordering Amador and Calaveras Counties (Sacramento, San Joaquin, and Stanislaus Counties) are significantly greater than emissions from Amador and Calaveras Counties. Emissions of NO_x and VOC from Sacramento County in 2008 were over 27,000 and over 21,000 tpy, respectively; from San Joaquin County were nearly 32,000 and over 17,000 tpy, respectively; and from Stanislaus County were over 15,000 tpy and over 16,000 tpy, respectively.

Population density and degree of urbanization

EPA evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. These include ozone-creating emissions from on-road and off-road vehicles and engines, consumer products, residential fuel combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NO_x and VOC emissions, which contribute to ozone formation. Rapid population growth or growth in vehicle miles traveled (VMT) (see below) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the area associated with area source and mobile source emissions as part of the nonattainment area. Table 4 shows the population, population density, and population growth information for each county in the area.

Table 4. Population and Growth.

| County | State Recommended Nonattainment? | 2010 Population | 2010 Population Density (1000 pop/sq mi) | Absolute change in population (2000-2010) | Population % change (2000-2010) |
|---------------|----------------------------------|-----------------|------------------------------------------|-------------------------------------------|---------------------------------|
| Amador, CA | No | 38,091 | 0.06 | 2,916 | +8% |
| Calaveras, CA | Yes | 45,578 | 0.04 | 4,880 | +12% |
| Areawide: | | 83,669 | 0.05 | 7,796 | +10% |

Sources: U.S. Census Bureau population estimates for 2010 as of August 4, 2011

(http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_PL_GCTPL2.STO5&prodType=table)

Maps 1 and 1a in Appendices 1 and 2, respectively, show population for the area. The small populations and low population densities of Amador and Calaveras Counties show that this area is sparsely populated. Although the population of Calaveras County is larger than Amador County, the population density of Amador County is greater than Calaveras County because Calaveras County encompasses a larger land area than Amador County. Additionally, Map 1a shows that Amador County contains a population center surrounding Jackson Rancheria, whereas Calaveras County contains no discrete population centers. For ozone, population is an indicator of ozone precursor emissions. During the period from 2000 to 2010, both counties showed population growth, with slightly larger growth, both in terms of absolute change and percent change, in Calaveras County.

Traffic (VMT) data

EPA evaluated the commuting patterns of residents in the area, as well as the total VMT for each county. In combination with the population/population density data and the location of main transportation arteries (see above), this information helps identify the probable location of non-point source emissions. A county with high VMT is generally an integral part of an urban area and indicates the presence of motor vehicle emissions that may contribute to ozone formation and nonattainment in the area. Rapid population or VMT growth in a county on the urban perimeter signifies increasing

integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 5 shows total 2008 VMT.

Table 5. Traffic (VMT) data.

| County | State Recommended Nonattainment? | 2008 VMT* (million miles) |
|---------------|----------------------------------|---------------------------|
| Amador, CA | No | 640 |
| Calaveras, CA | Yes | 747 |
| Areawide: | | 1,387 |

* MOBILE model VMTs are those inputs into the NEI version 1.5.

Total VMT in Amador and Calaveras Counties are similar. Calaveras County has a slightly higher VMT, which may be associated with the larger area of the county. Maps 1 and 1b in Appendix 1 show annual average daily non-truck and truck traffic volumes. Heavy non-truck traffic occurs on roads that run north-south and link Amador and Calaveras Counties, as well as east-west that link these two counties with San Joaquin and Stanislaus Counties. Heaviest truck traffic occurs on a roadway that links Amador County with San Joaquin County. Truck and non-truck traffic is lightest on roads that link Amador and Calaveras Counties with El Dorado and Alpine Counties to the east.

Factor 3: Meteorology (weather/transport patterns)

EPA evaluated available meteorological data to help determine how meteorological conditions, such as weather, transport patterns and stagnation, would affect the fate and transport of precursor emissions contributing to ozone formation.

Amador and Calaveras counties are the center counties of the “Mountain Counties Air Basin” as defined by ARB². Summers are generally fairly warm and dry, but there can be periods of quite cool weather. Depending on the meteorological station, in summer months, normal low temperatures range from 46 to 60 degrees Fahrenheit (8 to 16 degrees Celsius), and normal highs range from 74 to 96 degrees F (23 to 35 degrees C). Winds are generally daytime upslope and nighttime downslope flows, caused by the differential heating or cooling of air near mountain ground surfaces relative to air at the same height over land at lower elevations. Such flows follow the east-northeast and west-southwest orientation of the river valleys, described under Factor 4. This is generally consistent with the south-southwest flow in Amador and Calaveras counties seen in the 30-year average direction frequencies computed by EPA, as shown in the “radar”-style wind rose diagram below (see Figure 2). However, it should be noted that this diagram combines flows from multiple meteorological stations, from parts of the counties that do not all have the same valley orientation.

² <http://www.arb.ca.gov/ei/maps/statemap/abmap.htm>

Central Mountain Counties Wind Direction Frequency

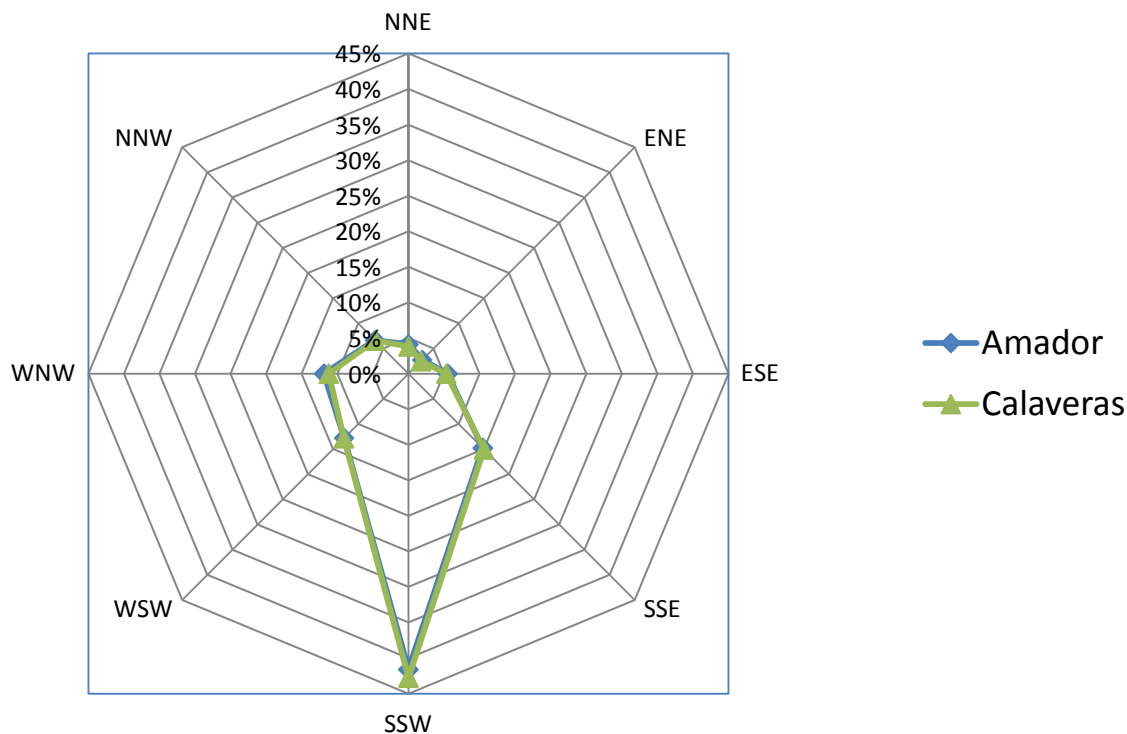


Figure 2

Neighboring San Joaquin Valley (SJV) can have temperature inversions from 2,000 to 2,500 feet (600 to 750 meters) above the valley floor, or even as high as 5,000 feet (1,500 meters). Ozone produced in the SJV and trapped under this inversion can reach fairly high into the mountain counties, or be advected there by daytime upslope flows. Previous assessments of transport by ARB³ have found a strong potential for ozone transport from the Sacramento and San Joaquin valleys up into the mountain counties. Nighttime drainage flows reverse this, so some of this pollution, in combination with pollution generated in the mountain counties themselves, could be transported back into the valley, with the potential for some carryover into subsequent days.

North-south flow between Amador and Calaveras Counties is likely as there are fewer barriers to this transport pattern due to the weaker topographic relief in the western parts of both counties. There is likely some transport of pollutants between these two counties, as well as transport from the Sacramento and San Joaquin areas. Additionally, EPA notes that 2011 was anomalously cool, potentially creating localized ozone patterns that are not representative of expected normal conditions or ongoing trends.

³ "Assessment of the Impacts of Transported Pollutants on Ozone Concentrations in California". California Environmental Protection Agency, Air Resources Board, March 2001. <http://www.arb.ca.gov/aqd/transport/assessments/assessments.htm>

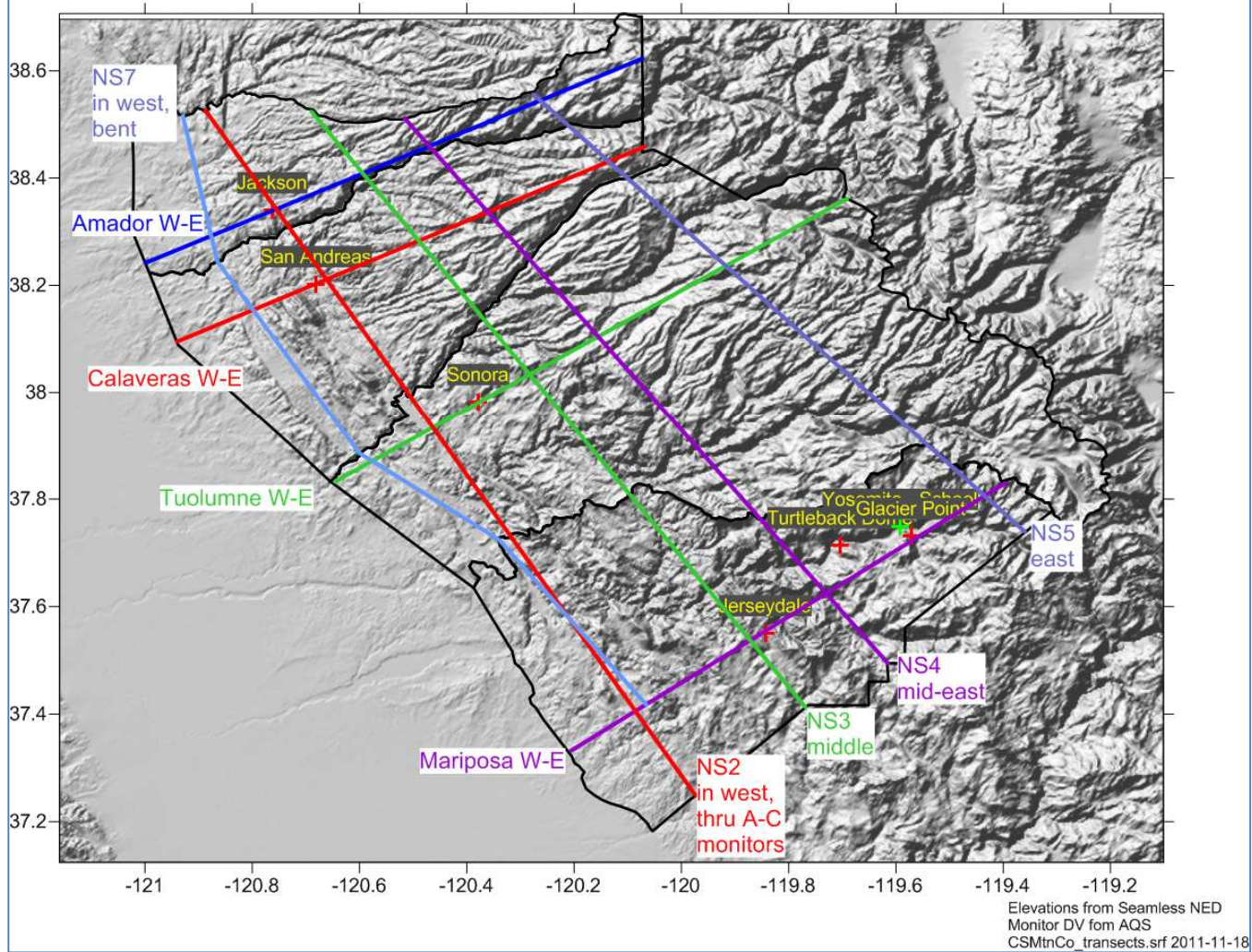
Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis evaluates the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the area.

Amador and Calaveras counties are the center counties of the “Mountain Counties Air Basin” as defined by ARB. This is not a “basin” in the sense of a single watershed or an area that is more or less surrounded by high terrain. Rather it is a group of rural and largely mountainous counties that are similar in their better air quality, more pronounced topography, and rural character as compared to the more polluted, flatter, and more populous areas to the west (the broad Sacramento and San Joaquin valleys of central California). Both counties are in the foothills and mountains of the Sierra Nevada mountain range. Elevations increase from about 100 feet (24 meters) above mean sea level (MSL) in the west to over 8,000 feet (2,500 meters) in the east. The counties are characterized by rivers running roughly east-northeast to west-southwest, separated by mountains. The largest rivers are the Mokelumne River along the Amador-Calaveras border, the Calaveras River within Calaveras County, and the Stanislaus River along the southern boundary of Calaveras County. These rivers and their various forks and tributaries divide the counties into deep valleys. The strong relief of the terrain may be seen in Appendix 1, Map 1.

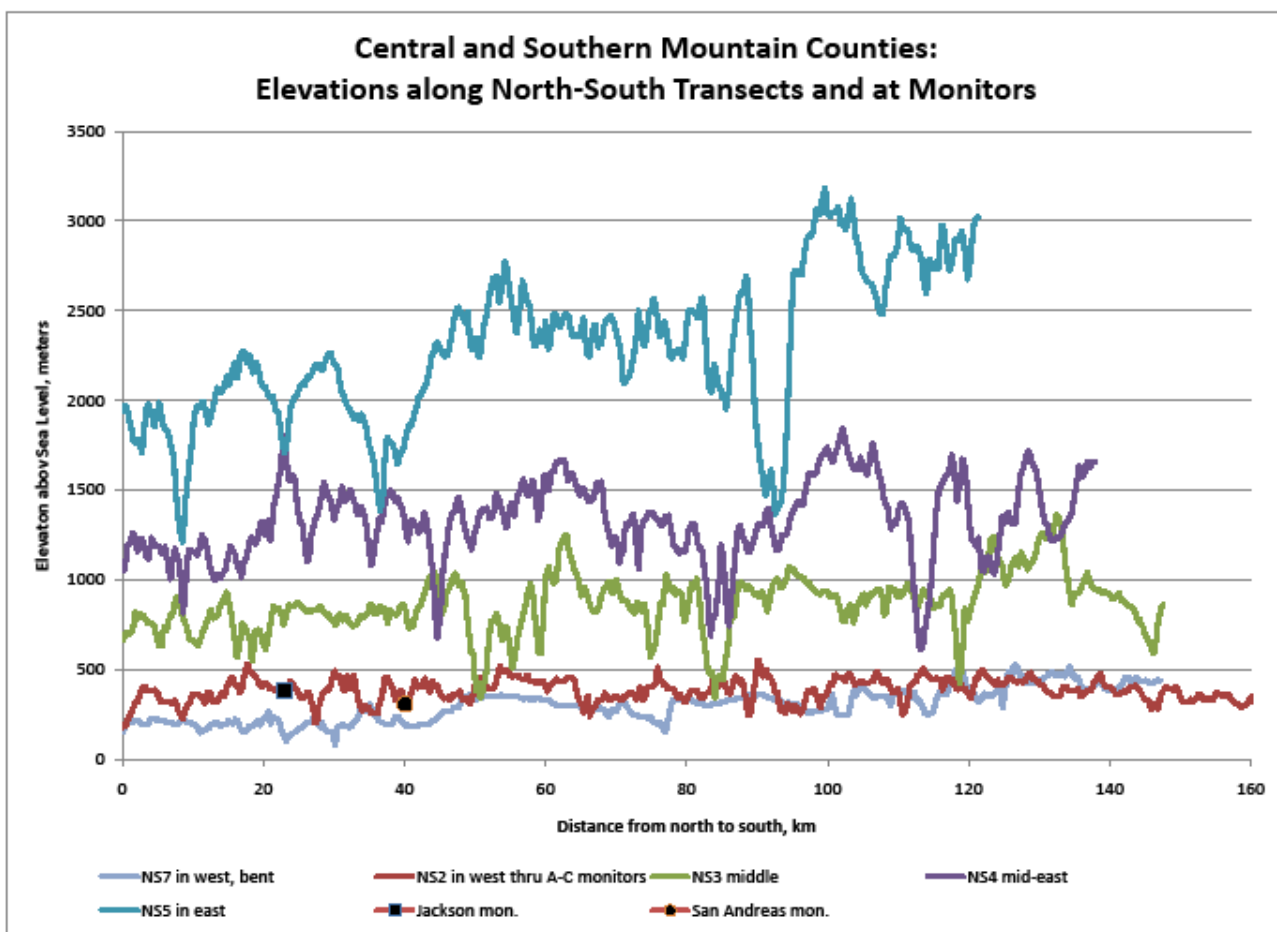
The eastern and western portions of the counties are different. The variation of elevation along a 20 kilometer (km) north-south transect is 500 meters and more in the east, decreasing to about 100 - 200 meters in the west. In the west there are even some valleys with relatively low ridges oriented northwest-southeast, such as Gopher Ridge; these are roughly perpendicular to the orientation of the valleys in the east. Thus, in the eastern portion, the mountains separating the valleys pose a strong barrier to south-north air flow, but in the eastern portion the topography is only a partial barrier to the south-north transport of air, and thus to transport of pollution between the two counties (see Figures 3 - 5).

Central and Southern Mountain Counties North-South and West-East Transects and O3 Monitors



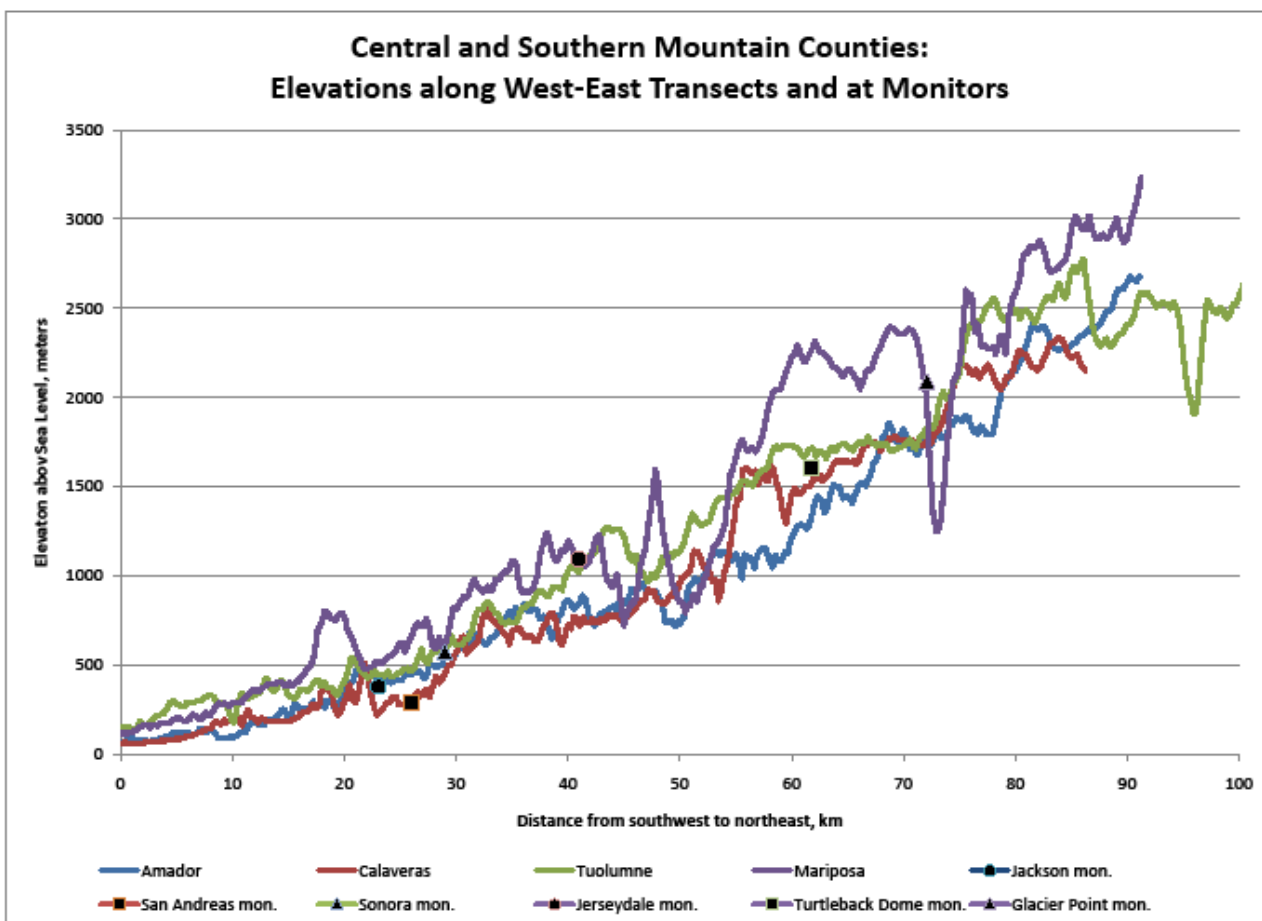
Preliminary 2011 DVs: Jackson-Clinton Road (Amador County): 71; San Andreas-Gold Strike Road (Calaveras County): 77; Sonora-Barretta Street (Tuolumne County): 74; Jerseydale (Mariposa County): 76; Yosemite National Park-Turtleback Dome (Mariposa County, CASTNET monitor): 77; Yosemite National Park-Glacier Point (Mariposa County, National Park Service monitor/non-regulatory): 72*. * = DV does not meet data completeness requirements.

Figure 3



*Preliminary 2011 DVs: Jackson-Clinton Road (Amador County): 71; San Andreas-Gold Strike Road (Calaveras County): 77.

Figure 4



Preliminary 2011 DVs: Jackson-Clinton Road (Amador County): 71; San Andreas-Gold Strike Road (Calaveras County): 77; Sonora-Barretta Street (Tuolumne County): 74; Jerseydale (Mariposa County): 76; Yosemite National Park-Turtleback Dome (Mariposa County, CASTNET monitor): 77; Yosemite National Park-Glacier Point (Mariposa County, National Park Service monitor/non-regulatory): 72*. * = DV does not meet data completeness requirements.

Figure 5

Flow in the west-east direction is relatively unimpeded along the river valleys, which extend well east into the interior of the counties. Eastward transport of pollutants from the more urbanized areas to the west is thus possible during conditions of upslope flow. Conversely, westward transport of locally generated pollution is possible.

Factor 5: Jurisdictional boundaries

For each potential nonattainment area, we considered existing jurisdictional boundaries to provide a clearly defined legal boundary and to help identify the areas appropriate for carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment area boundaries for ozone or other urban-scale pollutants, county lines, air district boundaries, township boundaries, areas covered by a metropolitan planning organization, state lines, Reservation boundaries, and the urban growth boundary. Where existing jurisdictional boundaries were not adequate or appropriate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates were considered.

The Central Mountain Counties area has previously-established nonattainment boundaries associated with the 1997 8-hour ozone NAAQS. EPA had proposed in December 2003 that these counties, along with two other violating mountain counties, be designated as part of the San Joaquin Valley nonattainment area for the 1997 ozone standard. EPA believed then, as we still believe, that the strongest contribution to the violations in the mountain counties comes from the San Joaquin Valley. However, the state requested grouping Amador and Calaveras counties as one nonattainment area, citing existing inter-county coordination, similarities in pollution transport paths, and support from the other factors analyzed. EPA accepted the state's recommendations and in 2004 designated Amador and Calaveras counties as one multi-jurisdictional nonattainment area. In 2009, the state recommended the same nonattainment area for the 2008 standard. Both counties had violating monitors at the time. Now that preliminary 2011 data appear to indicate that Amador may be attaining the NAAQS, the state is requesting that we split the existing nonattainment area and only designate Calaveras County nonattainment. This recommendation follows the county and air district boundaries, but deviates from the existing nonattainment area boundary. Neither county is a CBSA or part of a CSA. The Amador County boundary is also the boundary for the jurisdiction of the Amador County Air Pollution Control District. Likewise, the Calaveras County boundary is the jurisdictional boundary for the Calaveras County Air Pollution Control District.

The Central Mountain Counties area also includes portions of Indian country. As defined at 18 U.S.C. 1151, "Indian country" refers to: "(a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same." EPA recognizes the sovereignty of tribal governments, and has attempted to take the desires of the tribes into account in establishing appropriate nonattainment area boundaries.

The Jackson Rancheria of Me-Wuk Indians (Jackson Rancheria) is a federally recognized tribe with reservation lands in both Amador County and Tuolumne County. These portions of Indian country and the surrounding proposed nonattainment areas are shown in Maps 1a and 7a in Appendix 2. Due to the non-contiguous nature of these lands, EPA intends to designate the portions of Jackson Rancheria in Amador County as part of the Central Mountain Counties nonattainment area.

The California Valley Miwok Tribe (California Valley) is a federally recognized tribe with non-contiguous reservation lands in both Calaveras County and San Joaquin County. These portions of

Indian country and the surrounding proposed nonattainment areas are shown in Maps 1a and 13a in Appendix 2. Due to the non-contiguous nature of these lands, EPA intends to designate the portions of California Valley in Calaveras County as part of the Central Mountain Counties nonattainment area.

Conclusion

Based on the assessment of factors described above, EPA has preliminarily concluded that the following counties should be included as part of the Central Mountain Counties nonattainment area because they are either violating the 2008 ozone NAAQS or contributing to a violation in a nearby area: Amador County and Calaveras County, including the Jackson Rancheria portions of Indian country in Amador County and the California Valley portions of Indian country in Calaveras County.

The Clean Air Act requires EPA to designate any area as nonattainment if it violates a NAAQS or if it contributes to a violation in a nearby area. Both Amador County and Calaveras County contain violating monitors, based on certified 2010 monitoring data. Preliminary air quality data (Factor 1) for 2011 indicate that a monitor in Calaveras County within the Central Mountain Counties nonattainment area (consisting of Amador and Calaveras counties) shows a violation of the 2008 8-hour ozone standard. The monitor in Amador County, based on preliminary 2011 data, indicates that Amador County may be attaining the 2008 ozone standard. However, the variable nature of the DV trend observed in Amador and Calaveras Counties over the past decade makes it difficult to determine whether Amador County will continue to attain the standard. Additionally, the sparse monitoring network in these two counties makes it difficult to determine solely from air quality data whether Amador County is contributing to ozone levels in Calaveras County. Because air quality data can be influenced by a number of circumstances, the remaining four factors must be considered to determine if excluding Amador County from the nonattainment area, as recommended by the state, is justified.

Emissions and emission-related data (Factor 2) show that most of the stationary sources of ozone precursor emissions are located in Amador County. Additionally, the road that sees the heaviest truck and non-truck traffic is located in Amador County; however, VMT in Calaveras County is higher than Amador County. Calaveras County has a slightly larger population and showed greater population growth over 2000 - 2010, while Amador has a slightly higher population density. EPA notes that the monitor in Amador County is upwind of the sources we expect may contribute to ozone in both Amador and Calaveras Counties. Based on the higher population density, greater number of stationary sources, and the commuting patterns observed in Amador County, EPA believes that Amador County may contribute to the violation in Calaveras County.

Meteorology and weather or transport patterns (Factor 3) show that north-south flow between Amador and Calaveras Counties is likely because there are fewer barriers to this transport pattern due to the weaker topographic relief in the western parts of both counties. There is thus likely some transport of pollutants between these two counties, as well as transport from the Sacramento and San Joaquin areas. Consideration of the meteorology supports the joining of Amador and Calaveras counties with nonattainment areas to the west, and also offers support for joining the two counties together as a single nonattainment area. Additionally, EPA notes that 2011 was anomalously cool, potentially creating localized ozone patterns that are not representative of expected normal conditions or ongoing trends.

Geography and topography (Factor 4) shows that Amador and Calaveras Counties contain complex terrain. The complex terrain of Amador County makes it difficult for one monitor to be representative of

the entire county. Flow in the west-east direction is relatively unimpeded along the river valleys, which extend well east into the interior of the counties. Eastward transport of pollutants from the more urbanized areas to the west is thus possible during conditions of upslope flow. Conversely, westward transport of locally generated pollution is possible. Consideration of the topography supports joining of these counties with nonattainment areas to the west, and provides some support for joining Amador and Calaveras counties together as a single nonattainment area.

In considering jurisdictional boundaries (Factor 5), EPA notes that Amador and Calaveras Counties were designated nonattainment as the Central Mountain Counties nonattainment area for the 1997 ozone NAAQS in 2004. In December 2003, EPA intended to designate these two counties, along with two other violating mountain counties (Mariposa and Tuolumne), as part of the San Joaquin Valley nonattainment area for the 1997 ozone standard. EPA believed, as we still believe, that the strongest contribution to the violations in the mountain counties comes from the San Joaquin Valley. However, the state requested grouping Amador and Calaveras counties as one separate nonattainment area from the San Joaquin Valley nonattainment area, citing existing inter-county coordination, similarities in pollution transport paths, and support from the other factors analyzed. EPA agreed with the analysis and accepted the state's recommendations and in 2004 designated Amador and Calaveras counties as one multi-jurisdictional (two affected air districts) nonattainment area, the Central Mountain Counties. In 2009, the state recommended the same nonattainment area for the 2008 standard. Both counties had violating monitors at the time. Now that preliminary 2011 data appear to indicate that Amador may be attaining the NAAQS, the state is requesting that we split the existing nonattainment area and only designate Calaveras County nonattainment.

The Clean Air Act requires EPA to designate any area as nonattainment if it violates a NAAQS or if it contributes to a violation in a nearby area. Although the evidence for a contribution of Amador County to violations in Calaveras County is limited, we nonetheless believe that there is transport in that direction. The state has not provided EPA with a full analysis of this issue. It has presented preliminary monitoring data for 2011 and committed to an early certification of air quality monitoring data (by the end of February 2012). Air quality monitoring data for 2009-2011 is one aspect of Factor 1 (Air Quality Data) and does not constitute a full, five factor analysis. If the certified 2009-2011 data for Mariposa County continues to show violations of the 2008 ozone NAAQS, based on the five factor analysis above, EPA intends to include both Mariposa and Tuolumne Counties in the intended Southern Mountain Counties nonattainment area. The state's certified data for 2008-2010 shows violations in both counties, continuing the trend from the state's 2009 recommendation, when both counties were violating the 2008 ozone NAAQS. EPA therefore intends to designate the two-county area, including Buena Vista Rancheria of Me-Wuk Indians of California, Ione Band of Miwok Indians of California, the portions of Jackson Rancheria in Amador County, and the portions of California Valley in Calaveras County, as nonattainment. However, we remain open to a fuller analysis presented to us by the state.

Technical Support Document for 2008 Ozone NAAQS Designations

California Area Designations for the 2008 Ozone National Ambient Air Quality Standards

Technical Analysis for Chico (Butte County)

Figure 1 is a map of the intended Butte County nonattainment area. The map provides other relevant information including the locations and design values of air quality monitors, county names and boundaries, and indicates EPA's intended "nonattainment" designation. Also shown is the boundary of the existing area that is designated nonattainment for the 1997 ozone NAAQS.

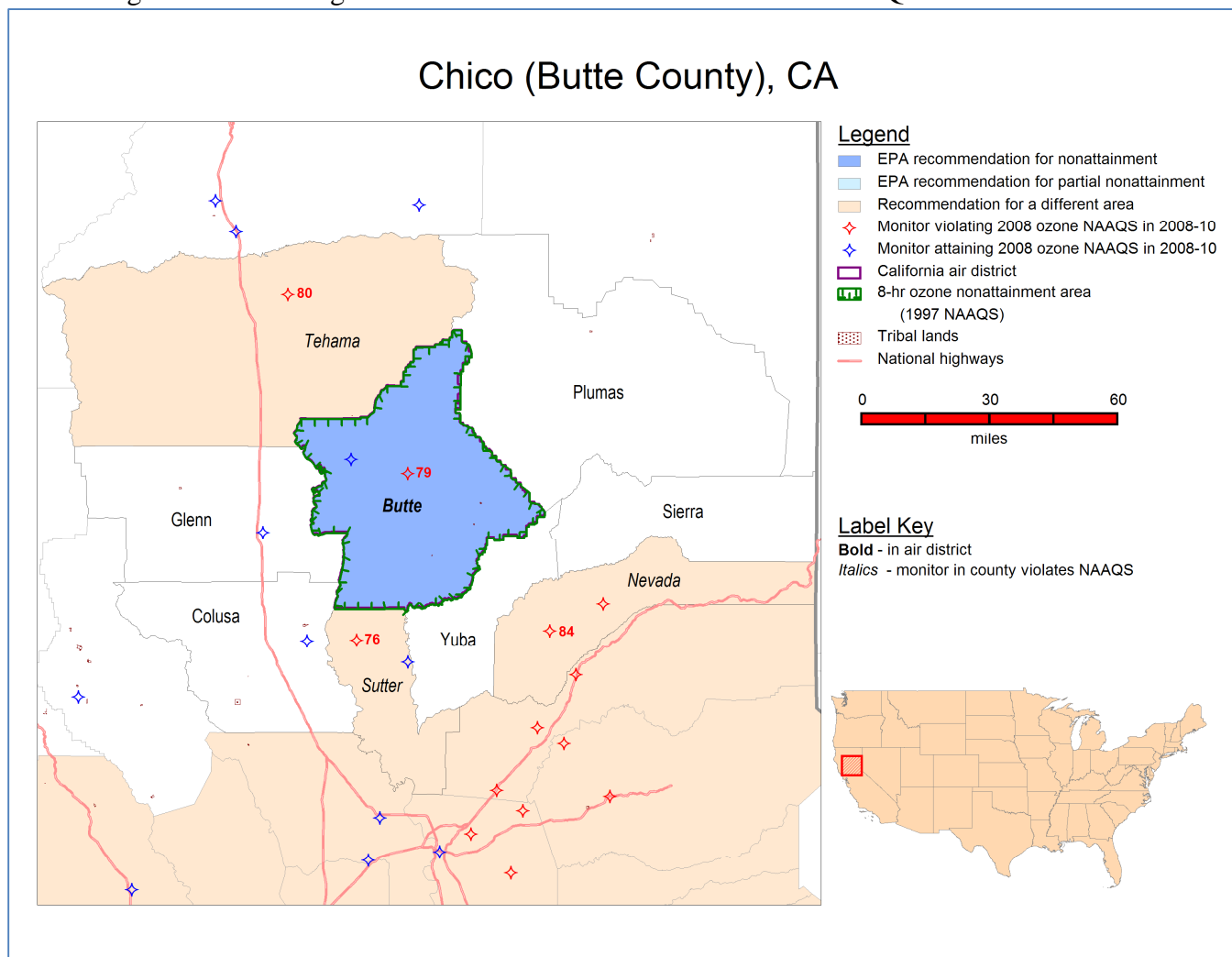


Figure 1

Note: The map shown in Figure 1 provides 8-hour ozone design values in parts per billion (ppb) based on data from 2008-2010 (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. For each particular area, Factor 1 and Appendix 3 describe the air quality data relevant for our intended nonattainment decisions.

For purposes of the 1997 8-hour ozone NAAQS, this area was designated nonattainment. The boundary for the nonattainment area for the 1997 ozone NAAQS included the entirety of Butte County. Several

areas of Indian country were included in the nonattainment area. These are the same tribes that are listed in Table 1, below.

In March 2009, California recommended that the same county be designated as “nonattainment” for the 2008 ozone NAAQS based on air quality data from 2006-2008 (letter from James Goldstene, Executive Officer, California Air Resources Board, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, dated March 11, 2009). California provided an update to the original recommendation in October 2011 based on air quality data from 2008-2010 and preliminary 2009-2011 data, but did not revise its recommendation for Butte County. These 2009 and 2011 recommendations are based on data from Federal Equivalent Method (FEM) monitors sited and operated in accordance with 40 CFR Part 58 (letter from Lynn Terry, Deputy Executive Officer, California Air Resources Board, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, dated October 12, 2011).

After considering these recommendations and based on EPA's technical analysis described below, EPA intends to designate Butte County, California, and areas of Indian country (identified in Table 1 below) as “nonattainment” for the 2008 ozone NAAQS as part of the Butte County multi-jurisdictional nonattainment area.

Table 1. State’s or Tribe’s Recommended and EPA’s Intended Designated Nonattainment Counties or Areas of Indian Country for Chico (Butte County).

| Butte County | State or Tribe-Recommended Nonattainment Counties or Areas of Indian Country | EPA Intended Nonattainment Counties or Areas of Indian Country |
|------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------|
| Butte County | Butte County | Butte County |
| Berry Creek Rancheria of Maidu Indians of California | N/A | Berry Creek Rancheria of Maidu Indians of California |
| Enterprise Rancheria of Maidu Indians of California | N/A | Enterprise Rancheria of Maidu Indians of California |
| Mechoopda Indian Tribe of Chico Rancheria | N/A | Mechoopda Indian Tribe of Chico Rancheria |
| Mooretown Rancheria of Maidu Indians of California | N/A | Mooretown Rancheria of Maidu Indians of California |

Factor Assessment

Factor 1: Air Quality Data

For this factor, we considered 8-hour ozone design values in parts per million (ppm) for air quality monitors in the existing Butte County nonattainment area, based on data from the 2008-2010 period (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. A monitor’s DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2008 ozone NAAQS are met at a monitor when the annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years, is 0.075 ppm (75 parts per billion (ppb)) or less. A DV is only valid if minimum data completeness criteria are met. See 40 CFR part 50 Appendix P. Where several monitors are located in a county (or a designated nonattainment area or maintenance area), the DV for the county or area is determined by the monitor with the highest level.

[Note: Monitors that are eligible for providing design value data generally include State and Local Air Monitoring Stations (SLAMS) that are sited in accordance with 40 CFR Part 58, Appendix D (Section

4.1) and operating with a federal reference method (FRM) or federal equivalent method (FEM) monitor that meets the requirements of 40 CFR part 58, appendix A. All data from a special purpose monitor (SPM) using an FRM or FEM which has operated for more than 24 months is eligible for comparison to the NAAQS unless the monitoring agency demonstrates that the data came from a particular period during which the requirements of appendix A (quality assurance requirements) or appendix E (probe and monitoring path siting criteria) were not met.]

The existing Butte County nonattainment area comprises Butte County (see Map 2a in Appendix 2). The 2010 DV for the ozone NAAQS for Butte County is shown in Table 2.

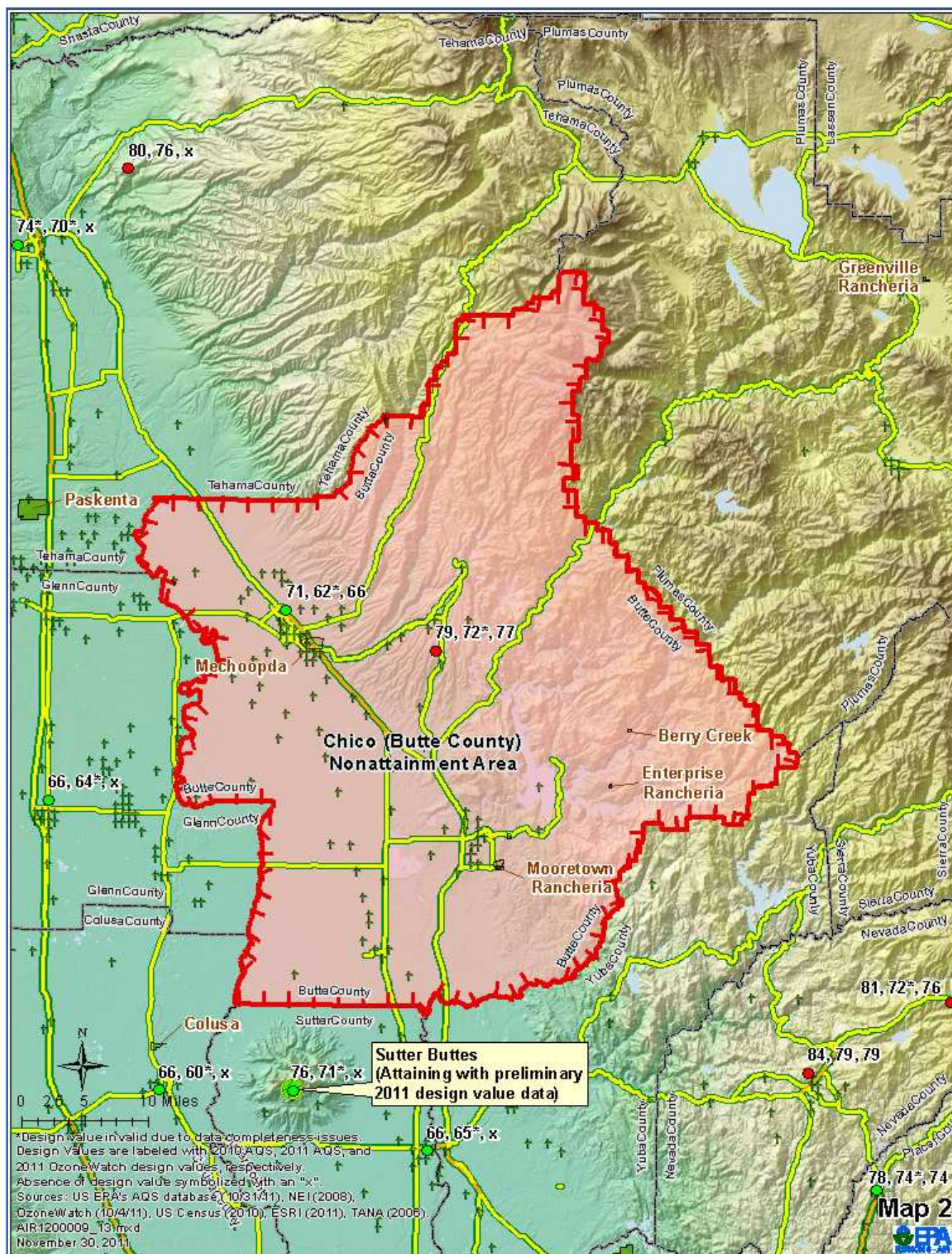
Table 2. Air Quality Data.

| County | State Recommended Nonattainment? | 2008-2010 Design Value (parts per billion) |
|-----------|----------------------------------|--------------------------------------------|
| Butte, CA | Yes | 79 |

Ozone monitors relevant for comparison to the NAAQS and information from additional data sources within the existing Butte County nonattainment area are shown in Appendix 1, Map 2. California's ozone season encompasses the entire year. Certified, quality assured data are available in EPA's Air Quality System (AQS) for all areas through calendar year 2010. Map 2 in Appendix 1 includes preliminary 2011 DVs for the existing Butte County nonattainment area for informational purposes only. For each monitor, Appendix 1 lists the monitor, the 2008-2010 DV (certified and quality assured in AQS), the preliminary 2009-2011 DV (as available in AQS as of October 31, 2011), and a preliminary 2009-2011 DV using 2011 data from OzoneWatch¹. Absence of a DV is symbolized with an "x".

Appendix 3 lists the DVs for monitors in the existing Butte County nonattainment area. Monitors shown in bold are the DV monitors (i.e., the monitor with the highest DV) for each individual county. Monitors shown in red font are the DV monitor for the nonattainment area. Values with an asterisk do not meet data completeness, and therefore those DVs are not relevant for comparison to the NAAQS and are solely provided for informational purposes.

¹ The preliminary 2009-2011 design values indicated by OzoneWatch are based on ozone data from 2009, 2010, and 2011 stored in AQS, combined with 2011 data reported to AirNow on days which no data currently exist in the AQS database. The 2009 and 2010 data were retrieved from AQS on July 20, 2011. The 2011 data are based on data submitted AQS or AirNow (<http://airnow.gov/>) as of October 4, 2011. Ultimately, attainment of the 8-hour ozone NAAQS will be determined entirely from data in AQS.



From Appendix 1, Map 2: For map legend describing monitors, emissions, traffic, population, and boundaries, see Appendix 1.

A monitor in Butte County shows a violation of the 2008 8-hour ozone standard based on 2008-2010 ambient air quality monitoring data. Therefore, this area is included in the Butte County intended nonattainment area (as listed in Table 1, above). A county (or partial county) must also be designated nonattainment if it contributes to a violation in a nearby area. Each county without a violating monitor that is located near a county with a violating monitor has been evaluated based on the weight of evidence of the five factors and other relevant information to determine whether it contributes to the nearby violation.

Factor 2: Emissions and Emissions-Related Data

EPA evaluated emissions of ozone precursors, nitrogen oxides (NO_x) and volatile organic compounds (VOC), and other emissions-related data that provide information on areas contributing to violating monitors.

Emissions data

EPA evaluated county-level emission data for NO_x and VOC derived from the 2008 National Emissions Inventory (NEI), version 1.5. This is the most recently available NEI (see <http://www.epa.gov/ttn/chief/net/2008inventory.html>). Emissions in a nearby area indicate the potential for the area to contribute to observed violations. We will also consider any additional information we receive on changes to emissions levels that are not reflected in recent inventories. These changes include emissions reductions due to permanent and enforceable emissions controls that will be in place before final designations are issued and emissions increases due to new sources.

Table 3 shows emissions of the ozone precursors NO_x and VOC (given in tons per year) for Butte County.

Table 3. Total 2008 NO_x and VOC Emissions.

| County | State Recommended Nonattainment? | NO _x (tpy) | VOC (tpy) |
|-----------|----------------------------------|-----------------------|-----------|
| Butte, CA | Yes | 8,640 | 7,581 |
| Areawide: | | 8,640 | 7,581 |

Stationary sources are generally located along the major roadway running north/northwest through Butte County, generally clustered in the two denser population centers (see Maps 2 and 2a in Appendices 1 and 2).

Population density and degree of urbanization

EPA evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. These include ozone-creating emissions from on-road and off-road vehicles and engines, consumer products, residential fuel combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NO_x and VOC emissions that may contribute to ozone formation in an area of interest. Rapid population or growth in vehicle miles traveled (VMT) (see below) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the area associated with area source and mobile source

emissions as part of the nonattainment area. Table 4 shows the population, population density, and population growth information for Butte County.

Table 4. Population and Growth.

| County | State Recommended Nonattainment? | 2010 Population | 2010 Population Density (1000 pop/sq mi) | Absolute change in population (2000-2010) | Population % change (2000-2010) |
|-----------|----------------------------------|-----------------|------------------------------------------|-------------------------------------------|---------------------------------|
| Butte, CA | Yes | 220,000 | 0.13 | 16,093 | +8% |
| | Areawide: | 220,000 | 0.13 | 16,093 | +8% |

Sources: U.S. Census Bureau population estimates for 2010 as of August 4, 2011

(http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_PL_GCTPL2.STO5&prodType=table)

Although the county has experienced population growth in terms of a percentage, the actual number of people in the county is low. The population is centered in several urban areas that are well within the county boundaries (Chico and Paradise, for example). Maps 2 and 2a in Appendices 1 and 2, respectively, show population in the area.

Traffic (VMT) data

EPA evaluated the commuting patterns of residents in the area, as well as the total VMT for each county. In combination with the population/population density data and the location of main transportation arteries (see above), this information helps identify the probable location of non-point source emissions. A county with high VMT indicates the presence of motor vehicle emissions that may contribute to ozone formation and nonattainment in the area. Rapid population or VMT growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 5 shows total 2008 VMT for Butte County.

Table 5. Traffic (VMT) data

| County | State Recommended Nonattainment? | 2008 VMT* (million miles) |
|-----------|----------------------------------|---------------------------|
| Butte, CA | Yes | 1,925 |
| | Areawide: | 1,925 |

* MOBILE model VMTs are those inputs into the NEI version 1.5.

Map 2 in Appendix 1 shows non-truck traffic volumes through Butte County. Heaviest non-truck traffic volumes occur over a 15-mile stretch of roadway that runs through Butte County from the northwest to southeast. Roadways that link Butte County with the neighboring counties of Plumas, Yuba, Sutter, Glenn, and Tehama show lower annual average daily non-truck traffic volumes than the 15-mile stretch of roadway through Butte County.

Factor 3: Meteorology (weather/transport patterns)

EPA evaluated available meteorological data to help determine how meteorological conditions, such as weather, transport patterns and stagnation conditions, would affect the fate and transport of precursor emissions contributing to ozone formation.

The western portion of Butte County is in the broad, flat, Sacramento Valley, and shares the valley's hot and dry summer conditions. This is conducive to ozone formation, although the relatively small

emissions inventory numbers suggests there may also be ozone transport from the more populous areas to the west and south.

Butte County air flow is most frequently from the south-southwest according to the 30-year average direction frequencies computed by EPA, as shown in the “radar”-style wind rose diagram below (Figure 2). This is consistent with the orientation of the river valleys and ridges in the mountainous eastern portion of the county, and with flow northward in the Central Valley of California. There is also a north-northwest component, which may reflect along-valley flow in the flatter western portion of the county.

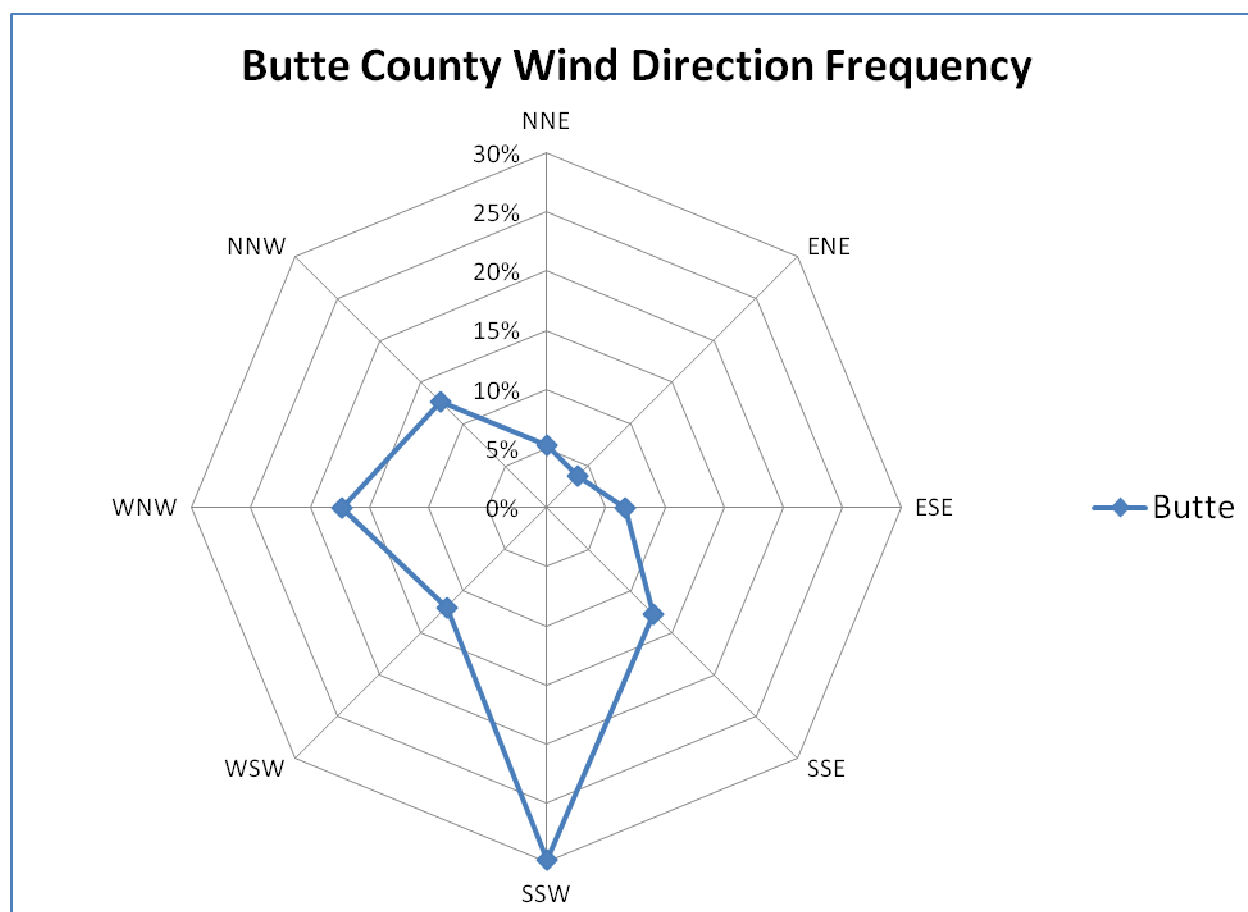


Figure 2

The western portion of the county is likely subject to the meteorology conditions of, and flow from, the neighboring Sacramento Valley to the west and south. Previous assessments of pollution transport found that the broader Sacramento area (which is about the same as the non-mountainous portions of the Sacramento Metropolitan ozone nonattainment area) can have an overwhelming impact on counties of the Upper Sacramento Valley, including Butte County.² However, the middle and eastern portions of the county are within the foothills of the Sierra Nevada mountain range, rather than in the flats of Sacramento Valley. These portions would tend to be more dominated by upslope and downslope flows of the strongly sloped landscape, as well as enhanced dispersion due to turbulence in the rough terrain.

²“Assessment of the Impacts of Transported Pollutants on Ozone Concentrations in California.” California Environmental Protection Agency, Air Resources Board, March 2001, p.7.

<http://www.arb.ca.gov/aqd/transport/assessments/assessments.htm>

Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis evaluates the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the area.

The Butte County area does not have any geographical or topographical barriers that would prevent air pollution transport within its airshed. Therefore, this factor did not play a substantial role in this evaluation.

The western portion of Butte County is part of the broad, flat Sacramento Valley, which is the northern half of California's Central Valley. Other than distance, in this western portion there is little barrier to transport of pollutants from areas further south. The eastern portion of Butte County is characterized by river valleys running roughly east-northeast to west-southwest, separated by mountain ridges. This tends to inhibit north-south flow, but allow east-west upslope and downslope flow. The increasing elevations eastward are likely a partial barrier to transport of pollutants to the less-populated eastern part of the county.

Factor 5: Jurisdictional boundaries

For each potential nonattainment area, we considered existing jurisdictional boundaries to provide a clearly defined legal boundary and to help identify the areas appropriate for carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment area boundaries for ozone or other urban-scale pollutants, county lines, air district boundaries, township boundaries, areas covered by a metropolitan planning organization, state lines, areas of Indian country, and urban growth boundary. Where existing jurisdictional boundaries were not adequate or appropriate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates were considered.

The Butte County area has previously-established nonattainment boundaries associated with the 1997 8-hour ozone NAAQS. The state has recommended the same boundary for the 2008 ozone NAAQS. The state's recommended boundary is the county boundary for Butte County, as well as the jurisdictional boundary for the local air planning agency, the Butte County Air Quality Management District. This boundary also represents the jurisdictional boundary of the local transportation planning agency, the Butte County Association of Governments (BCAG). The county also represents the entirety of the Chico metropolitan statistical area (MSA), named after its most populous city, Chico. The MSA is not associated with a larger CSA. As noted in Factor 1 above, Butte County is part of the Sacramento Valley Air Basin.

The Butte County area also includes areas of Indian country. As defined at 18 U.S.C. 1151, "Indian country" refers to: "(a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same." EPA recognizes the sovereignty of tribal governments, and has attempted to take the desires of the tribes into account in establishing appropriate nonattainment area boundaries.

Conclusion

Based on the assessment of factors described above, EPA has preliminarily concluded that Butte County, and all areas of Indian country located in Butte County, should be designated nonattainment because it is violating the 2008 ozone NAAQS. This area includes four tribes: Berry Creek Rancheria of Maidu Indians of California, Enterprise Rancheria of Maidu Indians of California, Mechoopda Indian Tribe of Chico Rancheria, and Mooretown Rancheria of Maidu Indians of California.

The Clean Air Act requires EPA to designate any area as nonattainment if it violates a NAAQS or if it contributes to a violation in a nearby area. Air quality data (Factor 1) show that monitors in Butte County show a violation of the 2008 8-hour ozone standard based on 2008-2010 data. Therefore, Factor 1 suggests that this area should be designated nonattainment.

EPA's review of emissions and emission related data (Factor 2), as well as meteorology and weather or transport patterns (Factor 3), geography and topography (Factor 4), and jurisdictional boundaries (Factor 5) support the proposed nonattainment boundaries recommended by the state. The Butte County intended nonattainment area has previously-established nonattainment boundaries associated with the 1997 8-hour ozone NAAQS, based on the Butte County boundary. The state has recommended the same boundary for the 2008 ozone NAAQS. Given the preceding analysis, EPA's preliminary conclusion is to concur with the state's recommendation to designate the same area as nonattainment for the 2008 ozone NAAQS that is currently nonattainment for the 1997 ozone NAAQS.

Technical Support Document for 2008 Ozone NAAQS Designations

California Area Designations for the 2008 Ozone National Ambient Air Quality Standards

Technical Analysis for Imperial County

Figure 1 is a map of the intended Imperial County nonattainment area. The map provides other relevant information including the locations and design values of air quality monitors, county names and boundaries and indicates EPA's intended nonattainment designation. Also shown is the boundary of the existing area that is designated nonattainment for the 1997 ozone NAAQS.

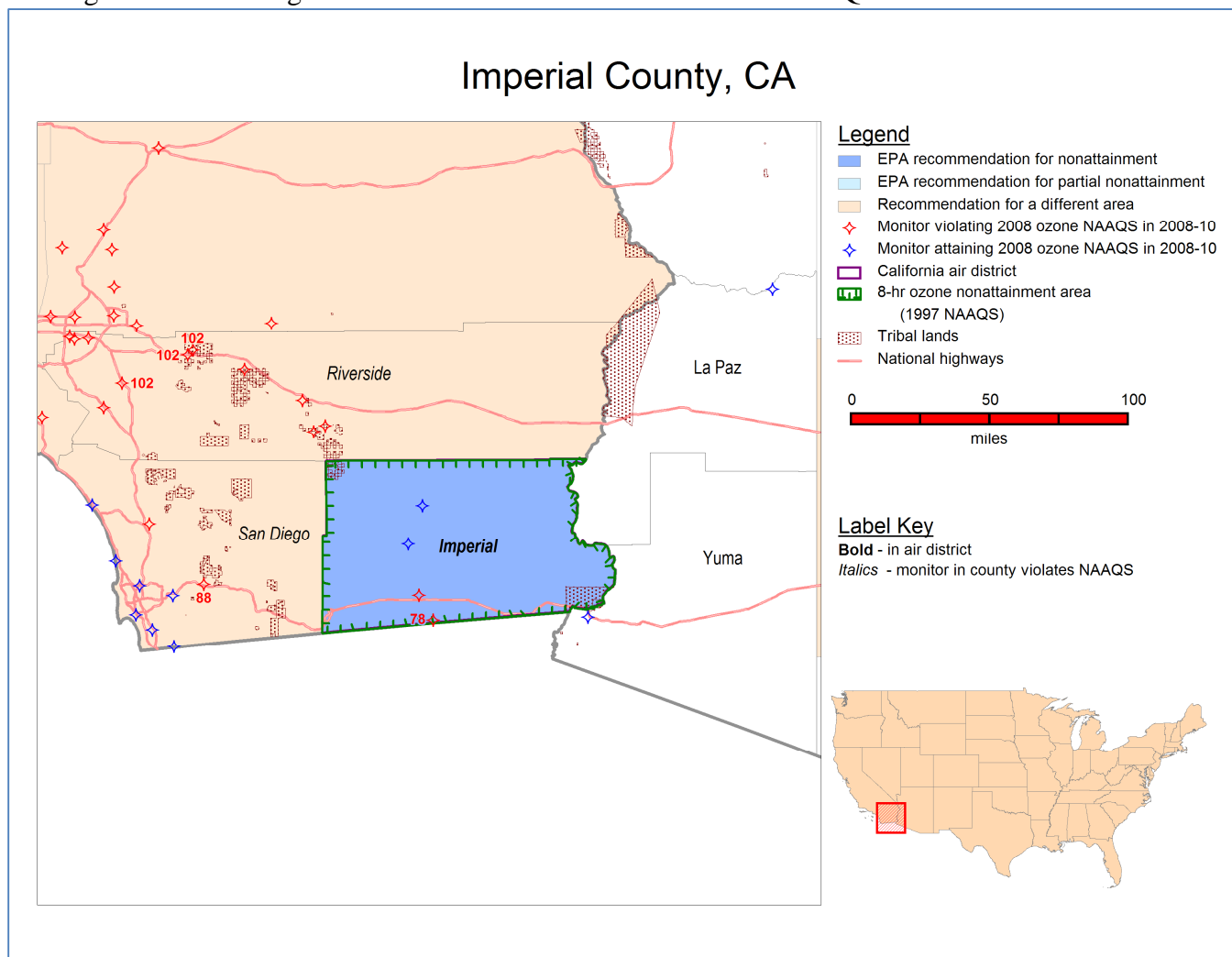


Figure 1

For purposes of the 1997 8-hour ozone NAAQS, this area was designated nonattainment. The boundary for the nonattainment area for the 1997 ozone NAAQS included the entirety of Imperial County. Several tribal areas were included in the nonattainment area. These are the same tribes that are listed in Table 1, below.

In March 2009, California recommended that the same county be designated as “nonattainment” for the 2008 ozone NAAQS based on air quality data from 2006-2008 (letter from James Goldstene, Executive Officer, California Air Resources Board, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, dated March 11, 2009). California provided an update to the original recommendation in October 2011 based on air quality data from 2008-2010 and preliminary 2009-2011 data, but did not revise its recommendation for Imperial County. These 2009 and 2011 recommendations are based on data from Federal Equivalent Method (FEM) monitors sited and operated in accordance with 40 CFR Part 58 (letter from Lynn Terry, Deputy Executive Officer, California Air Resources Board, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, dated October 12, 2011).

After considering these recommendations and based on EPA's technical analysis described below, EPA intends to designate Imperial County in California and all the areas of Indian country in Imperial County (identified in Table 1 below) as “nonattainment” for the 2008 ozone NAAQS as part of the Imperial County multi-jurisdictional nonattainment area.

Table 1. State’s or Tribe’s Recommended and EPA’s Intended Designated Nonattainment Counties or Areas of Indian country for Imperial County.

| Imperial County | State or Tribe-Recommended Nonattainment Counties or Areas of Indian country | EPA Intended Nonattainment Counties or Areas of Indian country |
|------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------|
| Imperial County | Imperial County | Imperial County |
| Quechan Indian Tribe ¹ | N/A | Quechan Indian Tribe (p) |
| Torres Martinez Desert Cahuilla Indians ² | N/A | Torres Martinez Desert Cahuilla Indians |

p = partial

N/A = Tribe did not submit recommendation.

¹ The Quechan Indian Tribe (Fort Yuma) has lands in both the intended Imperial County nonattainment area and Yuma County, Arizona. Non-contiguous lands of the Quechan Indian Tribe will be designated with the surrounding areas. This technical analysis addresses only those areas of Indian country within the intended Imperial County nonattainment area.

² The Torres Martinez Desert Cahuilla Indians have lands in both the intended Imperial County nonattainment area and the intended Riverside County (Coachella Valley) nonattainment area. Non-contiguous lands of the Torres Martinez Desert Cahuilla Indians will be designated with the surrounding areas. This technical analysis addresses only those areas of Indian country within the intended Imperial County nonattainment area.

Factor Assessment

Factor 1: Air Quality Data

For this factor, we considered 8-hour ozone design values in parts per million (ppm) for air quality monitors in the existing Imperial County nonattainment area, based on data from the 2008-2010 (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. A monitor’s DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2008 ozone NAAQS are met at a monitor when the annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years, is 0.075 ppm (75 parts per billion (ppb)) or less. A DV is only valid if minimum data completeness criteria are met. See 40 CFR part 50 Appendix P. Where several monitors are located in a county (or a designated nonattainment area or maintenance area), the DV for the county or area is determined by the monitor with the highest level.

[Note: Monitors that are eligible for providing design value data generally include State and Local Air Monitoring Stations (SLAMS) that are sited in accordance with 40 CFR Part 58, Appendix D (Section 4.1) and operating with a federal reference method (FRM) or federal equivalent method (FEM) monitor that meets the requirements of 40 CFR part 58, appendix A. All data from a special purpose monitor (SPM) using an FRM or FEM which has operated for more than 24 months is eligible for comparison to the NAAQS unless the monitoring agency demonstrates that the data came from a particular period during which the requirements of appendix A (quality assurance requirements) or appendix E (probe and monitoring path siting criteria) were not met.]

The existing Imperial County nonattainment area comprises Imperial County (see Map 3a in Appendix 2). The 2010 DV for the ozone NAAQS for Imperial County is shown in Table 2.

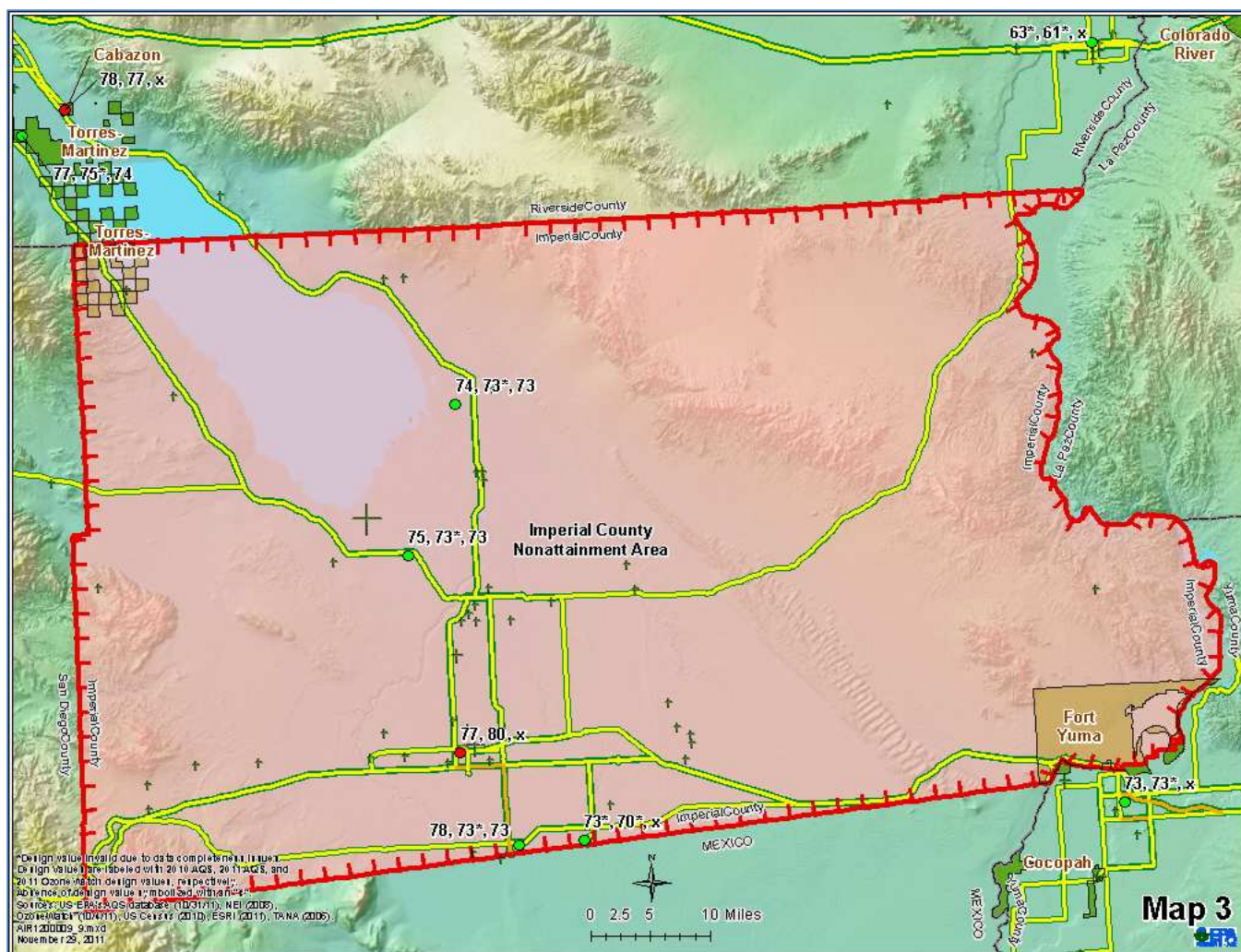
Table 2. Air Quality Data.

| County | State Recommended Nonattainment? | 2008-2010 Design Value (parts per billion) |
|--------------|----------------------------------|--------------------------------------------|
| Imperial, CA | Yes | 78 |

Ozone monitors relevant for comparison to the NAAQS and information from additional data sources within the existing Imperial County nonattainment area are shown in Appendix 1, Map 3. California's ozone season encompasses the entire year. Certified, quality assured data are available in EPA's Air Quality System (AQS) for all areas through calendar year 2010. Map 3 in Appendix 1 includes preliminary 2011 DVs for the existing Imperial County nonattainment area for informational purposes only. For each monitor, Appendix 1 lists the monitor, the 2008-2010 DV (certified and quality assured in AQS), the preliminary 2009-2011 DV (as available in AQS as of October 31, 2011), and a preliminary 2009-2011 DV using 2011 data from OzoneWatch¹. Absence of a DV is symbolized with an "x".

Appendix 3 lists the DVs for monitors in the existing Imperial County nonattainment area. Monitors shown in bold are the DV monitors (i.e., the monitor with the highest DV) for each individual county. Monitors shown in red font are the DV monitor for the nonattainment area. Values with an asterisk do not meet data completeness, and therefore those DVs are not relevant for comparison to the NAAQS and are solely provided for informational purposes.

¹ The preliminary 2009-2011 design values indicated by OzoneWatch are based on ozone data from 2009, 2010, and 2011 stored in AQS, combined with 2011 data reported to AirNow on days which no data currently exist in the AQS database. The 2009 and 2010 data were retrieved from AQS on July 20, 2011. The 2011 data are based on data submitted AQS or AirNow (<http://airnow.gov/>) as of October 4, 2011. Ultimately, attainment of the 8-hour ozone NAAQS will be determined entirely from data in AQS.



From Appendix 1, Map 3: For map legend describing monitors, emissions, traffic, population, and boundaries, see Appendix 1.

Monitors in Imperial County show a violation of the 2008 8-hour ozone standard based on 2008-2010 data. Therefore, this area is included in the intended Imperial County nonattainment area. A county (or partial county) must also be designated nonattainment if it contributes to a violation in a nearby area. Each county without a violating monitor that is located near a county with a violating monitor has been evaluated based on the weight of evidence of the five factors to determine whether it contributes to the nearby violation.

Factor 2: Emissions and Emissions-Related Data

EPA evaluated emissions of ozone precursors, nitrogen oxides (NO_x) and volatile organic compounds (VOC), and other emissions-related data that provide information on areas contributing to violating monitors.

Emissions data

EPA evaluated county-level emission data for NO_x and VOC derived from the 2008 National Emissions Inventory (NEI), version 1.5. This is the most recently available NEI. (See <http://www.epa.gov/ttn/chief/net/2008inventory.html>) Emissions in a nearby area indicate the potential for the area to contribute to observed violations. We will also consider any additional information we

receive on changes to emissions levels that are not reflected in recent inventories. These changes include emissions reductions due to permanent and enforceable emissions controls that will be in place before final designations are issued and emissions increases due to new sources. Table 3 shows emissions of NO_x and VOC (given in tons per year) for Imperial County.

Table 3. Total 2008 NO_x and VOC Emissions.

| County | State Recommended Nonattainment? | NO _x (tpy) | VOC (tpy) |
|--------------|----------------------------------|-----------------------|-----------|
| Imperial, CA | Yes | 13,108 | 8,662 |
| | Areawide: | 13,108 | 8,662 |

Compared to neighboring counties, such as San Diego County to the west (greater than 50,000 tpy of NO_x and VOC) and Riverside County to the north (greater than 50,000 tpy NO_x and greater than 25,000 tpy VOC), Imperial County's emissions of ozone precursors are relatively low. As seen in Map 3 (Appendix 1), stationary sources in Imperial County are generally located along major roadways. EPA intends to designate upwind areas that also contribute to Imperial County monitored violations (for example, Los Angeles-South Coast Air Basin and Riverside County (Coachella Valley)) as separate nonattainment areas.

Population density and degree of urbanization

EPA evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. These include ozone-creating emissions from on-road and off-road vehicles and engines, consumer products, residential fuel combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NO_x and VOC emissions, which contribute to ozone formation. Rapid population or growth in vehicle miles traveled (VMT) (see below) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the area associated with area source and mobile source emissions as part of the nonattainment area. Table 4 shows the population, population density, and population growth information for Imperial County.

Table 4. Population and Growth.

| County | State Recommended Nonattainment? | 2010 Population | 2010 Population Density (1000 pop/sq mi) | Absolute change in population (2000-2010) | Population % change (2000-2010) |
|--------------|----------------------------------|-----------------|------------------------------------------|-------------------------------------------|---------------------------------|
| Imperial, CA | Yes | 174,528 | 0.04 | 32,117 | +23% |
| | Areawide: | 174,528 | 0.04 | 32,117 | +23% |

Sources: U.S. Census Bureau population estimates for 2010 as of August 4, 2011

(http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_PL_GCTPL2.STO5&prodType=table)

Maps 3 and 3a in Appendices 1 and 2, respectively, show population in the area. Imperial County's population is experiencing high growth on a percentage basis. However, the population is still comparatively small and focused on three small urban centers in the south-central and central portions of the county, near the international border with Mexico (see Map 3a of Appendix 2). Most of the central portion of the county is a wide valley with farmland, and most of the county has very low population.

Traffic (VMT) data

EPA evaluated the commuting patterns of residents in the area, as well as the total VMT for each county. In combination with the population/population density data and the location of main transportation arteries (see above), this information helps identify the probable location of non-point source emissions. A county with high VMT indicates the presence of motor vehicle emissions that may contribute to ozone formation and nonattainment in the area. Rapid population or VMT growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 5 shows total 2008 VMT.

Table 5. Traffic (VMT) data.

| County | State Recommended Nonattainment? | 2008 VMT* (million miles) |
|--------------|----------------------------------|---------------------------|
| Imperial, CA | Yes | 2,021 |
| | Areawide: | 2,021 |

*MOBILE model VMTs are those inputs into the NEI version 1.5.

Imperial County contains very few roadways that experience heavy non-truck traffic (see Map 3 in Appendix 1).

Factor 3: Meteorology (weather/transport patterns)

EPA evaluated available meteorological data to help determine how meteorological conditions, such as weather, transport patterns and stagnation conditions, would affect the fate and transport of precursor emissions contributing to ozone formation.

The “Staff Report - Analysis of the Imperial County 2009 1997 8-Hour Ozone Modified Air Quality Management Plan”² by California Air Resources Board discusses the meteorological conditions in Imperial County in the Salton Sea Air Basin (SSAB).

“Imperial County is part of the Salton Sea Air Basin. Winters are mild and dry with daily average temperature ranges between 65 and 75°F, although daily high temperatures of up to 80°F are not uncommon. Summers are extremely hot with daily average temperature ranges between 104 and 115°F and daily high temperatures of up to 120°F. The County has an annual rainfall of approximately 3 inches, occurring mostly from late summer to midwinter.”

The South Coast Air Quality Management District’s “Final 2007 Air Quality Management Plan” also discusses transport to the Salton Sea Air Basin, including the Riverside County portion of the basin and the desert areas further inland:

“Ozone in the atmosphere of the Riverside county portion of SSAB is both directly transported from the Basin and formed principally from precursors emitted upwind. These precursors are emitted in greatest quantity in the coastal

² “STAFF REPORT Analysis of the Imperial County 2009 1997 8-Hour Ozone Modified Air Quality Management Plan and Reasonably Available Control Technology Plan” November 18, 2010, California Air Resources Board.
http://www.arb.ca.gov/planning/sip/planarea/imperial/ozone_staffrep.pdf

and central Los Angeles county areas of the Basin. The Basin's prevailing sea breeze causes polluted air to be transported inland. As the air is being transported inland, ozone is formed, with peak concentrations occurring in the inland valleys of the Basin in an area extending from eastern San Fernando Valley through the San Gabriel Valley into the Riverside-San Bernardino area and the adjacent mountains. As the air is transported still further inland into the desert areas, ozone concentrations decrease due to dilution.”³

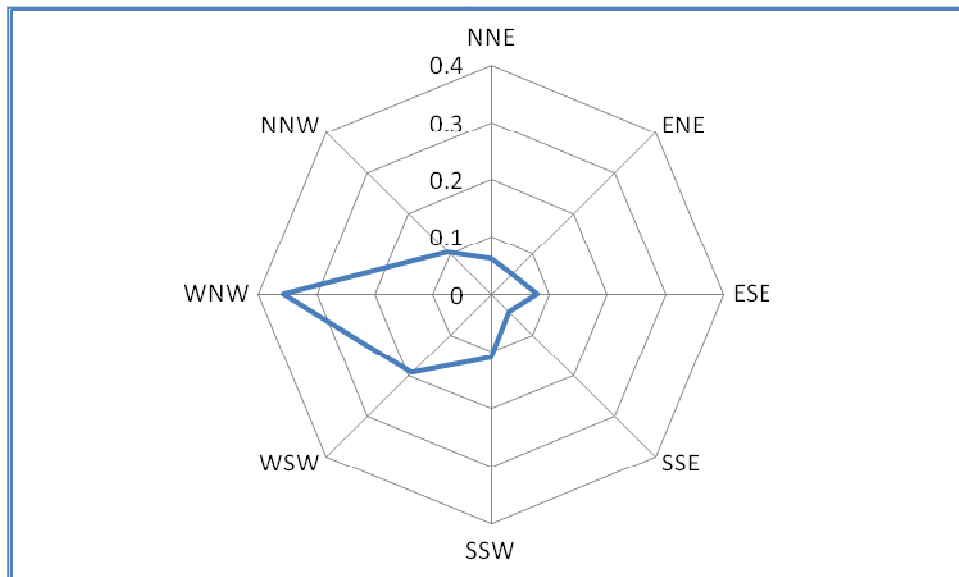


Figure 2: Imperial County – Summer Wind Frequency Distribution

The wind frequency distribution of wind direction data in the chart above is based on an average of 30 years of National Weather Service information for the months of June, July, and August (see Figure 2). The prevailing winds during the ozone season have a strong northwesterly component.

Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis evaluates the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the area.

The Imperial County area is shown in Appendix 1, Map 3a.

The “Staff Report - Analysis of the Imperial County 2009 1997 8-Hour Ozone Modified Air Quality Management Plan”⁴ states:

“Imperial County is part of the Salton Sea Air Basin. The Imperial County Ozone Nonattainment Area consists of the entire county, and is under the jurisdiction of the Imperial County Air Pollution Control District (District). Imperial County

³ “Final 2007 Air Quality Management Plan”, Appendix II

⁴ “STAFF REPORT Analysis of the Imperial County 2009 1997 8-Hour Ozone Modified Air Quality Management Plan and Reasonably Available Control Technology Plan”, November 18, 2010, California Air Resources Board.
http://www.arb.ca.gov/planning/sip/planarea/imperial/ozone_staffrep.pdf

covers 4,482 square miles of mostly arid lands in the southeastern corner of California.⁵ It is bordered by Mexico to the south, Arizona on the east, San Diego County on the west, and Riverside County on the north. Imperial County's elevation ranges from more than 2,800 feet on the mountain summits to the east to 230 feet below sea level in the Salton Sea."

Factor 5: Jurisdictional boundaries

For each potential nonattainment area, we considered existing jurisdictional boundaries to provide a clearly defined legal boundary and to help identify the areas appropriate for carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment area boundaries for ozone or other urban-scale pollutants, county lines, air district boundaries, township boundaries, areas covered by a metropolitan planning organization, state lines, areas of Indian country, and urban growth boundary. Where existing jurisdictional boundaries were not adequate or appropriate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates were considered.

Imperial County has previously established nonattainment boundaries associated with both the 1-hour and the 1997 8-hour ozone NAAQS. The state has recommended the same boundary for the 2008 ozone NAAQS. The entire county falls under the air quality management jurisdiction of the Imperial County Air Pollution Control District. Transportation planning in the county is performed by the Imperial Valley Association of Governments, which has jurisdiction throughout the county. The entirety of Imperial County comprises the El Centro metropolitan statistical area (MSA). To the south, the county line is also the international U.S.-Mexico border.

The Imperial County area also includes areas of Indian country. As defined at 18 U.S.C. 1151, "Indian country" refers to: "(a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same." EPA recognizes the sovereignty of tribal governments, and has attempted to take the desires of the tribes into account in establishing appropriate nonattainment area boundaries.

Torres Martinez Desert Cahuilla Indians (Torres Martinez) is a federally recognized tribe that has non-contiguous lands in both Imperial County and Riverside County. These portions of Indian country and the surrounding proposed nonattainment areas are shown in Map 3a in Appendix 2. Due to the non-contiguous nature of these lands, the portions of Torres Martinez in Imperial County will be designated as part of the Imperial County nonattainment area.

Quechan Indian Tribe (Fort Yuma) is a federally recognized tribe that has contiguous lands spanning Imperial County, California and Yuma County, Arizona. This portion of Indian country and the surrounding proposed nonattainment areas is shown in Map 3a in Appendix 2. Because the Tribe's

⁵ "STAFF REPORT Analysis of the Imperial County 2009 1997 8-Hour Ozone Modified Air Quality Management Plan and Reasonably Available Control Technology Plan", November 18, 2010, California Air Resources Board. http://www.arb.ca.gov/planning/sip/planarea/imperial/ozone_staffrep.pdf

reservation crosses state boundaries, with the majority of the Tribe's land in Imperial County, the portions of Quechan Indian Tribe in Imperial County will be designated as part of the Imperial County nonattainment area. The remainder of Quechan Indian Tribe reservation land located in Yuma County, Arizona will be designated as "unclassifiable/attainment" consistent with the surrounding area in Yuma County, Arizona.

Conclusion

Based on the assessment of factors described above, EPA has preliminarily concluded that Imperial County, and all areas of Indian country located in Imperial County, should be designated nonattainment because the area violates the 2008 ozone NAAQS.

The Clean Air Act requires EPA to designate any area as nonattainment if it violates a NAAQS or if it contributes to a violation in a nearby area. Air quality data (Factor 1) show that monitors in Imperial County show a violation of the 2008 8-hour ozone standard based on 2008-2010 data. Therefore, Factor 1 supports designating Imperial County as nonattainment.

EPA's review of emissions and emission related data (Factor 2), as well as meteorology and weather or transport patterns (Factor 3), geography and topography (Factor 4), and jurisdictional boundaries (Factor 5) support the proposed nonattainment boundaries recommended by the state. EPA notes that these boundaries are consistent with the boundaries from the 1-hour and the existing 1997 8-hour ozone nonattainment area, therefore EPA's preliminary conclusion is to concur with the state's recommendation.

EPA's intended boundary for Imperial County also includes two different tribes. Where practically possible, current EPA policy discourages splitting contiguous areas of Indian country between two separate nonattainment areas. However, due to the non-contiguous nature of the reservation lands of Torres Martinez (in Riverside and Imperial Counties) and because Quechan Indian Tribe's reservation lands straddle two states (in Imperial County and Yuma County, Arizona), EPA intends to designate only the portions of Torres Martinez and Quechan Indian Tribe located in Imperial County as part of the Imperial County nonattainment area. The portion of Torres Martinez located in Riverside County will be designated nonattainment with the Riverside County (Coachella Valley) nonattainment area, and the Yuma County, Arizona portion of Quechan Indian Tribe (Fort Yuma) will be designated "unclassifiable/attainment," consistent with the surrounding area in Yuma County, Arizona.

Technical Support Document for 2008 Ozone NAAQS Designations

California Area Designations for the 2008 Ozone National Ambient Air Quality Standards

Technical Analysis for Kern County (Eastern Kern)

Figure 1 is a map of Kern County. The map provides relevant information including the locations and design values of air quality monitors, county names and boundaries, and indicates EPA's intended partial county nonattainment designation. See Map 4 in Appendix 1 (and included in Factor 1, below) for a detailed map of the partial county boundary that EPA intends to designate nonattainment.

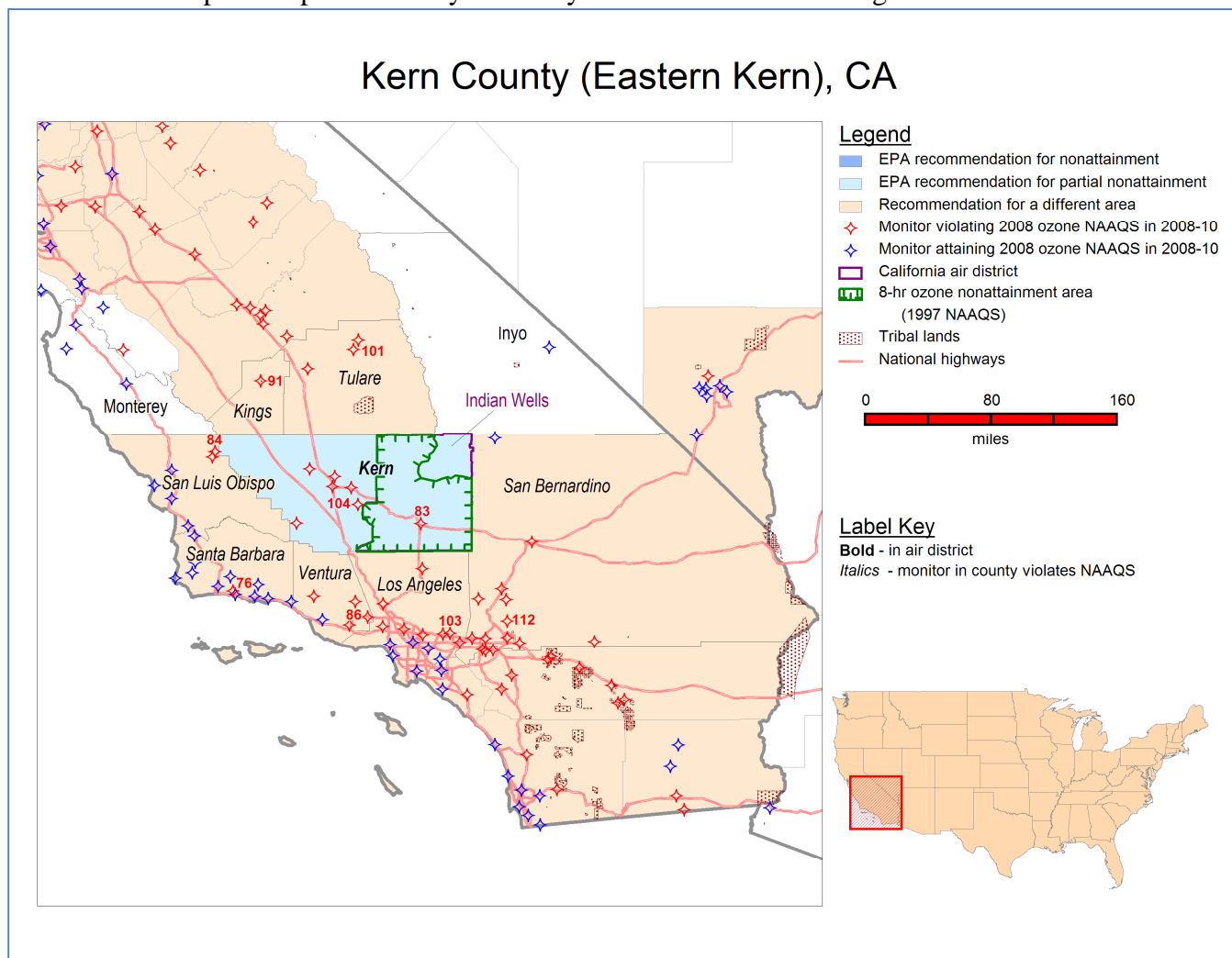


Figure 1

Note: The map shown in Figure 1 provides 8-hour ozone design values in parts per billion (ppb) based on data from 2008-2010 (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. For each particular area, Factor 1 and Appendix 3 describe the air quality data relevant for our intended nonattainment decisions.

For purposes of the 1997 8-hour ozone NAAQS, this area was designated nonattainment. The boundary for the nonattainment area for the 1997 ozone NAAQS included the same eastern portion of Kern County.

In March 2009, California recommended a larger partial-county area be designated as “nonattainment” for the 2008 ozone NAAQS based on air quality data from 2006-2008 (letter from James Goldstene, Executive Officer, California Air Resources Board, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, dated March 11, 2009). California provided an update to the original recommendation in October 2011 based on air quality data from 2008-2010 and preliminary 2009-2011 data and revised its recommendation for Kern County. These 2009 and 2011 recommendations are based on data from Federal Equivalent Method (FEM) monitors sited and operated in accordance with 40 CFR Part 58 (letter from Lynn Terry, Deputy Executive Officer, California Air Resources Board, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, dated October 12, 2011).

In the 2009 recommendation, the state expanded the recommended area to include the northeast corner of the county, Indian Wells Valley. The state indicated that it had monitoring data from the Indian Wells Valley that exceeded the 2008 ozone NAAQS. The data came from a monitor in the China Lake portion of Indian Wells Valley at a monitor that is not reported to EPA. At the time, there was also a violating monitor to the east at Trona, in San Bernardino County, and to the north in Death Valley, in Inyo County. In the state’s 2011 update to their recommendations, based on more recent air quality data, the state has asked EPA not to include the previously-recommended Indian Wells Valley and instead maintain the existing 1997 ozone NAAQS nonattainment area. Neither the Death Valley nor the Trona monitors are violating with 2008-2010 or preliminary 2009-2011 air quality data, and the state no longer recommends the areas around these monitors to be designated nonattainment.

After considering these recommendations and based on EPA's technical analysis described below, EPA intends to designate eastern Kern County (excluding Indian Wells Valley) in California (identified in Table 1 below) as “nonattainment” for the 2008 ozone NAAQS as part of the Eastern Kern nonattainment area.

Table 1. State's Recommended and EPA’s Intended Designated Nonattainment Counties or Areas of Indian country for Eastern Kern.

| Eastern Kern | State-Recommended Nonattainment Counties or Areas of Indian country | EPA Intended Nonattainment Counties or Areas of Indian country |
|------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------|
| Kern County | Kern County (p) | Kern County (p) |
| No areas of Indian country in the nonattainment area | | |

p = partial

Factor Assessment

Factor 1: Air Quality Data

For this factor, we considered 8-hour ozone design values in parts per million (ppm) for air quality monitors in the existing Eastern Kern nonattainment area, based on data from the 2008-2010 (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. A monitor’s DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2008 ozone NAAQS are met at a monitor when the annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years, is 0.075 ppm (75 parts per billion (ppb)) or less. A

DV is only valid if minimum data completeness criteria are met. See 40 CFR part 50 Appendix P. Where several monitors are located in a county (or a designated nonattainment area or maintenance area), the DV for the county or area is determined by the monitor with the highest level.

[Note: Monitors that are eligible for providing design value data generally include State and Local Air Monitoring Stations (SLAMS) that are sited in accordance with 40 CFR Part 58, Appendix D (Section 4.1) and operating with a federal reference method (FRM) or federal equivalent method (FEM) monitor that meets the requirements of 40 CFR part 58, appendix A. All data from a special purpose monitor (SPM) using an FRM or FEM which has operated for more than 24 months is eligible for comparison to the NAAQS unless the monitoring agency demonstrates that the data came from a particular period during which the requirements of appendix A (quality assurance requirements) or appendix E (probe and monitoring path siting criteria) were not met.]

The existing Eastern Kern nonattainment area comprises the eastern portion of Kern County (see Map 4a in Appendix 2). The 2010 DV for the ozone NAAQS for the entirety of Kern County is shown in Table 2.

Table 2. Air Quality Data.

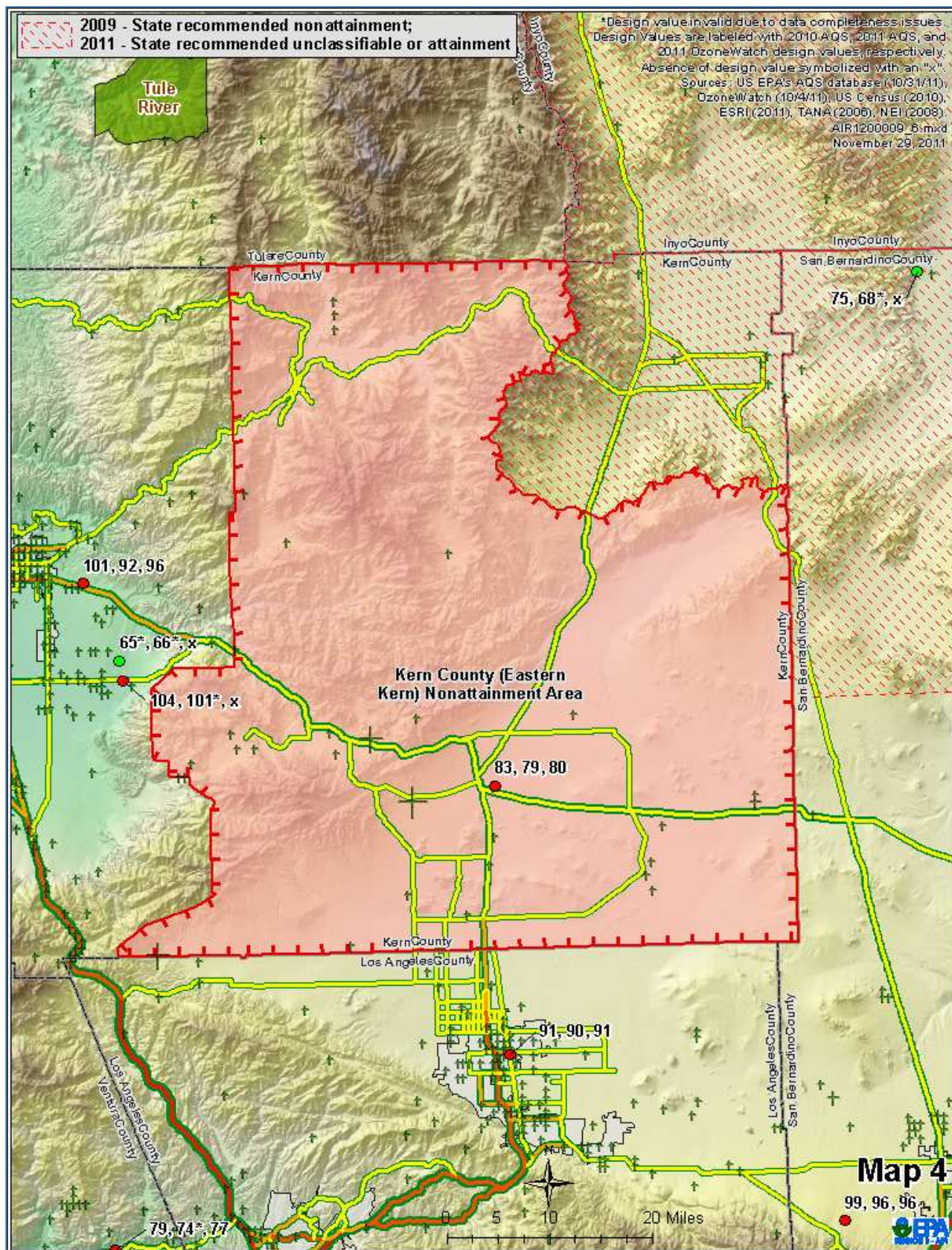
| County | State Recommended Nonattainment? | 2008-2010 Design Value (parts per billion) |
|----------|----------------------------------|--------------------------------------------|
| Kern, CA | Yes (partial) | 104 |

Ozone monitors relevant for comparison to the NAAQS and information from additional data sources within the existing Eastern Kern nonattainment area are shown in Appendix 1, Map 4 (inserted below). EPA intends to designate the western part of Kern County as part of the San Joaquin Valley nonattainment area. The design value shown in Table 2 is from a monitor located within this western portion of Kern County. As shown in Appendix 1, Map 4, there is one ozone monitor within the existing Eastern Kern nonattainment area with data in EPA's Air Quality System (AQS); this monitor has a 2010 DV of 83 ppb.

California's ozone season encompasses the entire year. Certified, quality assured data are available in AQS for all areas through calendar year 2010. Map 4 in Appendix 1 includes preliminary 2011 DVs for the existing Eastern Kern nonattainment area for informational purposes only. For each monitor, Appendix 1 lists the monitor, the 2008-2010 DV (certified and quality assured in AQS), the preliminary 2009-2011 DV (as available in AQS as of October 31, 2011), and a preliminary 2009-2011 DV using 2011 data from OzoneWatch¹. Absence of a DV is symbolized with an "x".

Appendix 3 lists the DVs for monitors in the existing Eastern Kern nonattainment area. Monitors shown in bold are the DV monitors (i.e., the monitor with the highest DV) for each individual county. Monitors shown in red font are the DV monitor for the nonattainment area. Values with an asterisk do not meet data completeness, and therefore those DVs are not relevant for comparison to the NAAQS and are solely provided for informational purposes.

¹ The preliminary 2009-2011 design values indicated by OzoneWatch are based on ozone data from 2009, 2010, and 2011 stored in AQS, combined with 2011 data reported to AirNow on days which no data currently exist in the AQS database. The 2009 and 2010 data were retrieved from AQS on July 20, 2011. The 2011 data are based on data submitted AQS or AirNow (<http://airnow.gov/>) as of October 4, 2011. Ultimately, attainment of the 8-hour ozone NAAQS will be determined entirely from data in AQS.



From Attachment 1, Map 4: For map legend describing monitors, emissions, traffic, population, and boundaries, see Appendix 1

The monitor in the existing Eastern Kern nonattainment area (which includes the eastern portion of Kern County and excludes the portion of Kern in the existing San Joaquin Valley nonattainment area and Indian Wells Valley) shows a violation of the 2008 8-hour ozone standard based on 2008-2010 data. Therefore, this area is included in the intended Eastern Kern nonattainment area. A county (or partial county) must also be designated nonattainment if it contributes to a violation in a nearby area. Each county without a violating monitor that is located near a county with a violating monitor has been evaluated based on the weight of evidence of the five factors to determine whether it contributes to the nearby violation.

Factor 2: Emissions and Emissions-Related Data

EPA evaluated emissions of ozone precursors, nitrogen oxides (NO_x) and volatile organic compounds (VOC), and other emissions-related data that provide information on areas contributing to violating monitors.

Emissions data

EPA evaluated county-level emission data for NO_x and VOC derived from the 2008 National Emissions Inventory (NEI), version 1.5. This is the most recently available NEI (see <http://www.epa.gov/ttn/chief/net/2008inventory.html>). Emissions in a nearby area indicate the potential for the area to contribute to observed violations. We will also consider any additional information we receive on changes to emissions levels that are not reflected in recent inventories. These changes include emissions reductions due to permanent and enforceable emissions controls that will be in place before final designations are issued and emissions increases due to new sources.

Table 3 shows emissions of NO_x and VOC (given in tons per year) for Kern County.

Table 3. Total 2008 NO_x and VOC Emissions.

| County | State Recommended Nonattainment? | NO _x (tpy) | VOC (tpy) |
|-----------|----------------------------------|-----------------------|-----------|
| Kern, CA | Yes (partial) | 70,256 | 32,300 |
| Areawide: | | 70,256 | 32,300 |

Kern County is geographically large, covering over 8,000 square miles. Most of the stationary sources of ozone precursor emissions are located on the western side of Kern County within the San Joaquin Valley nonattainment area (see Map 13 in Appendix 1). In the eastern portion of Kern County, there are two very large sources of ozone precursors (greater than 500 tons per year), however, overall, there are very few stationary sources located in Eastern Kern compared to the western portion of Kern County (see Map 4 in Appendix 1 for Eastern Kern; see Map 13 in Appendix 1 for the western portion of Kern County).

Population density and degree of urbanization

EPA evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. These include ozone-creating emissions from on-road and off-road vehicles and engines, consumer products, residential fuel combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NO_x and VOC emissions, which that may contribute to ozone formation. Rapid population or vehicle miles traveled (VMT) growth (see below) in a county on

the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the area associated with area source and mobile source emissions as part of the nonattainment area. Table 4 shows the population, population density, and population growth information for each county in the area.

Table 4. Population and Growth.

| County | State Recommended Nonattainment? | 2010 Population | 2010 Population Density (1000 pop/sq mi) | Absolute change in population (2000-2010) | Population % change (2000-2010) |
|-----------|----------------------------------|-----------------|------------------------------------------|-------------------------------------------|---------------------------------|
| Kern, CA | Yes (partial) | 839,631 | 0.10 | 176,121 | +27% |
| Areawide: | | 839,631 | 0.10 | 176,121 | +27% |

Sources: U.S. Census Bureau population estimates for 2010 as of August 4, 2011

(http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_PL_GCTPL2.STO5&prodType=table)

Maps 4 and 4a in Appendices 1 and 2, respectively, show population for the area. Overall, from 2000 - 2010, Kern County has experienced a high level of population growth. Its population is split between the western portion in the San Joaquin Valley and the eastern portion. In terms of population centers, Eastern Kern is distinct from the western portion of Kern County because it does not contain large population centers (see Map 4a of Appendix 2). Based on the relatively few population centers in Eastern Kern, the population growth in Kern County likely occurred in the western portion of the county, which includes the City of Bakersfield.

Traffic (VMT) data

EPA evaluated the commuting patterns of residents in the area, as well as the total VMT for each county. In combination with the population/population density data and the location of main transportation arteries (see above), this information helps identify the probable location of non-point source emissions. A county with high VMT indicates the presence of motor vehicle emissions that may contribute to ozone formation and nonattainment in the area. Rapid population or VMT growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 5 shows total 2008 VMT for Kern County.

Table 5. Traffic (VMT) data.

| County | State Recommended Nonattainment? | 2008 VMT* (million miles) |
|-----------|----------------------------------|---------------------------|
| Kern, CA | Yes (partial) | 8,578 |
| Areawide: | | 8,578 |

*MOBILE model VMTs are those inputs into the NEI version 1.5.

Kern County has a high VMT compared to other counties in the San Joaquin Valley (see Map 4 versus Map 14 of Appendix 1). Traffic volume in Eastern Kern is light compared to traffic in the western portion of Kern County.

Factor 3: Meteorology (weather/transport patterns)

EPA evaluated available meteorological data to help determine how meteorological conditions, such as weather, transport patterns and stagnation conditions would affect the fate and transport of precursor emissions contributing to ozone formation.

The State has presented the following information for Eastern Kern County.²

“Kern County is located in two different air basins: the San Joaquin Valley Air Basin and the Mojave Desert Air Basin. The eastern portion, located in the Mojave Desert Air Basin, falls under the jurisdiction of the Kern County Air Pollution Control District. Previous state implementation plans and transport studies have addressed the formation [of] ozone in the Mojave Basin and transport of ozone to the Mojave Basin.”

The “Federal 8-Hour Ozone Attainment Plan (Western Mojave Desert Non-attainment Area)” includes a discussion of the ozone formation and transport patterns in the Western Mojave Air Basin.³ The “Assessment and Mitigation of the Impacts of Transported Pollutants on Ozone Concentrations within California” (California Air Resources Board, 1990)⁴ and the second triennial update to that report (1996) also discuss transport to the Western Mojave Air Basin, including Eastern Kern County. Excerpts from these documents are presented below:

“Ozone concentrations in the Western Mojave Desert are impacted by transport from both the South Coast and San Joaquin Valley. Therefore, transport must be considered in evaluating the prospects for attainment. Several mountain passes provide transport routes into the Western Mojave Desert from the South Coast. Soledad Canyon on the eastern edge of the San Gabriel Mountains and Cajon Pass between the San Gabriel and San Bernardino mountains are the two major transport corridors from the South Coast to the Western Mojave Desert. A third transport corridor runs through the Tehachapi Pass in the Tehachapi Mountains and provides an outlet for emissions and pollutants from the southern San Joaquin Valley to the Western Mojave Desert. Previous ARB transport assessments concluded that during 1-hour State ozone exceedances, the transport contribution from the South Coast to ozone in the Western Mojave Desert could be overwhelming. The transport assessments also found there could be a shared impact between the South Coast and Western Mojave Desert, meaning ozone exceedances could be caused by a combination of transport and local emissions (ARB 1990; ARB 1996)^{5, 6}. In addition to the South Coast impact, the ARB transport assessments found an overwhelming transport impact from the San Joaquin Valley to the Western Mojave Desert.”

² “Recommended Area Designations for the 2008 Federal 8-Hour Ozone Standard Staff Report”, State of California Air Resources Board, Revised: March 3, 2009.

³ “Federal 8-Hour Ozone Attainment Plan (Western Mojave Desert Non-attainment Area)”, Adopted on: June 9, 2008 Mojave Desert Air Quality Management District.
<http://www.arb.ca.gov/planning/sip/planarea/wmdaqmp/wmd2008ozone.pdf>

⁴ Air Resources Board, 1990: “Assessment and Mitigation of the Impacts of Transported Pollutants on Ozone Concentrations within California.” ARB Staff Report prepared by the Technical Support Division and the Office of Air Quality Planning and Liaison, June 1990.

⁵ Air Resources Board, 1990: “Assessment and Mitigation of the Impacts of Transported Pollutants on Ozone Concentrations within California.” ARB Staff Report prepared by the Technical Support Division and the Office of Air Quality Planning and Liaison, June 1990.

⁶ Air Resources Board, 1996: “Second Triennial Review of the Assessment of the Impacts of Transported Pollutants on Ozone Concentrations in California (Revised).” ARB Staff Report prepared by the Technical Support Division, November 1996.

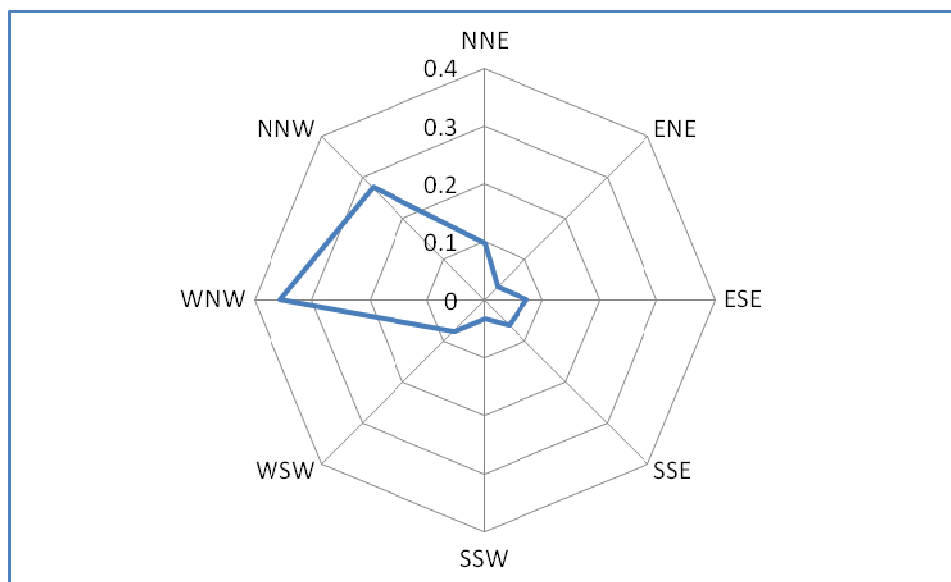


Figure 2: Eastern Kern County – Summer Wind Frequency Distribution

The wind frequency distribution of wind direction data in Figure 2, above, is based on an average of 30 years of National Weather Service information for the months of June, July, and August. The prevailing winds during the ozone season have a strong northwesterly component.

Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis evaluates the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the area.

The Eastern Kern County nonattainment area is shown in Appendix 2, Map 4a.

The Tehachapi Mountains to the northwest, separate Eastern Kern County, part of the Western Mojave Air Basin, from the San Joaquin Valley Air Basin. The Tehachapi's crest varies in height from approximately 4,000–8,000 feet. Eastern Kern County is bounded by Antelope Valley to the south and West Mojave Desert to the east.

The intended nonattainment area excludes the northeastern corner of Kern County, also known as the Indian Wells Valley. The Indian Wells Valley is separated from the rest of Eastern Kern County by mountain ranges. These mountain ranges are to the west: the peaks of the eastern slopes of the Sierra Nevada mountains are 6,000 to 7,000 feet in elevation along the western boundary of Indian Wells Valley; to the south, the El Paso mountains which are approximately 4,000 to 5,000 feet in this area; and also the Rand mountains which rise above 4,000 feet. These mountain barriers form the north and east boundaries of the airshed of the violating Eastern Kern area.

Factor 5: Jurisdictional boundaries

For each potential nonattainment area, we considered existing jurisdictional boundaries to provide a clearly defined legal boundary and to help identify the areas appropriate for carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment area boundaries for ozone or other urban-scale pollutants, county lines, air district boundaries, township boundaries, areas covered by a metropolitan planning

organization, state lines, Reservation boundaries, and urban growth boundary. Where existing jurisdictional boundaries were not adequate or appropriate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates were considered.

The Eastern Kern area has previously-established nonattainment boundaries associated with both the 1-hour and the 1997 8-hour ozone NAAQS. The state has recommended the same boundary for the 2008 ozone NAAQS as the existing boundary for the 1997 ozone NAAQS. Air quality is managed by the Eastern Kern Air Pollution Control District (APCD). The Eastern Kern APCD has jurisdiction over the eastern portion of the county, while the larger western portion of the county is under the jurisdiction of the San Joaquin Valley Air Pollution Control District. The entirety of Kern County is defined by the Office of Management and Budget as the Bakersfield-Delano metropolitan statistical area (MSA). The MSA is not part of a larger combined statistical area (CSA). The majority of the population underlying this definition is located in the San Joaquin Valley, on the other side of the Sierra Nevada mountains from the eastern portion of Kern County.

Conclusion

Based on the assessment of factors described above, EPA has preliminarily concluded that the eastern part of Kern County should be designated as the Eastern Kern nonattainment area because it is violating the 2008 ozone NAAQS.

The monitor within the existing Eastern Kern nonattainment area shows a violation of the 2008 8-hour ozone standard based on 2008-2010 data. Therefore, based on air quality data (Factor 1), the eastern portion of Kern County should be designated nonattainment.

Evaluation of emissions and emission sources (Factor 2) shows that sources of ozone precursor emissions are concentrated on the western side of Kern County, which EPA intends to designate nonattainment as part of the San Joaquin Valley nonattainment area. The eastern portion of Kern County is distinguished from the western portion in its relatively few stationary sources and population centers, and lower volumes of non-truck traffic. Therefore, Factor 2 supports the state's recommendation.

Meteorology and weather or transport patterns (Factor 3) and geography and topography (Factor 4) show potential pollution transport from neighboring areas, which will be designated as separate nonattainment areas. The eastern portion of Kern County is separated from the western portion by a mountain range. EPA intends to designate the western portion of the county as part of the San Joaquin Valley nonattainment area. Topography also supports separating Indian Wells Valley from the intended nonattainment area.

In considering jurisdictional boundaries (Factor 5), EPA notes that the Eastern Kern APCD has air quality planning jurisdiction over the eastern portion of the county, while the larger western portion of the county is under the jurisdiction of the San Joaquin Valley Air Pollution Control District. EPA's intended boundary for the Eastern Kern nonattainment area is the same as the 2008 8-hour ozone NAAQS boundary recommended by the state, as well as the 1997 8-hour ozone nonattainment boundary.

Because Eastern Kern has a violating monitor, is an existing nonattainment area under the 1997 8-hour ozone NAAQS with its own air pollution control district, and based on the emission sources and air pollutant transport patterns, EPA's preliminarily conclusion is to concur with the state's

recommendation to designate the eastern portion of Kern County, excluding Indian Wells Valley, as nonattainment for the 2008 ozone NAAQS.

Technical Support Document for 2008 Ozone NAAQS Designations

California Area Designations for the 2008 Ozone National Ambient Air Quality Standards

Technical Analysis for Los Angeles-San Bernardino Counties (West Mojave Desert)

Figure 1 is a map of the intended Los Angeles-San Bernardino Counties (West Mojave Desert) nonattainment area. The map provides other relevant information including the locations and design values of air quality monitors, county names and boundaries, and indicates EPA's intended nonattainment designation. Also shown is the nonattainment boundary for the 1997 8-hour ozone NAAQS, which includes the Antelope Valley portion of Los Angeles County and the Mojave Desert Air Basin portion of San Bernardino County. One area of Indian country was included in the 1997 9-hour ozone nonattainment area. It is the same tribe as is listed in Table 1, below.

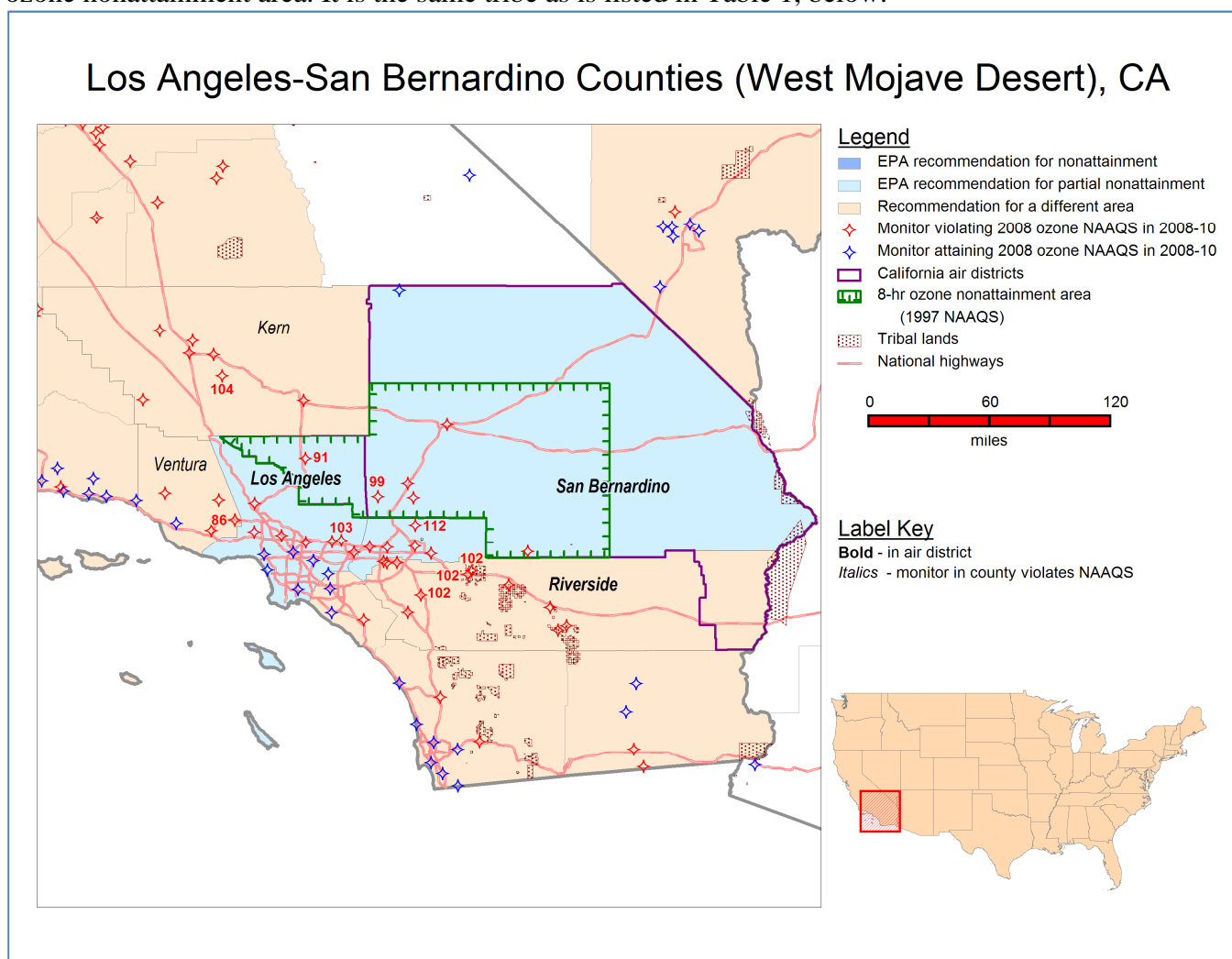


Figure 1

In March 2009, California recommended that the same area previously designated as nonattainment for the 1997 ozone NAAQS be designated as nonattainment for the 2008 ozone NAAQS based on air quality data from 2006-2008. The state also requested that the area be split into two nonattainment areas

along air district boundaries (letter from James Goldstene, Executive Officer, California Air Resources Board, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, dated March 11, 2009). California provided an update to their original recommendation in October 2011 based on air quality data from 2008-2010 and preliminary 2009-2011 data, but did not revise its recommendation for the Antelope Valley portion of Los Angeles County and the Mojave Desert Air Basin portion of San Bernardino County. The 2009 and 2011 recommendations are based on data from Federal Equivalent Method (FEM) monitors sited and operated in accordance with 40 CFR Part 58 (letter from Lynn Terry, Deputy Executive Officer, California Air Resources Board, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, dated October 12, 2011). The state did not submit preliminary 2011 data for this area and has not indicated they intend to certify 2011 data for this area early, therefore EPA anticipates relying on 2008-2010 data to designate West Mojave Desert.

After considering these recommendations and based on EPA's technical analysis described below, EPA intends to designate San Bernardino County (Mojave Desert Air Basin portion) and Los Angeles County (Antelope Valley portion) in California, and all the tribal lands in the area (identified in Table 1 below) as "nonattainment" for the 2008 ozone NAAQS, together comprising the Los Angeles-San Bernardino Counties (West Mojave Desert) multi-jurisdictional nonattainment area.

Table 1. State's or Tribe's Recommended and EPA's Intended Designated Nonattainment Counties or Areas of Indian country for Los Angeles-San Bernardino Counties (West Mojave Desert).

| Los Angeles-San Bernardino Counties (West Mojave Desert) | State or Tribe Recommended Nonattainment Counties or Areas of Indian country | EPA Intended Nonattainment Counties or Areas of Indian country ¹ |
|----------------------------------------------------------|------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Los Angeles County | Los Angeles County ¹ | Los Angeles County |
| San Bernardino County | San Bernardino County (p) ¹ | San Bernardino County (p) |
| Twenty Nine Palms Band of Mission Indians ² | N/A | Twenty Nine Palms Band of Mission Indians |

p = partial

N/A = Tribe did not submit recommendation.

EPA intended modifications to state or tribe recommendations are shown in **bold**.

¹ California recommended the Antelope Valley portion of Los Angeles County and the Mojave Desert Air Basin portion of San Bernardino County be designated separate nonattainment areas. EPA intends to designate these two partial-county areas as one nonattainment area, keeping the same nonattainment boundary as the existing nonattainment area boundary established for the 1997 ozone NAAQS.

² Twenty Nine Palms Band of Mission Indians (Twenty Nine Palms) has land in both the intended West Mojave Desert nonattainment area and the intended Riverside (Coachella Valley) nonattainment area. Non-contiguous lands of Twenty Nine Palms will designated with the surrounding nonattainment area. This technical analysis addresses only those lands within the intended West Mojave Desert nonattainment area.

Factor Assessment

Factor 1: Air Quality Data

For this factor, we considered 8-hour ozone design values in parts per million (ppm) for air quality monitors in counties in the existing 1997 8-hour ozone Los Angeles-San Bernardino Counties (West Mojave Desert) nonattainment area, based on data from the 2008-2010 period (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. A monitor's DV is

the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2008 ozone NAAQS are met at a monitor when the annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years, is 0.075 ppm (75 parts per billion (ppb)) or less. A DV is only valid if minimum data completeness criteria are met. See 40 CFR part 50 Appendix P. Where several monitors are located in a county (or a designated nonattainment area or maintenance area), the DV for the county or area is determined by the monitor with the highest level.

[Note: Monitors that are eligible for providing design value data generally include State and Local Air Monitoring Stations (SLAMS) that are sited in accordance with 40 CFR Part 58, Appendix D (Section 4.1) and operating with a federal reference method (FRM) or federal equivalent method (FEM) monitor that meets the requirements of 40 CFR part 58, appendix A. All data from a special purpose monitor (SPM) using an FRM or FEM which has operated for more than 24 months is eligible for comparison to the NAAQS unless the monitoring agency demonstrates that the data came from a particular period during which the requirements of appendix A (quality assurance requirements) or appendix E (probe and monitoring path siting criteria) were not met.]

The existing West Mojave Desert nonattainment area comprises the southwestern Mojave Desert Air Basin portion of San Bernardino (partial county) and the northeastern, Antelope Valley portion of Los Angeles County (partial county) (see Map 5a in Appendix 2). The 2010 DVs for the ozone NAAQS for these two counties are shown in Table 2.

Table 2. Air Quality Data.

| County | State Recommended Nonattainment? | 2008-2010 Design Value (parts per billion) |
|--------------------|----------------------------------|--------------------------------------------|
| Los Angeles, CA | Yes | 103 |
| San Bernardino, CA | Yes (partial) | 112 |

Ozone monitors relevant for comparison to the NAAQS and information from additional data sources within the existing West Mojave Desert nonattainment area are shown in Appendix 1, Map 5 (inserted below). EPA intends to designate the South Coast Air Basin portions of Los Angeles County and San Bernardino County as part of the Los Angeles-South Coast Air Basin nonattainment area (see Map 6 in Appendix 1). The design values shown in Table 2 are from monitors located within the intended Los Angeles-South Coast Air Basin nonattainment area portions of the two counties. As shown in Appendix 1, Map 5, the DV for the Los Angeles section of the existing West Mojave Desert nonattainment area is 91; the DV for the San Bernardino portion of the existing West Mojave Desert nonattainment area is 99 based on certified 2008-2010 data.

California's ozone season encompasses the entire year. Certified, quality assured data are available in EPA's Air Quality System (AQS) for all areas through calendar year 2010. Map 5 in Appendix 1 includes preliminary 2011 DVs for the existing West Mojave Desert nonattainment area for informational purposes only. For each monitor, Appendix 1 lists the monitor, the 2008-2010 DV (certified and quality assured in AQS), the preliminary 2009-2011 DV (as available in AQS as of October 31, 2011), and a preliminary 2009-2011 DV using 2011 data from OzoneWatch¹. Absence of a DV is symbolized with an "x".

¹ The preliminary 2009-2011 design values indicated by OzoneWatch are based on AQS ozone data from 2009, 2010, and 2011, supplemented with 2011 data reported to AirNow (<http://airnow.gov/>) on days for which no data currently exist in the AQS database. 2009 and 2010 AQS data were retrieved on July 20, 2011; 2011 AQS and AirNow data were compiled on October 4, 2011. Ultimately, attainment of the 8-hour ozone NAAQS will be determined entirely from data in AQS.

Emissions data

EPA evaluated county-level emission data for NO_x and VOC derived from the 2008 National Emissions Inventory (NEI), version 1.5. This is the most recently available NEI (see <http://www.epa.gov/ttn/chief/net/2008inventory.html>). Emissions in a nearby area indicate the potential for the area to contribute to observed violations. We will also consider any additional information we receive on changes to emissions levels that are not reflected in recent inventories. These changes include emissions reductions due to permanent and enforceable emissions controls that will be in place before final designations are issued and emissions increases due to new sources.

Table 3 shows emissions of NO_x and VOC (given in tons per year) for violating counties that we considered for inclusion in the Los Angeles-San Bernardino Counties (West Mojave Desert) area.

Table 3. Total 2008 NO_x and VOC Emissions.

| County | State Recommended Nonattainment? | NO _x (tpy) | VOC (tpy) |
|--------------------|----------------------------------|-----------------------|-----------|
| Los Angeles, CA | Yes | 219,340 | 124,133 |
| San Bernardino, CA | Yes (partial) | 99,779 | 43,359 |
| Areawide: | | 319,119 | 167,492 |

Emissions of ozone precursors shown in Table 3 represent all of Los Angeles and San Bernardino Counties, not just the Antelope Valley portion of Los Angeles County or the Mojave Desert Air Basin portion of San Bernardino County. Map 5 in Appendix 1 shows the distribution of stationary source emissions in the Los Angeles and San Bernardino County portions of West Mojave Desert. Stationary sources in the western portion of the West Mojave Desert nonattainment area, located in eastern Los Angeles County, are generally clustered near the major roadways. In contrast, stationary sources in the eastern portion of the West Mojave Desert nonattainment area, located in western San Bernardino County, are clustered around both major and minor roadways. Map 5 suggests that the majority of emission sources are located in the South Coast Air Basin portions of Los Angeles and San Bernardino Counties. We plan to designate those portions of Los Angeles and San Bernardino Counties as a separate nonattainment area (see technical analysis for the Los Angeles-South Coast Air Basin nonattainment area).

Population density and degree of urbanization

EPA evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. These include ozone-creating emissions from on-road and off-road vehicles and engines, consumer products, residential fuel combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NO_x and VOC emissions, which contribute to ozone formation. Rapid population growth or growth in vehicle miles traveled (VMT) (see below) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the area associated with area source and mobile source emissions as part of the nonattainment area. Table 4 shows the population, population density, and population growth information for each county in the area.

Table 4. Population and Growth.

| County | State Recommended Nonattainment? | 2010 Population | 2010 Population Density (1000 pop/sq mi) | Absolute change in population (2000-2010) | Population % change (2000-2010) |
|--------------------|----------------------------------|-----------------|------------------------------------------|-------------------------------------------|---------------------------------|
| Los Angeles, CA | Yes | 9,818,605 | 2.40 | 274,493 | +3% |
| San Bernardino, CA | Yes (partial) | 2,035,210 | 0.10 | 316,535 | +18% |
| Areawide: | | 11,853,815 | 0.49 | 591,028 | +5% |

Sources: U.S. Census Bureau population estimates for 2010 as of August 4, 2011

(http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_PL_GCTPL2.STO5&prodType=table)

Maps 5 and 5a in Appendices 1 and 2, respectively, show population for the area. Population and growth statistics shown in Table 4 represent all of Los Angeles and San Bernardino Counties, not just the Antelope Valley portion of Los Angeles County or the Mojave Desert Air Basin portion of San Bernardino County. In general, Los Angeles County is more highly and densely populated than San Bernardino County, however, San Bernardino County exhibited significantly greater growth over 2000 to 2010 than Los Angeles County. Map 5a in Appendix 2 shows two large population centers in the Antelope Valley portion of Los Angeles County, and a large but less dense population center in the western portion of San Bernardino County. Map 5a suggests that the majority of the dense population centers are located in the South Coast Air Basin portions of Los Angeles and San Bernardino Counties. We plan to designate those portions of Los Angeles and San Bernardino Counties as a separate nonattainment area (see technical analysis for the Los Angeles-South Coast Air Basin nonattainment area).

Traffic (VMT) data

EPA evaluated the commuting patterns of residents in the area, as well as the total VMT for each county. In combination with the population/population density data and the location of main transportation arteries (see above), this information helps identify the probable location of non-point source emissions. A county with high VMT is generally an integral part of an urban area and indicates the presence of motor vehicle emissions that may contribute to ozone formation that contributes to nonattainment in the area. Rapid population or VMT growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 5 shows total 2008 VMT.

Table 5. Traffic (VMT) data.

| County | State Recommended Nonattainment? | 2008 VMT* (million miles) |
|--------------------|----------------------------------|---------------------------|
| Los Angeles, CA | Yes | 78,315 |
| San Bernardino, CA | Yes (partial) | 20,229 |
| Areawide: | | 98,544 |

*MOBILE model VMTs are those inputs into the NEI version 1.5.

Both Los Angeles and San Bernardino counties have VMT that are consistent with population and other emissions data for the two counties. Within the Los Angeles-San Bernardino Counties (West Mojave Desert) area, the heaviest non-truck traffic, as shown in Map 5, occurs in a discrete portion of the Antelope Valley portion of Los Angeles County and along a roadway that bisects the Mojave Desert portion of San Bernardino County along a roughly southwest-northeast axis. Map 5 also suggests that the heaviest traffic volumes occur in the South Coast Air Basin portions of Los Angeles and San Bernardino Counties. Those portions of Los Angeles and San Bernardino counties will be designated as

a separate nonattainment area (see technical analysis for the Los Angeles-South Coast Air Basin intended nonattainment area).

Factor 3: Meteorology (weather/transport patterns)

EPA evaluated available meteorological data to help determine how meteorological conditions, such as weather, transport patterns and stagnation, would affect the fate and transport of precursor emissions contributing to ozone formation.

Previous implementation plans and transport studies for the State of California have addressed the formation of ozone in the Mojave Basin and transport of ozone to the Mojave Basin. The Federal 8-Hour Ozone Attainment Plan (Western Mojave Desert Nonattainment Area) includes a discussion of the ozone formation and transport patterns in the Western Mojave Air Basin.² The “Assessment and Mitigation of the Impacts of Transported Pollutants on Ozone Concentrations within California” (California Air Resources Board (ARB), 1990)³ and the second triennial update to that report (1996) also discuss transport to the Western Mojave Air Basin. Excerpts from these documents are presented below:

“The Western Mojave Desert ozone non-attainment area, which includes the MDAQMD [Mojave Desert Air Quality Management District], is a small portion of the complex greater Southern California airshed. Ozone and ozone precursors are known to flow (or be transported), under the influence of winds, throughout Southern California. The most technically accurate method of evaluating ozone concentrations, ozone emissions, and future ozone behavior is through a large modeling project that includes all of the affected areas in Southern California (and a portion of northern Mexico).

The Western Mojave Desert area extends about 90 miles north to south and 120 miles east to west. The Planning Area is classified as high desert with elevations ranging from 2,000 to 5,000 feet and annual precipitation averaging 4 to 6 inches. Average daily maximum temperatures are highest during July, ranging from 100 to 105 degrees Fahrenheit. In contrast, winter daily maximum temperatures average in the low 60s. [...]

Ozone concentrations in the Western Mojave Desert are impacted by transport from both the South Coast and San Joaquin Valley. Therefore, transport must be considered in evaluating the prospects for attainment. Several mountain passes provide transport routes into the Western Mojave Desert from the South Coast. Soledad Canyon on the eastern edge of the San Gabriel Mountains and Cajon Pass between the San Gabriel and San Bernardino mountains are the two major transport corridors from the South Coast to the Western Mojave Desert. A third transport corridor runs through the Tehachapi Pass in the Tehachapi Mountains and provides an outlet for emissions and pollutants from the southern San Joaquin Valley to the Western Mojave Desert. Previous ARB transport assessments

² Federal 8-Hour Ozone Attainment Plan (Western Mojave Desert Non-attainment Area) Adopted on: June 9, 2008, Mojave Desert Air Quality Management District. <http://www.arb.ca.gov/planning/sip/planarea/wmdaqmp/wmd2008ozone.pdf>

³ Air Resources Board, 1990: Assessment and Mitigation of the Impacts of Transported Pollutants on Ozone Concentrations within California. ARB Staff Report prepared by the Technical Support Division and the Office of Air Quality Planning and Liaison, June 1990. <http://www.arb.ca.gov/aqd/transport/assessments/assessments.htm>

concluded that during 1-hour State ozone exceedances, the transport contribution from the South Coast to ozone in the Western Mojave Desert could be overwhelming. The transport assessments also found there could be a shared impact between the South Coast and Western Mojave Desert, meaning ozone exceedances could be caused by a combination of transport and local emissions (ARB 1990; ARB 1996)^{4,5}. In addition to the South Coast impact, the ARB transport assessments found an overwhelming transport impact from the San Joaquin Valley to the Western Mojave Desert.

Although the impact of transport on ozone air quality in the Western Mojave Desert can be overwhelming, the frequency of the impacts has not been determined. However, more recent analyses indicate that ozone exceedances in the Western Mojave Desert continue to be impacted by transported pollutants. Areas impacted by transport generally show ozone concentrations peaking in the late afternoon or evening hours.”

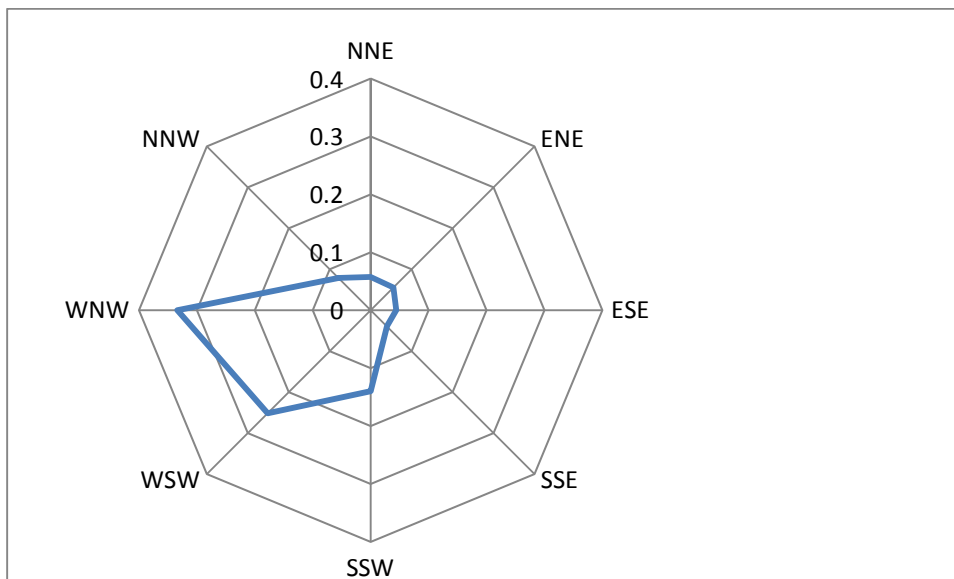


Figure 2: San Bernardino County – Summer Wind Frequency Distribution

The wind frequency distribution of wind direction data in Figure 2, above, is based on an average of 30 years of National Weather Service information for the months of June, July, and August. The prevailing winds during the ozone season have a strong westerly component.

⁴ Air Resources Board, 1990: Assessment and Mitigation of the Impacts of Transported Pollutants on Ozone Concentrations within California. ARB Staff Report prepared by the Technical Support Division and the Office of Air Quality Planning and Liaison, June 1990. <http://www.arb.ca.gov/aqd/transport/assessments/assessments.htm>

⁵ Air Resources Board, 1996: Second Triennial Review of the Assessment of the Impacts of Transported Pollutants on Ozone Concentrations in California (Revised). ARB Staff Report prepared by the Technical Support Division, November 1996.

Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis evaluates the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the area.

The Western Mojave Air Basin is shown in Appendix 2, Map 5a. The Western Mojave Desert area extends about 90 miles north to south and 120 miles east to west. The Western Mojave Desert Planning Area is classified as high desert with elevations ranging from 2,000 to 5,000 feet and annual precipitation averaging 4 to 6 inches. The San Gabriel and San Bernardino mountains to the west separate the South Coast Air Basin from the Western Mojave Desert Air Basin. The Tehachapi Mountains to the northwest separate the San Joaquin Valley from the Western Mojave Desert Air Basin.

Factor 5: Jurisdictional boundaries

For each potential nonattainment area, we considered existing jurisdictional boundaries to provide a clearly defined legal boundary and to help identify the areas appropriate for carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment area boundaries for ozone or other urban-scale pollutants, county lines, air district boundaries, township boundaries, areas covered by a metropolitan planning organization, state lines, areas of Indian country, and the urban growth boundary. Where existing jurisdictional boundaries were not adequate or appropriate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates were considered.

The Los Angeles-San Bernardino Counties (West Mojave Desert) area has previously-established nonattainment boundaries associated with the 1-hour and 1997 8-hour ozone NAAQS. The state has recommended a nonattainment designation for the West Mojave Desert, but also recommended separating the Antelope Valley portion of Los Angeles County from the Mojave Desert Air Basin portion of San Bernardino County, thereby creating two nonattainment areas where there currently is one. The separation line follows part of a county boundary, as well as part of an air district boundary.

Los Angeles County and San Bernardino County both have several jurisdictional boundaries to consider. See Appendix 2, Map 5a. Los Angeles County is divided between two air districts, with the northeast portion falling under the Antelope Valley Air Quality Management District's purview, and the remainder controlled by the South Coast Air Quality Management District (South Coast AQMD). San Bernardino County is mostly within the Mojave Desert Air Quality Management District (Mojave Desert AQMD), except for the southwest tip which is part of the South Coast AQMD. The portions under consideration for inclusion in the West Mojave Desert nonattainment area are under the jurisdictions of the Antelope Valley and the Mojave Desert AQMDs. Antelope Valley AQMD is operated and managed by the staff of the Mojave Desert AQMD, and both areas have been working together to address the 1997 ozone NAAQS. EPA, therefore, does not anticipate different AQMDs or different counties presenting an implementation challenge if these two air district areas remain one nonattainment area.

The West Mojave Desert area is included in the expansive Los Angeles-Long Beach-Riverside Combined Statistical Area (CSA). This CSA contains the entireties of Ventura, Los Angeles, Orange, San Bernardino and Riverside counties. Currently, for the 1997 ozone standard, this large CSA encompasses four different nonattainment areas (Ventura County (continental portion), West Mojave Desert (northeast Los Angeles and a portion of southwest San Bernardino counties), Los Angeles-South Coast (the remainder of Los Angeles County to the southwest, Orange County, a portion of southwest

San Bernardino County and west Riverside County), and central Riverside County (Coachella Valley) and attaining portions of Ventura, San Bernardino and Riverside counties. Taking a regional approach to southern California and designating most if not all of the southern portion of the state as nonattainment for the 2008 ozone NAAQS may have merit, but would also be complicated and perhaps counterproductive. Coordination of a number of air districts would be required and the large CSA covering multiple air basins may make air quality planning impractical. While the Office of Management and Budget's definition of urban areas describes economic interconnectedness, such an approach does not generally follow air basin or air shed boundaries. Furthermore, the state has asked EPA to designate areas along air basin and air district jurisdictional lines. The state's requested nonattainment areas in totality in southern California are essentially the same boundaries EPA has used in the past to designate ozone nonattainment areas.

The Los Angeles-San Bernardino Counties (West Mojave Desert) area also includes areas of Indian country. As defined at 18 U.S.C. 1151, "Indian country" refers to: "(a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same." EPA recognizes the sovereignty of tribal governments, and has attempted to take the desires of the tribes into account in establishing appropriate nonattainment area boundaries.

The Twenty Nine Palms is a federally recognized tribe with non-contiguous area of Indian country in both Riverside County and San Bernardino County. These portions of Indian country and the surrounding proposed nonattainment areas are shown in Map 5a in Appendix 2. Due to the non-contiguous nature of these lands, the portions of Twenty Nine Palms in San Bernardino County will be designated as part of the West Mojave Desert nonattainment area. See the technical analysis for the Riverside County (Coachella Valley) nonattainment area for discussion of the portions of Twenty Nine Palms in Riverside County (Coachella Valley).

Conclusion

Based on the assessment of factors described above, EPA has preliminarily concluded that the following counties should be included as part of the Los Angeles-San Bernardino Counties (West Mojave Desert) nonattainment area because they are either violating the 2008 ozone NAAQS or contributing to a violation in a nearby area: Los Angeles (partial) and San Bernardino (partial), including the portions of Twenty Nine Palms within San Bernardino County.

Air quality data (Factor 1) indicate all ozone monitors within the Mojave Desert Air Basin portion of San Bernardino County and Antelope Valley portion of Los Angeles County show violations of the 2008 8-hour ozone standard based on 2008-2010 data. Therefore, Factor 1 suggests that these areas should be included in the West Mojave Desert intended nonattainment area.

Emissions and emission-related data (Factor 2) show that the Mojave Desert Air Basin portion of San Bernardino County and Antelope Valley portion Los Angeles County both contain generally discrete centers of stationary sources, population clusters, and areas of high traffic volume. Emission patterns and increasing population in these two counties leads EPA to believe that both counties generate levels of ozone precursor emissions that likely contribute to violations in both counties. Therefore, Factor 2 suggests that these areas should be designated nonattainment as one area.

Meteorology and weather or transport patterns (Factor 3) suggest that the Mojave Desert Air Basin portion of San Bernardino County and Antelope Valley portion of Los Angeles County are impacted by similar sources within the area and transport patterns from outside areas. Geography and topography (Factor 4) also show no topographical distinction between Antelope Valley and southeast San Bernardino County. Because the West Mojave Desert portions of Los Angeles and San Bernardino Counties are contained in the same air basin, Factor 3 suggests that these partial counties should continue to comprise one nonattainment area.

In considering jurisdictional boundaries (Factor 5), EPA notes that the Antelope Valley and Mojave Desert were both previously designated together as the West Mojave Desert nonattainment area for the 1997 ozone NAAQS. Additionally, both of these areas are part of the same CSA and air basin. While it is true that the two areas fall into separate air district jurisdictions, the Antelope Valley Air Pollution Control District (APCD) is operated under agreement with the Mojave Desert APCD, which highlights the existing working relationship within the current jurisdictional structure. Although the state recommended Antelope Valley and Mojave Desert as separate nonattainment areas for the 2008 ozone NAAQS, there continues to be limited evidence to support the separation of these two areas.

Based on our consideration of all five factors, EPA has preliminarily concluded that the Mojave Desert Air Basin portion of San Bernardino County (southwest portion of the county, excluding the Los Angeles-South Coast portion) and Antelope Valley portion of Los Angeles County should continue to be designated nonattainment as the Los Angeles-San Bernardino Counties (West Mojave Desert) nonattainment area.

Technical Support Document for 2008 Ozone NAAQS Designations

California Area Designations for the 2008 Ozone National Ambient Air Quality Standards

Technical Analysis for Los Angeles-South Coast Air Basin

Figure 1 is a map of the intended Los Angeles-South Coast Air Basin nonattainment area. The map provides other relevant information including the locations and design values of air quality monitors, county names and boundaries, and indicates EPA's intended nonattainment designation. Also shown is the boundary of the existing area that is designated nonattainment for the 1997 ozone NAAQS.

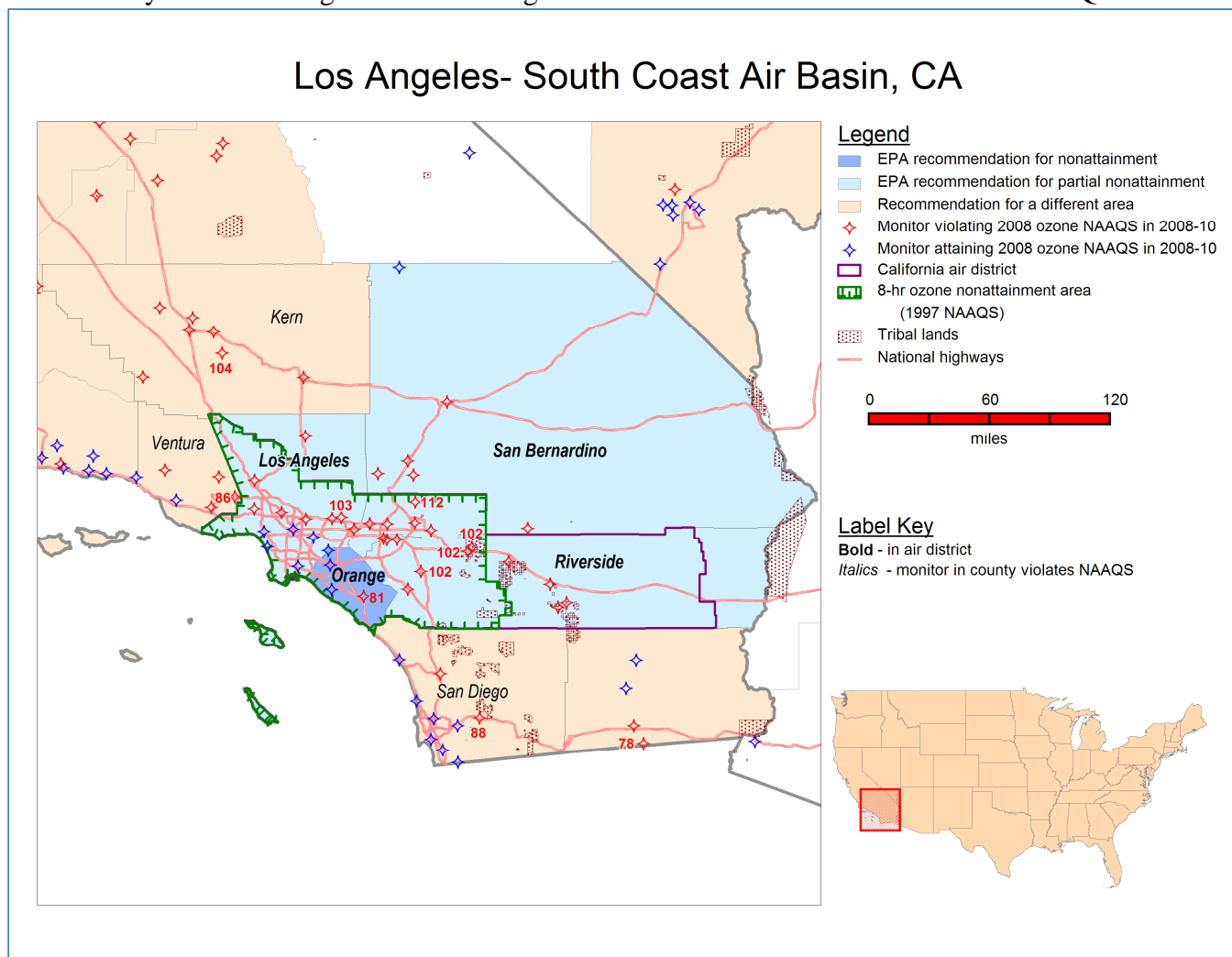


Figure 1

For purposes of the 1997 8-hour ozone NAAQS, this area was designated nonattainment. The boundary for the nonattainment area for the 1997 ozone NAAQS included the entirety of Orange County, parts of Los Angeles, San Bernardino and Riverside counties, and several areas of Indian country.

In March 2009, California recommended that the same counties or parts of counties be designated as “nonattainment” for the 2008 ozone NAAQS based on air quality data from 2006-2008. (Letter from James Goldstene, Executive Officer, California Air Resources Board, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, dated March 11, 2009.) California provided an update to the original recommendation in October 2011 based on air quality data from 2008-2010 and preliminary 2009-2011 data, but did not revise its recommendation for the Los Angeles-South Coast Air Basin. The 2009 and 2011 recommendations are based on data from Federal Equivalent Method (FEM) monitors sited and operated in accordance with 40 CFR Part 58. (Letter from Lynn Terry, Deputy Executive Officer, California Air Resources Board, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, dated October 12, 2011.)

In May 2009, the Morongo Band of Cahuilla Mission Indians recommended that the portions of Morongo Band in Riverside County be designated as a separate nonattainment area, or to be designated as “nonattainment” as part of the Coachella nonattainment area for the 2008 ozone NAAQS. (Letter from Robert Martin, Chairman, Morongo Band of Mission Indians, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, May 29, 2009.) In June 2009, the Morongo Band reiterated their 2009 recommendation and requested consultation. (Letter from Robert Martin, Chairman, Morongo Band of Mission Indians, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, June 18, 2009.)

After considering these recommendations and based on EPA's technical analysis described below, EPA intends to designate one county, three partial counties, and five areas of Indian country (identified in Table 1 below) as “nonattainment” for the 2008 ozone NAAQS as part of the Los Angeles-South Coast Air Basin multi-jurisdictional nonattainment area.

Table 1. State or Tribe’s Recommended and EPA’s Intended Designated Nonattainment Counties or Areas of Indian country for Los Angeles-South Coast Air Basin

| Los Angeles-South Coast Air Basin | State or Tribe-Recommended Nonattainment Counties or Areas of Indian country | EPA Intended Nonattainment Counties or Areas of Indian country |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| Los Angeles County | Los Angeles County | Los Angeles County |
| Orange County | Orange County | Orange County |
| San Bernardino County | San Bernardino County (p) | San Bernardino County (p) |
| Riverside County | Riverside County (p) | Riverside County (p) |
| Cahuilla Band of Indians | N/A | Cahuilla Band of Indians |
| Morongo Band of Cahuilla Mission Indians | Morongo Band of Cahuilla Mission Indians | Morongo Band of Cahuilla Mission Indians |
| Ramona Band of Cahuilla | N/A | Ramona Band of Cahuilla |
| San Manuel Band of Serrano Mission Indians of the San Manuel Reservation | N/A | San Manuel Band of Serrano Mission Indians of the San Manuel Reservation |
| Soboba Band of Luiseno Indians of the Soboba Reservation | N/A | Soboba Band of Luiseno Indians of the Soboba Reservation |

p = partial

N/A = Tribe did not submit a recommendation.

EPA intended modifications to state or tribal recommendations are shown in **bold**.

Factor Assessment

Factor 1: Air Quality Data

For this factor, we considered 8-hour ozone design values in parts per million (ppm) for air quality monitors in counties in the existing Los Angeles-South Coast Air Basin nonattainment area, based on data from the 2008-2010 period (i.e., the 2010 design value, or DV) which are the most recent years with fully-certified air quality data. A monitor's DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2008 ozone NAAQS are met at a monitor when the annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years is 0.075 ppm (75 parts per billion (ppb)) or less. A DV is only valid if minimum data completeness criteria are met. See 40 CFR part 50 Appendix P. Where several monitors are located in a county (or a designated nonattainment area or maintenance area), the DV for the county or area is determined by the monitor with the highest level.

[Note: Monitors that are eligible for providing design value data generally include State and Local Air Monitoring Stations (SLAMS) that are sited in accordance with 40 CFR Part 58, Appendix D (Section 4.1) and operating with a federal reference method (FRM) or federal equivalent method (FEM) monitor that meets the requirements of 40 CFR part 58, appendix A. All data from a special purpose monitor (SPM) using an FRM or FEM which has operated for more than 24 months is eligible for comparison to the NAAQS unless the monitoring agency demonstrates that the data came from a particular period during which the requirements of appendix A (quality assurance requirements) or appendix E (probe and monitoring path siting criteria) were not met.]

The existing Los Angeles-South Coast Air Basin nonattainment area comprises the entirety of Orange County, the southwestern portion of Los Angeles County, the southwest portion of San Bernardino County, and the western portion of Riverside County (see Map 6a in Appendix 2). The 2010 DVs for the ozone NAAQS for counties in the existing Los Angeles-South Coast Air Basin nonattainment area are shown in Table 2.

Table 2. Air Quality Data.

| County | State Recommended Nonattainment? | 2008-2010 Design Value (parts per billion) |
|--------------------|----------------------------------|--------------------------------------------|
| Los Angeles, CA | Yes | 103 |
| Orange, CA | Yes | 81 |
| Riverside, CA | Yes (partial) | 102 |
| San Bernardino, CA | Yes (partial) | 112 |

Ozone monitors relevant for comparison to the NAAQS and information from additional data sources within the existing Los Angeles-South Coast Air Basin nonattainment area are shown in Appendix 1, Map 6. California's ozone season encompasses the entire year. Certified, quality assured data are available in EPA's Air Quality System (AQS) for all areas through calendar year 2010. Map 6 in Appendix 1 includes preliminary 2011 DVs for the existing Los Angeles-South Coast Air Basin nonattainment area for informational purposes only. For each monitor, Appendix 1 lists the monitor, the 2008-2010 DV (certified and quality assured in AQS), the preliminary 2009-2011 DV (as available in

Appendix 3 lists the DVs for monitors in the existing Los Angeles-South Coast Air Basin nonattainment area. Monitors shown in bold are the DV monitors (i.e., the monitor with the highest DV) for each individual county. Monitors shown in red font are the DV monitor for the nonattainment area. Values with an asterisk do not meet data completeness, and therefore those DVs are not relevant for comparison to the NAAQS and are solely provided for informational purposes.



From Appendix 1, Map 6: For map legend describing monitors, emissions, traffic, population, and boundaries, see Appendix 1

Monitors in the existing Los Angeles-South Coast Air Basin nonattainment area (which includes the counties listed in Table 1 above) show violations of the 2008 8-hour ozone standard based on 2008-2010 data. Based on 2008-2010 data, each of the counties or partial counties included in the existing Los Angeles-South Coast Air Basin nonattainment area has one or more violating monitors. Therefore, these

¹ The preliminary 2009-2011 design values indicated by OzoneWatch are based on ozone data from 2009, 2010, and 2011 stored in AQS, combined with 2011 data reported to AirNow on days which no data currently exist in the AQS database. The 2009 and 2010 data were retrieved from AQS on July 20, 2011. The 2011 data are based on data submitted AQS or AirNow (<http://airnow.gov/>) as of October 4, 2011. Ultimately, attainment of the 8-hour ozone NAAQS will be determined entirely from data in AQS.

areas are included in the intended Los Angeles-South Coast Air Basin nonattainment area. A county (or partial county) must also be designated nonattainment if it contributes to a violation in a nearby area. Each county without a violating monitor that is located near a county with a violating monitor has been evaluated based on the weight of evidence of the five factors to determine whether it contributes to the nearby violation.

Factor 2: Emissions and Emissions-Related Data

EPA evaluated emissions of ozone precursors, nitrogen oxides (NO_x) and volatile organic compounds (VOC) and other emissions-related data that provide information on areas contributing to violating monitors.

Emissions data

EPA evaluated county-level emission data for NO_x and VOC derived from the 2008 National Emissions Inventory (NEI), version 1.5. This is the most recently available NEI. (See <http://www.epa.gov/ttn/chief/net/2008inventory.html>) Emissions in a nearby area indicate the potential for the area to contribute to observed violations. We will also consider any additional information we receive on changes to emissions levels that are not reflected in recent inventories. These changes include emissions reductions due to permanent and enforceable emissions controls that will be in place before final designations are issued and emissions increases due to new sources.

Table 3 shows emissions of NO_x and VOC (given in tons per year) from stationary sources for violating and nearby counties that we considered for inclusion in the Los Angeles-South Coast Air Basin area.

Table 3. Total 2008 NO_x and VOC Emissions.

| County | State Recommended Nonattainment? | NO _x (tpy) | VOC (tpy) |
|--------------------|----------------------------------|-----------------------|-----------|
| Los Angeles, CA | Yes | 219,340 | 124,133 |
| Orange, CA | Yes | 50,397 | 45,390 |
| Riverside, CA | Yes (partial) | 54,727 | 28,934 |
| San Bernardino, CA | Yes (partial) | 99,779 | 43,359 |
| Areawide: | | 424,243 | 241,815 |

The ozone precursor emissions listed for the four counties that EPA intends to designate as nonattainment (either in whole or in part) are clearly at elevated levels and are contributing to monitored violations in the South Coast Air Basin.

Population density and degree of urbanization

EPA evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. These include ozone-creating emissions from on-road and off-road vehicles and engines, consumer products, residential fuel combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NO_x and VOC emissions, which contribute to ozone formation. Rapid population growth or growth in vehicle miles traveled (VMT) (see below) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the area associated with area source and mobile source emissions as part of the nonattainment area. Table 4 shows the population, population density, and population growth

information for each county in the area.

Table 4. Population and Growth.

| County | State Recommended Nonattainment? | 2010 Population | 2010 Population Density (1000 pop/sq mi) | Absolute change in population (2000-2010) | Population % change (2000-2010) |
|----------------|----------------------------------|-----------------|------------------------------------------|-------------------------------------------|---------------------------------|
| Los Angeles | Yes | 9,818,605 | 2.40 | 274,493 | +3% |
| Orange | Yes | 3,010,232 | 3.76 | 153,314 | +5% |
| Riverside | Yes (partial) | 2,189,641 | 0.30 | 630,364 | +40% |
| San Bernardino | Yes (partial) | 2,035,210 | 0.10 | 316,535 | +18% |
| Areawide: | | 17,053,688 | 0.53 | 1,374,706 | +9% |

Sources: U.S. Census Bureau population estimates for 2010 as of August 4, 2011

(http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_PL_GCTPL2.STO5&prodType=table)

All four counties are highly populated, among the highest populated counties in the nation. In addition, the populations of all four counties are growing. Riverside and San Bernardino counties are among the fastest growing counties in the nation.

Maps 6 and 6a in Appendices 1 and 2, respectively, show the population in the intended nonattainment area. The largest population centers are included within the proposed nonattainment area. The area is part of a larger combined statistical area (CSA) (see Factor 5). Other portions of the CSA are largely nonattainment and a discussion of each individual area can be in this California TSD, under the technical analyses sections for the Ventura County, Los Angeles-San Bernardino Counties (West Mojave Desert) and Riverside County (Coachella Valley) proposed nonattainment areas.

Traffic (VMT) data

EPA evaluated the commuting patterns of residents in the area, as well as the total VMT for each county. In combination with the population/population density data and the location of main transportation arteries (see above), this information helps identify the probable location of non-point source emissions. A county with high VMT and/or a high number of commuters is generally an integral part of an urban area and indicates the presence of motor vehicle emissions that may contribute to ozone formation that contributes to nonattainment in the area. Rapid population or VMT growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 5 shows total 2008 VMT.

Table 5. Traffic and Commuting Patterns.

| County | State Recommended Nonattainment? | 2008 VMT* (million miles) |
|----------------|----------------------------------|---------------------------|
| Los Angeles | Yes | 78,315 |
| Orange | Yes | 22,681 |
| Riverside | Yes (partial) | 21,704 |
| San Bernardino | Yes (partial) | 20,229 |
| Areawide: | | 142,929 |

*MOBILE model VMTs are those inputs into the NEI version 1.5.

As shown in Table 5, Los Angeles County has the highest levels of VMT, while VMT levels from Orange, Riverside, and San Bernardino Counties are similar.

Factor 3: Meteorology (weather/transport patterns)

EPA evaluated available meteorological data to help determine how meteorological conditions, such as weather, transport patterns and stagnation conditions, would affect the fate and transport of precursor emissions contributing to ozone formation. EPA reviewed the “Final 2007 Air Quality Management Plan” for the South Coast Basin, the modeling protocol for that plan, and the wind frequency distribution of wind direction data based on an average of 30 years of National Weather Service information for the months of June, July, and August.

The “Final 2007 Air Quality Management Plan” provides a general discussion of how meteorological conditions would affect the fate and transport of precursor emissions contributing to ozone formation. This discussion is included below:²

“The topography and climate of Southern California combine to make the Basin an area of high air pollution potential. During the summer months, a warm air mass frequently descends over the cool, moist marine layer produced by the interaction between the ocean’s surface and the lowest layer of the atmosphere. The warm upper layer forms a cap over the cool marine layer and inhibits the pollutants in the marine layer from dispersing upward. In addition, light winds during the summer further limit ventilation. Furthermore, sunlight triggers the photochemical reactions which produce ozone. The region experiences more days of sunlight than any other major urban area in the nation except Phoenix.

The Basin’s severe air pollution problem is a consequence of the combination of emissions from the nation’s second largest urban area and meteorological conditions which are adverse to the dispersion of those emissions.³ The average wind speed for Los Angeles is the lowest of the nation’s ten largest urban areas. In addition, the summertime maximum mixing height (an index of how well pollutants can be dispersed vertically in the atmosphere) in Southern California averages the lowest in the U.S. The Southern California area is also an area with abundant sunshine, which drives the photochemical reactions which form pollutants such as ozone. In the Basin, high concentrations of ozone are normally recorded during the spring and summer months.”

² P. 1-3 “Final 2007 Air Quality Management Plan.” South Coast Air Quality Management District, June 2007. http://www.aqmd.gov/aqmp/07aqmp/aqmp/Chapter_1.pdf

³ P. 2-3, Final 2007 Air Quality Management Plan. South Coast Air Quality Management District. <http://www.aqmd.gov/aqmp/07aqmp/index.html>

The meteorological conditions that would affect the fate and transport of precursor emissions contributing to ozone formation are discussed in greater detail in the “Final 2007 Air Quality Management Plan,” Appendix V, Modeling and Attainment Demonstrations, which provides a conceptual model of an eight hour ozone episode.⁴

“Conceptual Model of an 8-Hour Ozone Episode

In general, elevated concentrations of ozone (both 1- and 8-hour average) occur under a west coast or Four Corners ridge of high pressure aloft. Typically, the 500 mb [millibars] pressure surface heights above mean sea level (msl) exceed 5880 m and generate a strong low level subsidence inversion (10° C in strength or higher). The surface pressure gradient (i.e. wind forcing) typically is less than 5 mb between the coast and the desert (approximately 200 km in distance) and days often begin with a deck of morning coastal stratus that extends into the near valleys then burns off in the late morning hours. The more severe episodes tend to have neutral to slightly off shore pressure gradient forcing and clear skies.

Figure V-4-3 illustrates the 500 mb upper air structure over the west coast during the July 2005 meteorological episode. Figure V-4-4 provides the 1200 UTC (4:00 am PST) temperature profile for July 16, 2005.

⁴ V-4-12-14, Final 2007 Air Quality Management Plan, Appendix V: Modeling And Attainment Demonstrations. South Coast Air Quality Management District. <http://www.aqmd.gov/aqmp/07aqmp/index.html>

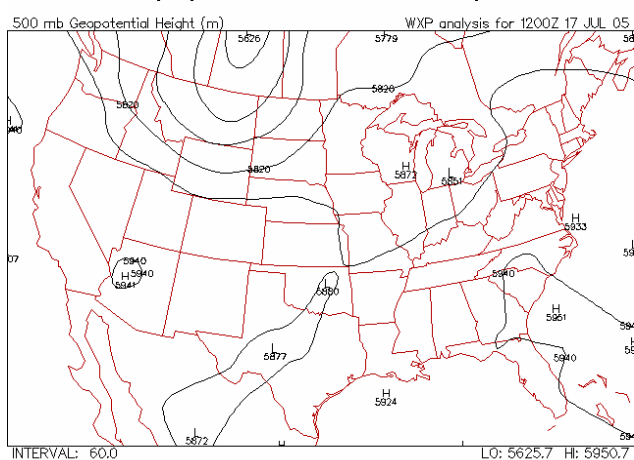
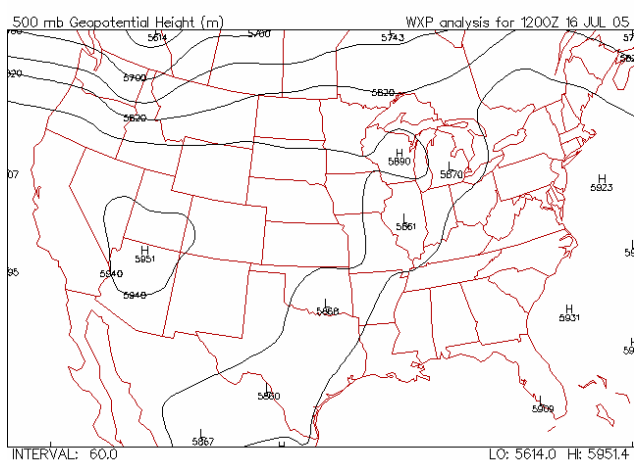
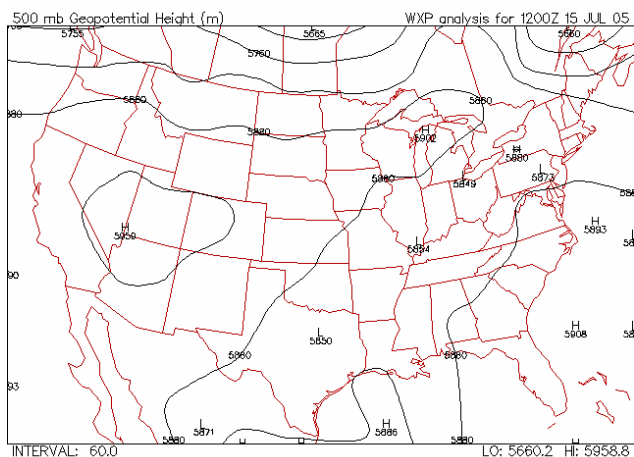


Figure 2: From FIGURE V-4-3⁵ : 500 mb Upper Air Structure: July 2005 Meteorological Episode

⁵ P. V-4-13 Final 2007 Air Quality Management Plan, Appendix V: Modeling And Attainment Demonstrations. South Coast Air Quality Management District. <http://www.aqmd.gov/aqmp/07aqmp/index.html>

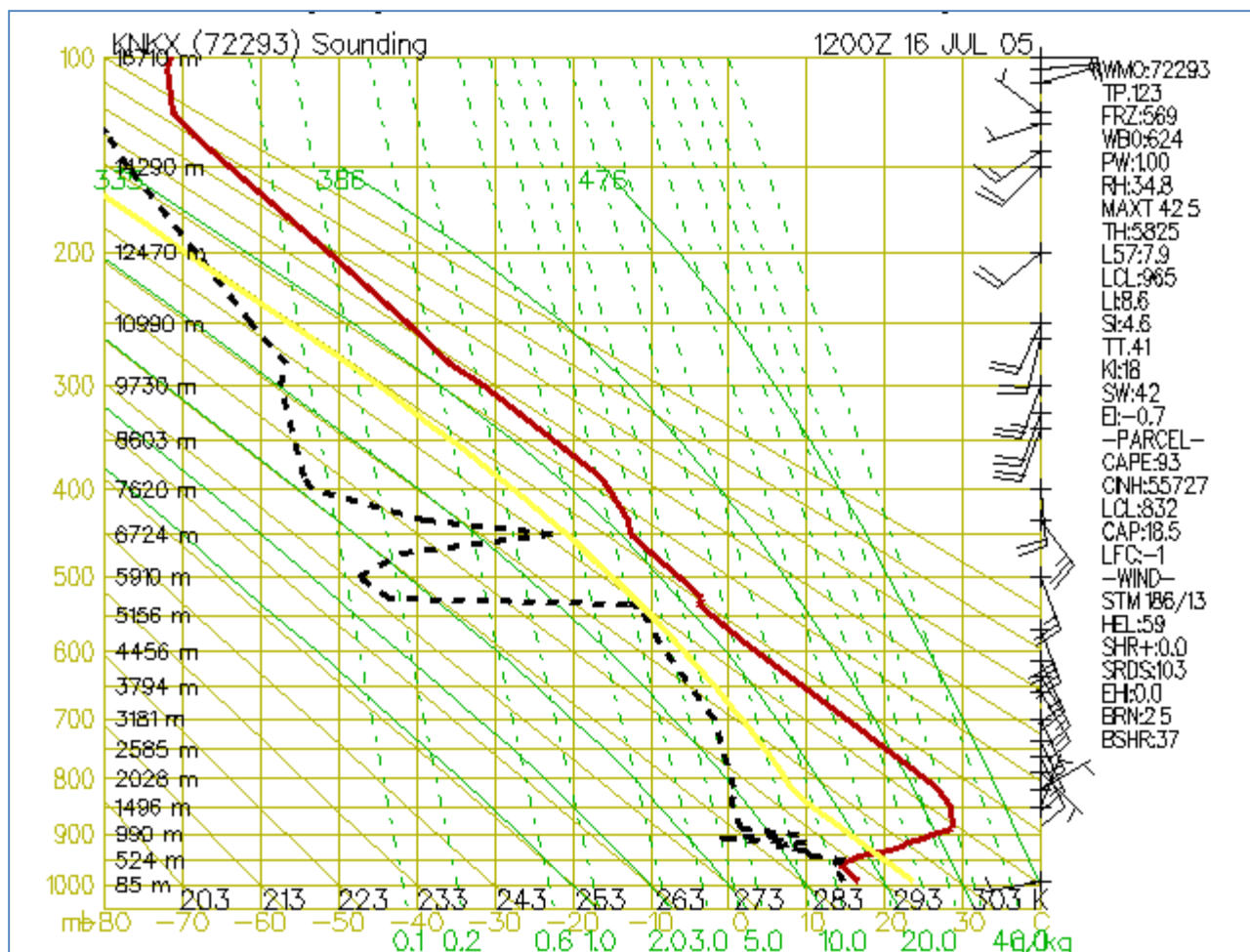


Figure 3: From FIGURE V-4-4⁶
 1200 UTC Upper Air Sounding at Miramar MCAS (San Diego, CA) July 16, 2005

⁶ P. V-4-14 Final 2007 Air Quality Management Plan, Appendix V: Modeling And Attainment Demonstrations. South Coast Air Quality Management District. <http://www.aqmd.gov/aqmp/07aqmp/index.html>

Synoptic forcing and mesoscale flow characteristics can sometimes result in eddy circulations. In the SCOS97 domain two key eddy features are prevalent: the Catalina Eddy (named since its center is often near Santa Catalina Island), and the Gaviota Eddy in the Santa Barbara Channel (Smith, et. al., 1984).⁷ Both eddy circulations are important transport mechanisms; they are capable of transporting precursors and aged ozone concentrations onshore and northward to Santa Clarita and sometimes Ventura and Santa Barbara Counties. Exceedances of the ozone standards are often observed with the presence of an eddy circulation and the deep [sic] of the marine layer that accompanies a mature coastal eddy can end an ozone episode. The timing of the onset, persistence, and spatial extent of eddy circulations, are a critical part of the windfield validation.

Land/sea breeze circulations are another important flow feature. The sea breeze is one method whereby pollutants generated in the Los Angeles Basin are transported eastward. That is, the strength of the sea breeze will determine how far precursors and ozone generated near the coast will be transported inland.”

In addition, EPA reviewed the wind frequency distribution of wind direction data in Figure 4, below. The figure is based on an average of 30 years of National Weather Service information for the months of June, July, and August. The prevailing winds during the ozone season have a strong westerly component.

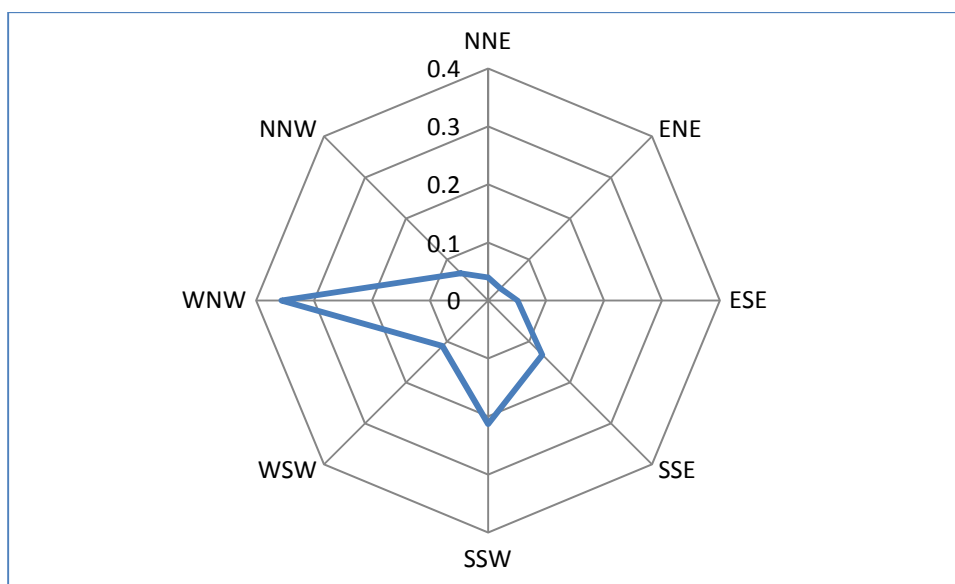


Figure 4: South Coast - Summer Wind Frequency Distribution

⁷ P. 53, *Draft Modeling Protocol For Ozone And Particulate Matter Modeling In Support Of The South Coast Air Quality Management District 2007 Air Quality Management Plan Update, Draft Report*, May 9, 2006

Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis evaluates the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the area.

The Los Angeles County, South Coast Air Basin Area is shown in Appendix 1, Map 6a.

South Coast Air Quality Management District's (SCAQMD's) "Final 2007 Air Quality Management Plan" provides a description of the South Coast Air Basin.⁸

"The Basin, which is a subregion of the SCAQMD's jurisdiction, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. It includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties."

Factor 5: Jurisdictional boundaries

For each potential nonattainment area, we considered existing jurisdictional boundaries to provide a clearly defined legal boundary and to help identify the areas appropriate for carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment area boundaries for ozone or other urban-scale pollutants, county lines, air district boundaries, township boundaries, areas covered by a metropolitan planning organization, state lines, Reservation boundaries, and urban growth boundary. Where existing jurisdictional boundaries were not adequate or appropriate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates were considered.

The Los Angeles-South Coast Air Basin area ("South Coast") has previously established nonattainment boundaries associated with both the 1-hour and 1997 8-hour ozone NAAQS. The state has recommended the same boundary for the 2008 ozone NAAQS. For the 1-hour ozone NAAQS, South Coast was nonattainment. For the 1997 ozone NAAQS, South Coast was designated nonattainment in 2004. For the 2008 ozone NAAQS, EPA intends to designate the same area as the Los Angeles-South Coast nonattainment area.

South Coast comprises a large western portion of the larger Los Angeles-Long Beach-Riverside combined statistical area (CSA). The CSA includes the entirety of Los Angeles, Orange, San Bernardino and Riverside counties, while the South Coast intended nonattainment area includes only portions of these counties. However, the adjacent portions of these counties are intended to be designated as separate nonattainment areas (Riverside County (Coachella Valley) and Los Angeles-San Bernardino (West Mojave Desert)). Ventura County is also part of the CSA. EPA intends to designate Ventura County (continental portion) as a separate nonattainment.

The South Coast Air Management District has jurisdiction over air quality planning in the intended Los Angeles-South Coast Air Basin nonattainment area. The district also has jurisdiction over the adjacent Coachella Valley (the Riverside County portion of the Salton Sea Air Basin). Transportation planning is performed by the South Coast Association of Governments (SCAG), whose jurisdictional coverage is equal to the CSA.

⁸ P. 1-2 Final 2007 Air Quality Management Plan

The intended Los Angeles-South Coast Air Basin nonattainment area also includes portions of Indian country. As defined at 18 U.S.C. 1151, “Indian country” refers to: “(a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.” EPA recognizes the sovereignty of tribal governments, and has attempted to take the desires of the tribes into account in establishing appropriate nonattainment area boundaries.

Evaluation of Recommendation from Morongo Band of Cahuilla Mission Indians

Pursuant to section 107(d) of the Clean Air Act, EPA must designate as nonattainment those areas that violate the NAAQS and those areas that contribute to violations. EPA has evaluated the recommendation of the Morongo Band of Cahuilla Mission Indians (Morongo Band) based on 2008-2010 certified air quality data.

The Morongo Band is a federally recognized tribe located in the western portion of the Riverside-San Bernardino-Ontario metropolitan area. Map 6a in Appendix 2 shows the location of the area of Indian country within the Los Angeles-South Coast Air Basin nonattainment area.

The Morongo Band’s tribal lands are located in an area known as Banning Pass, which is an elevated mountain pass connecting the South Coast Air Basin to the Salton Sea Air Basin. In 2004, EPA established the Los Angeles-South Coast Air Basin nonattainment area boundaries for the 1997 ozone NAAQS that included the entirety of Orange County, the southwestern portion of Los Angeles County, the southwest portion of San Bernardino County, and the western portion of Riverside County (see Map 6 in Appendix 1); this area includes the Morongo Band. In 2004, EPA also established the Riverside County (Coachella Valley) nonattainment area boundaries for the 1997 ozone NAAQS. It is to the east of and adjacent to the Los Angeles-South Coast Air Basin.

In May 2009, the Morongo Band of Cahuilla Mission Indians recommended that the portions of Morongo Band in Riverside County be designated as a separate nonattainment area, or to be designated as “nonattainment” as part of the adjacent Coachella nonattainment area for the 2008 ozone NAAQS (Letter from Robert Martin, Chairman, Morongo Band of Mission Indians, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, May 29, 2009). In June 2009, the Morongo Band reiterated their 2009 recommendation and requested consultation (Letter from Robert Martin, Chairman, Morongo Band of Mission Indians, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, June 18, 2009). However, based on the factors discussed below, EPA believes that the Morongo Band should be designated nonattainment as part of the Los Angeles-South Coast Air Basin nonattainment area for the 2008 ozone NAAQS.

Air Quality Data

Currently, the Morongo Band operates one ozone monitor within their area of Indian country (monitor TT58210161; see Appendix 3). Map 6 in Appendix 1 shows the geographic distribution of monitors in the Los Angeles-South Coast Air Basin nonattainment area. For each monitor, Appendix 1 shows the monitor location and lists the 2008-2010 design value (DV), the

preliminary 2009-2011 DV (as available in AQS as of October 31, 2011), and a preliminary 2009-2011 DV using 2011 data from OzoneWatch⁹.

Based on the information currently available, the TT58210161 ozone monitor has a 2008-2010 8-hour design value of 0.102 ppm, which constitutes a violation of the 2008 ozone NAAQS. A monitor operated by South Coast Air Quality Management District (060656001) is within two miles of the Morongo Band monitor and also has a 2008-2010 8-hour design value of 0.102 ppm. The fact that 2008-2010 DVs for the Morongo Band monitor and the nearby South Coast monitor are the same supports including the Tribe in the Los Angeles-South Coast nonattainment area.

Emissions and Emissions-Related Data

The Morongo Band has approximately 35,000 acres of reservation lands, which is home to over 1,500 tribal members. The Morongo Band does have emission sources of ozone precursors within the tribal boundaries, including the Morongo Casino Resort and Spa cogeneration facility (Title V permit), local traffic which includes travel to the resort, generators, the Morongo Travel Center, and rail traffic. Also, a busy interstate highway, I-10, passes through the Morongo Band tribal land.

General information on emissions, population density and degree of urbanization, traffic and commuting patterns for the Los Angeles-South Coast Air Basin non-attainment area can be found in Factor 2 of the Los Angeles-South Coast Air Basin nonattainment technical analysis, above.

Meteorology (Weather/Transport Patterns)

The lands of the Morongo Band are fairly integrated with the surrounding urban area and therefore the information for the Los Angeles-South Coast Air Basin nonattainment area discussed in Factor 2 above, adequately characterizes the meteorology and transport patterns for the Morongo Band.

Geography/Topography

The lands of the Morongo Band do not have any geographical or topographical barriers significantly limiting air pollution transport from the surrounding Los Angeles-South Coast Air Basin nonattainment area. Therefore, geography and topography support including Morongo Band with the surrounding Los Angeles-South Coast Air Basin nonattainment area.

Jurisdictional Boundaries

The Morongo Band is a federally recognized tribe located in the western portion of the Riverside-San Bernardino-Ontario metropolitan area. Map 6a in Appendix 2 shows the location of the area of Indian country within the Los Angeles-South Coast Air Basin nonattainment area.

⁹ The preliminary 2009-2011 design values indicated by OzoneWatch are based on AQS ozone data from 2009, 2010, and 2011, supplemented with 2011 data reported to AirNow (<http://airnow.gov/>) on days for which no data currently exist in the AQS database. 2009 and 2010 AQS data were retrieved on July 20, 2011; 2011 AQS and AirNow data were compiled on October 4, 2011. Ultimately, attainment of the 8-hour ozone NAAQS will be determined entirely from data in AQS.

Conclusion for Morongo Band

While the Morongo Band has recommended that the Tribe be designated as its own nonattainment area or to be included in the Coachella Valley nonattainment area, based on the information currently available and the five factor analysis above, EPA intends to designate the Morongo Band as part of the Los Angeles-South Coast Air Basin nonattainment area for the 2008 ozone NAAQS.

Conclusion

Based on the assessment of factors described above, EPA has preliminarily concluded that the following counties and partial counties should be included as part of the Los Angeles-South Coast Air Basin nonattainment area because they are either violating the 2008 ozone NAAQS or contributing to a violation in a nearby area: Orange County, San Bernardino County (partial), Riverside County (partial), and Los Angeles County (partial). This nonattainment area also includes five areas of Indian country.

The Clean Air Act requires EPA to designate any area as nonattainment if it violates a NAAQS or if it contributes to a violation in a nearby area. Air quality data (Factor 1) show that monitors in the Los Angeles-South Coast Air Basin nonattainment area (which includes the counties listed in Table 1 above) show a violation of the 2008 8-hour ozone standard based on 2008-2010 data. Therefore, Factor 1 supports designating these counties or partial counties as nonattainment.

EPA's review of emissions and emission related data (Factor 2), as well as meteorology and weather or transport patterns (Factor 3), geography and topography (Factor 4), and jurisdictional boundaries (Factor 5) support the proposed nonattainment boundaries recommended by the state. EPA concurs with the state's recommendation and notes that these boundaries are consistent with the boundaries from the existing 1997 8-hour ozone nonattainment area. Neighboring areas that may receive pollutant transport from the Los Angeles-South Coast Air Basin will also be designated separate nonattainment areas.

EPA intends to include the following five areas of Indian country as part of the Los Angeles-South Coast Air Basin nonattainment area for the 2008 ozone NAAQS: Cahuilla Band of Indians, Ramona Band of Cahuilla Indians, San Manuel Band of Serrano Mission Indians, Soboba Band of Luiseno Indians, and the Morongo Band. EPA has preliminarily concluded that the 1997 nonattainment boundary for the Los Angeles-South Coast Air Basin should be changed so that the Santa Rosa Band of Cahuilla Indians is included only in the intended Riverside County (Coachella Valley) nonattainment area, and the Pechanga Band of Luiseno Indians is only included in the intended San Diego nonattainment area. See the technical analysis for the intended Riverside County (Coachella Valley) nonattainment area for discussion of the Santa Rosa Band of Cahuilla Indians. See the technical analysis for the intended San Diego County nonattainment area for discussion of the Pechanga Band of Luiseno Indians.

Technical Support Document for 2008 Ozone NAAQS Designations

California Area Designations for the 2008 Ozone National Ambient Air Quality Standards

Technical Analysis for Mariposa and Tuolumne Counties (Southern Mountain Counties)

Figure 1 is a map of the Mariposa and Tuolumne Counties (Southern Mountain Counties) intended nonattainment area. The map provides other relevant information including the locations and design values of air quality monitors, county names and boundaries, and indicates EPA's intended nonattainment designation. Also shown is the boundary of the existing area that is designated nonattainment for the 1997 ozone NAAQS.

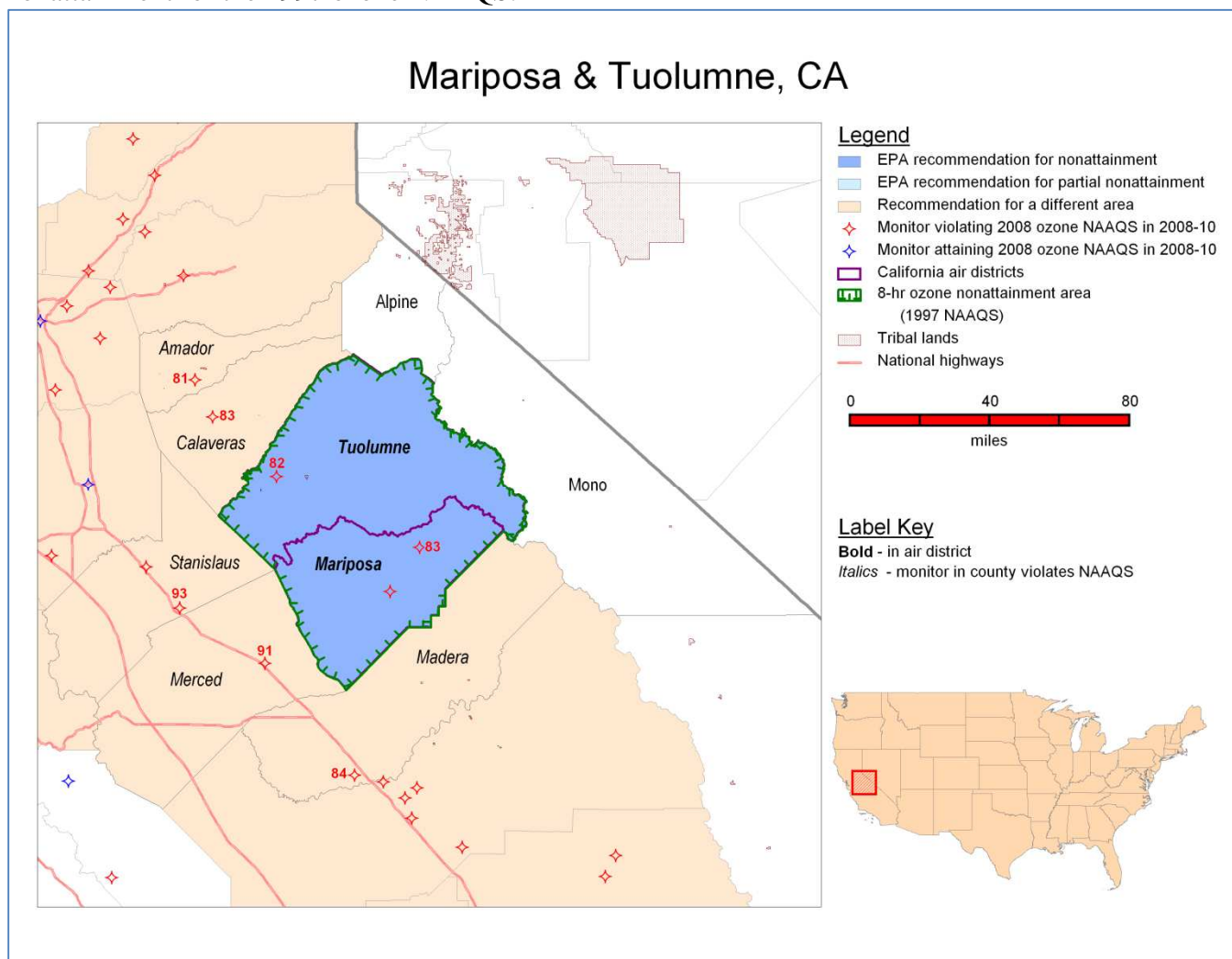


Figure 1

Note: The map shown in Figure 1 provides 8-hour ozone design values in parts per billion (ppb) based on data from the 2008-2010 period (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. For each particular area, Factor 1 and Appendix 3 describe the air quality data relevant for our intended nonattainment decisions.

The Southern Mountain Counties nonattainment area was designated nonattainment for the 1997 ozone NAAQS in 2004. EPA had proposed in December 2003 that these counties, along with two other violating mountain counties, be designated as part of the San Joaquin Valley nonattainment area. EPA believed, as we still believe, that the strongest contribution to the violations in the mountain counties comes from the San Joaquin Valley. However, the state requested grouping Mariposa and Tuolumne as one nonattainment area, separate from the San Joaquin Valley areas, citing existing inter-county coordination, similarities in pollution transport paths, and support from the other factors analyzed. EPA accepted the state's recommendations and in 2004 designated Mariposa and Tuolumne Counties as one multi-jurisdictional nonattainment area (Southern Mountain Counties). Several areas of Indian country were included in the nonattainment area. These are the same tribes that are listed in Table 1, below.

In March 2009, California recommended that the same counties be designated as "nonattainment" for the 2008 ozone NAAQS based on air quality data from 2006-2008. (Letter from James Goldstene, Executive Officer, California Air Resources Board, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, dated March 11, 2009.) California provided an update to the original recommendation in October 2011 based on air quality data from 2008-2010 and preliminary 2009-2011 data. Based on preliminary 2011 air quality data, California revised its recommendation for the intended Southern Mountain Counties nonattainment area to include only Mariposa County and to exclude Tuolumne County. The 2009 and 2011 recommendations are based on data from Federal Equivalent Method (FEM) monitors sited and operated in accordance with 40 CFR Part 58 (Letter from Lynn Terry, Deputy Executive Officer, California Air Resources Board, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, dated October 12, 2011).

After considering these recommendations and based on EPA's technical analysis described below, EPA intends to designate Mariposa and Tuolumne Counties in California (identified in Table 1 below) as "nonattainment" for the 2008 ozone NAAQS as part of the Mariposa and Tuolumne Counties (Southern Mountain Counties) multi-jurisdictional nonattainment area.

Table 1. State's or Tribe's Recommended and EPA's Intended Designated Nonattainment Counties or Areas of Indian country for the Southern Mountain Counties.

| Southern Mountain Counties | State or Tribe-Recommended Nonattainment Counties or Areas of Indian country | EPA Intended Nonattainment Counties or Areas of Indian country |
|-------------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------|
| Mariposa County | Mariposa County | Mariposa County |
| Tuolumne County | Attainment | Tuolumne County |
| Chicken Ranch Rancheria of Mi-Wuk Indians of California | N/A | Chicken Ranch Rancheria of Mi-Wuk Indians of California |
| Jackson Rancheria of Me-Wuk Indians ¹ | N/A | Jackson Rancheria of Me-Wuk Indians |
| Tuolumne Band of Me-Wuk Indians of the Tuolumne Reservation | N/A | Tuolumne Band of Me-Wuk Indians of the Tuolumne Reservation |

p = partial

EPA intended modifications to state or tribe recommendations are shown in **bold**.

N/A = Tribe did not submit a recommendation

¹ Jackson Rancheria has lands in both the Central and the Southern Mountain Counties intended nonattainment area. Non-contiguous lands of the Jackson Rancheria will be designated with the surrounding nonattainment areas. This technical analysis addresses only those areas of Indian country within the intended Southern Mountain Counties nonattainment area.

Factor Assessment

Factor 1: Air Quality Data

For this factor, we considered 8-hour ozone design values for air quality monitors in counties in the existing Southern Mountain Counties nonattainment area, based on data from the 2008-2010 period (i.e., the 2010 design value, or DV) and preliminary data from the 2009-2011 period (i.e., the preliminary 2011 DV). A monitor's DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2008 ozone NAAQS are met at a monitor when the annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years, is 0.075 ppm (75 parts per billion (ppb)) or less. A DV is only valid if minimum data completeness criteria are met. See 40 CFR part 50 Appendix P. Where several monitors are located in a county (or a designated nonattainment area or maintenance area), the DV for the county or area is determined by the monitor with the highest level.

[Note: Monitors that are eligible for providing design value data generally include State and Local Air Monitoring Stations (SLAMS) that are sited in accordance with 40 CFR Part 58, Appendix D (Section 4.1) and operating with a federal reference method (FRM) or federal equivalent method (FEM) monitor that meets the requirements of 40 CFR part 58, appendix A. All data from a special purpose monitor (SPM) using an FRM or FEM which has operated for more than 24 months is eligible for comparison to the NAAQS unless the monitoring agency demonstrates that the data came from a particular period during which the requirements of appendix A (quality assurance requirements) or appendix E (probe and monitoring path siting criteria) were not met.]

Certified, quality assured data are available in EPA's Air Quality System (AQS) for all areas through calendar year 2010. California's ozone season encompasses the entire year, but some ozone monitors in the existing Southern Mountain Counties nonattainment area have been approved to operate on a seasonal schedule per 40 CFR part 58, Appendix D, section 4.1(i). Ozone monitors relevant for comparison to the NAAQS and information from additional data sources within the current Southern Mountain Counties nonattainment area are shown in Appendix 1. The 2010 DVs for the ozone NAAQS for counties in the existing Southern Mountain Counties nonattainment area are shown in Table 2.

Table 2. Air Quality Data.

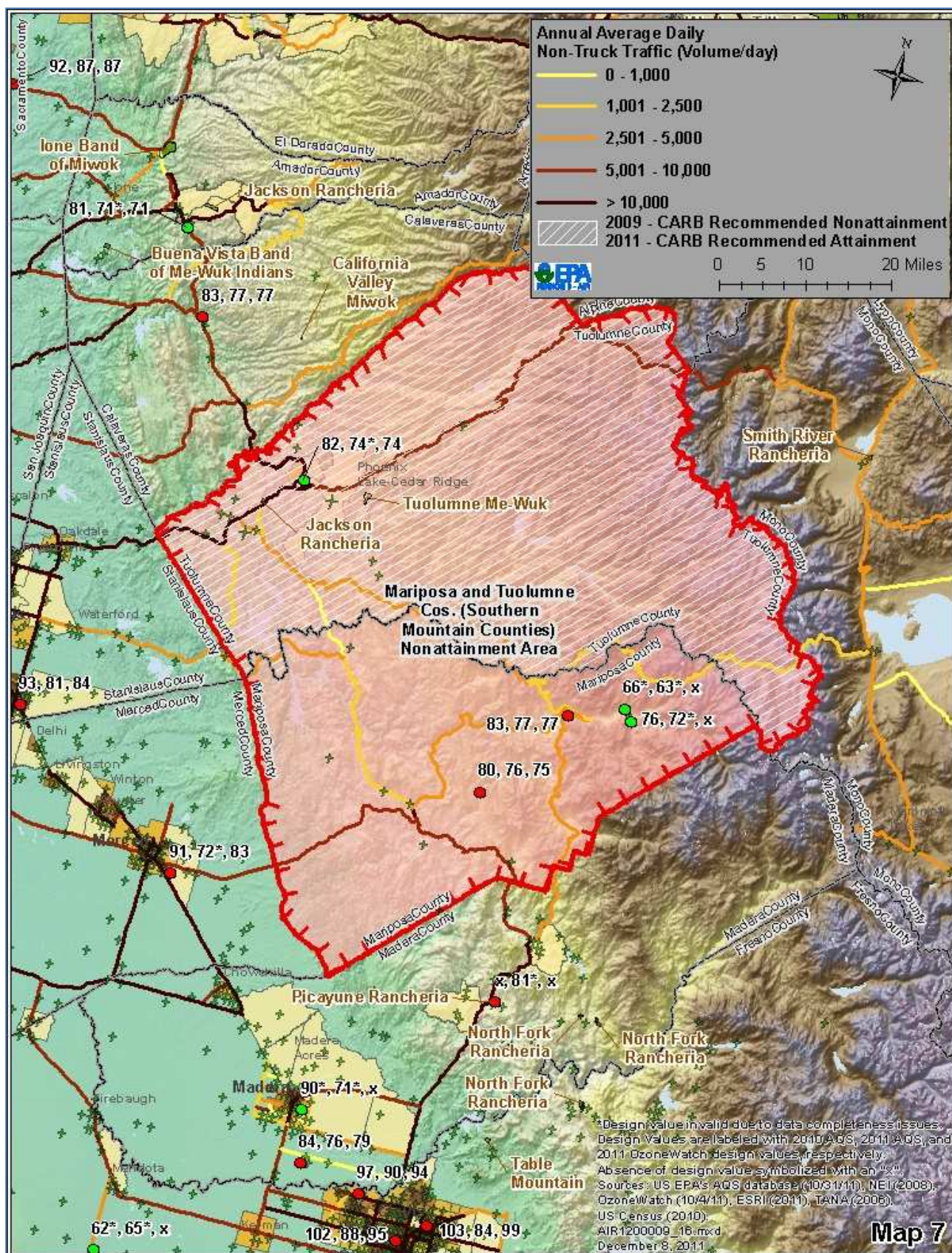
| County | State Recommended Nonattainment? | 2008-2010 Design Value (parts per billion) |
|--------------|----------------------------------|--------------------------------------------|
| Mariposa, CA | Yes | 83 |
| Tuolumne, CA | No | 82 |

California Air Resources Board (ARB) based its 2011 designation recommendation for Mariposa and Tuolumne Counties on preliminary 2011 data. Preliminary data from part of calendar year 2011 is available in AQS for most areas, however, these data have not yet been certified and quality assured. States are required to certify data by May 1st of the following year. ARB has indicated that it plans to certify 2011 data early for Mariposa and Tuolumne Counties. EPA's designation recommendation for this area is therefore based on certified 2008-2010 data and is further informed by preliminary 2009-2011 data.

Maps contained in Appendix 1 show the geographic distribution of monitors. Maps 7 and 7b show monitor locations for the existing Southern Mountain Counties nonattainment area. For each monitor, Appendix 1 lists the monitor, the 2008-2010 DV (certified and quality assured in AQS), the preliminary 2009-2011 DV (as available in AQS as of October 31, 2011), and a preliminary 2009-2011 DV using 2011 data from OzoneWatch¹. Absence of a DV is symbolized with an "x".

Appendix 3 lists preliminary 2009-2011 DVs for Mariposa and Tuolumne Counties, either from AQS (as available in AQS as of October 31, 2011) or from OzoneWatch (as calculated on October 4, 2011). Appendix 3 lists the higher of these two preliminary 2009-2011 DVs. Monitors shown in bold are the DV monitors (i.e., the monitor with the highest DV) for each individual county. Monitors shown in red font are the DV monitor for the nonattainment area. Values with an asterisk do not meet data completeness, and therefore those DVs are not relevant for comparison to the NAAQS and are solely provided for informational purposes.

¹ The preliminary 2009-2011 design values indicated by OzoneWatch are based on AQS ozone data from 2009, 2010, and 2011, supplemented with 2011 data reported to AirNow (<http://airnow.gov/>) on days for which no data currently exist in the AQS database. 2009 and 2010 AQS data were retrieved on July 20, 2011; 2011 AQS and AirNow data were compiled on October 4, 2011. Ultimately, attainment of the 8-hour ozone NAAQS will be determined entirely from data in AQS.



From Appendix 1, Map 7: For map legend describing monitors, emissions, traffic, population, and boundaries, see Appendix 1.

2010 DV data indicate that both Mariposa County and Tuolumne County contain violating monitors. Preliminary 2011 DV data indicate that Mariposa continues to violate the 2008 ozone standard, while the monitor in Tuolumne County may be attaining. However, the variable nature of the DV trend over the past decade in Tuolumne and Mariposa Counties makes it difficult to determine whether Tuolumne County will continue to attain. The sparse monitoring network in these two topographically-complex counties also makes it difficult to determine solely from air quality data whether Tuolumne County is contributing to ozone levels in Mariposa County. EPA notes that portions of both counties are in the Sierra Nevada Mountain Range and ozone concentrations often increase with elevation. Therefore, the observed difference in ozone concentrations may be due in part to the fact that the monitor in Tuolumne County is at a vastly lower elevation than the two monitors with complete data in Mariposa County (571 meters versus 1135 meters and 1605 meters).

Based on 2008-2010 data, monitors in both Amador County and Calaveras County are violating the 2008 standard and are thus included in the intended Central Mountain Counties nonattainment area. A county (or partial county) must also be designated nonattainment if it contributes to a violation in a nearby area. Each county without a violating monitor that is located near a county with a violating monitor has been evaluated based on the weight of evidence of the five factors to determine whether it contributes to the nearby violation.

Factor 2: Emissions and Emissions-Related Data

EPA evaluated emissions of ozone precursors, nitrogen oxides (NO_x) and volatile organic compounds (VOC), and other emissions-related data that provide information on areas contributing to violating monitors.

Emissions data

EPA evaluated county-level emission data for NO_x and VOC derived from the 2008 National Emissions Inventory (NEI), version 1.5. This is the most recently available NEI. (See <http://www.epa.gov/ttn/chief/net/2008inventory.html>) Emissions in a nearby area indicate the potential for the area to contribute to observed violations. We will also consider any additional information we receive on changes to emissions levels that are not reflected in recent inventories. These changes include emissions reductions due to permanent and enforceable emissions controls that will be in place before final designations are issued and emissions increases due to new sources.

Table 3 shows emissions of NO_x and VOC (given in tons per year) for violating and nearby counties that we considered for inclusion in the Mariposa and Tuolumne Counties (Southern Mountain Counties) area.

Table 3. Total 2008 NO_x and VOC Emissions.

| County | State Recommended Nonattainment? | NO _x (tpy) | VOC (tpy) |
|--------------|----------------------------------|-----------------------|-----------|
| Mariposa, CA | Yes | 675 | 2,140 |
| Tuolumne, CA | No | 3,013 | 5,400 |
| Areawide: | | 3,688 | 7,540 |

Both NO_x and VOC are precursors to formation of ozone in ambient air. Most of the stationary sources of ozone precursors in the existing Southern Mountain Counties nonattainment area are located in Tuolumne County (see Map 7 in Appendix 1). Additionally, Tuolumne County contributes nearly 4.5 times more NO_x and 2.5 times more VOC emissions than Mariposa County. However, emissions of ozone precursors in the neighboring counties in the San Joaquin Valley bordering Tuolumne and Mariposa Counties (Stanislaus, Merced, and Madera Counties) are greater than emissions from Tuolumne and Mariposa Counties. Emissions of NO_x and VOC from Stanislaus County in 2008 were nearly 17,000 and over 15,000 tpy, respectively; from Merced County were nearly 18,000 and over 10,000 tpy, respectively; and from Madera County were over 10,000 tpy and over 6,000 tpy, respectively.

Population density and degree of urbanization

EPA evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. These include ozone-creating emissions from on-road and off-road vehicles and engines, consumer products, residential fuel combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NO_x and VOC emissions, which contribute to ozone formation. Rapid population growth or growth in vehicle miles traveled (VMT) (see below) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the area associated with area source and mobile source emissions as part of the nonattainment area. Table 4 shows the population, population density, and population growth information for each county in the area.

Table 4. Population and Growth.

| County | State Recommended Nonattainment? | 2010 Population | 2010 Population Density (1000 pop/sq mi) | Absolute change in population (2000-2010) | Population % change (2000-2010) |
|--------------|----------------------------------|-----------------|------------------------------------------|-------------------------------------------|---------------------------------|
| Mariposa, CA | Yes | 18,251 | 0.01 | 1,107 | +6% |
| Tuolumne, CA | No | 55,365 | 0.02 | 714 | +1% |
| Areawide: | | 73,616 | 0.02 | 1,821 | +3% |

Sources: U.S. Census Bureau population estimates for 2010 as of August 4, 2011

(http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_PL_GCTPL2.STO5&prodType=table)

Maps 7 and 7a in Appendices 1 and 2, respectively, show population for the area. Mariposa and Tuolumne Counties are both sparsely populated, but the total 2010 population of Tuolumne County is three times larger than the population of Mariposa County. Both counties have very low population density. As shown in Map 7a in Appendix 2, Tuolumne County contains a population center in the western portion of the county, whereas Mariposa County contains no discrete population centers. For ozone, population is an indicator of ozone precursor emissions. During the period from 2000 to 2010,

both counties showed population growth, however, absolute change and percent changes in population in Tuolumne County were smaller than Mariposa County.

Traffic (VMT) data

EPA evaluated the total VMT for each county in the area. In combination with the population/population density data and the location of main transportation arteries (see above), this information helps identify the probable location of non-point source emissions. A county with high VMT is generally an integral part of an urban area and indicates the presence of motor vehicle emissions that may contribute to ozone formation and nonattainment in the area. Rapid population or VMT growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 5 shows total 2008 VMT for counties within the area.

Table 5. Traffic (VMT) Data

| County | State Recommended Nonattainment? | 2008 VMT* (million miles) |
|--------------|----------------------------------|---------------------------|
| Mariposa, CA | Yes | 290 |
| Tuolumne, CA | No | 777 |
| Areawide: | | 1,068 |

*MOBILE model VMTs are those inputs into the NEI version 1.5.

In 2008, VMT in Tuolumne County was nearly three times higher than in Mariposa County. Maps 7 and 7b in Appendix 1 show annual average daily non-truck and truck traffic volumes. Highest truck traffic volume in the current Southern Mountain Counties nonattainment area generally occurred in Tuolumne County, on roads linking the Tuolumne population center, in the western portion of the county, with Stanislaus County to the west and Calaveras County to the northwest. Heaviest non-truck traffic also occurs in Tuolumne County on the same roadways as the heavy truck traffic, but also occurs on the roadway that runs through Tuolumne County to the north-northeast. Relatively heavy non-truck traffic also occurs in the southern portion of Mariposa County, between Merced County to the west and Madera County to the southeast.

Factor 3: Meteorology (weather/transport patterns)

EPA evaluated available meteorological data to help determine how meteorological conditions, such as weather, transport patterns and stagnation, would affect the fate and transport of precursor emissions contributing to ozone formation.

Mariposa and Tuolumne counties are the southernmost counties in the “Mountain Counties Air Basin” as defined by ARB². Summers are generally fairly warm and dry, but there can be periods of quite cool weather. Depending on the meteorological station, in summer months, normal low temperatures range from 43 to 55 degrees Fahrenheit (6 to 13 degrees Celsius), and normal highs range from 62 to 94 degrees Fahrenheit (17 to 34 degrees Celsius). Winds are generally daytime upslope and nighttime downslope flows, caused by the differential heating or cooling of air near mountain ground surfaces relative to air at the same height over land at lower elevations. These flows generally follow the east-northeast and west-southwest orientation of the river valleys, described in Factor 4. This is generally consistent with the west-northwest to south-southwest flow in Mariposa and Tuolumne counties seen in

² <http://www.arb.ca.gov/ei/maps/statemap/abmap.htm>

the 30-year average direction frequencies computed by EPA, as shown in the “radar”-style wind rose diagram below (Figure 2). However, it should be noted that this diagram combines flows from multiple meteorological stations, from parts of the counties that do not all have the same valley orientation.

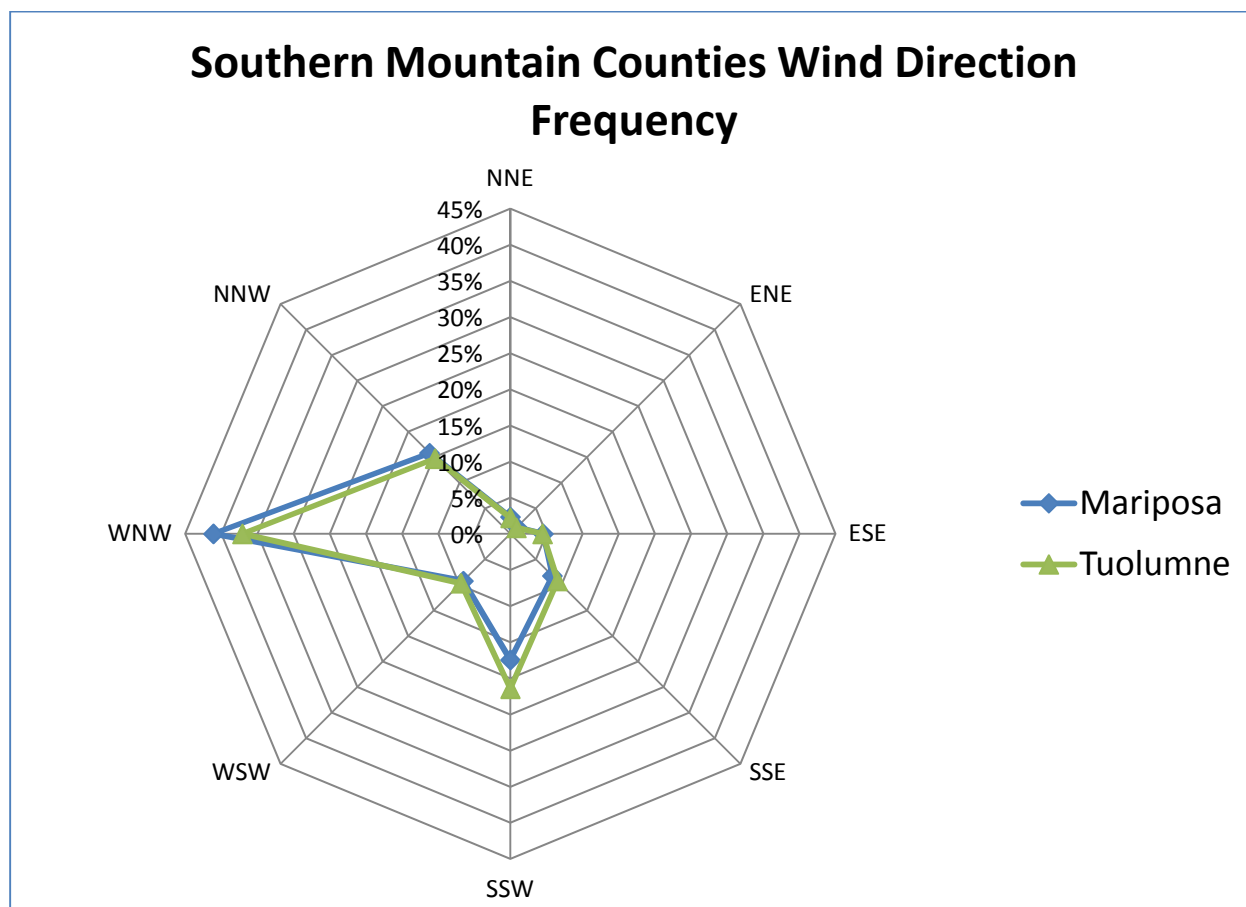


Figure 2

Neighboring San Joaquin Valley (SJV) can have temperature inversions from 2000 to 2500 feet (600 to 750 meters) above the valley floor, or even as high as 5000 feet (1500 meters). Ozone produced in the SJV and trapped under this inversion can reach fairly high into the mountain counties, or be advected there by daytime upslope flows. Previous assessments of transport by ARB³ have found a strong potential for ozone transport from the Sacramento and San Joaquin valleys up into the mountain counties. Nighttime drainage flows reverse this, so some of this pollution, in combination with pollution generated in the mountain counties themselves, could be transported back into the valley, with the potential for some carryover into subsequent days. EPA intends to designate both the Sacramento Metro area and San Joaquin Valley as their own nonattainment areas for the 2008 ozone NAAQS.

North-south flow between Tuolumne and Mariposa Counties is likely a result of fewer barriers to this transport pattern due to the weaker topographic relief in the western portion of both counties. There is likely some transport of pollutants between the two counties, as well as transport from the Sacramento

³ “Assessment of the Impacts of Transported Pollutants on Ozone Concentrations in California”. California Environmental Protection Agency, Air Resources Board, March 2001. <http://www.arb.ca.gov/aqd/transport/assessments/assessments.htm>

and San Joaquin areas. In addition, 2011 was anomalously cool, potentially creating localized ozone patterns that are not representative of expected normal conditions or ongoing trends.

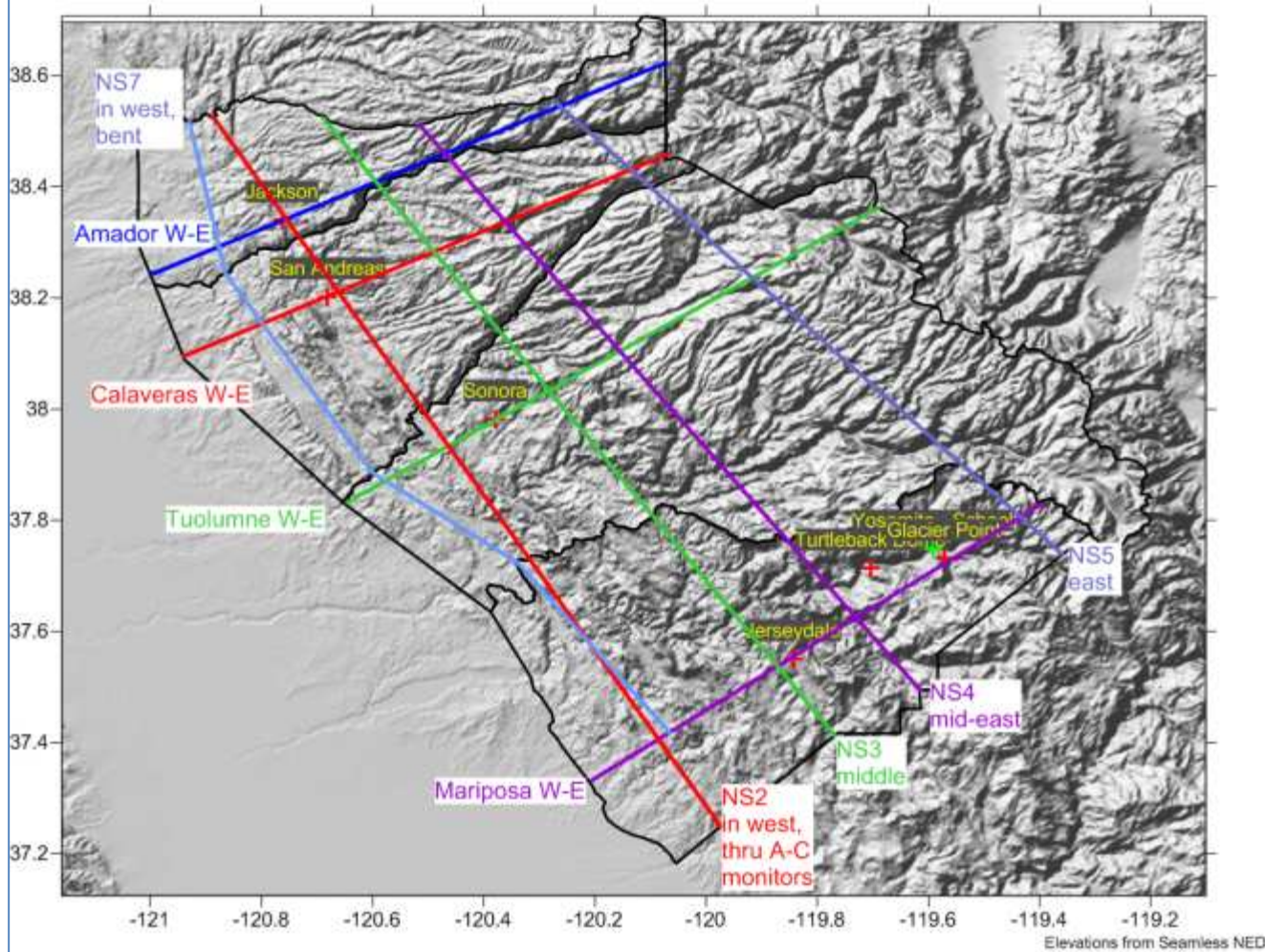
Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis evaluates the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the area.

Mariposa and Tuolumne counties are the southernmost counties of the “Mountain Counties Air Basin” as defined by ARB. This is not a “basin” in the sense of a single watershed or an area that is more or less surrounded by high terrain. Rather, it is a group of rural and largely mountainous counties that are similar in their better air quality, more pronounced topography, and rural character as compared to the more polluted, flatter, and more populous areas to the west (i.e., the broad Sacramento and San Joaquin valleys of central California). Both counties are in the foothills and mountains of the Sierra Nevada mountain range. Elevations increase from about 200 feet (67 meters) above mean sea level (MSL) in the west to over 12,000 feet (3,500 meters) in the east. The counties are characterized by river valleys running roughly east-northeast to west-southwest, separated by mountains. The largest rivers are the Stanislaus River along the Tuolumne northern border, the Tuolumne River within Tuolumne County, and the Merced River, Bear Creek, and Mariposa Creek within Mariposa County. These rivers and their various forks and tributaries divide the counties into deep valleys. The strong relief of the terrain may be seen in Appendix 1, Map 7.

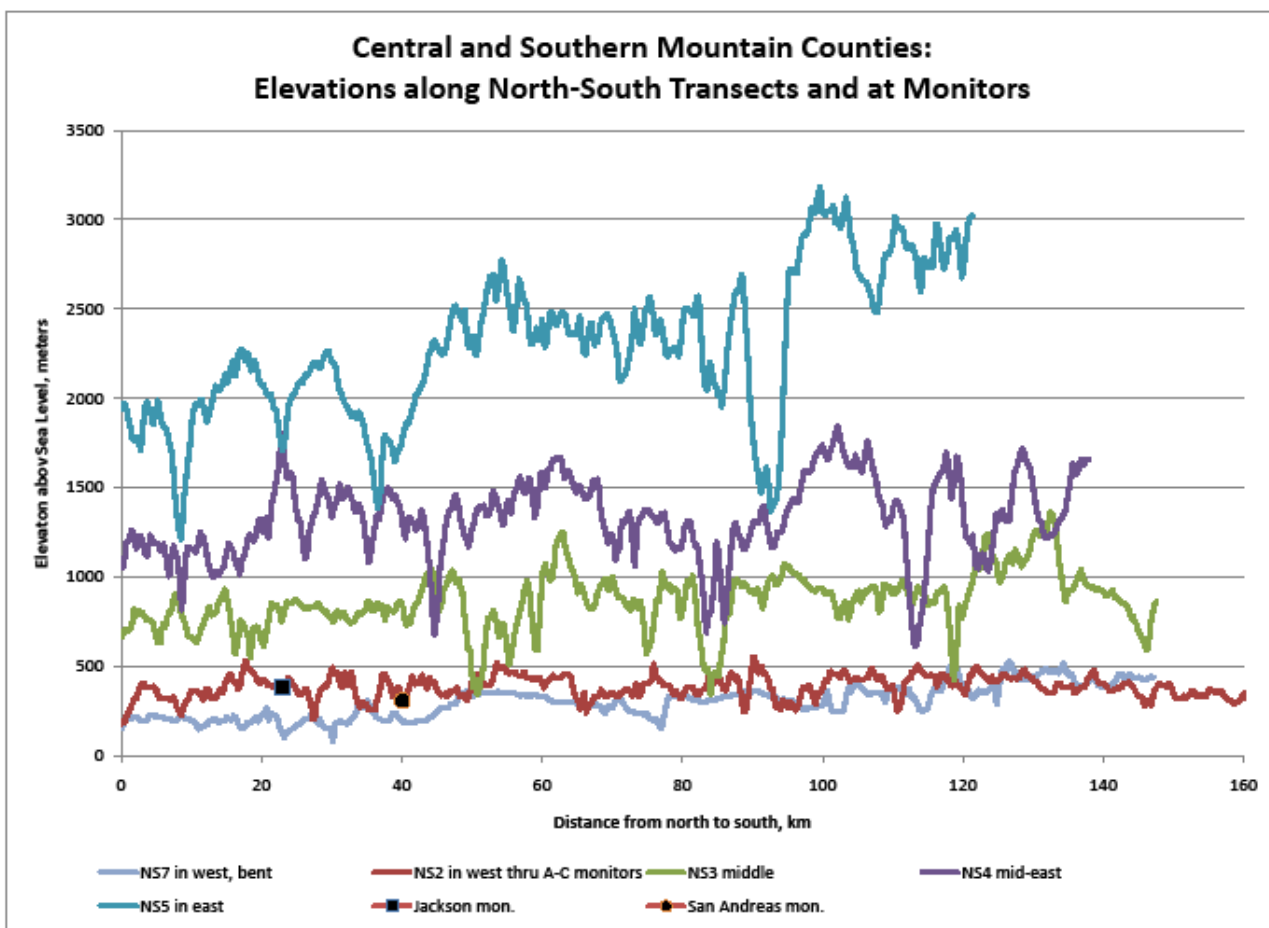
The eastern and western portions of the counties are different. The variation of elevation along a 20 kilometer (km) north-south transect is 500 meters (m) and more in the east, decreasing to about 100 - 200 m in the west. In the west there are even some valleys with relatively low ridges oriented northwest-southeast, roughly perpendicular to the orientation of the valleys in the east. Thus, in the eastern portion, the mountains separating the valleys pose a strong barrier to south-north air flow, but in the western portion the topography is a much weaker barrier to the south-north transport of air, and thus to transport of pollution between the two counties (see Figures 3 - 5).

Central and Southern Mountain Counties North-South and West-East Transects and O3 Monitors



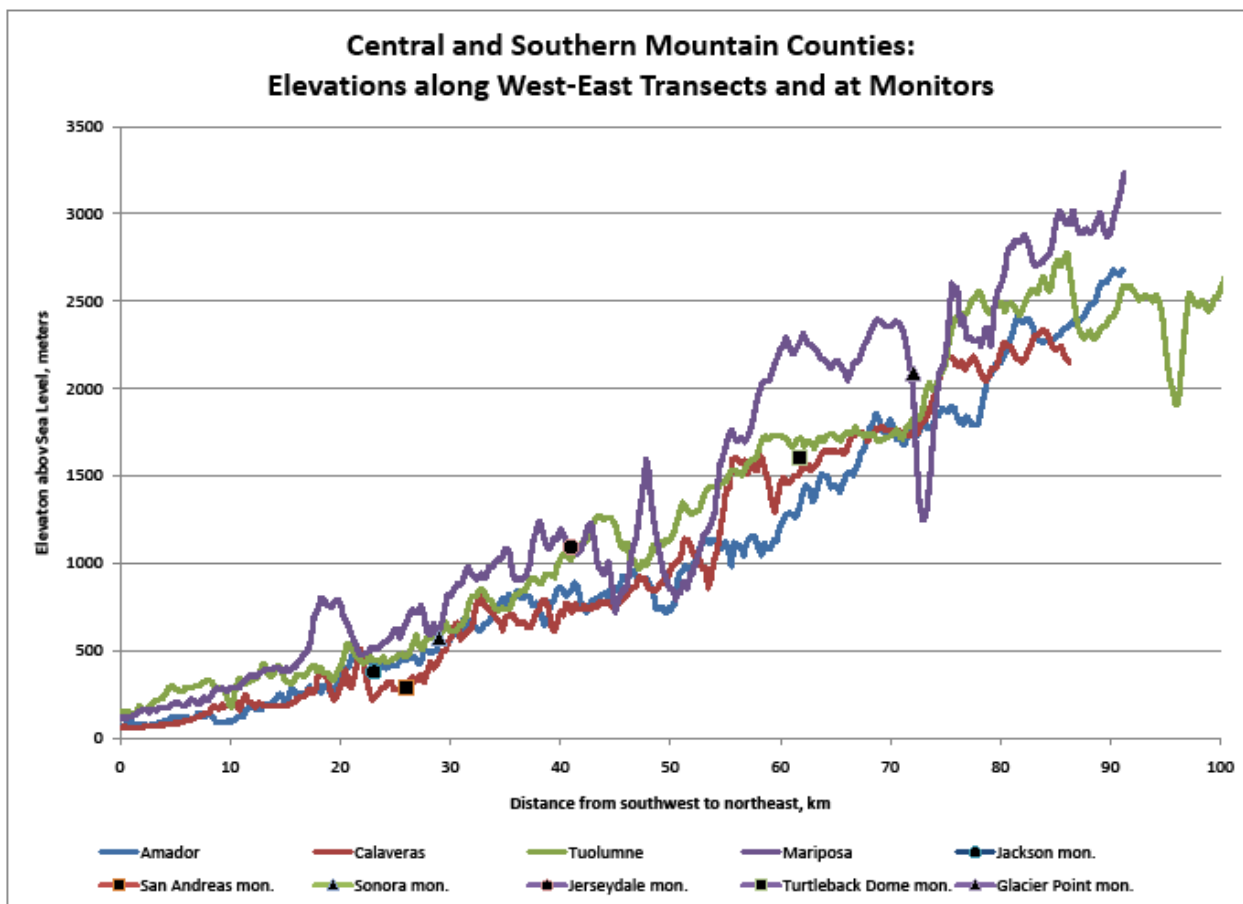
Preliminary 2011 DVs: Jackson-Clinton Road (Amador County): 71; San Andreas-Gold Strike Road (Calaveras County): 77; Sonora-Barretta Street (Tuolumne County): 74; Jerseydale (Mariposa County): 76; Yosemite National Park-Turtleback Dome (Mariposa County, CASTNET monitor): 77; Yosemite National Park-Glacier Point (Mariposa County, National Park Service monitor/non-regulatory): 72*. * = DV does not meet data completeness requirements.

Figure 3



*Preliminary 2011 DVs: Jackson-Clinton Road (Amador County): 71; San Andreas-Gold Strike Road (Calaveras County): 77.

Figure 4



Preliminary 2011 DVs: Jackson-Clinton Road (Amador County): 71; San Andreas-Gold Strike Road (Calaveras County): 77; Sonora-Barretta Street (Tuolumne County): 74; Jerseydale (Mariposa County): 76; Yosemite National Park-Turtleback Dome (Mariposa County, CASTNET monitor): 77; Yosemite National Park-Glacier Point (Mariposa County, National Park Service monitor/non-regulatory): 72*. * = DV does not meet data completeness requirements.

Figure 5

Flow in the west-east direction is relatively unimpeded along the river valleys, which extend well east into the interior of the counties. Eastward transport of pollutants from the more urbanized areas to the west is thus possible during conditions of upslope flow. Conversely, westward transport of locally generated pollution is possible.

Factor 5: Jurisdictional boundaries

For each potential nonattainment area, we considered existing jurisdictional boundaries to provide a clearly defined legal boundary and to help identify the areas appropriate for carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment area boundaries for ozone or other urban-scale pollutants, county lines, air district boundaries, township boundaries, areas covered by a metropolitan planning organization, state lines, areas of Indian country, and the urban growth boundary. Where existing jurisdictional boundaries were not adequate or appropriate to describe the nonattainment area, other

clearly defined and permanent landmarks or geographic coordinates were considered.

The Mariposa and Tuolumne counties (Southern Mountain Counties) area has previously-established nonattainment boundaries associated with the 1997 8-hour ozone NAAQS. In December 2003, EPA indicated its intent to designate these counties, along with two other violating mountain counties (Amador and Calaveras), as part of the San Joaquin Valley nonattainment area. EPA believed, as we still believe, that the strongest contribution to the violations in the mountain counties comes from the San Joaquin Valley. However, the state requested grouping Mariposa and Tuolumne counties as one nonattainment area, citing existing inter-county coordination, similarities in pollution transport paths, and support from the other factors analyzed. EPA accepted the state's recommendations and in 2004 designated Mariposa and Tuolumne Counties as one multi-jurisdictional (regarding the two affected air districts) nonattainment area, the Southern Mountain Counties. In 2009, the state recommended the same nonattainment area for the 2008 ozone standard. Both counties had violating monitors at the time.

Now that preliminary 2011 data appear to indicate that Tuolumne County may be attaining the NAAQS, the state is requesting that we split the existing nonattainment area and only designate Mariposa County as nonattainment. This recommendation follows the county and air district boundaries, but deviates from the existing nonattainment area boundary. Although Mariposa County is neither a Core Based Statistical Area (CBSA) nor part of a Combined Statistical Area (CSA), Tuolumne County represents the Phoenix Lake-Cedar Ridge micropolitan CBSA. This CBSA is not part of a larger CSA. The Mariposa County boundary is also the boundary for the jurisdiction of the Mariposa County Air Pollution Control District. Likewise, the Tuolumne County boundary is the jurisdictional boundary for the Tuolumne County Air Pollution Control District.

The Mariposa and Tuolumne Counties (Southern Mountain Counties) area also includes an area of Indian country. As defined at 18 U.S.C. 1151, "Indian country" refers to: "(a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same." EPA recognizes the sovereignty of tribal governments, and has attempted to take the desires of the tribes into account in establishing appropriate nonattainment area boundaries.

The Jackson Rancheria of Me-Wuk Indians (Jackson Rancheria) is a federally recognized tribe with reservation lands in both Amador County and Tuolumne County. These portions of Indian country and the surrounding proposed nonattainment areas are shown in Maps 1a and 7a in Appendix 2. Due to the non-contiguous nature of these lands, we intend to designate as part of the Southern Mountain Counties nonattainment area the portions of Jackson Rancheria in Tuolumne County.

Conclusion

Based on the assessment of factors described above, EPA has preliminarily concluded that the following counties should be included as part of the Mariposa and Tuolumne Counties (Southern Mountain Counties) nonattainment area because they are either violating the 2008 ozone NAAQS or contributing to a violation in a nearby area: Mariposa County and Tuolumne County, including Chicken Ranch Rancheria, Tuolumne Band of Me-Wuk Indians, and the portions of Jackson Rancheria in Tuolumne

County.

Both Mariposa County and Tuolumne County contain violating monitors, based on certified 2010 monitoring data. Preliminary air quality data (Factor 1) for 2011 indicate that the violating monitor in the intended Southern Mountain Counties nonattainment area is located in Mariposa County. The monitor in Tuolumne County, based on preliminary 2011 data, indicates that Tuolumne County may be attaining the 2008 ozone standard. However, the variable nature of the DV trend over the past decade in Tuolumne and Mariposa counties makes it difficult to determine whether Tuolumne County will continue to attain. The sparse monitoring network in these two counties also makes it difficult to determine solely from air quality data whether Tuolumne County is contributing to ozone levels in Mariposa County. Because air quality data can be influenced by a number of circumstances, the remaining four factors must be considered to determine if removing Tuolumne County from the nonattainment area, as recommended by the state, is justified.

Emissions and emission-related data (Factor 2) show that most of the stationary sources of ozone precursor emissions in the intended nonattainment area are located in Tuolumne County. Mariposa and Tuolumne Counties are both sparsely populated, but the total 2010 population of Tuolumne County is three times larger than the population of Mariposa County. Highest truck and non-truck traffic volumes generally occur in Tuolumne County, and VMT in this county is also nearly three times higher than VMT in Mariposa County. Based on the higher population density, greater number of stationary sources, and the commuting patterns observed in Tuolumne County, EPA preliminarily concludes that Tuolumne County may contribute to the violation in Mariposa County and should be included in the nonattainment designation.

Meteorology and weather or transport patterns (Factor 3) show that north-south flow between Tuolumne and Mariposa counties is likely because there are fewer barriers to this transport pattern due to the weaker topographic relief in the western portion of both counties. There is thus likely some transport of pollutants between the two counties, as well as transport from the Sacramento and San Joaquin areas. Consideration of the meteorology supports joining these counties with nonattainment areas to the west, and also offers support for joining the counties together as a single nonattainment area. In addition, 2011 was anomalously cool, potentially creating localized ozone patterns that are not representative of expected normal conditions or ongoing trends.

Geography and topography (Factor 4) shows that Tuolumne and Mariposa counties contain complex terrain. The complex terrain of Tuolumne County makes it difficult for one monitor to be representative of the entire county. EPA notes that portions of both counties are in the Sierra Nevada Mountain Range and ozone concentrations often increase with elevation. Therefore, the observed difference in ozone concentrations may be due in part to the fact that the monitor in Tuolumne County is at a vastly lower elevation than the two monitors with complete data in Mariposa County (571 meters versus 1135 meters and 1605 meters). Flow in the west-east direction is relatively unimpeded along the river valleys, which extend well east into the interior of the counties. Eastward transport of pollutants from the more urbanized areas to the west is thus possible during conditions of upslope flow. Conversely, westward transport of locally generated pollution is possible. Consideration of the topography tends to support the joining of these counties with nonattainment areas to the west, and provides some support for joining Mariposa and Tuolumne counties together as a single nonattainment area.

In considering jurisdictional boundaries (Factor 5), EPA notes that the intended Southern Mountain Counties nonattainment area, including both Mariposa and Tuolumne Counties, was designated

nonattainment for the 1997 ozone NAAQS in 2004. In December 2003, EPA indicated its intent to designate Mariposa and Tuolumne counties, along with two other violating mountain counties (Amador and Calaveras), as part of the San Joaquin Valley nonattainment area. EPA believed then, as we still believe, that the strongest contribution to the violations in the mountain counties comes from the San Joaquin Valley. However, the state requested grouping Mariposa and Tuolumne counties as one nonattainment area, citing existing inter-county coordination, similarities in pollution transport paths, and support from the other factors analyzed. EPA agreed with this analysis and accepted the state's recommendations, designating in 2004 both Mariposa and Tuolumne counties as one multi-jurisdictional (regarding the two affected air districts) nonattainment area, the Southern Mountain Counties. In 2009, the state recommended the same nonattainment area for the 2008 ozone standard. Both counties had violating monitors at the time. Now that preliminary 2011 data appear to indicate that Tuolumne may be attaining the NAAQS, the state is requesting that we split the existing nonattainment area and only designate Mariposa County as nonattainment.

The Clean Air Act requires EPA to designate any area as nonattainment if it violates a NAAQS or contributes to a violation in a nearby area. Although the evidence for a contribution of Tuolumne County to violations in Mariposa County is limited, we nonetheless believe that there is transport in that direction. The state has not provided EPA with a full analysis of this issue. It has presented preliminary monitoring data for 2011 and committed to an early certification of air quality monitoring data (by the end of February 2012). Air quality monitoring data for 2009-2011 is one aspect of Factor 1 (Air Quality Data) and does not constitute a full, five factor analysis. If the certified 2009-2011 data for Mariposa County continues to show violations of the 2008 ozone NAAQS, based on the five factor analysis above, EPA intends to include both Mariposa and Tuolumne Counties in the intended Southern Mountain Counties nonattainment area. The state's certified data for 2008-2010 shows violations in both counties, continuing the trend from the state's 2009 recommendation, when both counties were violating the 2008 ozone NAAQS. EPA therefore intends to designate the two-county area as nonattainment, including Chicken Ranch Rancheria, Tuolumne Band of Me-Wuk Indians, and the portions of Jackson Rancheria in Tuolumne County. However, we remain open to a full analysis presented to us by the state.

Technical Support Document for 2008 Ozone NAAQS Designations

California Area Designations for the 2008 Ozone National Ambient Air Quality Standards

Technical Analysis for Nevada County (Western part)

Figure 1 is a map of the intended Nevada County (Western part) nonattainment area. The map provides other relevant information including the locations and design values of air quality monitors, county names and boundaries, and indicates EPA's intended nonattainment designation. Also shown is the boundary of the existing area that is designated nonattainment for the 1997 ozone NAAQS.

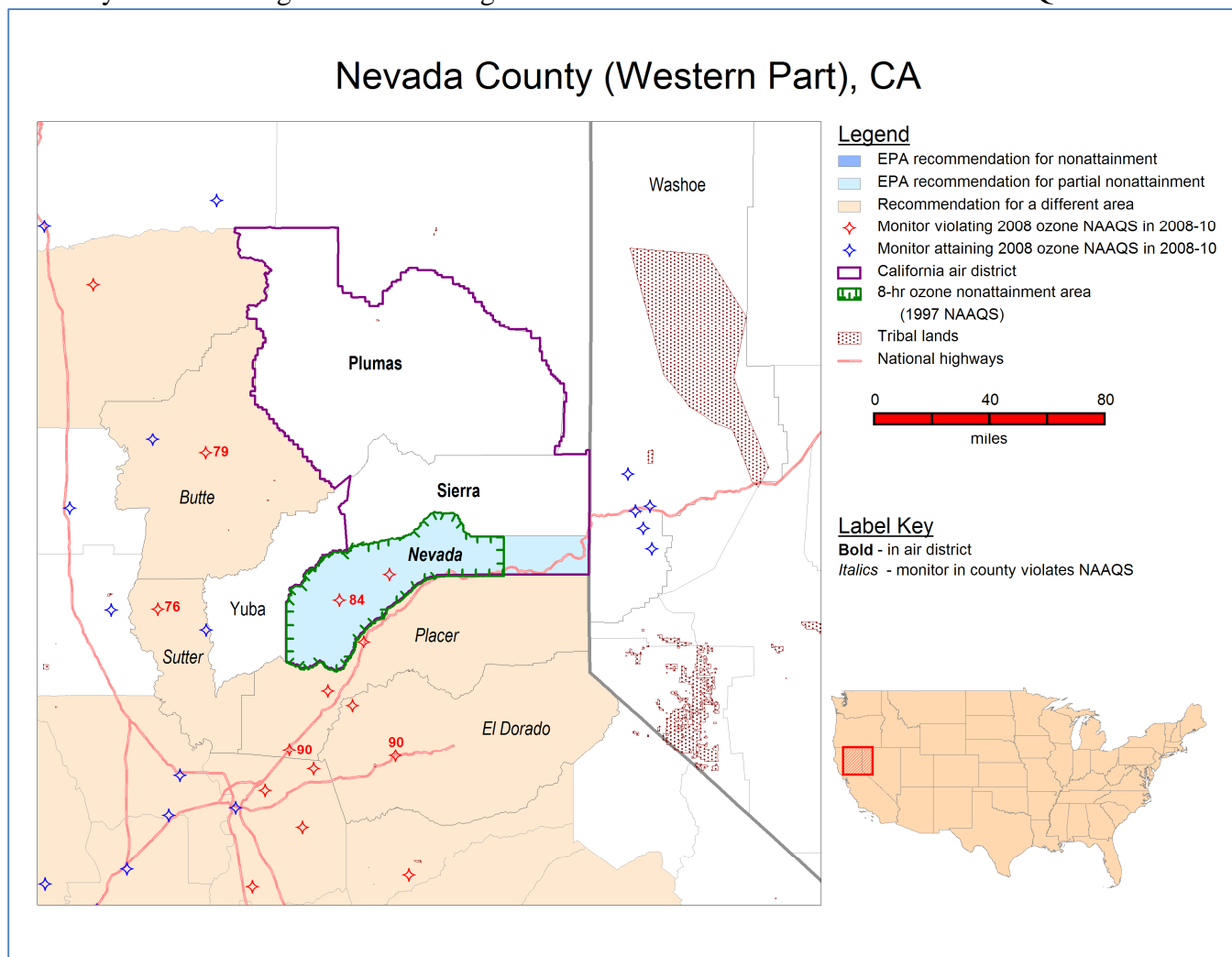


Figure 1

Note: The map shown in Figure 1 provides 8-hour ozone design values in parts per billion (ppb) based on data from 2008-2010 (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. For each particular area, Factor 1 and Appendix 3 describe the air quality data relevant for our intended nonattainment decisions.

For purposes of the 1997 8-hour ozone NAAQS, this area was designated nonattainment. The boundary for the nonattainment area for the 1997 ozone NAAQS included the same western portion of Nevada County.

In March 2009, California recommended that the same partial-county area be designated as “nonattainment” for the 2008 ozone NAAQS based on air quality data from 2006-2008 (letter from James Goldstene, Executive Officer, California Air Resources Board, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, dated March 11, 2009). California provided an update to the original recommendation in October 2011 based on air quality data from 2008-2010 and preliminary 2009-2011 data, but did not change its recommendation for Nevada County. These 2009 and 2011 recommendations are based on data from Federal Equivalent Method (FEM) monitors sited and operated in accordance with 40 CFR Part 58 (letter from Lynn Terry, Deputy Executive Officer, California Air Resources Board, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, dated October 12, 2011).

After considering these recommendations and based on EPA's technical analysis described below, EPA intends to designate western Nevada County, CA (identified in Table 1 below) as “nonattainment” for the 2008 ozone NAAQS.

Table 1. State's Recommended and EPA's Intended Designated Nonattainment Counties or Areas of Indian country for Nevada County (Western part).

| Nevada County (Western part) | State-Recommended Nonattainment Counties or Areas of Indian country | EPA Intended Nonattainment Counties or Areas of Indian country |
|--------------------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------|
| Nevada County | Nevada County (p) | Nevada County (p) |
| No areas of Indian country in nonattainment area | | |

p = partial

Factor Assessment

Factor 1: Air Quality Data

For this factor, we considered 8-hour ozone design values in parts per million (ppm) for air quality monitors in counties in the existing Nevada County nonattainment area, based on data from the 2008-2010 period (i.e., the 2010 design value, or DV) and preliminary data from the 2009-2011 period (i.e., the preliminary 2011 DV). A monitor's DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2008 ozone NAAQS are met at a monitor when the annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years, is 0.075 ppm (75 parts per billion (ppb)) or less. A DV is only valid if minimum data completeness criteria are met. See 40 CFR part 50 Appendix P. Where several monitors are located in a county (or a designated nonattainment area or maintenance area), the DV for the county or area is determined by the monitor with the highest level.

[Note: Monitors that are eligible for providing design value data generally include State and Local Air Monitoring Stations (SLAMS) that are sited in accordance with 40 CFR Part 58, Appendix D (Section 4.1) and operating with a federal reference method (FRM) or federal equivalent method (FEM) monitor that meets the requirements of 40 CFR part 58, appendix A. All data from a special purpose monitor (SPM) using an FRM or FEM which has operated for more than 24 months is eligible for comparison to the NAAQS unless the monitoring agency demonstrates that the data came from a particular period

during which the requirements of appendix A (quality assurance requirements) or appendix E (probe and monitoring path siting criteria) were not met.]

The Nevada County nonattainment area comprises the western portion of Nevada County (see Map 8a in Appendix 2). The 2010 DV for the ozone NAAQS for Nevada County is shown in Table 2.

Table 2. Air Quality Data.

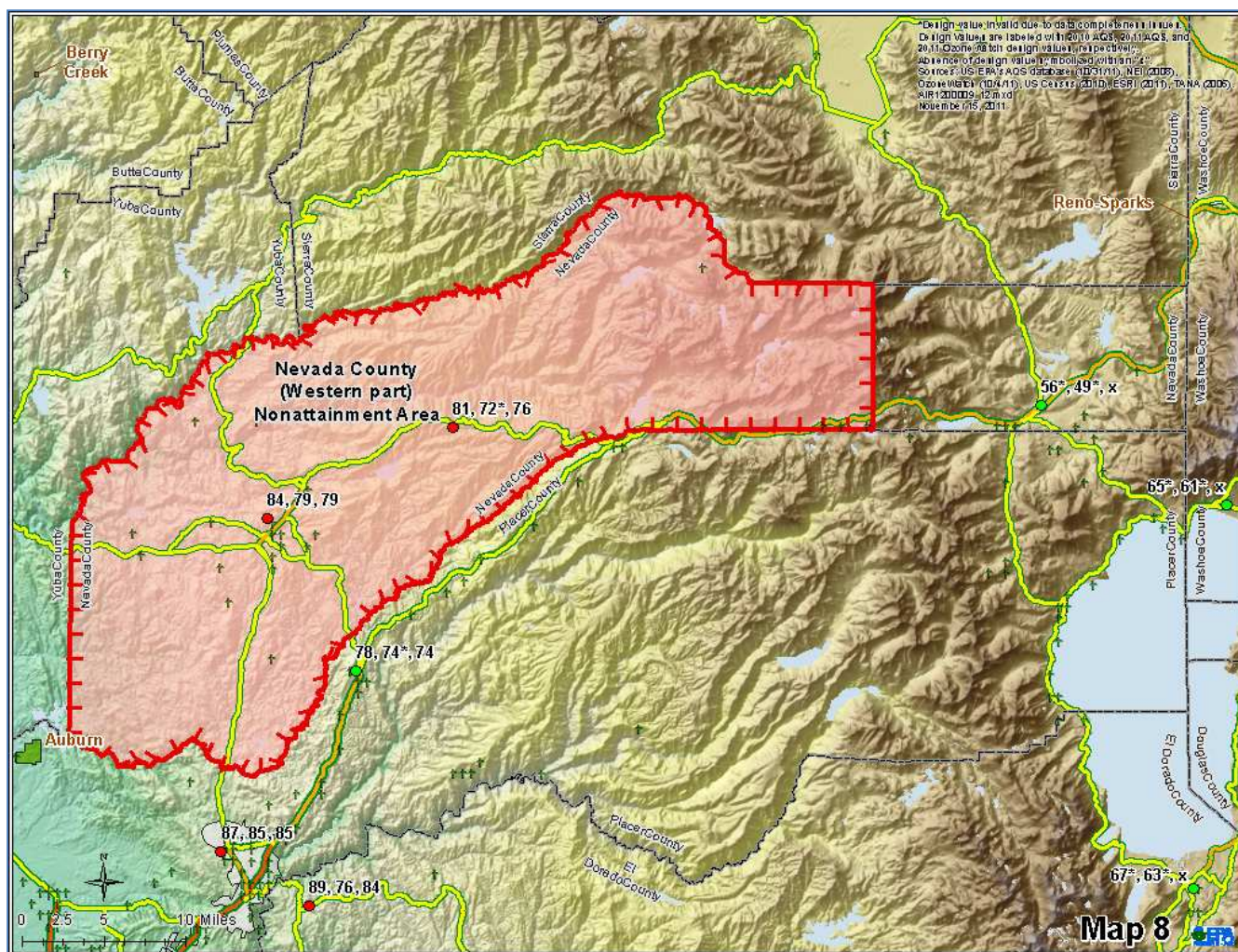
| County | State Recommended Nonattainment? | 2008-2010 Design Value (parts per billion) |
|------------|----------------------------------|--------------------------------------------|
| Nevada, CA | Yes (partial) | 84 |

California's ozone season encompasses the entire year, but some ozone monitors in the Nevada County nonattainment area have been approved to operate on a seasonal schedule per 40 CFR part 58, Appendix D, section 4.1(i). Certified, quality assured data are available in EPA's Air Quality System (AQS) for all areas through calendar year 2010. Preliminary data from part of calendar year 2011 is available in AQS for most areas, however, these data have not yet been certified and quality assured. States are required to certify data by May 1st of the following year. Northern Sierra Air Quality Management District (AQMD) has indicated that it plans to certify 2011 data early for Nevada County. EPA's designation recommendation for this area is therefore based on certified 2008-2010 data and is further informed by preliminary 2009-2011 data.

Ozone monitors relevant for comparison to the NAAQS and information from additional data sources within the existing Nevada County nonattainment area are shown in Appendix 1. Map 8 shows monitors in Nevada County. For each monitor, Appendix 1 lists the monitor, the 2008-2010 DV (certified and quality assured in AQS), the preliminary 2009-2011 DV (as available in AQS as of October 31, 2011), and a preliminary 2009-2011 DV using 2011 data from OzoneWatch¹. Absence of a DV is symbolized with an "x".

Appendix 3 lists preliminary 2009-2011 DVs for Nevada County, either from AQS (as available in AQS as of October 31, 2011) or from OzoneWatch (as calculated on October 4, 2011). Appendix 3 lists the higher of these two preliminary 2009-2011 DVs. Monitors shown in bold are the DV monitors (i.e., the monitor with the highest DV) for each individual county. Monitors shown in red font are the DV monitor for the nonattainment area. Values with an asterisk do not meet data completeness, and therefore those DVs are not relevant for comparison to the NAAQS and are solely provided for informational purposes.

¹ The preliminary 2009-2011 design values indicated by OzoneWatch are based on AQS ozone data from 2009, 2010, and 2011, supplemented with 2011 data reported to AirNow (<http://airnow.gov/>) on days for which no data currently exist in the AQS database. 2009 and 2010 AQS data were retrieved on July 20, 2011; 2011 AQS and AirNow data were compiled on October 4, 2011. Ultimately, attainment of the 8-hour ozone NAAQS will be determined entirely from data in AQS.



From Appendix 1, Map 8: For map legend describing monitors, emissions, traffic, population, and boundaries, see Appendix 1

Monitors in the existing Nevada County nonattainment area (which includes the western part of Nevada County) show a violation of the 2008 8-hour ozone standard based on certified 2008-2010 data and preliminary 2011 data. Therefore, this area is included in the intended Nevada County nonattainment area. A county (or partial county) must also be designated nonattainment if it contributes to a violation in a nearby area. Each county without a violating monitor that is located near a county with a violating monitor has been evaluated based on the weight of evidence of the five factors to determine whether it contributes to the nearby violation.

Factor 2: Emissions and Emissions-Related Data

EPA evaluated emissions of ozone precursors, nitrogen oxides (NO_x) and volatile organic compounds (VOC), and other emissions-related data that provide information on areas contributing to violating monitors.

Emissions data

EPA evaluated county-level emission data for NO_x and VOC derived from the 2008 National Emissions Inventory (NEI), version 1.5. This is the most recently available NEI. (See <http://www.epa.gov/ttn/chief/net/2008inventory.html>) Emissions in a nearby area indicate the potential for the area to contribute to observed violations. We will also consider any additional information we receive on changes to emissions levels that are not reflected in recent inventories. These changes include emissions reductions due to permanent and enforceable emissions controls that will be in place before final designations are issued and emissions increases due to new sources.

Table 3 shows emissions of NO_x and VOC (given in tons per year) for Nevada County.

Table 3. Total 2008 NO_x and VOC Emissions.

| County | State Recommended Nonattainment? | NO _x (tpy) | VOC (tpy) |
|-------------------|----------------------------------|-----------------------|-----------|
| Nevada County, CA | Yes (partial) | 3,761 | 4,626 |
| Areawide: | | 3,761 | 4,626 |

Nevada County has a low level of ozone precursor emissions relative to the larger Sacramento Metro area to the south-southwest. EPA intends to designate the Sacramento Metro area as nonattainment for the 2008 ozone NAAQS.

Population density and degree of urbanization

EPA evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. These include ozone-creating emissions from on-road and off-road vehicles and engines, consumer products, residential fuel combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NO_x and VOC emissions, which contribute to ozone formation. Rapid population or vehicle miles traveled (VMT) growth (see below) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the area associated with area source and mobile source emissions as part of the nonattainment area. Table 4 shows the population, population density, and population growth information for Nevada County.

Table 4. Population and Growth.

| County | State Recommended Nonattainment? | 2010 Population | 2010 Population Density (1000 pop/sq mi) | Absolute change in population (2000-2010) | Population % change (2000-2010) |
|-------------------|----------------------------------|-----------------|------------------------------------------|-------------------------------------------|---------------------------------|
| Nevada County, CA | Yes (partial) | 136,484 | 0.17 | 11,946 | +10% |
| Areawide: | | 136,484 | 0.17 | 11,946 | +10% |

Sources: U.S. Census Bureau population estimates for 2010 as of August 4, 2011

(http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_PL_GCTPL2.STO5&prodType=table)

Maps 8 and 8a in Appendices 1 and 2, respectively show population for this area. Nevada County has experienced growth, yet overall it has a small population relative to the rest of the Sacramento Metro area, to the south-southwest.

Traffic (VMT) data

EPA evaluated the commuting patterns of residents in the area, as well as the total VMT for each county. In combination with the population/population density data and the location of main transportation arteries (see above), this information helps identify the probable location of non-point source emissions. A county with high VMT indicates the presence of motor vehicle emissions that may contribute to ozone formation and nonattainment in the area. Rapid population or VMT growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 5 shows total 2008 VMT for Nevada County.

Table 5. Traffic (VMT) data.

| County | State Recommended Nonattainment? | 2008 VMT* (million miles) |
|------------|----------------------------------|---------------------------|
| Nevada, CA | Yes (partial) | 1,374 |
| Areawide: | | 1,374 |

* MOBILE model VMTs are those inputs into the NEI version 1.5.

Map 8 in Appendix 1 shows that annual average daily non-truck traffic in Nevada County is light (less than 25,000 non-truck vehicles per day), with a five-mile stretch of roadway that experiences comparatively heavier traffic (25,000 - 50,000 non-truck vehicles per day).

Factor 3: Meteorology (weather/transport patterns)

EPA evaluated available meteorological data to help determine how meteorological conditions, such as weather, transport patterns and stagnation conditions, would affect the fate and transport of precursor emissions contributing to ozone formation.

Previous assessments of pollution transport found that the broader Sacramento area (roughly equivalent to the non-mountainous portions of the Sacramento Metropolitan ozone nonattainment area) can have an overwhelming impact on counties of the Mountain Counties Air Basin, including Nevada County.²

The Nevada County air flow is most frequently from the south-southwest according to the 30-year average direction frequencies computed by EPA, as shown in the “radar”-style wind rose diagram below (Figure 2). This is consistent with the orientation of the river valleys and ridges in Nevada County, and with the shape of the western portion of the county itself. See Map 8, Appendix 1.

² “Assessment of the Impacts of Transported Pollutants on Ozone Concentrations in California”. California Environmental Protection Agency, Air Resources Board, March 2001. <http://www.arb.ca.gov/aqd/transport/assessments/assessments.htm>

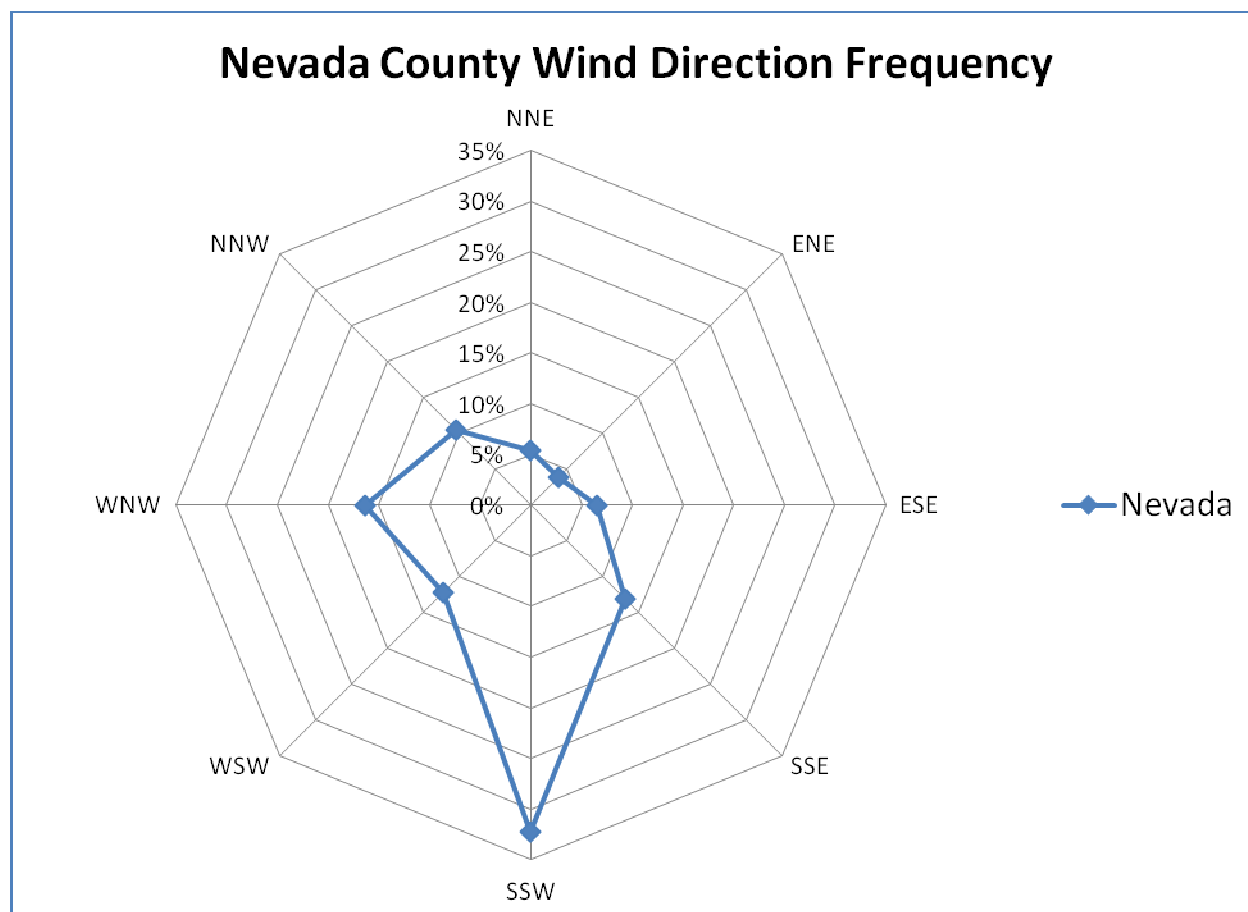


Figure 2

The western portion of the county is likely also subject to the meteorology conditions of, and flow from, the neighboring Sacramento Valley to the south-southwest, such as from the Sacramento Metro area. See Map 10, Appendix 1. However, even at its western end the county is within the foothills of the Sierra Nevada mountain range, rather than in the flats of Sacramento Valley, and on the whole the county is more rural and largely mountainous. In contrast to the Sacramento Valley, it is more dominated by upslope and downslope flows of the strongly sloped landscape, as well as enhanced dispersion due to turbulence in the rough terrain. The eastern portion of the county is not expected to be subject to conditions in or transport from the Sacramento Valley, since it is on the other side of the crest of the Sierra Nevada mountain range (4,200 meters or 14,000 feet high).

Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis evaluates the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the area.

Nevada County is in the north central portion of the “Mountain Counties Air Basin” as defined by California Air Resources Board (ARB)³. This is not a “basin” in the sense of a single watershed or an area that is more or less surrounded by high terrain. Rather, it is a group of rural and largely mountainous counties that are similar in their better air quality, more pronounced topography, and rural character as compared to the more polluted, flatter, and more populous areas to the west - the broad Sacramento and San Joaquin valleys of central California. Nevada County is in the foothills and mountains proper of the Sierra Nevada mountain range. Elevations increase from roughly 300 feet (ft) above mean sea level (MSL) in the west to over 1,400 ft in the east, at the Sierra crest (100 meters to over 4,200 meters).

Nevada County is characterized by river valleys running roughly east-northeast to west-southwest, separated by mountain ridges. This tends to inhibit north-south flow, but allow east-west upslope and downslope flow. The eastern portion of the county would not be expected to be influenced by conditions in or transport from the Sacramento Valley or even the western portion of Nevada County itself, since it is on the other side of the crest of the Sierra Nevada mountain range (14,000 ft or 4,200 meters high).

Factor 5: Jurisdictional boundaries

For each potential nonattainment area, we considered existing jurisdictional boundaries to provide a clearly defined legal boundary and to help identify the areas appropriate for carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment area boundaries for ozone or other urban-scale pollutants, county lines, air district boundaries, township boundaries, areas covered by a metropolitan planning organization, state lines, areas of Indian country, and urban growth boundaries. Where existing jurisdictional boundaries were not adequate or appropriate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates were considered.

The Nevada County (Western part) area has previously established nonattainment boundaries associated with the 1997 8-hour ozone NAAQS. The state has recommended the same boundary for the 2008 ozone NAAQS. The western portion is defined as the portion of the county that lies to the west of the crest of the Sierra Nevada mountain range. This ridgeline also represents the hydrographic boundary between the Lake Tahoe watershed and the watersheds to the west. The entire county is under the air quality management jurisdiction of the Northern Sierra AQMD, along with Plumas and Sierra Counties to the north of Nevada County. Nevada County is a micropolitan statistical area within the Sacramento–Arden-Arcade–Yuba City Combined Statistical Area or CSA.

Nevada County is not part of the Sacramento Area Council of Governments (SACOG) transportation planning agency and MPO (metropolitan planning organization) that has jurisdiction within the Sacramento Metro area. As such, Nevada County is in a different regulatory regime with respect to transportation planning. The county does not have its own MPO. This fact formed part of the basis for EPA accepting the state’s request to exclude the west Nevada County area from the Sacramento Metro

³ <http://www.arb.ca.gov/ei/maps/statemap/abmap.htm>

area in our designations for the 1997 ozone NAAQS. We believe this jurisdictional difference is still relevant to our current ozone designations for the Sacramento Metro and Nevada County intended nonattainment areas.

Conclusion

Based on the assessment of factors described above, EPA has preliminarily concluded that the western part of Nevada County should be designated as the Nevada County (Western part) nonattainment area because it is violating the 2008 ozone NAAQS.

The Clean Air Act requires EPA to designate any area as nonattainment if it violates a NAAQS or if it contributes to a violation in a nearby area. Air quality data (Factor 1) show that monitors in the western part of Nevada County show a violation of the 2008 8-hour ozone standard based on 2008-2010 data. Therefore, Factor 1 suggests that this area should be included in the intended Nevada County (Western part) nonattainment area.

EPA's review of emissions and emission related data (Factor 2), as well as meteorology and weather or transport patterns (Factor 3), and geography and topography (Factor 4), show a distinction between the western and eastern parts of the county in terms of sources of ozone precursor emissions as well as meteorology resulting from topography (Sierra Nevada mountain range).

In considering jurisdictional boundaries (Factor 5), EPA believes that although there is justification to include western Nevada County in the intended Sacramento Metro nonattainment area, based on the county's inclusion in the Sacramento–Arden–Arcade–Yuba City CSA and the degree of economic interconnectedness indicated by such inclusion, we nonetheless believe that the state's recommendation to make this area a separate nonattainment area is reasonable. All areas that are violating and any nearby contributing areas will be designated nonattainment. Also, our policy for intrastate transport is to allow the state to determine how best to address such transport.

Based on the preceding discussion, EPA's preliminary conclusion is to concur with the state's recommendation to designate Nevada County (Western part) as nonattainment for the 2008 ozone NAAQS.

Technical Support Document for 2008 Ozone NAAQS Designations

California Area Designations for the 2008 Ozone National Ambient Air Quality Standards

Technical Analysis for Riverside County (Coachella Valley)

Figure 1 is a map of the intended Riverside County (Coachella Valley) nonattainment area. The map provides other relevant information including the locations and design values of air quality monitors, county names and boundaries, and indicates EPA's intended nonattainment designation. Also shown is the boundary of the existing area that is designated nonattainment for the 1997 ozone NAAQS.

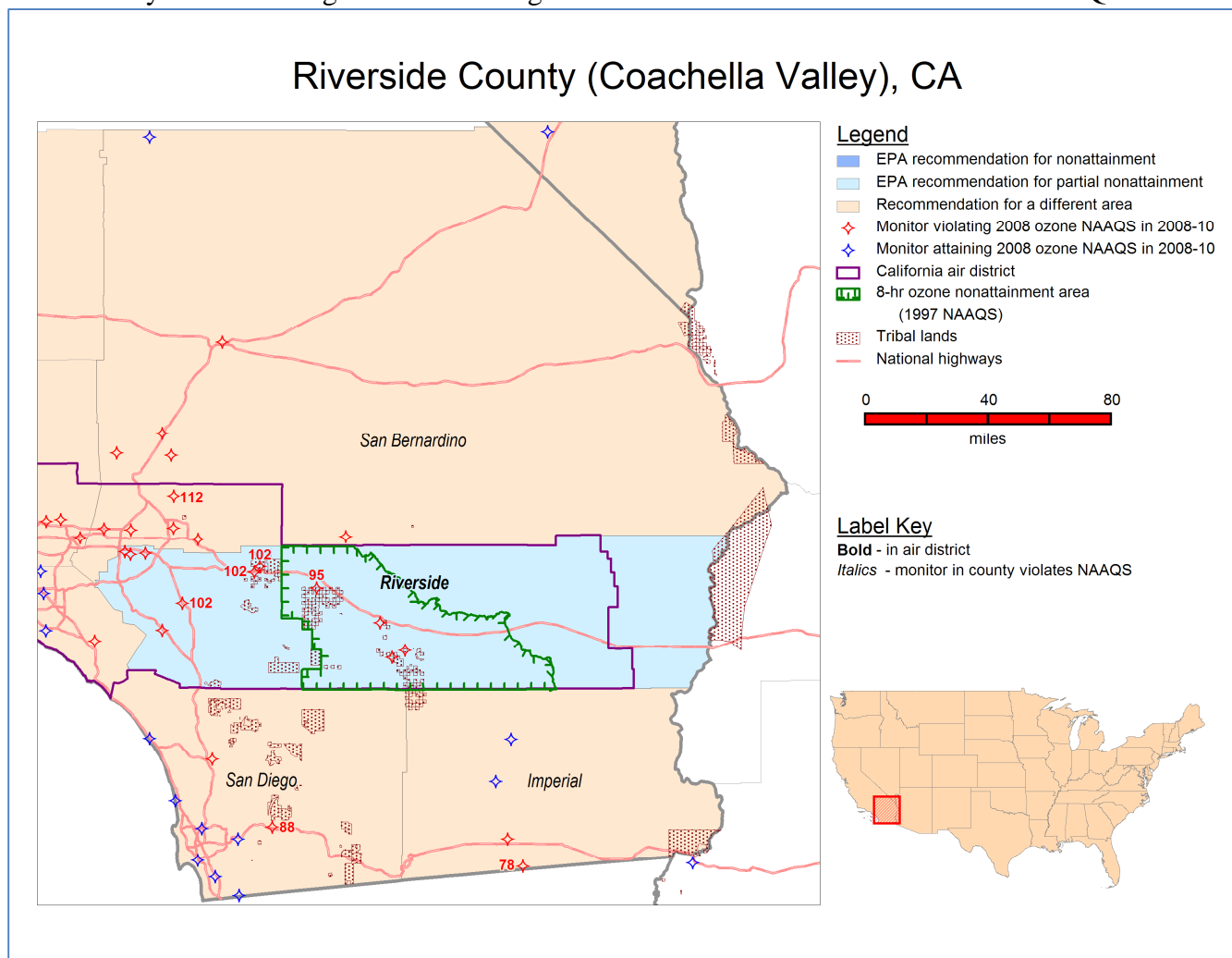


Figure 1

For purposes of the 1997 8-hour ozone NAAQS, this area was designated nonattainment. The boundary for the nonattainment area for the 1997 ozone NAAQS included the same portion of central Riverside County. Several areas of Indian country were included in the nonattainment area. These are the same tribes that are listed in Table 1, below.

In March 2009, California recommended that the same partial-county area be designated as “nonattainment” for the 2008 ozone NAAQS based on air quality data from 2006-2008 (letter from James Goldstene, Executive Officer, California Air Resources Board, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, dated March 11, 2009). California provided an update to the original recommendation in October 2011 based on air quality data from 2008-2010 and preliminary 2009-2011 data, but did not revise its recommendation for Riverside County (Salton Sea Air Basin portion). These 2009 and 2011 recommendations are based on data from Federal Equivalent Method (FEM) monitors sited and operated in accordance with 40 CFR Part 58 (letter from Lynn Terry, Deputy Executive Officer, California Air Resources Board, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, dated October 12, 2011).

After considering these recommendations and based on EPA's technical analysis described below, EPA intends to designate Riverside County (Salton Sea Air Basin portion) in California and areas of Indian country in Riverside County as “nonattainment” for the 2008 ozone NAAQS as part of the Riverside County (Coachella Valley) multi-jurisdictional nonattainment area.

Table 1. State’s or Tribe’s Recommended and EPA’s Intended Designated Nonattainment Counties or Areas in Indian country for Coachella Valley.

| Coachella Valley | State or Tribe-Recommended Nonattainment Counties or Areas in Indian country | EPA Intended Nonattainment Counties or Areas in Indian country |
|--------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------|
| Riverside County | Riverside County (p) | Riverside County (p) |
| Agua Caliente Indian Reservation | N/A | Agua Caliente Indian Reservation |
| Augustine Band of Cahuilla Indians | N/A | Augustine Band of Cahuilla Indians |
| Cabazon Band of Mission Indians | N/A | Cabazon Band of Mission Indians |
| Santa Rosa Band of Cahuilla Indians ¹ | N/A | Santa Rosa Band of Cahuilla Indians |
| Torres Martinez Desert Cahuilla Indians ² | N/A | Torres Martinez Desert Cahuilla Indians |
| Twenty Nine Palms Band of Mission Indians ³ | N/A | Twenty-Nine Palms Band of Mission Indians |

p = partial

N/A = Tribe did not submit recommendation.

¹ Santa Rosa Cahuilla has contiguous reservation land in both the Los Angeles-South Coast Air Basin intended nonattainment area and in Coachella Valley intended nonattainment area. All of Santa Rosa Cahuilla will be designated with the Coachella Valley intended nonattainment area.

² Torres Martinez has non-contiguous reservation land in both the Imperial County and the Coachella Valley intended nonattainment areas. Non-contiguous lands of the Torres Martinez will be designated with the surrounding nonattainment areas. This technical analysis addresses only those areas of Indian country within the intended Coachella Valley nonattainment area.

³ Twenty Nine Palms has non-contiguous reservation land in both the Los Angeles-South Coast Air Basin nonattainment area and the Coachella Valley intended nonattainment area. Non-contiguous lands of the Twenty Nine Palms will be designated with the surrounding nonattainment areas. This technical analysis addresses only those areas of Indian country within the intended Coachella Valley nonattainment area.

Factor Assessment

Factor 1: Air Quality Data

For this factor, we considered 8-hour ozone design values in parts per million (ppm) for air quality monitors in the existing Riverside County (Coachella Valley) nonattainment area, based on data from the 2008-2010 period (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. A monitor's DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2008 ozone NAAQS are met at a monitor when the annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years, is 0.075 ppm (75 parts per billion (ppb)) or less. A DV is only valid if minimum data completeness criteria are met. See 40 CFR part 50 Appendix P. Where several monitors are located in a county (or a designated nonattainment area or maintenance area), the DV for the county or area is determined by the monitor with the highest level.

[Note: Monitors that are eligible for providing design value data generally include State and Local Air Monitoring Stations (SLAMS) that are sited in accordance with 40 CFR Part 58, Appendix D (Section 4.1) and operating with a federal reference method (FRM) or federal equivalent method (FEM) monitor that meets the requirements of 40 CFR part 58, appendix A. All data from a special purpose monitor (SPM) using an FRM or FEM which has operated for more than 24 months is eligible for comparison to the NAAQS unless the monitoring agency demonstrates that the data came from a particular period during which the requirements of appendix A (quality assurance requirements) or appendix E (probe and monitoring path siting criteria) were not met.]

The existing Riverside County (Coachella Valley) nonattainment area comprises the Salton Sea Air Basin portion of Riverside County (see Map 9a in Appendix 2). The 2010 DV for the ozone NAAQS for the entirety of Riverside County is shown in Table 2.

Table 2. Air Quality Data.

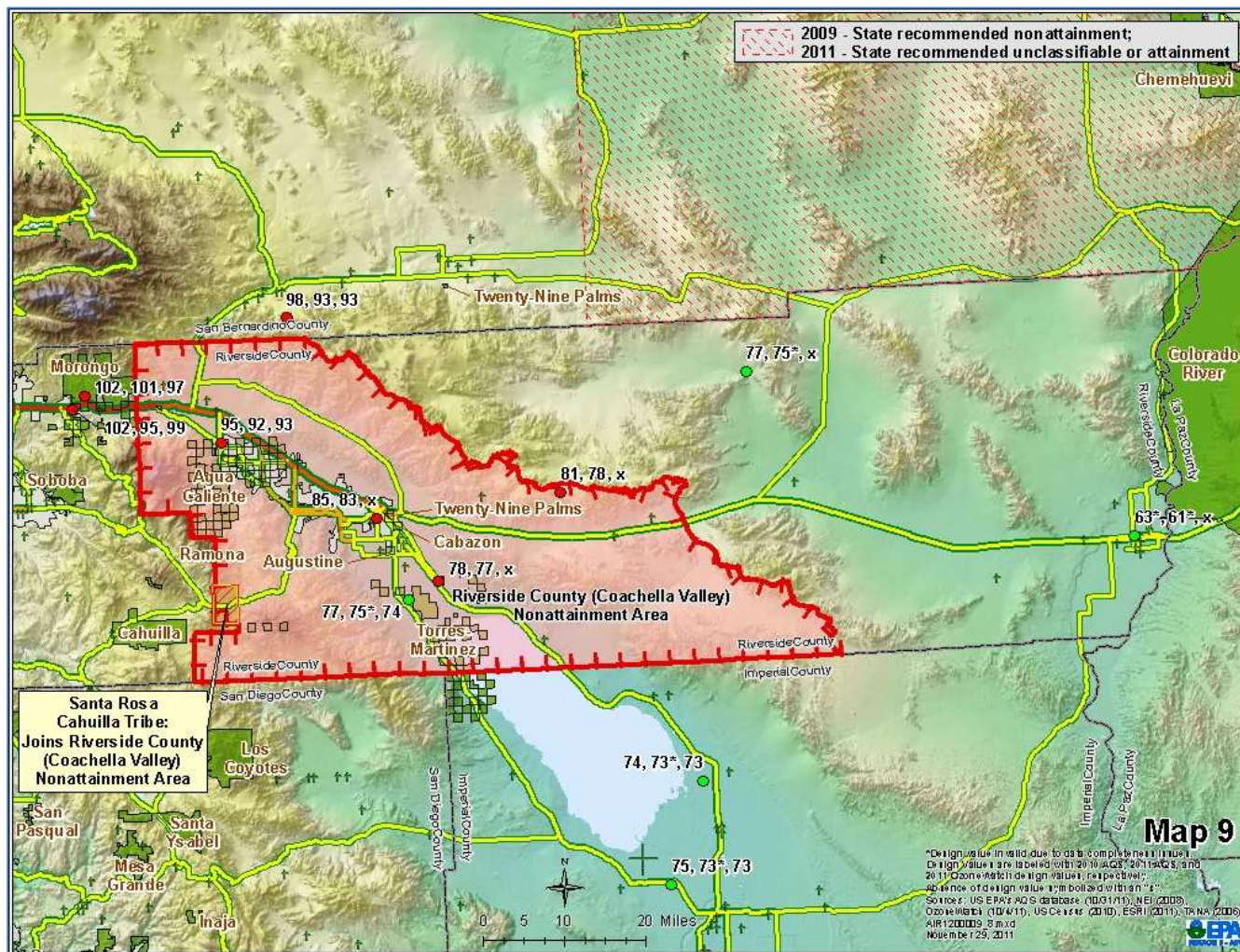
| County | State Recommended Nonattainment? | 2008-2010 Design Value (parts per billion) |
|---------------|----------------------------------|--------------------------------------------|
| Riverside, CA | Yes (partial) | 102 |

Ozone monitors relevant for comparison to the NAAQS and information from additional data sources within the existing Coachella Valley nonattainment area are shown in Appendix 1, Map 9 (inserted below). EPA intends to designate the western part of Riverside County as part of the Los Angeles-South Coast Air Basin nonattainment area. The design value shown in Table 2 is from a monitor located within this western portion of Riverside County. As shown in Appendix 1, Map 9, the existing Coachella Valley nonattainment area has a DV of 95 ppb.

California's ozone season encompasses the entire year. Certified, quality assured data are available in EPA's Air Quality System (AQS) for all areas through calendar year 2010. Map 9 in Appendix 1 includes preliminary 2011 DVs for the existing Coachella Valley nonattainment area for informational purposes only. For each monitor, Appendix 1 lists the monitor, the 2008-2010 DV (certified and quality assured in AQS), the preliminary 2009-2011 DV (as available in AQS as of October 31, 2011),

and a preliminary 2009-2011 DV using 2011 data from OzoneWatch¹. Absence of a DV is symbolized with an “x”.

Appendix 3 lists the DVs for monitors in the existing Coachella Valley nonattainment area. Monitors shown in bold are the DV monitors (i.e., the monitor with the highest DV) for each individual county. Monitors shown in red font are the DV monitor for the nonattainment area. Values with an asterisk do not meet data completeness, and therefore those DVs are not relevant for comparison to the NAAQS and are solely provided for informational purposes.



From Appendix 1, Map 9: For map legend describing monitors, emissions, traffic, population, and boundaries, see Appendix 1

Monitors within the Salton Sea Air Basin portion of Riverside County show violations of the 2008 8-hour ozone standard based on 2008-2010 data. Therefore, this area is included in the intended Riverside County (Coachella Valley) nonattainment area.

¹ The preliminary 2009-2011 design values indicated by OzoneWatch are based on AQS ozone data from 2009, 2010, and 2011, supplemented with 2011 data reported to AirNow (<http://airnow.gov/>) on days for which no data currently exist in the AQS database. 2009 and 2010 AQS data were retrieved on July 20, 2011; 2011 AQS and AirNow data were compiled on October 4, 2011. Ultimately, attainment of the 8-hour ozone NAAQS will be determined entirely from data in AQS.

Factor 2: Emissions and Emissions-Related Data

EPA evaluated emissions of ozone precursors, nitrogen oxides (NO_x) and volatile organic compounds (VOC), and other emissions-related data that provide information on areas contributing to violating monitors.

Emissions data

EPA evaluated county-level emission data for NO_x and VOC derived from the 2008 National Emissions Inventory (NEI), version 1.5. This is the most recently available NEI. (See <http://www.epa.gov/ttn/chief/net/2008inventory.html>) Emissions in a nearby area indicate the potential for the area to contribute to observed violations. We will also consider any additional information we receive on changes to emissions levels that are not reflected in recent inventories. These changes include emissions reductions due to permanent and enforceable emissions controls that will be in place before final designations are issued and emissions increases due to new sources. Table 3 shows emissions of NO_x and VOC (given in tons per year) for Riverside County.

Table 3. Total 2008 NO_x and VOC Emissions.

| County | State Recommended Nonattainment? | NO _x (tpy) | VOC (tpy) |
|---------------|----------------------------------|-----------------------|-----------|
| Riverside, CA | Yes (partial) | 54,727 | 28,934 |
| Areawide: | | 54,727 | 28,934 |

Stationary source emissions in Riverside County are generally clustered in the western portion of Riverside County (designated with the Los Angeles-South Coast Air Basin nonattainment area), with fewer stationary sources in the eastern Coachella Valley nonattainment area portion of the county (see Maps 6 and 9 of Appendix 1). Although stationary source emissions of ozone precursors from Riverside County are quite high, based on the geographic distribution of stationary sources, the eastern portion of the county is expected to represent a relatively smaller fraction of total emissions from Riverside County.

Population density and degree of urbanization

EPA evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. These include ozone-creating emissions from on-road and off-road vehicles and engines, consumer products, residential fuel combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NO_x and VOC emissions, which contribute to ozone formation. Rapid population growth or growth in vehicle miles traveled (VMT) (see below) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the area associated with area source and mobile source emissions as part of the nonattainment area. Table 4 shows the population, population density, and population growth information for Riverside County.

Table 4. Population and Growth.

| County | State Recommended Nonattainment? | 2010 Population | 2010 Population Density (1000 pop/sq mi) | Absolute change in population (2000-2010) | Population % change (2000-2010) |
|---------------|----------------------------------|-----------------|------------------------------------------|-------------------------------------------|---------------------------------|
| Riverside, CA | Yes (partial) | 2,189,641 | 0.30 | 630,364 | +40% |
| Areawide: | | 2,189,641 | 0.30 | 630,364 | +40% |

Sources: U.S. Census Bureau population estimates for 2010 as of August 4, 2011

(http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_PL_GCTPL2.STO5&prodType=table)

Maps 9 and 9a in Appendices 1 and 2, respectively, show population in the area. The percent change of population in Riverside County indicates a high level of growth. Based on the population centers in Riverside County, the population growth was likely centered in the western portion of the county (see Maps 6a and 9a of Appendix 2). The eastern portion of the county is fairly unpopulated, mountainous terrain. The western and eastern portions of Riverside County are linked by Banning Pass. On the east side of Banning Pass, EPA intends to designate the Salton Sea Air Basin portion of Riverside County as the Coachella Valley nonattainment area. To the west, EPA intends to designate nonattainment the South Coast Air Basin portion of Riverside County as part of the Los Angeles-South Coast nonattainment area.

Traffic (VMT) data

EPA evaluated the commuting patterns of residents in the area, as well as the total VMT for each county. In combination with the population/population density data and the location of main transportation arteries (see above), this information helps identify the probable location of non-point source emissions. A county with high VMT indicates the presence of motor vehicle emissions that may contribute to ozone formation and nonattainment in the area. Rapid population or VMT growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 5 shows total 2008 VMT.

Table 5. Traffic (VMT) data.

| County | State Recommended Nonattainment? | 2008 VMT* (million miles) |
|---------------|----------------------------------|---------------------------|
| Riverside, CA | Yes (partial) | 21,704 |
| Areawide: | | 21,704 |

*MOBILE model VMTs are those inputs into the NEI version 1.5.

Riverside County exhibits high VMT. However, based on traffic patterns (see Maps 6 and 9 in Appendix 1), most of the non-truck traffic volume is centered in the western portion of Riverside County, with some heavy traffic in the eastern portion of the county limited to two major roadways.

Factor 3: Meteorology (weather/transport patterns)

For this factor, EPA evaluated any available meteorological data to help determine how meteorological conditions, such as weather, transport patterns and stagnation conditions, would affect the fate and transport of precursor emissions contributing to ozone formation.

The Final 2007 Air Quality Management Plan produced by South Coast Air Quality Management District discusses the transport patterns and stagnation conditions, and how these patterns and

conditions would affect the fate and transport of precursor emissions that contribute to ozone formation in the Salton Sea Air Basin (SSAB) portion of Riverside County.²

“Ozone in the atmosphere of the Riverside county portion of SSAB is both directly transported from the Basin and formed principally from precursors emitted upwind. These precursors are emitted in greatest quantity in the coastal and central Los Angeles county areas of the Basin. The Basin’s prevailing sea breeze causes polluted air to be transported inland. As the air is being transported inland, ozone is formed, with peak concentrations occurring in the inland valleys of the Basin in an area extending from eastern San Fernando Valley through the San Gabriel Valley into the Riverside-San Bernardino area and the adjacent mountains. As the air is transported still further inland into the desert areas, ozone concentrations decrease due to dilution.”

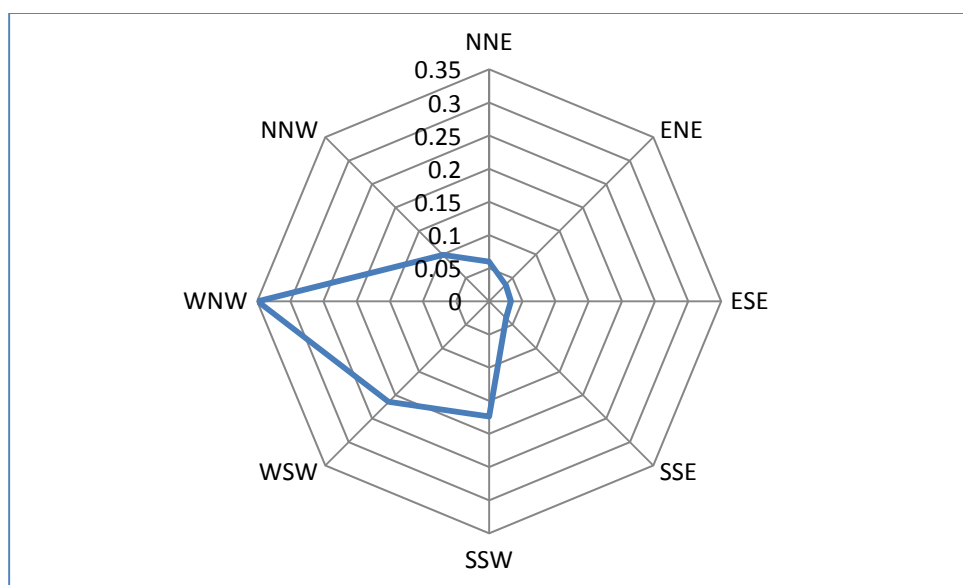


Figure 2: Riverside County - Summer Wind Frequency Distribution

The wind frequency distribution of wind direction data in Figure 2, above, is based on an average of 30 years of National Weather Service information for the months of June, July, and August. The prevailing winds during the ozone season have a strong westerly component.

Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis evaluates the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the area.

The air basins in this area are shown in Appendix 2, Map 9a. The proposed nonattainment area consists of the northern portion of the Salton Sea Air Basin. The remaining portion of the Salton Sea Air Basin consists of the entirety of Imperial County. EPA is proposing a separate nonattainment area for

² South Coast Air Quality Management District, June 2007. Final 2007 Air Quality Management Plan, Appendix II. http://www.aqmd.gov/aqmp/07aqmp/aqmp/Appendix_II.pdf

Imperial County, consistent with the existing 1997 ozone nonattainment areas and consistent with the State's recommendations under the 2008 ozone NAAQS.

South Coast Air Quality Management District's Final 2007 Air Quality Management Plan provides a brief description of the Coachella Valley Planning Area.

"The Riverside county portion of the SSAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. The federal nonattainment area (known as the Coachella Valley Planning Area) is a subregion of Riverside County and the Salton Sea Air Basin that is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east.³"

The "Assessment and Mitigation of the Impacts of Transported Pollutants on Ozone Concentrations within California," produced by California Air Resources Board, also discusses the physical features of the land that might affect the airshed and distribution of ozone over the area⁴

"There is only one major pass, San Geronio Pass, connecting the Los Angeles Basin and the Colorado (low) Desert. The northern wall of the pass is the foothills and lower ridges of the San Bernardino Mountains which build up to Mount San Geronio (11,502 ft MSL). The more imposing southern wall rises abruptly toward Mount San Jacinto (10,805 ft MSL) in the San Jacinto Mountains. The floor of the pass begins about two miles west of Banning (about 2,300 ft MSL) and slopes downward at about 80 feet per mile to its eastern end about two miles east of Whitewater (about 1000 ft MSL)."

Factor 5: Jurisdictional boundaries

For each potential nonattainment area, we considered existing jurisdictional boundaries to provide a clearly defined legal boundary and to help identify the areas appropriate for carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment area boundaries for ozone or other urban-scale pollutants, county lines, air district boundaries, township boundaries, areas covered by a metropolitan planning organization, state lines, areas of Indian country, and urban growth boundary. Where existing jurisdictional boundaries were not adequate or appropriate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates were considered.

The Riverside County (Coachella Valley) area has previously established nonattainment boundaries associated with both the 1-hour and the 1997 8-hour ozone NAAQS. The state has recommended the same boundary for the 2008 ozone NAAQS.

³ 1-2. Final 2007 Air Quality Management Plan. South Coast Air Quality Management District.
<http://www.aqmd.gov/aqmp/07aqmp/index.html>

⁴ Air Resources Board, 1990: Assessment and Mitigation of the Impacts of Transported Pollutants on Ozone Concentrations within California. ARB Staff Report prepared by the Technical Support Division and the Office of Air Quality Planning and Liaison, June 1990.

For the 1-hour ozone NAAQS, the intended Riverside County (Coachella Valley) nonattainment area was part of the Southeast Desert nonattainment area. For the 1997 ozone NAAQS, however, EPA designated Coachella as a separate nonattainment area. For the 2008 ozone NAAQS, EPA's intended Riverside County (Coachella Valley) nonattainment area consists of the northern portion of the Salton Sea Air Basin. The remaining portion of the Salton Sea Air Basin consists of the entirety of Imperial County. EPA is proposing a separate nonattainment area for Imperial County, consistent with the existing 1997 ozone nonattainment areas and consistent with the State's recommendations under the 2008 ozone NAAQS. Imperial Valley has its own air district, and the Salton Sea Air Basin portion of Riverside County is under the air quality jurisdiction of the South Coast Air Quality Management District.

The Riverside County (Coachella Valley) area also includes areas of Indian country. As defined at 18 U.S.C. 1151, "Indian country" refers to: "(a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same." EPA recognizes the sovereignty of tribal governments, and has attempted to take the desires of the tribes into account in establishing appropriate nonattainment area boundaries.

The Santa Rosa Band of Cahuilla Indians (Santa Rosa Cahuilla) is a federally recognized tribe with reservation lands in Riverside County. These portions of Indian country located in the intended Riverside County (Coachella Valley) nonattainment area are shown on Map 9a in Appendix 2. In 2004, EPA established the Los Angeles-South Coast Air Basin nonattainment boundaries for the 1997 ozone NAAQS. The Los Angeles-South Coast Air Basin nonattainment area included the entirety of Orange County, the southwestern portion of Los Angeles County, the southwest portion of San Bernardino County, and the western portion of Riverside County (see Map 6 in Appendix 1). In 2004, western portions of Santa Rosa Cahuilla in the southwestern portion of Riverside County were designated as part of the Los Angeles-South Coast Air Basin nonattainment area, while eastern portions of Santa Rosa Cahuilla were designated as part of the Coachella Valley nonattainment area. Consistent with current EPA policy that discourages splitting contiguous areas of Indian country between two separate nonattainment areas where practically possible, the Santa Rosa Cahuilla reservation land, including those portions that were previously part of the existing Los Angeles-South Coast Air Basin nonattainment area, will be designated as part of the intended Riverside County (Coachella Valley) nonattainment area.

The Torres Martinez Desert Cahuilla Indians (Torrez Martinez) is a federally recognized tribe that has non-contiguous reservation lands in both Riverside County and Imperial County. These portions of Indian country and the surrounding proposed nonattainment areas are shown on Map 9a in Appendix 2. Due to the non-contiguous nature of these lands, the portions of Torres Martinez in Riverside County will be designated as part of the Riverside County (Coachella Valley) nonattainment area. See the technical analysis for the intended Imperial County nonattainment area for discussion of the portions of Torres Martinez in Imperial County.

The Twenty-Nine Palms Band of Mission Indians (Twenty-Nine Palms) is a federally recognized tribe that has non-contiguous reservation lands in both Riverside County and San Bernardino County. These portions of Indian country and the surrounding proposed nonattainment areas are shown on Map 9a in Appendix 2. Due to the non-contiguous nature of these lands, the portions of Twenty-Nine Palms in

Riverside County will be designated as part of the Riverside County (Coachella Valley) intended nonattainment area. See the technical analysis for the intended Los Angeles-San Bernardino Counties (West Mojave Desert) nonattainment area for discussion of the portions of Torres Martinez in San Bernardino County.

Consistent with the nonattainment boundaries for the 1997 ozone standard, Morongo Band of Cahuilla Mission Indians lands will be included as part of the intended Los Angeles-South Coast Air Basin nonattainment area. See the technical analysis for the intended Los Angeles-South Coast Air Basin nonattainment area for further discussion.

Conclusion

Based on the assessment of factors described above, EPA has preliminarily concluded that Riverside County (Salton Sea Air Basin portion) should be designated nonattainment because the area violates the 2008 ozone NAAQS.

The Clean Air Act requires EPA to designate any area as nonattainment if it violates a NAAQS or if it contributes to a violation in a nearby area. Air quality data (Factor 1) show that monitors within the Salton Sea Air Basin portion of Riverside County are violating the 2008 8-hour ozone standard based on 2008-2010 data. Therefore, Factor 1 supports designating the Salton Sea Air Basin portion of Riverside County as nonattainment.

Evaluation of emissions and emission sources (Factor 2) shows that sources of ozone precursor emissions are concentrated on the western side of Riverside County, which EPA intends to designate nonattainment as part of the Los Angeles-South Coast Air Basin nonattainment area. The central, Salton Sea Air Basin, portion of Riverside County is distinguished from the western (South Coast Air Basin) portion by its lower design values, fewer stationary sources and population centers, and lower volumes of non-truck traffic. Therefore, Factor 2 supports the state's recommendation.

Meteorology and weather or transport patterns (Factor 3) and geography and topography (Factor 4) shows that within Riverside County, Coachella Valley is distinguished by mountain ranges to the east and west. The only topographical link of Coachella Valley to other parts of southern California are the Banning Pass to the northwest, with the intended Los Angeles-South Coast Air Basin nonattainment area on the other side of the pass, and to the south, the remainder of the Salton Sea Air Basin, comprising all of Imperial County. Consistent with the state's recommendation, EPA intends to designate these areas as separate nonattainment areas.

In considering jurisdictional boundaries (Factor 5), EPA notes that the boundary for the intended Coachella Valley nonattainment area is the same as the 1997 8-hour ozone nonattainment boundary, is the same as the state's recommended boundary and is under the jurisdiction of SCAQMD, but in a separate air basin from the Los Angeles-South Coast area.

EPA agrees with the state's recommendation and intends to designate Riverside County (Salton Sea Air Basin portion) in California and areas of Indian country in Riverside County as "nonattainment" for the 2008 ozone NAAQS as part of the Riverside County (Coachella Valley) multi-jurisdictional nonattainment area

EPA's intended boundary for Coachella Valley also includes six tribes. Three of the tribes have non-contiguous land within different nonattainment area boundaries. Where practically possible, current

EPA policy discourages splitting contiguous areas of Indian country between two separate nonattainment areas. For Santa Rosa Cahuilla, EPA intends to designate all portions, specifically including those reservation lands previously included in the Los Angeles-South Coast Air Basin nonattainment area and reservation lands within Coachella Valley, as part of the Coachella Valley nonattainment area. However, due to the nature of the non-contiguous lands of Torres Martinez (in Riverside and Imperial Counties) and Twenty-Nine Palms (in Riverside and San Bernardino Counties), EPA intends to include only the portions of Torres Martinez and Twenty-Nine Palms located in Riverside County as part of the Coachella Valley ozone nonattainment area.

Technical Support Document for 2008 Ozone NAAQS Designations

California Area Designations for the 2008 Ozone National Ambient Air Quality Standards

Technical Analysis for Sacramento Metro

Figure 1 is a map of the intended Sacramento Metro nonattainment area. The map provides other relevant information including the locations and design values of air quality monitors, county names and boundaries, and indicates EPA's intended "nonattainment" designation. Also shown is the boundary of the existing area that is designated nonattainment for the 1997 ozone NAAQS.

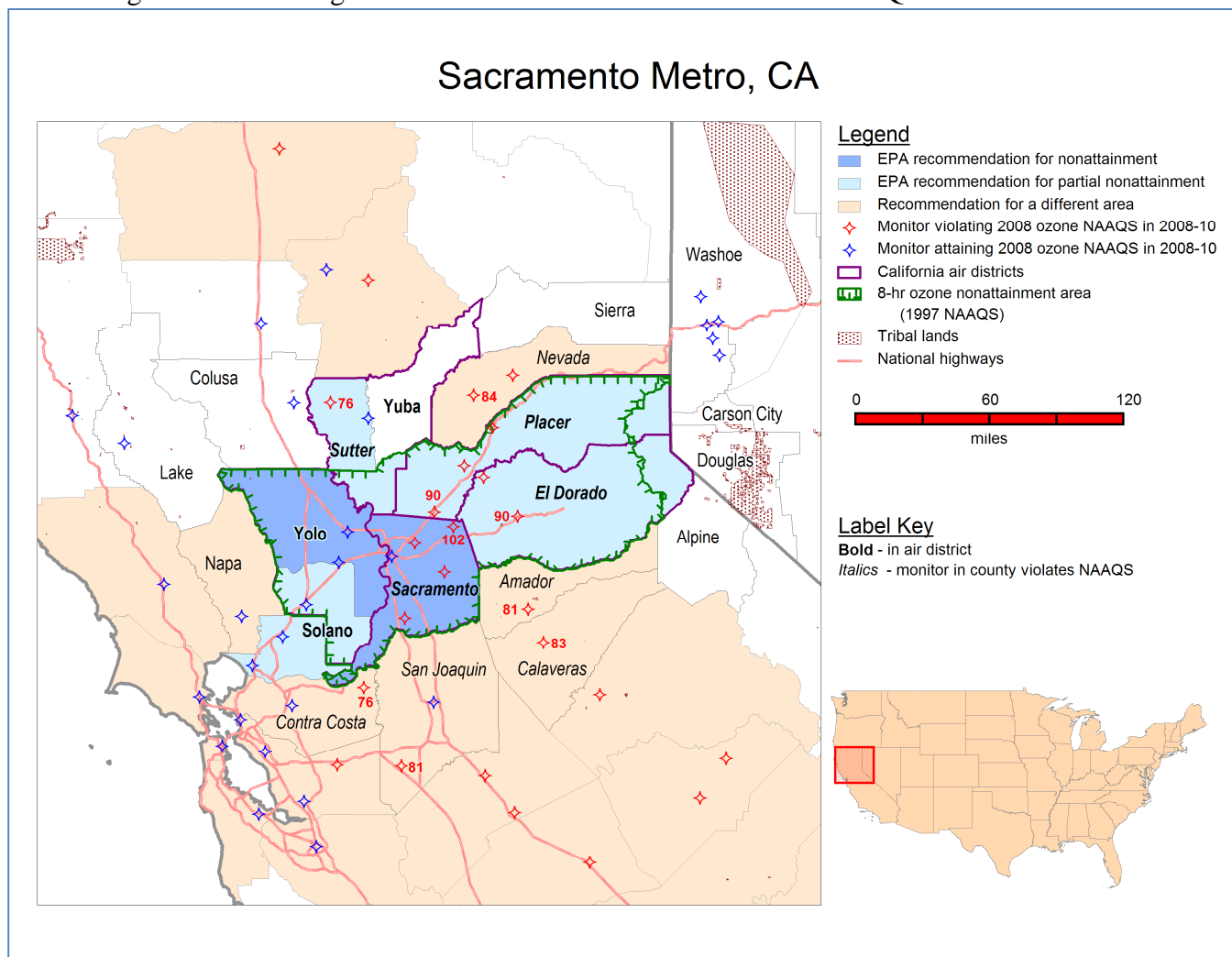


Figure 1

Note: The map shown in Figure 1 provides 8-hour ozone design values in parts per billion (ppb) based on data from 2008-2010 (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. For each particular area, Factor 1 and Appendix 3 describe the air quality data relevant for our intended nonattainment decisions.

For purposes of the 1997 8-hour ozone NAAQS, this area was designated nonattainment. The boundary for the nonattainment area for the 1997 ozone NAAQS included the entirety of Sacramento and Yolo counties and parts of Solano, Sutter, Placer and El Dorado counties. Three areas of Indian country were included in the nonattainment area. These are the same tribes that are listed in Table 1, below.

In March 2009, California recommended that the same counties or parts of counties be designated as nonattainment for the 2008 ozone NAAQS based on air quality data from 2006-2008 (letter from James Goldstene, Executive Officer, California Air Resources Board, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, dated March 11, 2009). California provided an update to the original recommendation in October 2011 based on air quality data from 2008-2010 and preliminary 2009-2011 data, but did not revise its recommendation for the Sacramento Metro area. These 2009 and 2011 recommendations are based on data from Federal Equivalent Method (FEM) monitors sited and operated in accordance with 40 CFR Part 58 (letter from Lynn Terry, Deputy Executive Officer, California Air Resources Board, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, dated October 12, 2011).

After considering these recommendations and based on EPA's technical analysis described below, EPA intends to designate two counties and four partial counties in California and areas of Indian country (identified in Table 1 below) as nonattainment for the 2008 ozone NAAQS as part of the Sacramento Metro multi-jurisdictional nonattainment area.

Table 1. State and Tribe's Recommended and EPA's Intended Designated Nonattainment Counties or Areas of Indian Country for Sacramento Metro.

| Sacramento Metro | State and Tribe-Recommended Nonattainment Counties or Areas of Indian Country | EPA Intended Nonattainment Counties or Areas of Indian Country |
|----------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Sacramento County | Sacramento County | Sacramento County |
| Yolo County | Yolo County | Yolo County |
| Solano County | Solano County | Solano County |
| Sutter County | Sutter County (p) | Sutter County (p) |
| El Dorado County | El Dorado County (p) | El Dorado County (p) |
| Placer County | Placer County (p) | Placer County (p) |
| Shingle Springs Band of Miwok Indians | N/A | Shingle Springs Band of Miwok Indians |
| United Auburn Indian Community of the Auburn Rancheria of California | N/A | United Auburn Indian Community of the Auburn Rancheria of California |
| Yocha Dehe Wintun Nation | N/A | Yocha Dehe Wintun Nation |

p = partial

N/A = Tribe did not submit a recommendation.

Factor Assessment

Factor 1: Air Quality Data

For this factor, we considered 8-hour ozone design values in parts per million (ppm) for air quality monitors in counties in the existing Sacramento Metro nonattainment area, based on preliminary data from the 2008-2010 period (i.e., the 2010 design value, or DV). A monitor's DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2008 ozone

NAAQS are met at a monitor when the annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years, is 0.075 ppm (75 parts per billion (ppb)) or less. A DV is only valid if minimum data completeness criteria are met (see 40 CFR part 50 Appendix P). Where several monitors are located in a county (or a designated nonattainment area or maintenance area), the DV for the county or area is determined by the monitor with the highest level.

[Note: Monitors that are eligible for providing design value data generally include State and Local Air Monitoring Stations (SLAMS) that are sited in accordance with 40 CFR Part 58, Appendix D (Section 4.1) and operating with a federal reference method (FRM) or federal equivalent method (FEM) monitor that meets the requirements of 40 CFR part 58, appendix A. All data from a special purpose monitor (SPM) using an FRM or FEM which has operated for more than 24 months is eligible for comparison to the NAAQS unless the monitoring agency demonstrates that the data came from a particular period during which the requirements of appendix A (quality assurance requirements) or appendix E (probe and monitoring path siting criteria) were not met.]

The existing Sacramento Metro nonattainment area comprises Sacramento and Yolo Counties, the eastern portion of Solano County, the southern portion of Sutter County and the western portions of Placer and El Dorado Counties (see Map 10a in Appendix 2). The 2010 DVs for the ozone NAAQS for counties in the existing Sacramento Metro nonattainment area are shown in Table 2.

Table 2. Air Quality Data.

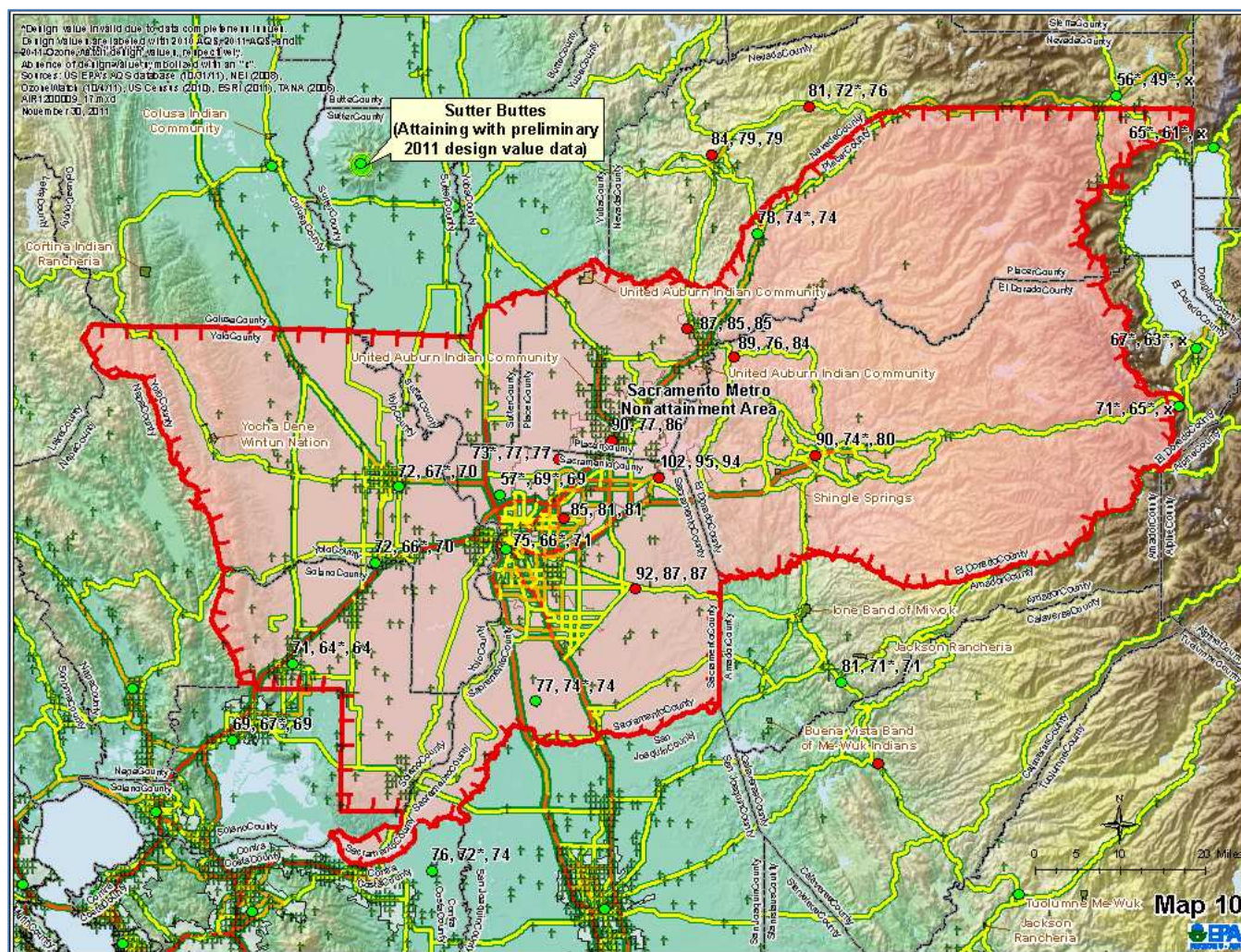
| County | State Recommended Nonattainment? | 2008-2010 Design Value (parts per billion) |
|----------------|----------------------------------|--------------------------------------------|
| El Dorado, CA | Yes (partial) | 90 |
| Placer, CA | Yes (partial) | 90 |
| Sacramento, CA | Yes | 102 |
| Solano, CA | Yes | 71 |
| Sutter, CA | Yes (partial) | 76 |
| Yolo, CA | Yes | 72 |

The DV for Sutter County is based on a violating monitor outside of the existing Sacramento Metro nonattainment area. The part of Sutter County outside the existing Sacramento Metro nonattainment area was considered as a separate area (see discussion of Sutter County in the introduction to the California State TSD). All other DVs listed in Table 2 are from monitors within the existing Sacramento Metro nonattainment area.

Ozone monitors relevant for comparison to the NAAQS and information from additional data sources within the existing Sacramento Metro nonattainment area are shown in Appendix 1, Map 10. California's ozone season encompasses the entire year, but some ozone monitors in the Sacramento Metro nonattainment area have been approved to operate on a seasonal schedule per 40 CFR part 58, Appendix D, section 4.1(i). Certified, quality assured data are available in EPA's Air Quality System (AQS) for all areas through calendar year 2010. Map 10 in Appendix 1 includes preliminary 2011 DVs for the existing Sacramento Metro nonattainment area for informational purposes only. For each monitor, Appendix 1 lists the monitor, the 2008-2010 DV (certified and quality assured in AQS), the preliminary 2009-2011 DV (as available in AQS as of October 31, 2011), and a preliminary 2009-2011 DV using 2011 data from OzoneWatch¹. Absence of a DV is symbolized with an "x".

¹ The preliminary 2009-2011 design values indicated by OzoneWatch are based on AQS ozone data from 2009, 2010, and 2011, supplemented with 2011 data reported to AirNow (<http://airnow.gov/>) on days for which no data currently exist in the

Appendix 3 lists the DVs for monitors in the existing Sacramento Metro nonattainment area. Monitors shown in bold are the DV monitors (i.e., the monitor with the highest DV) for each individual county. Monitors shown in red font are the DV monitor for the nonattainment area. Values with an asterisk do not meet data completeness, and therefore those DVs are not relevant for comparison to the NAAQS and are solely provided for informational purposes.



From Appendix 1, Map 10: For map legend describing monitors, emissions, traffic, population, and boundaries, see Appendix 1

Monitors in Sacramento, Placer, and El Dorado Counties show a violation of the 2008 8-hour ozone standard based on 2008-2010 data. Therefore, these areas are included in the intended Sacramento Metro nonattainment area. As shown on Map 10 in Appendix 1, the Sacramento Metro area shows violations using 2008-2010 data and with preliminary 2011 data.

A county (or partial county) must also be designated nonattainment if it contributes to a violation in a nearby area. Each county without a violating monitor that is located near a county with a violating monitor has been evaluated based on the weight of evidence of the five factors to determine whether it contributes to the nearby violation.

Factor 2: Emissions and Emissions-Related Data

EPA evaluated emissions of ozone precursors, nitrogen oxides (NO_x) and volatile organic compounds (VOC), and other emissions-related data that provide information on areas contributing to violating monitors.

Emissions data

EPA evaluated county-level emission data for NO_x and VOC derived from the 2008 National Emissions Inventory (NEI), version 1.5. This is the most recently available NEI (see <http://www.epa.gov/ttn/chief/net/2008inventory.html>). Emissions in a nearby area indicate the potential for the area to contribute to observed violations. We will also consider any additional information we receive on changes to emissions levels that are not reflected in recent inventories. These changes include emissions reductions due to permanent and enforceable emissions controls that will be in place before final designations are issued and emissions increases due to new sources.

Table 3 shows emissions of NO_x and VOC (given in tons per year) for violating and nearby counties that we considered for inclusion in the Sacramento Metro area.

Table 3. Total 2008 NO_x and VOC Emissions.

| County | State Recommended Nonattainment? | NO _x (tpy) | VOC (tpy) |
|----------------|----------------------------------|-----------------------|-----------|
| El Dorado, CA | Yes (partial) | 3,501 | 6,238 |
| Placer, CA | Yes (partial) | 11,191 | 9,920 |
| Sacramento, CA | Yes | 27,118 | 21,536 |
| Solano, CA | Yes | 15,361 | 11,339 |
| Sutter, CA | Yes (partial) | 6,273 | 3,338 |
| Yolo, CA | Yes | 7,135 | 4,448 |
| Areawide: | | 70,578 | 56,819 |

Sacramento County represents the greater portion of the emissions for the area. However, all counties in the area contribute to monitored air quality violations of the 2008 ozone NAAQS.

Population density and degree of urbanization

EPA evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. These include ozone-creating emissions from on-road and off-road vehicles and engines, consumer products, residential fuel combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NO_x and VOC emissions, which contribute to ozone formation. Rapid population growth or growth in vehicle miles traveled (VMT) (see below) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the area associated with area source and mobile source emissions as part of the nonattainment area. Table 4 shows the population, population density, and population growth information for each county in the area.

Table 4. Population and Growth.

| County | State Recommended Nonattainment? | 2010 Population | 2010 Population Density (1000 pop/sq mi) | Absolute change in population (2000-2010) | Population % change (2000-2010) |
|----------------|----------------------------------|-----------------|------------------------------------------|-------------------------------------------|---------------------------------|
| El Dorado, CA | Yes (partial) | 181,058 | 0.10 | 23,930 | +15% |
| Placer, CA | Yes (partial) | 348,432 | 0.23 | 97,177 | +39% |
| Sacramento, CA | Yes | 1,418,788 | 1.43 | 188,541 | +15% |
| Solano, CA | Yes | 413,344 | 0.47 | 16,373 | +4% |
| Sutter, CA | Yes (partial) | 94,737 | 0.16 | 15,610 | +20% |
| Yolo, CA | Yes | 200,849 | 0.20 | 30,979 | +18% |
| Areawide: | | 2,657,208 | 0.39 | 372,610 | +16% |

Sources: U.S. Census Bureau population estimates for 2010 as of August 4, 2011

(http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_PL_GCTPL2.STO5&prodType=table)

Maps 10 and 10a in Appendices 1 and 2, respectively, show population for the area. Population growth has been strong throughout the area. Population in this area represents a large source of emissions for the area, as it is linked to traffic and commuting patterns (see next section). Sacramento County has the largest population in the area, the highest population density and has experienced the largest absolute change in population, although Placer County had higher population growth on a percentage basis.

Traffic (VMT) data

EPA evaluated the commuting patterns of residents in the area, as well as the total VMT for each county. In combination with the population/population density data and the location of main transportation arteries (see above), this information helps identify the probable location of non-point source emissions. A county with high VMT indicates the presence of motor vehicle emissions that may contribute to ozone formation that contributes to nonattainment in the area. Rapid population or VMT growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 5 shows total 2008 VMT for violating and nearby counties that we considered for inclusion in the Sacramento Metro area.

Table 5. Traffic (VMT) data.

| County | State Recommended Nonattainment? | 2008 VMT* (million miles) |
|----------------|----------------------------------|---------------------------|
| El Dorado, CA | Yes (partial) | 2,299 |
| Placer, CA | Yes (partial) | 2,939 |
| Sacramento, CA | Yes | 9,578 |
| Solano, CA | Yes | 3,280 |
| Sutter, CA | Yes (partial) | 701 |
| Yolo, CA | Yes | 1,621 |
| Areawide: | | 20,417 |

*MOBILE model VMTs are those inputs into the NEI version 1.5.

VMT from Sacramento County are comparatively higher than the other counties listed in Table 5.

Factor 3: Meteorology (weather/transport patterns)

EPA evaluated available meteorological data to help determine how meteorological conditions, such as weather, transport patterns and stagnation conditions, would affect the fate and transport of precursor emissions contributing to ozone formation.

Conditions in the Sacramento Metropolitan area are generally hot and dry in the summer, with conditions conducive to ozone formation. This is mitigated somewhat by periodic flow of marine air from the Pacific Ocean (via the Golden Gate at the mouth of San Francisco Bay). This sea breeze may occur daily and lead to cooler and more turbulent conditions and lower ozone, but there can also be extended periods where this pattern breaks down and hot, stagnant conditions occur. Even then the flow tends to be toward the northeast, and together with upslope results in high ozone concentrations being transported up the valleys in the foothills to the east, such as to Auburn.

The air flow in the Sacramento Metropolitan area counties is most frequently from the south-southwest according to the 30-year average direction frequencies computed by EPA, as shown in the “radar”-style wind rose diagram below (Figure 2). This is consistent with the position of the area with respect to the Golden Gate, the key route for air flow between the Pacific Ocean and the Central Valley of California (the northern half of which is the Sacramento Valley, which includes the Sacramento Metropolitan area and areas further north). It is also consistent with the orientation of the river valleys extending northeast of Sacramento into the foothills and ranges of the Sierra Nevada mountain range.

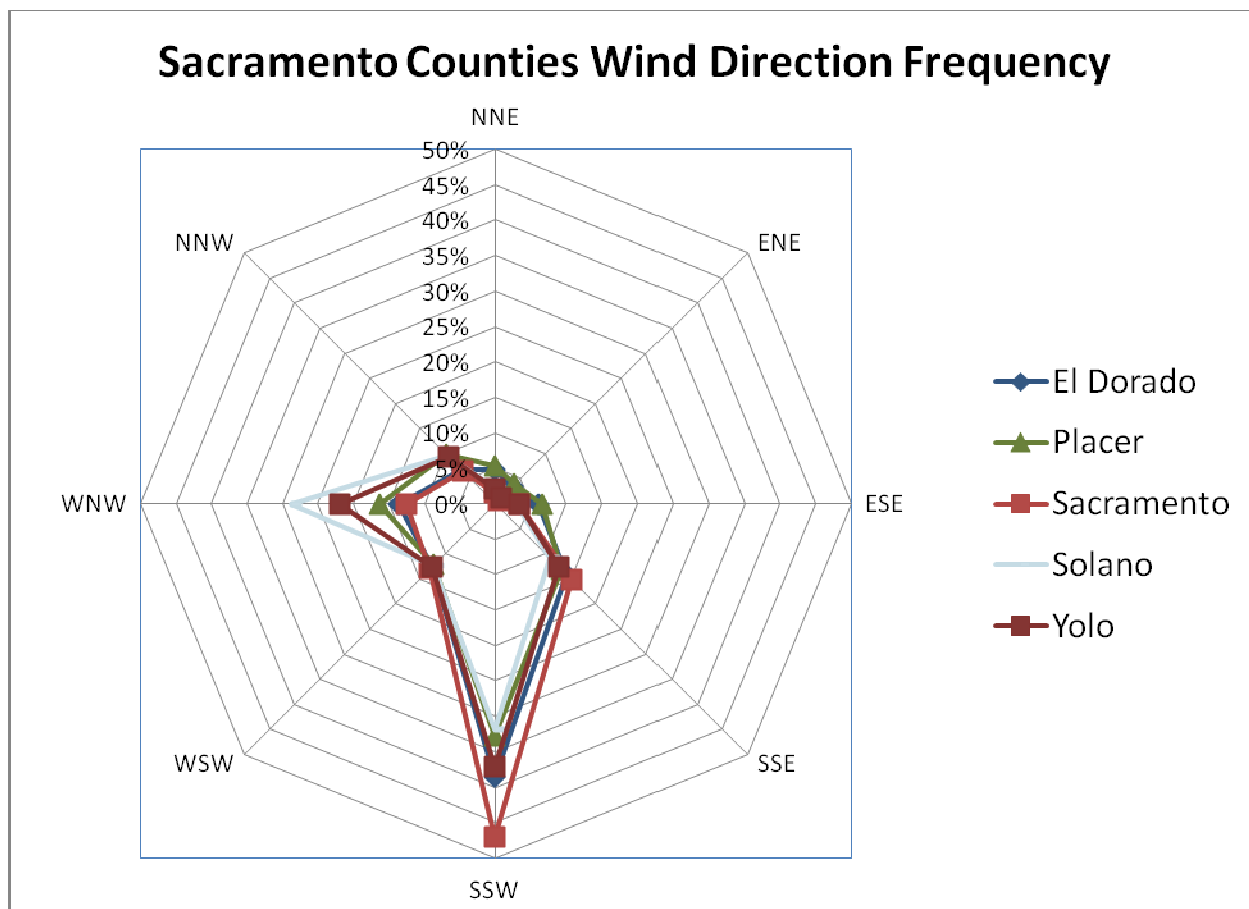


Figure 2

The California Coast Range topographically separates the Sacramento Metro area from the San Francisco Bay area, despite the important gap leading to the Golden Gate. The two areas have different meteorology, with the Sacramento Metro area being part of the hot and dry Central Valley, though with significant marine influence at times, and the San Francisco Bay area being dominated by interaction with air masses over the Pacific Ocean.

There is no topographic barrier between the Sacramento Valley and the San Joaquin Valley to the south, but generally the air flow from the Pacific Ocean through Golden Gate toward the east tends to bifurcate where the two valleys meet, providing some degree of separation between the two valleys much of the time.

Consideration of the meteorology factor supports the state's recommendation for the nonattainment area boundary. At the juncture of influences of the Central Valley and the Golden Gate, the meteorology of the Sacramento Metro area is distinct from both the San Joaquin Valley and the San Francisco Bay Area. While transport between adjacent areas can occur, the most important flow during ozone episodes within the Sacramento Metro area is toward the northeast and the foothills within the Sacramento Metro area itself.

Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis evaluates the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the area.

The Sacramento Metropolitan area is at the southern end of the Sacramento Valley, the name for the northern half of California's broad, flat, Central Valley. Two-thirds of the area is flat, while the eastern third, comprising El Dorado county and the eastern portion of Placer county, is in the foothills and mountains of the Sierra Nevada range. These two counties extend to and beyond the range crest at over 2500 meters (8000 feet) elevation, and bound the Sacramento Metro area on the east.

The area is bounded on the west by California's Coast Range, except for the gap leading to the Golden Gate. Rivers drain to the Pacific Ocean through that gap, which is also important for air flow. There is no topographic barrier to the north or south. To the north, the area is distinguished by the greater distance from the influence of the Golden Gate, and the exclusively north-south orientation of the walls of the Central Valley, as compared to the gap west of Sacramento Metro.

The California Coast Range topographically separates the Sacramento Metro area from the San Francisco Bay area, despite the important gap leading to the Golden Gate. The two areas have different topography, with the Sacramento Metro area being mainly flat, and a part of the Central Valley, and the San Francisco Bay area being more hilly, and a part of the Pacific coast.

In addition, while there is no topographic barrier between the Sacramento Valley and the San Joaquin Valley to the south, generally the air flow from the Pacific Ocean through Golden Gate toward the east tends to bifurcate where the two valleys meet, providing some degree of separation between the two valleys much of the time.

Factor 5: Jurisdictional boundaries

For each potential nonattainment area, we considered existing jurisdictional boundaries to provide a clearly defined legal boundary and to help identify the areas appropriate for carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment area boundaries for ozone or other urban-scale pollutants, county lines, air district boundaries, township boundaries, areas covered by a metropolitan planning organization, state lines, areas of Indian country, and urban growth boundary. Where existing jurisdictional boundaries were not adequate or appropriate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates were considered.

EPA's intended Sacramento Metro nonattainment area has previously-established nonattainment boundaries associated with both the 1-hour and the 1997 8-hour ozone NAAQS. The state has recommended the same boundary for the 2008 ozone NAAQS. This area encompasses the entirety of the developed center of the metropolitan area, Sacramento County. To the south, San Joaquin County is part of the San Joaquin Valley intended nonattainment area. To the west, Solano County is bisected diagonally, with the southwest half in the proposed San Francisco Bay Area nonattainment area and the northeast portion in the proposed Sacramento Metro nonattainment area. Northwest of Sacramento County, the entirety of Yolo County is included in the intended nonattainment area. North of Sacramento County is Sutter County. The southern portion of Sutter County is included in the intended nonattainment area. Placer County is northeast of the urban center and is included in the intended nonattainment area up to the crest of the Sierra Nevada mountain range, as is El Dorado County to the east of Sacramento County.

The proposed Sacramento Metro nonattainment area overlaps with the Office of Management and Budget's definition of the Sacramento–Arden–Arcade–Yuba City combined statistical area (CSA). The CSA includes two metropolitan statistical areas (Sacramento–Arden–Arcade–Roseville and Yuba City) and one micropolitan statistical area (Truckee–Grass Valley). This CSA is larger overall than the Sacramento Metro intended nonattainment area. The CSA includes Sacramento and Yolo counties, both of which are in the intended nonattainment area. The CSA also includes the entirety of Sutter, Placer, and El Dorado counties, all of which are partial counties for the intended nonattainment area. The CSA also includes Nevada County, which is a partial county that EPA intends to designate, per the state's recommendation, as a separate nonattainment area. One last county in the CSA, Yuba County, is not part of the intended nonattainment area. EPA intends to designate Yuba County as “unclassifiable/attainment”.

The Sacramento Metro intended nonattainment area includes one partial county (Solano) that is not part of the CSA. Solano County is part of the San Jose–San Francisco–Oakland CSA. For ozone designations, Solano County has been split along air district boundaries between Sacramento Metro and San Francisco Bay Area. Most of the Sacramento–Arden–Arcade–Yuba City CSA is part of the Sacramento Metro intended nonattainment area. Portions of Placer and El Dorado counties are excluded because they are beyond the crest of the Sierra Nevada, in the Lake Tahoe hydrologic basin. Of the two counties (Sutter and Yuba) in the Yuba City MSA portion of the CSA, only southern Sutter County is part of the Sacramento Metro intended nonattainment area.

The Sacramento Metro intended nonattainment area includes most of the transportation planning agency in the area, which is the metropolitan planning organization (MPO) known as the Sacramento Area Council of Governments (SACOG). Air quality planning is led by the largest air pollution control district in the area, the Sacramento Metro Air Quality Management District. Four other air districts

participate in air planning and management in the area. The Yolo-Solano Air Quality Management District (AQMD) has jurisdiction over Yolo County and the Sacramento Metro portion of Solano County. Feather River AQMD has jurisdiction over Sutter and Yuba Counties, including the south Sutter County portion of the Sacramento Metro area. Placer County Air Pollution Control District (APCD) has jurisdiction over Placer County, as El Dorado County AQMD does over its county.

The Sacramento Metro area also includes areas of Indian country. As defined at 18 U.S.C. 1151, “Indian country” refers to: “(a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.” EPA recognizes the sovereignty of tribal governments, and has attempted to take the desires of the tribes into account in establishing appropriate nonattainment area boundaries.

Conclusion

Based on the assessment of factors described above, EPA intends to include the following counties as part of the Sacramento Metro nonattainment area because they are either violating the 2008 ozone NAAQS or contributing to a violation in a nearby area: Sacramento County, Yolo County, Solano County (partial), Sutter County (partial), El Dorado County (partial), and Placer County (partial). This area also includes three tribes: Shingle Springs Band of Miwok Indians, United Auburn Indian Community of the Auburn Rancheria of California, and Yocha Dehe Wintun Nation.

The Clean Air Act requires EPA to designate any area as nonattainment if it violates a NAAQS or if it contributes to a violation in a nearby area. Air quality data (Factor 1) show that monitors in El Dorado, Placer, and Sacramento Counties are violating the 2008 8-hour ozone standard based on 2008-2010 data and preliminary 2009-2011 data. Therefore, Factor 1 suggests that all or part of these counties should be included in the Sacramento Metro nonattainment area.

EPA’s review of emissions and emission related data (Factor 2), as well as meteorology and weather or transport patterns (Factor 3), geography and topography (Factor 4), and jurisdictional boundaries (Factor 5) support the proposed nonattainment boundaries recommended by the state. The geographic boundaries to the west and east are clear; while the boundaries to the north and south are not defined by definite barriers, they include the locations with comparable topography and meteorology that are distinct from those northern and southern areas.

Based on our consideration of all five factors, EPA’s preliminary conclusion is to designate two counties and four partial counties in California and areas of Indian country (identified in Table 1 above) as nonattainment for the 2008 ozone NAAQS as part of the Sacramento Metro multi-jurisdictional nonattainment area.

Technical Support Document for 2008 Ozone NAAQS Designations

California Area Designations for the 2008 Ozone National Ambient Air Quality Standards

Technical Analysis for San Diego County

Figure 1 is a map of the intended San Diego County nonattainment area. The map provides other relevant information including the locations and design values of air quality monitors, county names and boundaries, and indicates EPA's intended nonattainment designation. Also shown is the boundary of the existing area that is designated nonattainment for the 1997 ozone NAAQS.

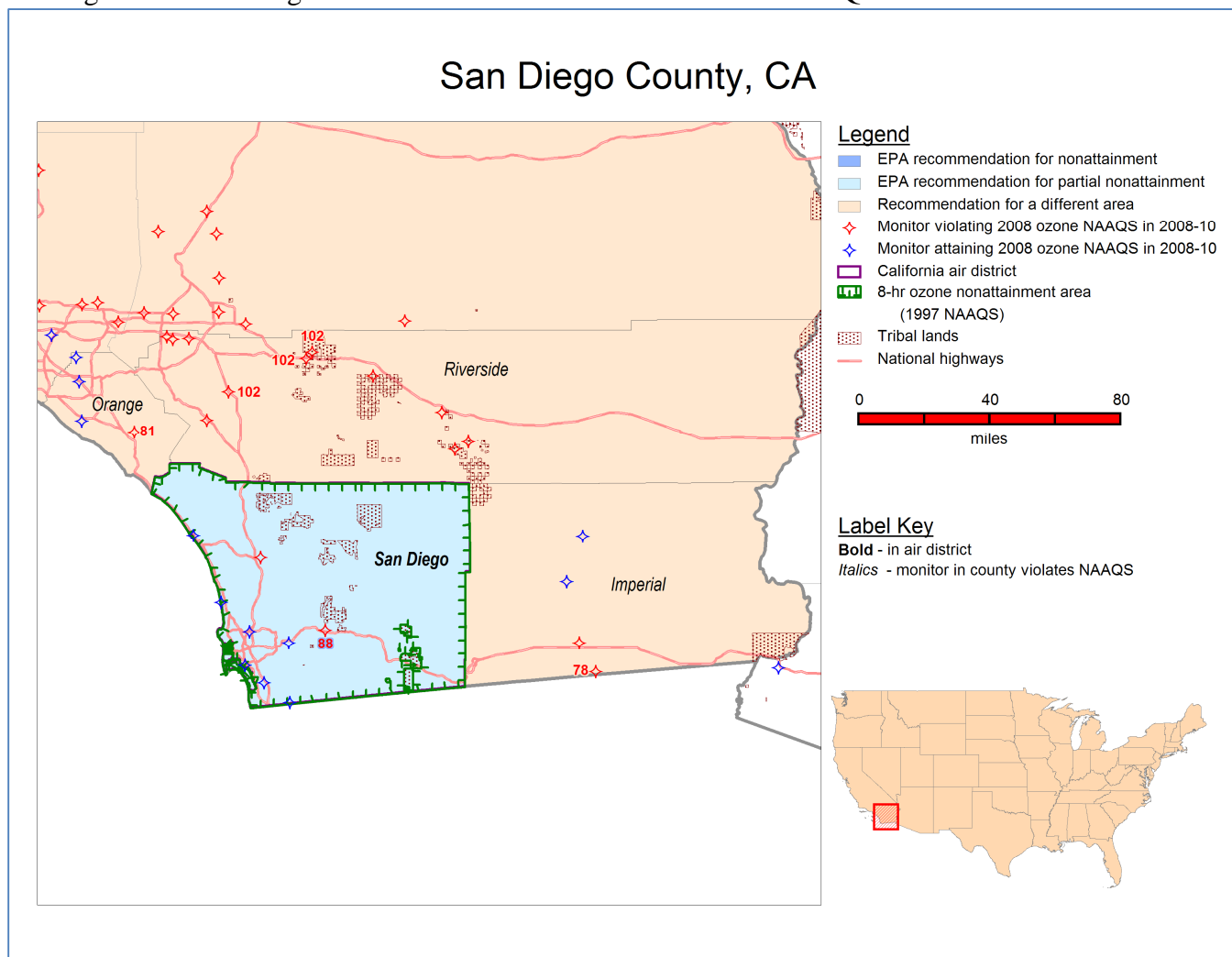


Figure 1

Note: The map shown in Figure 1 provides 8-hour ozone design values in parts per billion (ppb) based on data from the 2008-2010 period (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. For each particular area, Factor 1 and Appendix 3 describe the air quality data relevant for our intended nonattainment decisions.

The San Diego County area was redesignated to attainment for the 1-hour ozone NAAQS in 2003. In 2004, this area was designated nonattainment for purposes of the 1997 8-hour ozone NAAQS. The boundary for the nonattainment area for the 1997 ozone NAAQS included the entirety of San Diego County. Several areas of Indian country were included in the nonattainment area. Except as noted, these are the same tribes that are listed in Table 1, below.

In March 2009, California recommended that San Diego County be designated as “nonattainment” for the 2008 ozone NAAQS based on air quality data from 2006-2008 (letter from James Goldstene, Executive Officer, California Air Resources Board, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, dated March 11, 2009). California provided an update to the original recommendation in October 2011 based on air quality data from 2008-2010 and preliminary 2009-2011 data, but did not revise its recommendation for San Diego County. The 2009 and 2011 recommendations are based on data from Federal Equivalent Method (FEM) monitors sited and operated in accordance with 40 CFR Part 58 (letter from Lynn Terry, Deputy Executive Officer, California Air Resources Board, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, dated October 12, 2011).

In March 2009, the La Jolla Band of Luiseno Indians recommended that their reservation lands in San Diego County be designated as “unclassifiable” for the 2008 ozone NAAQS (letter from Larriann Musick, Tribal Chairperson, La Jolla Band of Luiseno Indians, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, March 6, 2009). In June 2009, the Pechanga Band of Luiseno Indians of the Pechanga Reservation (Pechanga Band) recommended that areas of Indian country in Riverside and San Diego Counties be designated as “nonattainment” as a separate area or to be designated as “nonattainment” as part of the San Diego nonattainment area for the 2008 ozone NAAQS (letter from Mark Macarro, Tribal Chairman, Pechanga Band of Luiseno Indians, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, June 23, 2009).

After considering these recommendations and based on EPA's technical analysis described below, EPA intends to designate San Diego County (identified in Table 1 below) and all areas of Indian country in San Diego County as “nonattainment” for the 2008 ozone NAAQS as part of the San Diego County multi-jurisdictional nonattainment area.

Table 1. State's or Tribe's Recommended and EPA's Intended Designated Nonattainment Counties or Areas of Indian country for San Diego County.

| San Diego County | State or Tribe-Recommended Nonattainment Counties or Areas of Indian country | EPA Intended Nonattainment Counties or Areas of Indian country |
|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| San Diego County | San Diego County | San Diego County |
| Barona Band of Mission Indians | N/A | Barona Band of Mission Indians |
| Campo Band of Kumeyaay Indians * | N/A | Campo Band of Kumeyaay Indians |
| Ewiiapaayp Band of Kumayaay * | N/A | Ewiiapaayp Band of Kumayaay |
| Iipay Nation of Santa Ysabel | N/A | Iipay Nation of Santa Ysabel |
| Inaja Band of Diegueno Mission Indians of the Inaja and Cosmit Reservation | N/A | Inaja Band of Diegueno Mission Indians of the Inaja and Cosmit Reservation |
| Jamul Indian Village | N/A | Jamul Indian Village |
| La Jolla Band of Luiseno Indians | Unclassifiable | La Jolla Band of Luiseno Indians |
| La Posta Band of Mission Indians * | N/A | La Posta Band of Mission Indians |
| Los Coyotes Band of Cahuilla and Cupeno Indians | N/A | Los Coyotes Band of Cahuilla and Cupeno Indians |
| Manzanita Band of the Kumeyaay Nation* | N/A | Manzanita Band of the Kumeyaay Nation |
| Mesa Grande Band of Diegueno Indians | N/A | Mesa Grande Band of Diegueno Indians |
| Pala Band of Luiseno Indians of the Pala Reservation | N/A | Pala Band of Luiseno Indians of the Pala Reservation |
| Pauma Band of Luiseno Indians of the Pauma and Yuima Reservation | N/A | Pauma Band of Luiseno Indians of the Pauma and Yuima Reservation |
| Pechanga Band of Luiseno Indians of the Pechanga Reservation ¹ | Pechanga Band of Luiseno Indians of the Pechanga Reservation | Pechanga Band of Luiseno Indians of the Pechanga Reservation |
| Rincon Band of Luiseno Indians | N/A | Rincon Band of Luiseno Indians |
| San Pasqual Band of Diegueno Mission Indians of California | N/A | San Pasqual Band of Diegueno Mission Indians of California |
| Sycuan Band of the Kumeyaay Nation | N/A | Sycuan Band of the Kumeyaay Nation |
| Viejas Group of Capitan Grande Band of Mission Indians | N/A | Viejas Group of Capitan Grande Band of Mission Indians |

EPA intended modifications to state or tribal recommendations are shown in **bold**.

N/A = tribe did not submit a recommendation.

*Tribe is located within San Diego County, but was not included in San Diego County nonattainment area for the 1997 ozone NAAQS.

¹ Pechanga has lands in two areas designated nonattainment for the 1997 ozone NAAQS, the San Diego County nonattainment area and the Los Angeles-South Coast Air Basin nonattainment area. EPA intends to designate lands in each area with San Diego County under the 2008 ozone NAAQS.

Factor Assessment

Factor 1: Air Quality Data

For this factor, we considered 8-hour ozone design values in parts per million (ppm) for air quality monitors in San Diego County, based on data from the 2008-2010 period (i.e., the 2010 design value, or DV) and preliminary data from the 2009-2011 period (i.e., the preliminary 2011 DV). A monitor's DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2008 ozone NAAQS are met at a monitor when the annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years, is 0.075 ppm (75 parts per billion (ppb)) or less. A DV is only valid if minimum data completeness criteria are met. See 40 CFR part 50 Appendix P. Where several monitors are located in a county (or a designated nonattainment area or maintenance area), the DV for the county or area is determined by the monitor with the highest level.

[Note: Monitors that are eligible for providing design value data generally include State and Local Air Monitoring Stations (SLAMS) that are sited in accordance with 40 CFR Part 58, Appendix D (Section 4.1) and operating with a federal reference method (FRM) or federal equivalent method (FEM) monitor that meets the requirements of 40 CFR part 58, appendix A. All data from a special purpose monitor (SPM) using an FRM or FEM which has operated for more than 24 months is eligible for comparison to the NAAQS unless the monitoring agency demonstrates that the data came from a particular period during which the requirements of appendix A (quality assurance requirements) or appendix E (probe and monitoring path siting criteria) were not met.]

Certified, quality assured data are available in EPA's Air Quality System (AQS) for all areas through calendar year 2010. Ozone monitors relevant for comparison to the NAAQS and information from additional data sources within the existing San Diego County nonattainment area are shown in Appendix 1. The 2010 DV for the ozone NAAQS for San Diego County is shown in Table 2.

Table 2. Air Quality Data.

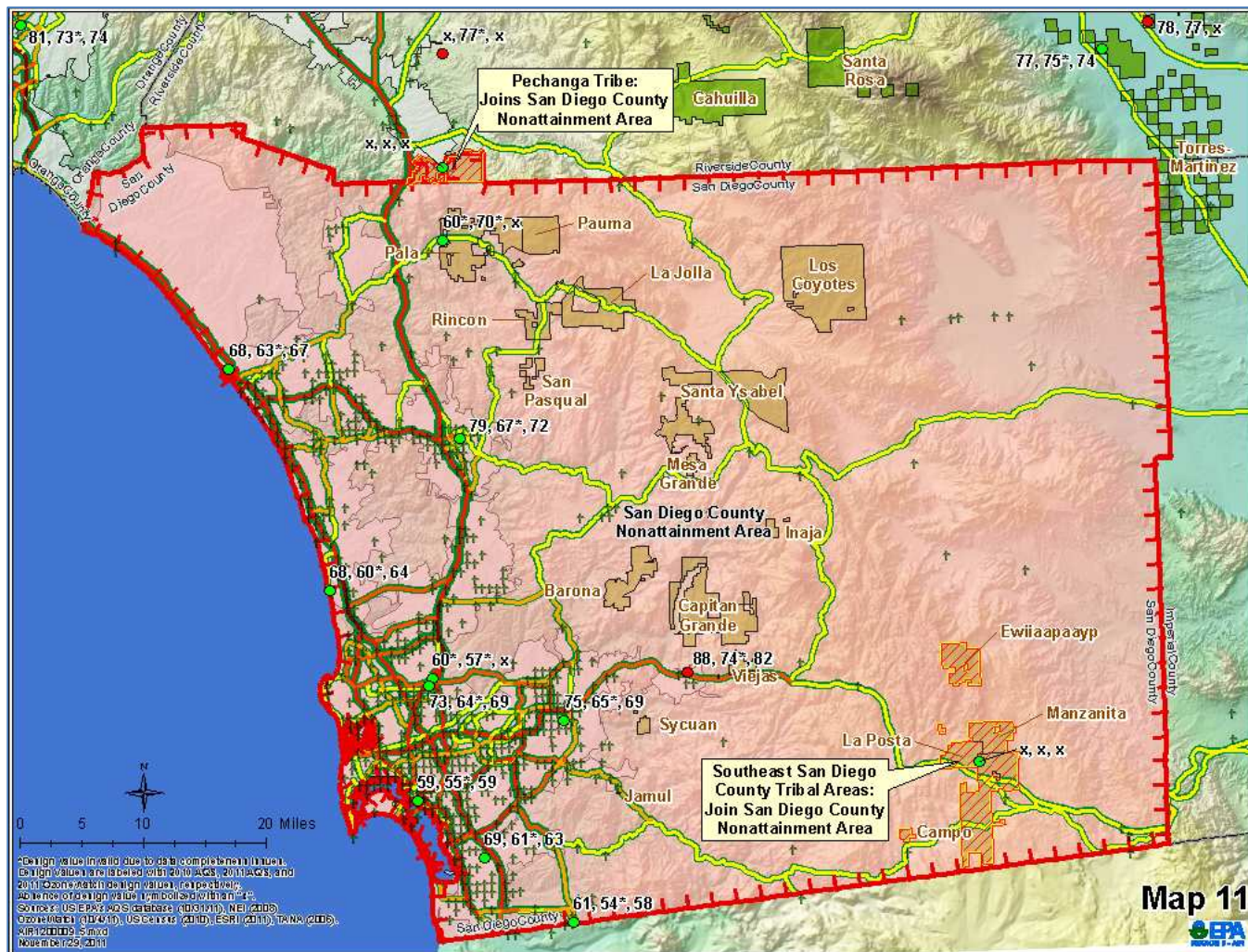
| County | State Recommended Nonattainment? | 2008-2010 Design Value (parts per billion) |
|---------------|----------------------------------|--------------------------------------------|
| San Diego, CA | Yes | 88 |

California's ozone season encompasses the entire year. Preliminary data from part of calendar year 2011 is available in AQS for most areas, however, these data have not yet been certified and quality assured. States are required to certify data by May 1st of the following year. San Diego Air Pollution Control District (APCD) has indicated that it plans to certify 2011 data early for San Diego County. EPA's designation recommendation for this area is therefore based on certified 2008-2010 data and is further informed by preliminary 2009-2011 data. As shown in Table 2, 2010 data indicate that San Diego County is violating the 2008 ozone NAAQS. Preliminary 2011 data show the same monitor in San Diego County violating the 2008 8-hour ozone standard, with a preliminary 2011 DV of 82 ppb.

Maps contained in Appendix 1 show the geographic distribution of monitors. Map 11 shows monitor locations for San Diego County. For each monitor, Appendix 1 lists the monitor, the 2008-2010 DV (certified and quality assured in AQS), the preliminary 2009-2011 DV (as available in AQS as of

October 31, 2011), and a preliminary 2009-2011 DV using 2011 data from OzoneWatch¹. Absence of a DV is symbolized with an “x”.

Appendix 3 lists preliminary 2009-2011 DVs for San Diego County, either from AQS (as available in AQS as of October 31, 2011) or from OzoneWatch (as calculated on October 4, 2011). Appendix 3 lists the higher of these two preliminary 2009-2011 DVs. Monitors shown in bold are the DV monitors (i.e., the monitor with the highest DV) for each individual county. Monitors shown in red font are the DV monitor for the nonattainment area. Values with an asterisk do not meet data completeness, and therefore those DVs are not relevant for comparison to the NAAQS and are solely provided for informational purposes.



From Attachment 1, Map 11: For map legend describing monitors, emissions, traffic, population, and boundaries, see Appendix 1.

Monitors in San Diego County show a violation of the 2008 8-hour ozone standard based on 2008-2010 data and preliminary 2009-2011 data. Therefore, this area is included in the intended San Diego County nonattainment area. A county (or partial county) must also be designated nonattainment if it contributes to a violation in a nearby area. Each county without a violating monitor that is located near a county

¹ The preliminary 2009-2011 design values indicated by OzoneWatch are based on AQS ozone data from 2009, 2010, and 2011, supplemented with 2011 data reported to AirNow (<http://airnow.gov/>) on days for which no data currently exist in the AQS database. 2009 and 2010 AQS data were retrieved on July 20, 2011; 2011 AQS and AirNow data were compiled on October 4, 2011. Ultimately, attainment of the 8-hour ozone NAAQS will be determined entirely from data in AQS.

with a violating monitor has been evaluated based on the weight of evidence of the five factors to determine whether it contributes to the nearby violation.

Factor 2: Emissions and Emissions-Related Data

EPA evaluated emissions of ozone precursors, nitrogen oxides (NO_x) and volatile organic compounds (VOC), and other emissions-related data that provide information on areas contributing to violating monitors.

Emissions data

EPA evaluated county-level emission data for NO_x and VOC derived from the 2008 National Emissions Inventory (NEI), version 1.5. This is the most recently available NEI. (See <http://www.epa.gov/ttn/chief/net/2008inventory.html>) Emissions in a nearby area indicate the potential for the area to contribute to observed violations. We will also consider any additional information we receive on changes to emissions levels that are not reflected in recent inventories. These changes include emissions reductions due to permanent and enforceable emissions controls that will be in place before final designations are issued and emissions increases due to new sources.

Table 3 shows emissions of NO_x and VOC (given in tons per year) for San Diego County.

Table 3. Total 2008 NO_x and VOC Emissions.

| County | State Recommended Nonattainment? | NO _x (tpy) | VOC (tpy) |
|---------------|----------------------------------|-----------------------|-----------|
| San Diego, CA | Yes | 59,093 | 54,767 |
| Areawide: | | 59,093 | 54,767 |

Emissions in San Diego County contribute to the monitored violations in the county. Stationary source emissions are predominantly located about 20 miles from the coast, upwind of the violating monitor which is located farther inland. Stationary sources in San Diego County are scattered in the central and eastern portions of the county and clustered most heavily in the southern and western portions of county, coinciding with both the population centers and major roadways (see Maps 11 and 11a in Appendices 1 and 2, respectively). Emissions of NO_x are slightly greater in San Diego County than in neighboring Riverside County to the northeast and Orange County to the northwest, and about 4.5 times greater than Imperial County to the east. Emissions of VOCs are about 1.2 times greater than VOC emissions from Orange County, nearly two times greater than VOC emissions from Riverside County and over six times greater than VOC emissions from Imperial County. EPA intends to designate these other areas as separate nonattainment for the 2008 ozone NAAQS as well.

Population density and degree of urbanization

EPA evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. These include ozone-creating emissions from on-road and off-road vehicles and engines, consumer products, residential fuel combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NO_x and VOC emissions that may contribute to ozone formation. Rapid population or vehicle miles traveled (VMT) growth (see below) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the area associated with area source and mobile source emissions as part of the

nonattainment area. Table 4 shows the population, population density, and population growth information for each county in the area.

Table 4. Population and Growth.

| County | State Recommended Nonattainment? | 2010 Population | 2010 Population Density (1000 pop/sq mi) | Absolute change in population (2000-2010) | Population % change (2000-2010) |
|---------------|----------------------------------|-----------------|------------------------------------------|-------------------------------------------|---------------------------------|
| San Diego, CA | Yes | 3,095,313 | 0.73 | 269,918 | +10% |
| Areawide: | | 3,095,313 | 0.73 | 269,918 | +10% |

Sources: U.S. Census Bureau population estimates for 2010 as of August 4, 2011

(http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_PL_GCTPL2.STO5&prodType=table)

Like point source emissions, the population centers in San Diego County are located along the western coast of the county and extend approximately 20 miles inland (see Maps 11 and 11a in Appendices 1 and 2, respectively). The San Diego metropolitan area is located in the southern coastal portion of the county. The total population of San Diego County is very similar to the population of Orange County, 1.4 times greater than Riverside County and almost 18 times greater than Imperial County, with a population density that is similarly greater than Riverside and Imperial Counties (2.4 and nearly 19 times greater, respectively). In contrast, although the populations of San Diego and Orange County are similar, the population density of Orange County is over five times higher than San Diego County. Over 2000 - 2010, the population of San Diego County has grown at a rate comparable to other smaller coastal counties (for example, Ventura County and San Luis Obispo County).

Traffic (VMT) data

EPA evaluated the commuting patterns of residents in the area, as well as the total VMT for each county. In combination with the population/population density data and the location of main transportation arteries (see above), this information helps identify the probable location of non-point source emissions. A county with high VMT is generally an integral part of an urban area and indicates the presence of motor vehicle emissions that may contribute to ozone formation that contributes to nonattainment in the area. Rapid population or VMT growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 5 shows total 2008 VMT for San Diego County.

Table 5. Traffic (VMT) Data.

| County | State Recommended Nonattainment? | 2008 VMT* (million miles) |
|---------------|----------------------------------|---------------------------|
| San Diego, CA | Yes | 33,689 |
| Areawide: | | 33,689 |

*MOBILE model VMTs are those inputs into the NEI version 1.5.

The county's VMT is greater than most of the counties in the neighboring Los Angeles-South Coast Air Basin, including Riverside and Orange Counties (which range from 20,000 to about 23,000 VMT in 2008), with the exception of Los Angeles County (nearly 80,000 VMT in 2008). Substantial amounts of non-truck traffic occurs within 20 miles of the coast of San Diego County, generally between the northern and southern portions of the county and within the San Diego metropolitan area.

Factor 3: Meteorology (weather/transport patterns)

EPA evaluated available meteorological data to help determine how meteorological conditions, such as weather, transport patterns and stagnation conditions, would affect the fate and transport of precursor emissions contributing to ozone formation. EPA reviewed the 8-Hour Ozone Attainment Plan for San Diego County, as well as several previous assessments of ozone transport in Southern California. EPA also reviewed the wind frequency distribution of wind direction data based on an average of 30 years of National Weather Service information for the months of June, July, and August.

The “Eight-Hour Ozone Attainment Plan” for San Diego County, produced by San Diego County APCD in May 2007, discusses meteorological conditions that would affect fate and transport of precursor emissions contributing to ozone formation.² The ozone conceptual model identifies five regimes of ozone and ozone precursor transport to San Diego County. In addition, the conceptual model identifies conditions present when local emissions in San Diego County are sufficient to generate ozone concentrations exceeding the federal standard.

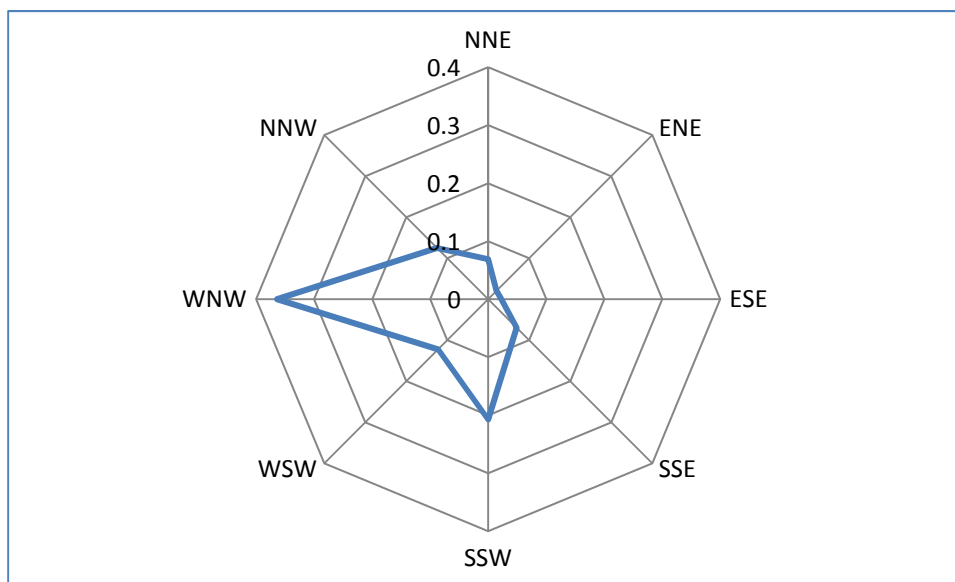


Figure 2: San Diego Summer Wind Frequency Distribution

The wind frequency distribution of wind direction data in Figure 2, above, is based on an average of 30 years of National Weather Service information for the months of June, July, and August. The prevailing winds during the ozone season have a strong northwesterly component.

Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis evaluates the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the area.

San Diego County is shown in Appendix 1, Map 11a. San Diego County encompasses 4,300 square miles with 70 miles of beach along the Pacific Ocean. The county area is 65 miles from north to south

² P. 1-7. Eight-Hour Ozone Attainment Plan For San Diego County, May 2007. San Diego County Air Pollution Control District. <http://www.sdapcd.org/planning/8-Hour-O3-Attain-Plan.pdf>

and 86 miles from east to west. It borders Orange and Riverside Counties to the north, Mexico to the South, Imperial County to the east, and the Pacific Ocean to the west. The Cleveland National Forest,³ with peaks of up to 6,271 feet, is located in the central portion of the county. The Anza-Borrego Desert State Park is located in the northeast portion of the county.

Factor 5: Jurisdictional boundaries

For each potential nonattainment area, we considered existing jurisdictional boundaries to provide a clearly defined legal boundary and to help identify the areas appropriate for carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment area boundaries for ozone or other urban-scale pollutants, county lines, air district boundaries, township boundaries, areas covered by a metropolitan planning organization, state lines, areas of Indian country, and urban growth boundary. Where existing jurisdictional boundaries were not adequate or appropriate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates were considered.

The San Diego County area has previously established nonattainment boundaries associated with both the 1-hour and the 1997 8-hour ozone NAAQS. The state has recommended the same boundary for the 2008 ozone NAAQS. For the 1-hour ozone NAAQS, the entirety of San Diego County was nonattainment initially and then redesignated to attainment with a maintenance plan in 2003. For the 1997 ozone NAAQS, the county was designated nonattainment in 2004 and remains nonattainment.

In addition to prior ozone designations, there are other jurisdictional considerations for this area. The San Diego APCD performs air quality planning for the county, in addition to permitting and other regulatory and non-regulatory forms of air pollution controls. The metropolitan planning organization (MPO) in charge of transportation planning for the area is the San Diego Association of Governments (SANDAG). The entirety of the county is also defined by the Office of Management and Budget (OMB) as the San Diego-Carlsbad-San Marcos metropolitan statistical area (MSA). OMB uses full counties for its urban area definitions. EPA notes that in this case, San Diego is a very large county (over 4,200 square miles) and that the population is in the west half of the county. The state's recommendation to designate the entirety of the county nonattainment reflects the boundary for the air district, the transportation planning agency, the county government, and the MSA.

The San Diego County area also includes portions of Indian country. As defined at 18 U.S.C. 1151, "Indian country" refers to: "(a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same." EPA recognizes the sovereignty of tribal governments, and has attempted to take the desires of the tribes into account in establishing appropriate nonattainment area boundaries.

Evaluation of Recommendation from La Jolla Band of Luiseno Indians

Pursuant to section 107(d) of the Clean Air Act, EPA must designate as nonattainment those areas that violate the NAAQS and those areas that contribute to violations. EPA has evaluated

³ <http://www.fs.usda.gov/main/cleveland/about-forest>

the recommendation of the La Jolla Band of Luiseno Indians (La Jolla Band) based on currently available information.

The La Jolla Band is a federally recognized tribe located in the northern portion of the San Diego-Carlsbad-San Marcos MSA. Map 11a in Appendix 2 shows the location of the area of Indian country within the San Diego County nonattainment area.

In 2004, EPA established the San Diego nonattainment boundaries for the 1997 ozone NAAQS. This boundary included most portions of San Diego County and encompassed the lands of the La Jolla Band.

In March 2009, the La Jolla Band recommended that portions of its lands in San Diego County be designated as “unclassifiable” for the 2008 ozone NAAQS (letter from Larriann Musick, Tribal Chairperson, La Jolla Band of Luiseno Indians, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, March 6, 2009).

Based on the factors discussed below, EPA has preliminarily concluded that the La Jolla Band should be designated nonattainment as part of the San Diego County nonattainment area for the 2008 ozone NAAQS.

Air Quality Data

Currently, La Jolla Band does not operate any ozone monitors within the tribal boundaries. Map 11 in Appendix 1 shows monitor locations for the intended San Diego County nonattainment area. For each monitor, Appendix 1 shows the monitor location and lists the 2008-2010 design value (DV), the preliminary 2009-2011 DV (as available in AQS as of October 31, 2011), and a preliminary 2009-2011 DV using 2011 data from OzoneWatch⁴.

The typical pattern for ozone levels along the southwest coast of California is lower ozone levels along the coast from clean coastal air with increasing levels inland as precursors and temperatures increase. At times, ozone and its precursors can be transported along the coast, as described above in Factor 3. Air monitoring stations show this pattern with coastal monitors attaining the 2008 ozone NAAQS (e.g., monitor numbers 060731008, 060731001, 060731010) and inland monitors violating (e.g., 060731006 and 060659001). See Appendix 3. The violating monitor in San Diego is 20-25 miles inland, which is similar to the location of the La Jolla Band’s reservation. Also, other sources of data from similar inland locations show the potential for high levels of ozone. Data from one nearby inland monitor in San Diego are largely incomplete and do not have sufficient data to produce a valid design value, but the available data show multiple exceedances in late summer/early fall. Air quality data, therefore, do not provide enough information to support exclusion of La Jolla Band from the intended San Diego County nonattainment area.

Emissions and Emissions-Related Data

⁴ The preliminary 2009-2011 design values indicated by OzoneWatch are based on AQS ozone data from 2009, 2010, and 2011, supplemented with 2011 data reported to AirNow (<http://airnow.gov/>) on days for which no data currently exist in the AQS database. 2009 and 2010 AQS data were retrieved on July 20, 2011; 2011 AQS and AirNow data were compiled on October 4, 2011. Ultimately, attainment of the 8-hour ozone NAAQS will be determined entirely from data in AQS.

The lands of the La Jolla Band consist of 8,822 acres of reservation lands, which are home to 470 tribal members. The La Jolla Band has a few sources of ozone precursor emissions within the tribal boundaries; these include a gas station, general store, and local traffic. Also, Highway 76 passes through the lands of the La Jolla Band land.

General information on emissions, population density and degree of urbanization, traffic and commuting patterns for San Diego County can be found in Factor 2 of the intended San Diego County nonattainment area technical analysis, above. This information is relevant for both San Diego County's densely-populated coastal areas and the less-populated inland areas, including the La Jolla Band area of Indian country.

Meteorology (Weather/Transport Patterns)

The lands of the La Jolla Band are located about 20 miles inland and experience similar meteorology and transport patterns as other inland parts of western San Diego County. Therefore, the information for San Diego County discussed in Factor 3 above, also characterizes the complex meteorology and transport patterns for the La Jolla Band. As described in Factor 3, transport of ozone and its precursors is prevalent within San Diego County, and from adjacent intended nonattainment areas.

Geography/Topography

The La Jolla Band's reservation does not have any geographical or topographical barriers that would prevent air pollution transport from the surrounding San Diego County nonattainment area. Although the terrain is complex, there are no topographic barriers. Therefore, geography and topography support including La Jolla Band with the surrounding area.

Jurisdictional Boundaries

The La Jolla Band is a federally recognized tribe located in the northern portion of the San Diego-Carlsbad-San Marcos MSA. Map 11a in Appendix 2 shows the location of the area of Indian country within the intended San Diego County nonattainment area.

Conclusion for La Jolla Band

While the La Jolla Band has recommended that their reservation lands be designated as unclassifiable, based on the information currently available and the five factor analysis above, EPA has preliminarily concluded that the lands of the La Jolla Band should be designated nonattainment as part of the San Diego County nonattainment area for the 2008 ozone NAAQS.

Evaluation of Recommendation from Pechanga Band of Luiseno Indians of the Pechanga Reservation

Pursuant to section 107(d) of the Clean Air Act, EPA must designate as nonattainment those areas that violate the NAAQS and those areas that contribute to violations in nearby areas. EPA has evaluated the recommendation of the Pechanga Band of Luiseno Indians of the Pechanga Reservation (Pechanga Band) based on currently available information.

The Pechanga Band is a federally recognized tribe located in the northern portion of the San Diego-Carlsbad-San Marcos MSA and the southern part of the Los Angeles-Long Beach-Santa Ana MSA. Map 11a in Appendix 2 shows the location of the area of Indian country within the San Diego County nonattainment area.

In 2004, EPA established the Los Angeles-South Coast Air Basin nonattainment boundaries for the 1997 ozone NAAQS. The Los Angeles-South Coast Air Basin nonattainment area included the entirety of Orange County, the southwestern portion of Los Angeles County, the southwest portion of San Bernardino County, and the western portion of Riverside County (see Map 6 in Appendix 1). In 2004, all of Pechanga Band's reservation lands were in the southwestern portion of Riverside County, and Pechanga Band was included in the Los Angeles-South Coast Air Basin nonattainment area. Since the previous designation, Pechanga Band has acquired lands that extend into San Diego County.

In June 2009, the Pechanga Band recommended that portions of the Pechanga Band's lands in Riverside and San Diego Counties be designated as "nonattainment" as a separate area, or be designated as "nonattainment" as part of the San Diego nonattainment area, for the 2008 ozone NAAQS (letter from Mark Macarro, Tribal Chairman, Pechanga Band of Luiseno Indians, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, June 23, 2009). Based on the factors discussed below, EPA has preliminarily concluded that the Pechanga Band should be designated nonattainment as part of the San Diego County nonattainment area for the 2008 ozone NAAQS.

Air Quality Data

Map 11 in Appendix 1 shows ozone monitors within San Diego County. For each monitor, Appendix 1 shows the monitor location and lists the 2008-2010 design value (DV), the preliminary 2009-2011 DV (as available in AQS as of October 31, 2011), and a preliminary 2009-2011 DV using 2011 data from OzoneWatch.⁵ Currently, the Pechanga Band operates one ozone monitor within the tribal boundaries. A monitoring issue with this monitor was identified and resolved in the summer of 2011. EPA is currently discussing the accuracy of the ozone data from this monitor with the Pechanga Band and does not intend to use these data for current ozone designations.

The typical pattern for ozone levels along the southwest coast of California is low ozone levels along the coast from clean coastal air with increasing levels inland as precursors and temperatures increase. At times, ozone and its precursors can be transported along the coast, as described in Factor 3 for San Diego County, above. Air monitoring stations show this pattern with coastal monitors attaining the 2008 ozone NAAQS (e.g. monitor numbers 060731008, 060731001, and 060731010) and inland monitors violating (e.g., monitor numbers 060731006 and 060659001). See Appendix 3. The violating monitor in San Diego is 20-25 miles inland, as are the Pechanga Band's tribal lands. Also, other sources of data from similar inland locations show the potential for high levels of ozone. Data from one nearby inland monitor within San Diego County are largely incomplete and do not have sufficient data to produce a valid design value, but the available, existing data show multiple exceedances in late summer / early fall. Air

⁵ The preliminary 2009-2011 design values indicated by OzoneWatch are based on AQS ozone data from 2009, 2010, and 2011, supplemented with 2011 data reported to AirNow (<http://airnow.gov/>) on days for which no data currently exist in the AQS database. 2009 and 2010 AQS data were retrieved on July 20, 2011; 2011 AQS and AirNow data were compiled on October 4, 2011. Ultimately, attainment of the 8-hour ozone NAAQS will be determined entirely from data in AQS.

quality data, therefore, do not provide enough information to support exclusion of the Pechanga Band from the San Diego County nonattainment area.

Emissions and Emissions-Related Data

The reservation lands of the Pechanga Band consist of 6,700 acres, which are home to approximately 800 tribal members. The Pechanga Band has one major stationary source of emissions – Pechanga Casino and Resort – within the tribal boundaries. Other sources of ozone precursor emissions include local traffic to the casino/resort, parking structures, golf course, gas station, and a recreational vehicle (RV) park.

General information on emissions, population density and degree of urbanization, traffic and commuting patterns for San Diego County can be found in Factor 2, above. This information is relevant for both San Diego County's densely-populated coastal areas and the less-populated inland areas, including the lands of the Pechanga Band.

Meteorology/Transport Patterns

The Pechanga Band is located about 20 miles inland and experiences similar meteorology and transport patterns as other inland parts of western San Diego County. Therefore, the information for San Diego County discussed in Factor 3 above, also characterizes the complex meteorology and transport patterns for the Pechanga Band. As described in Factor 3, transport of ozone and its precursors is prevalent within San Diego County, and from adjacent intended nonattainment areas.

Geography/Topography

The Pechanga Band area does not have any geographical or topographical barriers that would eliminate air pollution transport from the surrounding San Diego County nonattainment area. Although the terrain is complex, there are no topographic barriers. Therefore, geography and topography support including Pechanga Band with the surrounding area.

Jurisdictional Boundaries

The Pechanga Band is a federally recognized tribe located in the northern portion of the San Diego-Carlsbad-San Marcos MSA and the southern part of the Los Angeles-Long Beach-Santa Ana MSA. Map 11a in Appendix 2 shows the location of the area of Indian country within the San Diego County nonattainment area.

Conclusion for Pechanga Band

The Pechanga Band requested to be included in the San Diego County nonattainment area and has similar topography and meteorology to San Diego County. Consistent with current EPA policy that discourages splitting areas of Indian country between two separate nonattainment areas where practically possible, and based on the information currently available and the five factor analysis above, EPA has preliminarily concluded that all Pechanga Band land, including those portions previously part of the Los Angeles-South Coast Air Basin nonattainment area, should be designated as part of the San Diego County nonattainment area.

Conclusion

Based on the assessment of factors described above, EPA has preliminarily concluded that San Diego County, and all areas of Indian country located in San Diego County⁶, should be designated nonattainment because the area violates the 2008 ozone NAAQS.

The Clean Air Act requires EPA to designate any area as nonattainment if it violates a NAAQS or if it contributes to a violation in a nearby area. Air quality data (Factor 1) show that monitors in San Diego County show a violation of the 2008 8-hour ozone standard based on 2008-2010 data and preliminary 2009-2011 data. Therefore, Factor 1 supports designating San Diego County as nonattainment.

Emissions and emission-related data (Factor 2) show that based on locations of stationary sources and population centers, as well as traffic patterns, the state's recommended nonattainment area encompasses both source and receptor populations in the county.

Based on meteorology and weather or transport patterns (Factor 3), influenced by geography and topography (Factor 4), EPA preliminarily concurs with the state's analysis characterizing the formation of ozone from local sources as well as transport. EPA believes that this factor supports the proposed nonattainment boundaries of San Diego County.

In considering jurisdictional boundaries (Factor 5), EPA recognizes that the San Diego County area has established nonattainment boundaries associated with both the 1-hour and the 1997 8-hour ozone NAAQS. The state has recommended the same boundary for the 2008 ozone NAAQS. EPA preliminarily concurs with this recommendation and believes that the existing boundary appropriately encompasses stationary and mobile sources of emissions and accounts for meteorological and geographical boundaries that affect ozone concentrations in San Diego County, and reflects the appropriate jurisdictional boundaries (e.g., San Diego APCD, SANDAG and the San Diego-Carlsbad-San Marcos metropolitan statistical area).

Eighteen tribes are located with the boundaries of the San Diego nonattainment area. Two tribes submitted recommendations to EPA. The La Jolla Band, located over 20 miles inland in the northern portion of the county, recommended its lands be designated unclassifiable. Based on available air quality data as well as meteorology and geography, EPA preliminarily concludes that the La Jolla Band's lands are not sufficiently distinct to separate the La Jolla Band from the San Diego nonattainment area. The Pechanga Band, formerly designated nonattainment with the Los Angeles-South Coast Air Basin, recommended its lands be designated separately, or in the alternative, with the San Diego nonattainment area. Based on the information currently available, EPA preliminarily agrees and intends that the Pechanga Band tribal lands be designated nonattainment as part of the intended San Diego County nonattainment area for the 2008 ozone NAAQS.

Based on our consideration of all five factors, EPA intends to designate San Diego County and all areas of Indian country in San Diego County as nonattainment as part of the San Diego County multi-jurisdictional nonattainment area.

⁶ Campo Band of Kumeyaay Indians, Ewiiapaayp Band of Kumayaay, La Posta Band of Mission Indians, and Manzanita Band of the Kumeyaay Nation were excluded from the San Diego nonattainment during the 2004 designations of the 1997 standard ozone standard.

Technical Support Document for 2008 Ozone NAAQS Designations

California Area Designations for the 2008 Ozone National Ambient Air Quality Standards

Technical Analysis for San Francisco Bay Area

Figure 1 is a map of the intended San Francisco Bay Area nonattainment area. The map provides other relevant information including the locations and design values of air quality monitors, county names and boundaries, and indicates EPA's intended nonattainment designation. Also shown is the boundary of the existing area that is designated nonattainment for the 1997 ozone NAAQS.

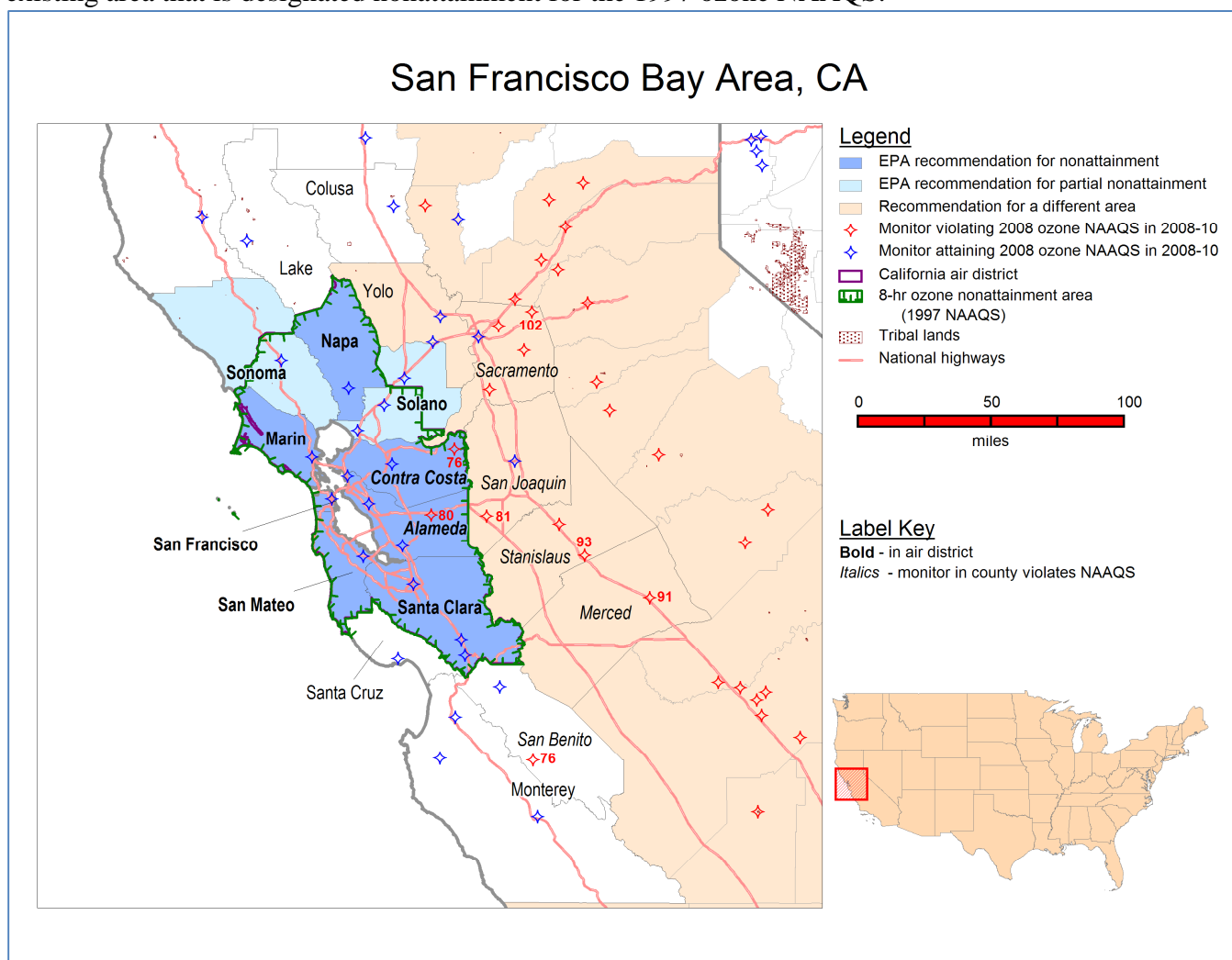


Figure 1

Note: The map shown in Figure 1 provides 8-hour ozone design values in parts per billion (ppb) based on data from 2008-2010 (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. For each particular area, Factor 1 and Appendix 3 describe the air quality data relevant for our intended nonattainment decisions.

For purposes of the 1997 8-hour ozone NAAQS, this area was designated nonattainment. The boundary for the nonattainment area for the 1997 ozone NAAQS included the entire counties of San Francisco, Marin, Napa, Contra Costa, Alameda, Santa Clara and San Mateo and part of Sonoma (southern part) and Solano (southwest part not included in Sacramento Metro Area) Counties. Several areas of Indian country were included in the nonattainment area. These are the same tribes that are listed in Table 1, below.

In March 2009, California recommended that the same counties or parts of counties be designated as “nonattainment” for the 2008 ozone NAAQS based on air quality data from 2006-2008 (letter from James Goldstene, Executive Officer, California Air Resources Board, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, dated March 11, 2009). California provided an update to the original recommendation in October 2011 based on air quality data from 2008-2010 and preliminary 2009-2011 data, but did not revise its recommendation for the San Francisco Bay Area. These 2009 and 2011 recommendations are based on data from Federal Equivalent Method (FEM) monitors sited and operated in accordance with 40 CFR Part 58 (letter from Lynn Terry, Deputy Executive Officer, California Air Resources Board, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, dated October 12, 2011).

After considering these recommendations and based on EPA's technical analysis described below, EPA intends to designate seven counties, two partial counties, and areas of Indian country (identified in Table 1 below) as “nonattainment” for the 2008 ozone NAAQS as part of the San Francisco Bay Area multi-jurisdictional nonattainment area.

Table 1. State or Tribe’s Recommended and EPA’s Intended Designated Nonattainment Counties or Areas of Indian country for San Francisco Bay Area.

| San Francisco Bay Area | State or Tribe-Recommended Nonattainment Counties or Areas of Indian country | EPA Intended Nonattainment Counties or Areas of Indian country |
|---------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------|
| San Francisco County | San Francisco County | San Francisco County |
| Marin County | Marin County | Marin County |
| Sonoma County | Sonoma County (p) | Sonoma County (p) |
| Napa County | Napa County | Napa County |
| Solano County | Solano County | Solano County |
| Contra Costa County | Contra Costa County | Contra Costa County |
| Alameda County | Alameda County | Alameda County |
| Santa Clara County | Santa Clara County | Santa Clara County |
| San Mateo County | San Mateo County | San Mateo County |
| Federated Indians of Graton Rancheria | N/A | Federated Indians of Graton Rancheria |
| Lytton Rancheria of California | N/A | Lytton Rancheria of California |

p = partial

N/A = Tribe did not submit a recommendation

Factor Assessment

Factor 1: Air Quality Data

For this factor, we considered 8-hour ozone design values in parts per million (ppm) for air quality monitors in counties in the existing San Francisco Bay Area nonattainment area, based on data from the 2008-2010 period (i.e., the 2010 design value, or DV) which are the most recent years with fully-certified air quality data. A monitor's DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2008 ozone NAAQS are met at a monitor when the annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years is 0.075 ppm (75 parts per billion (ppb)) or less. A DV is only valid if minimum data completeness criteria are met. See 40 CFR part 50 Appendix P. Where several monitors are located in a county (or a designated nonattainment area or maintenance area), the DV for the county or area is determined by the monitor with the highest level.

[Note: Monitors that are eligible for providing design value data generally include State and Local Air Monitoring Stations (SLAMS) that are sited in accordance with 40 CFR Part 58, Appendix D (Section 4.1) and operating with a federal reference method (FRM) or federal equivalent method (FEM) monitor that meets the requirements of 40 CFR part 58, appendix A. All data from a special purpose monitor (SPM) using an FRM or FEM which has operated for more than 24 months is eligible for comparison to the NAAQS unless the monitoring agency demonstrates that the data came from a particular period during which the requirements of appendix A (quality assurance requirements) or appendix E (probe and monitoring path siting criteria) were not met.]

The existing San Francisco Bay Area nonattainment area comprises Alameda County, Contra Costa County, Marin County, Napa County, San Francisco County, San Mateo County, Santa Clara County, Solano County (partial), and Sonoma County (partial) (see Map 12a in Appendix 2). The 2010 DVs for the ozone NAAQS for counties in the existing San Francisco Bay Area nonattainment area are shown in Table 2.

Table 2. Air Quality Data.

| County | State Recommended Nonattainment? | 2008-2010 Design Value (parts per billion) |
|-------------------|----------------------------------|--------------------------------------------|
| Alameda, CA | Yes | 80 |
| Contra Costa, CA | Yes | 76 |
| Marin, CA | Yes | 54 |
| Napa, CA | Yes | 66 |
| San Francisco, CA | Yes | 47 |
| San Mateo, CA | Yes | 57 |
| Santa Clara, CA | Yes | 75 |
| Solano, CA | Yes | 71 |
| Sonoma, CA | Yes (partial) | 54 |

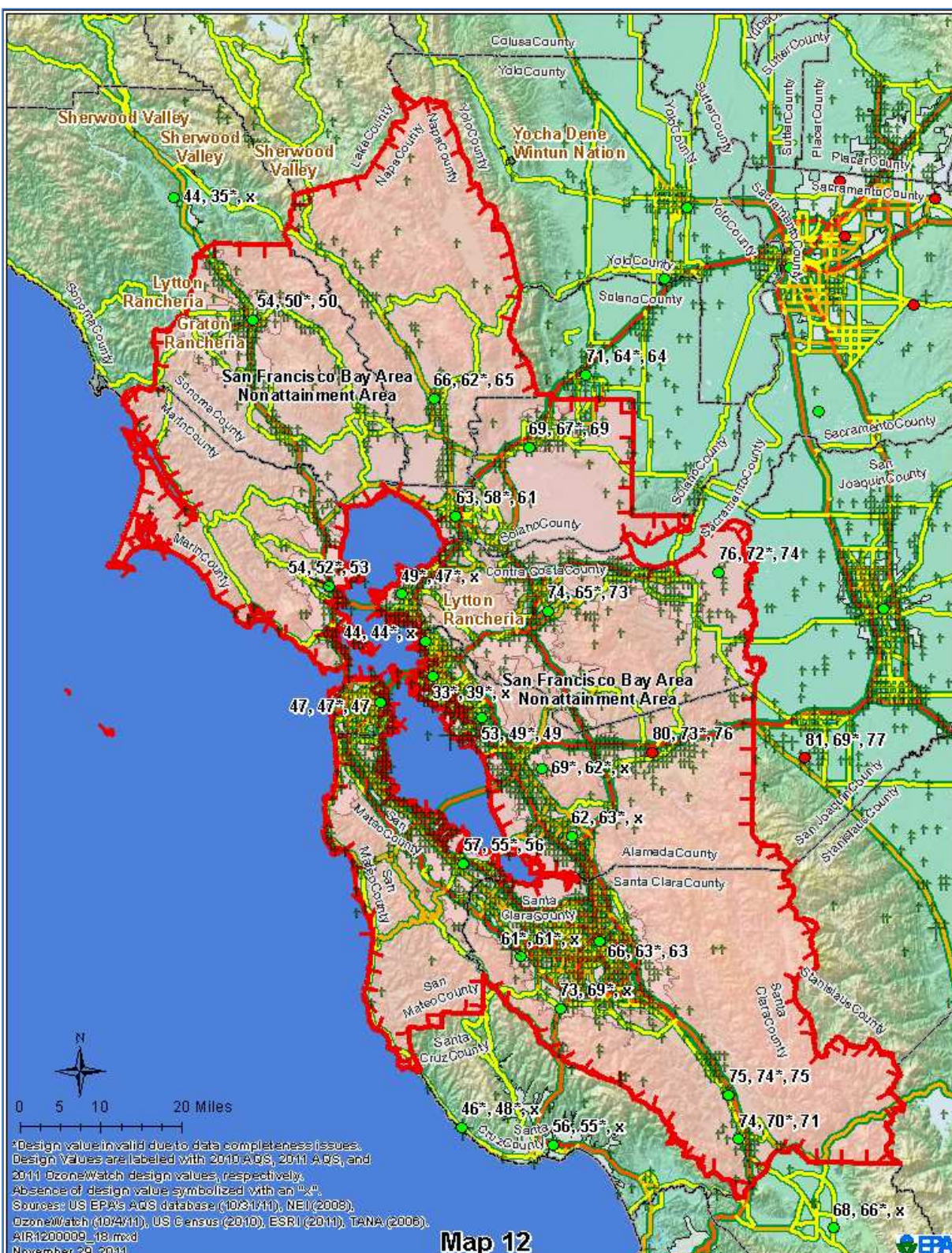
Ozone monitors relevant for comparison to the NAAQS and information from additional data sources within the San Francisco Bay Area nonattainment area are shown in Appendix 1, Map 12 (inserted below). The state has recommended that Solano County be designated nonattainment, with the northeastern part in the Sacramento Metro nonattainment area, and the southwestern part in the San Francisco Bay Area nonattainment area. The design value shown in Table 2 is from a monitor located within this northeastern portion of Solano County. As shown in Appendix 1, Map 12, the southwestern

part of Solano County, within the existing San Francisco Bay Area nonattainment area, has a 2010 DV of 69 ppb. All other values shown in Table 2 are from monitors within the existing San Francisco Bay Area nonattainment area.

California's ozone season encompasses the entire year, but some ozone monitors in the San Francisco Bay Area have been approved to operate on a seasonal schedule per 40 CFR part 58, Appendix D, section 4.1(i). Certified, quality assured data are available in EPA's Air Quality System (AQS) for all areas through calendar year 2010. Map 12 in Appendix 1 includes preliminary 2011 DVs for the existing San Francisco Bay Area nonattainment area for informational purposes only. For each monitor, Appendix 1 lists the monitor, the 2008-2010 DV (certified and quality assured in AQS), the preliminary 2009-2011 DV (as available in AQS as of October 31, 2011), and a preliminary 2009-2011 DV using 2011 data from OzoneWatch¹. Absence of a DV is symbolized with an "x".

Appendix 3 lists the DVs for monitors in the existing San Francisco Bay Area nonattainment area. Monitors shown in bold are the DV monitors (i.e., the monitor with the highest DV) for each individual county. Monitors shown in red font are the DV monitor for the nonattainment area. Values with an asterisk do not meet data completeness, and therefore those DVs are not relevant for comparison to the NAAQS and are solely provided for informational purposes.

¹ The preliminary 2009-2011 design values indicated by OzoneWatch are based on ozone data from 2009, 2010, and 2011 stored in AQS, combined with 2011 data reported to AirNow on days which no data currently exist in the AQS database. The 2009 and 2010 data were retrieved from AQS on July 20, 2011. The 2011 data are based on data submitted AQS or AirNow (<http://airnow.gov/>) as of October 4, 2011. Ultimately, attainment of the 8-hour ozone NAAQS will be determined entirely from data in AQS.



From Appendix 1, Map 12: For map legend describing monitors, emissions, traffic, population, and boundaries, see Appendix 1. Monitor dot colors (green or red) are based on preliminary 2011 DV data. EPA is basing its intended designation for the San Francisco Bay Area on certified 2010 data.

Monitors in Alameda County and Contra Costa County show a violation of the 2008 8-hour ozone standard based on 2008-2010 data. Therefore, these areas are included in the intended San Francisco

Bay Area nonattainment area. A county (or partial county) must also be designated nonattainment if it contributes to a violation in a nearby area. Each county without a violating monitor that is located near a county with a violating monitor has been evaluated based on the weight of evidence of the five factors to determine whether it contributes to the nearby violation.

Factor 2: Emissions and Emissions-Related Data

EPA evaluated emissions of ozone precursors, nitrogen oxides (NO_x) and volatile organic compounds (VOC), and other emissions-related data that provide information on areas contributing to violating monitors.

Emissions data

EPA evaluated county-level emission data for NO_x and VOC derived from the 2008 National Emissions Inventory (NEI), version 1.5. This is the most recently available NEI. (See <http://www.epa.gov/ttn/chief/net/2008inventory.html>) Emissions in a nearby area indicate the potential for the area to contribute to observed violations. We will also consider any additional information we receive on changes to emissions levels that are not reflected in recent inventories. These changes include emissions reductions due to permanent and enforceable emissions controls that will be in place before final designations are issued and emissions increases due to new sources. Table 3 shows emissions of NO_x and VOC (given in tons per year) for violating and nearby counties that we considered for inclusion in the intended San Francisco Bay Area nonattainment area.

Table 3. Total 2008 NO_x and VOC Emissions.

| County | State Recommended Nonattainment? | NO _x (tpy) | VOC (tpy) |
|-------------------|----------------------------------|-----------------------|-----------|
| Alameda, CA | Yes | 40,415 | 27,192 |
| Contra Costa, CA | Yes | 34,200 | 21,751 |
| Marin, CA | Yes | 5,518 | 5,959 |
| Napa, CA | Yes | 3,761 | 4,626 |
| San Francisco, CA | Yes | 15,391 | 10,779 |
| San Mateo, CA | Yes | 14,002 | 11,959 |
| Santa Clara, CA | Yes | 32,952 | 33,035 |
| Solano, CA | Yes | 15,361 | 11,339 |
| Sonoma, CA | Yes (partial) | 10,517 | 13,906 |
| Areawide: | | 172,116 | 140,546 |

Emissions of ozone precursors from the nine-county San Francisco Bay Area nonattainment area are higher than emissions from the Sacramento Metro area (70,578 and 56,819 tons per year of NO_x and VOC, respectively), but not as high as emissions from the San Joaquin Valley and Los Angeles-South Coast Air Basin nonattainment areas. Stationary source emissions are clustered along the San Francisco Bay (rather than along the Pacific Ocean side of San Francisco and Marin Counties), and along the major roadways running north through southern Sonoma and Napa Counties, northeast through Solano County, east through Contra Costa County and Alameda Counties, and south through Santa Clara County (see Map 12 in Appendix 1). Stationary sources of ozone precursor emissions are distributed throughout the San Francisco Bay Area, on both a north-south axis, as well as running east into the Sacramento Metro and San Joaquin Valley nonattainment areas. The northern portion of Sonoma County is distinct from the southern portion in that it contains very few stationary sources of ozone

precursor emissions. The northeastern portion of Solano County, included in the intended Sacramento Metro nonattainment area, contains numerous stationary sources of emissions.

Population density and degree of urbanization

EPA evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. These include ozone-creating emissions from on-road and off-road vehicles and engines, consumer products, residential fuel combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NO_x and VOC emissions, which contribute to ozone formation. Rapid population growth or growth in vehicle miles traveled (VMT) (see below) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the area associated with area source and mobile source emissions as part of the nonattainment area. Table 4 shows the population, population density, and population growth information for each county in the area.

Table 4. Population and Growth.

| County | State Recommended Nonattainment? | 2010 Population | 2010 Population Density (1000 pop/sq mi) | Absolute change in population (2000-2010) | Population % change (2000-2010) |
|-------------------|----------------------------------|-----------------|------------------------------------------|-------------------------------------------|---------------------------------|
| Alameda, CA | Yes | 1,510,271 | 2.01 | 59,875 | +4% |
| Contra Costa, CA | Yes | 1,049,025 | 1.38 | 95,721 | +10% |
| Marin, CA | Yes | 252,409 | 0.47 | 4,812 | +2% |
| Napa, CA | Yes | 136,484 | 0.17 | 11,946 | +10% |
| San Francisco, CA | Yes | 805,235 | 17.06 | 27,703 | +4% |
| San Mateo, CA | Yes | 718,451 | 1.57 | 10,009 | +1% |
| Santa Clara, CA | Yes | 1,781,642 | 1.37 | 95,488 | +6% |
| Solano, CA | Yes | 413,344 | 0.47 | 16,373 | +4% |
| Sonoma, CA | Yes (partial) | 483,878 | 0.30 | 23,453 | +5% |
| Areawide: | | 7,150,739 | 1.00 | 345,380 | +5% |

Sources: U.S. Census Bureau population estimates for 2010 as of August 4, 2011

(http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_PL_GCTPL2.STO5&prodType=table)

Maps 12 and 12a in Appendices 1 and 2, respectively, show population for this area. Over the 2000 - 2010 period, the nine counties in the San Francisco Bay Area exhibited growth rates of 10% or less, which are lower than growth rates observed in the counties comprising the San Joaquin Valley and Sacramento Metro nonattainment areas. However, the absolute change in population in the San Francisco Bay was similar to the population increase in the Sacramento Metro area. Population growth is associated with even greater growth in traffic and commuting patterns, which are themselves associated with emissions of ozone precursors (see next section). Population centers are located throughout the San Francisco Bay Area counties, and are generally co-located with the stationary sources of NO_x and VOC emissions (see Maps 12 and 12a of Appendices 1 and 2). The violating monitor in the San Francisco Bay Area is located farther inland in a population center in Alameda County that is less densely populated than the population centers adjacent to the San Francisco Bay. The northern portion of Sonoma County is distinct from the southern portion in that it is sparsely populated. The northeastern portion of Solano County is also not heavily populated.

The 2010 population of San Benito County (over 55,000 individuals) was lower than all counties in the San Francisco Bay Area nonattainment area, and the population density of San Benito County was over four times lower than Napa County, the most sparsely populated county in the San Francisco Bay Area.

Population growth over 2000 - 2010 in San Benito County was similar to Marin and San Francisco Counties.

Traffic (VMT) data

EPA evaluated the commuting patterns of residents in the area, as well as the total VMT for each county. In combination with the population/population density data and the location of main transportation arteries (see above), this information helps identify the probable location of non-point source emissions. A county with high VMT indicates the presence of motor vehicle emissions that may contribute to ozone formation and nonattainment in the area. Rapid population or VMT growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 5 shows total 2008 VMT for each county in the area.

Table 5. Traffic (VMT) data.

| County | State Recommended Nonattainment? | 2008 VMT* (million miles) |
|-------------------|----------------------------------|---------------------------|
| Alameda, CA | Yes | 11,201 |
| Contra Costa, CA | Yes | 8,405 |
| Marin, CA | Yes | 2,364 |
| Napa, CA | Yes | 1,488 |
| San Francisco, CA | Yes | 4,258 |
| San Mateo, CA | Yes | 7,543 |
| Santa Clara, CA | Yes | 14,993 |
| Solano, CA | Yes | 3,280 |
| Sonoma, CA | Yes (partial) | 4,118 |
| Areawide: | | 57,651 |

*MOBILE model VMTs are those inputs into the NEI version 1.5.

In the San Francisco Bay Area, VMT is high compared to VMT in the Sacramento Metro and San Joaquin Valley nonattainment areas. The northern portion of Sonoma County is distinct from the southern portion in that it has lower traffic volume (see Map 12 of Appendix 1). The northeastern portion of Solano County, included in the intended Sacramento Metro nonattainment area, contains high traffic volume. EPA intends to designate Sacramento Metro and the San Joaquin Valley as separate nonattainment areas.

Factor 3: Meteorology (weather/transport patterns)

EPA evaluated available meteorological data to help determine how meteorological conditions, such as weather, transport patterns and stagnation conditions, would affect the fate and transport of precursor emissions contributing to ozone formation.

The eastern portions of the San Francisco Bay Area have hot, dry, summers, with conditions conducive to ozone formation. The summers are less intense than in the Central Valley toward the east, on the other side of the Coast Ranges. The summer heat is mitigated by periods of fog caused by condensation in air cooled by the cold upwelling Pacific waters.

The San Francisco Bay Area flow is most frequently from the north-northwest according to 30-year average of National Weather Service summer wind direction frequencies computed by EPA, as shown in the “radar”-style wind rose diagram below (Figure 2).

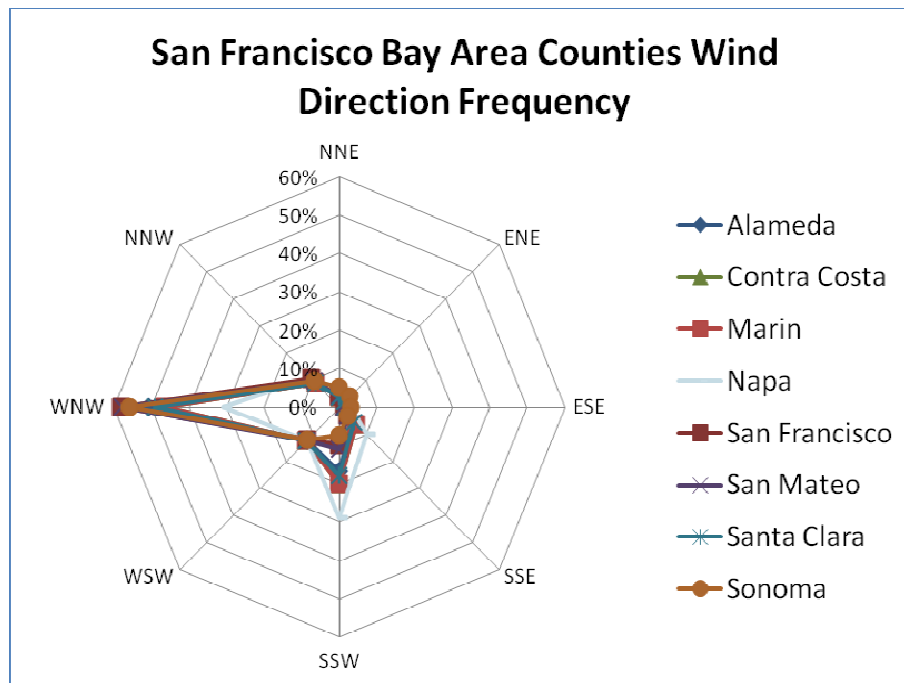


Figure 2

The California Coast Range topographically separates the Sacramento Metro area from the San Francisco Bay area, despite the important gap leading to the Golden Gate. The two areas have different meteorology, with the Sacramento Metro area being part of the hot and dry Central Valley, with substantial marine influence at times, while the San Francisco Bay area is dominated by interaction with air masses over the Pacific Ocean.

Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis evaluates the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the area.

The San Francisco Air Basin encompasses approximately 5,430 square miles and consists of all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo and Santa Clara counties, the southern half of Sonoma County and the southwestern portion of Solano County. The Air Basin is equivalent to the state's recommended San Francisco Bay Area nonattainment area. The region is characterized by complex terrain, consisting of coastal mountain ranges, rugged hillsides, and inland valleys and bays. Elevations range from sea level to 1,500 feet. The area is generally surrounded by hilly or mountainous terrain that separates it from neighboring areas. The main exception is the Golden Gate (at the mouth of San Francisco Bay), which is an important gap toward the northwest, and the Sacramento Metro area.

The California Coast Range topographically separates the Sacramento Metro area from the San Francisco Bay area, despite the important gap leading to the Golden Gate. The two areas have different topography, with the Sacramento Metro area being mainly flat, and a part of the Central Valley, and the San Francisco Bay area being more hilly, and a part of the Pacific coast.

Factor 5: Jurisdictional boundaries

For each potential nonattainment area, we considered existing jurisdictional boundaries to provide a clearly defined legal boundary and to help identify the areas appropriate for carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment area boundaries for ozone or other urban-scale pollutants, county lines, air district boundaries, township boundaries, areas covered by a metropolitan planning organization, state lines, areas of Indian country, and urban growth boundaries. Where existing jurisdictional boundaries were not adequate or appropriate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates were considered.

The San Francisco Bay Area has previously-established nonattainment boundaries associated with both the 1-hour and the 1997 8-hour ozone NAAQS. The state has recommended the same boundary for the 2008 ozone NAAQS.

The state's recommendation includes the entire counties of San Francisco, Marin, Napa, Contra Costa, Alameda, Santa Clara and San Mateo and part of Sonoma (southern part) and Solano (southwest part not included in Sacramento Metro Area) counties. The state's recommendation includes the entirety of the jurisdictional area of the Bay Area Air Quality Management District (Bay Area AQMD). The partial county boundary for Sonoma County reflects the fact that the northern portion of the county is relatively less populated. The county forms the boundary for the Santa Rosa-Petaluma Metropolitan Statistical Area (MSA). The Office of Management and Budget defines such areas in decreasing ranking of populated areas within the MSA. Both Santa Rosa and Petaluma are completely within the partial county boundary that is included as part of the Bay Area AQMD. The partial county boundary also shares the same boundary as the boundary between the Bay Area Air Basin and the North Coast Air Basin.

Regarding the partial county boundary in Solano County, this boundary is shared among various jurisdictions. The boundary demarcates the portion of the county that falls under the air quality management jurisdictions of the Bay Area AQMD and the Yolo-Solano Air Quality Management District (YSAQMD). The northern part of the YSAQMD is included in the Sacramento Metro nonattainment area for the 1997 ozone NAAQS and EPA intends to include it with the Sacramento Metro nonattainment area for the 2008 ozone NAAQS as well. This partial county boundary also shares the same boundary as the boundary between the Bay Area Air Basin and the Sacramento Valley Air Basin². Regarding transportation planning, the partial county boundary in Solano County also is the boundary between the jurisdictions of the Metropolitan Transportation Commission (MTC), which performs transportation planning in the Bay Area, and the Sacramento Council of Governments (SACOG), which performs the same function in the wider Sacramento Metro area.

The intended San Francisco Bay Area nonattainment area comprises most of the San Jose-San Francisco-Oakland combined statistical area (CSA). The CSA comprises six metropolitan statistical areas (MSAs): the Santa Rosa-Petaluma, Napa, Vallejo-Fairfield, San Francisco-Oakland-Fremont San Jose-Sunnyvale-Santa Clara, and Santa Cruz-Watsonville MSAs. The CSA reflects the intended nonattainment area boundaries except the partial counties for Sonoma and Solano counties, as previously discussed, and the exclusion of San Benito County, to the south. San Benito County is not under the jurisdiction of the Bay Area Air Quality Management District, but rather it is under the jurisdiction of the Monterey Bay Unified Air Pollution Control District.

² <http://www.arb.ca.gov/ei/maps/statemap/abmap.htm>

The San Francisco Bay Area also includes areas of Indian country. As defined at 18 U.S.C. 1151, “Indian country” refers to: “(a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.” EPA recognizes the sovereignty of tribal governments, and has attempted to take the desires of the tribes into account in establishing appropriate nonattainment area boundaries. The tribes in the San Francisco Bay Area nonattainment area are the Federated Indians of Graton Rancheria and Lytton Rancheria of California.

Conclusion

Based on the assessment of factors described above, EPA has preliminarily concluded that the following counties should be included as part of the San Francisco Bay Area nonattainment area because they are either violating the 2008 ozone NAAQS or contributing to a violation in a nearby area: San Francisco County, Marin County, Sonoma County (partial), Napa County, Solano County (partial), Contra Costa County, Alameda County, Santa Clara County, and San Mateo County. This area also includes the reservation lands of two tribes: Federated Indians of Graton Rancheria and Lytton Rancheria of California.

The Clean Air Act requires EPA to designate any area as nonattainment if it violates a NAAQS or if it contributes to a violation in a nearby area. Air quality data (Factor 1) show that monitors in Alameda County and Contra Costa County show a violation of the 2008 8-hour ozone standard based on 2008-2010 data. Therefore, based on Factor 1, Alameda County and Contra Costa County should be included in the San Francisco Bay Area nonattainment area.

Evaluation of emissions and emissions-related data (Factor 2) show that emission sources of ozone precursors (including stationary sources, population centers, and mobile sources) from all seven counties or partial counties are clustered along the San Francisco Bay. The state’s recommended nonattainment area includes two partial counties in the San Francisco Bay nonattainment area. The northern portion of Sonoma County is distinct from the southern portion in that it is sparsely populated, has lower traffic volume and contains very few stationary sources of ozone precursor emissions. The northeastern portion of Solano County is also not heavily populated but does contain numerous stationary sources of emissions and high traffic volume, both of which contribute to ozone formation. EPA intends to designate the northeastern portion of Solano County with the Sacramento Metro nonattainment area. Consideration of emissions data (Factor 2) supports the state’s recommended nonattainment area, which appropriately encompasses source and receptor populations in the San Francisco Bay Area.

EPA’s review of meteorology and weather or transport patterns (Factor 3) and geography and topography (Factor 4) support the state’s recommendation for the San Francisco Bay Area nonattainment area.

In considering jurisdictional boundaries (Factor 5), the San Francisco Bay Area has previously-established nonattainment boundaries associated with both the 1-hour and the 1997 8-hour ozone NAAQS. The state has recommended the same boundary for the 2008 ozone NAAQS. The existing boundary includes two partial counties: Sonoma County to the north along the Pacific coast, and Solano County to the northeast. The Sonoma partial county boundary shares the same boundary as the boundary

between the Bay Area Air Basin and the North Coast Air Basin. The boundary that creates the partial Solano County demarcates the portion of the county that falls under the jurisdictions of the Bay Area AQMD and the Yolo-Solano AQMD. The Yolo-Solano AQMD is part of the Sacramento Metro nonattainment area for the 1997 ozone NAAQS and EPA intends to include it with the Sacramento Metro nonattainment area for the 2008 ozone NAAQS as well. The state's recommended nonattainment area has identical borders to the San Francisco Bay Air Basin.

EPA's preliminary conclusion is to concur with the state's recommendation that the existing nonattainment area boundary appropriately encompasses stationary and mobile sources of emissions and accounts for meteorological, geographical, and existing jurisdictional boundaries in the San Francisco Bay Area. EPA intends to designate seven counties, two partial counties, and areas of Indian country (identified in Table 1 above) as "nonattainment" for the 2008 ozone NAAQS as part of the San Francisco Bay Area multi-jurisdictional nonattainment area.

Technical Support Document for 2008 Ozone NAAQS Designations

California Area Designations for the 2008 Ozone National Ambient Air Quality Standards

Technical Analysis for San Joaquin Valley

Figure 1 is a map of the intended San Joaquin Valley nonattainment area. The map provides other relevant information including the locations and design values of air quality monitors, county and other jurisdictional boundaries. Also shown is the boundary of the existing area that is designated nonattainment for the 1997 ozone NAAQS.

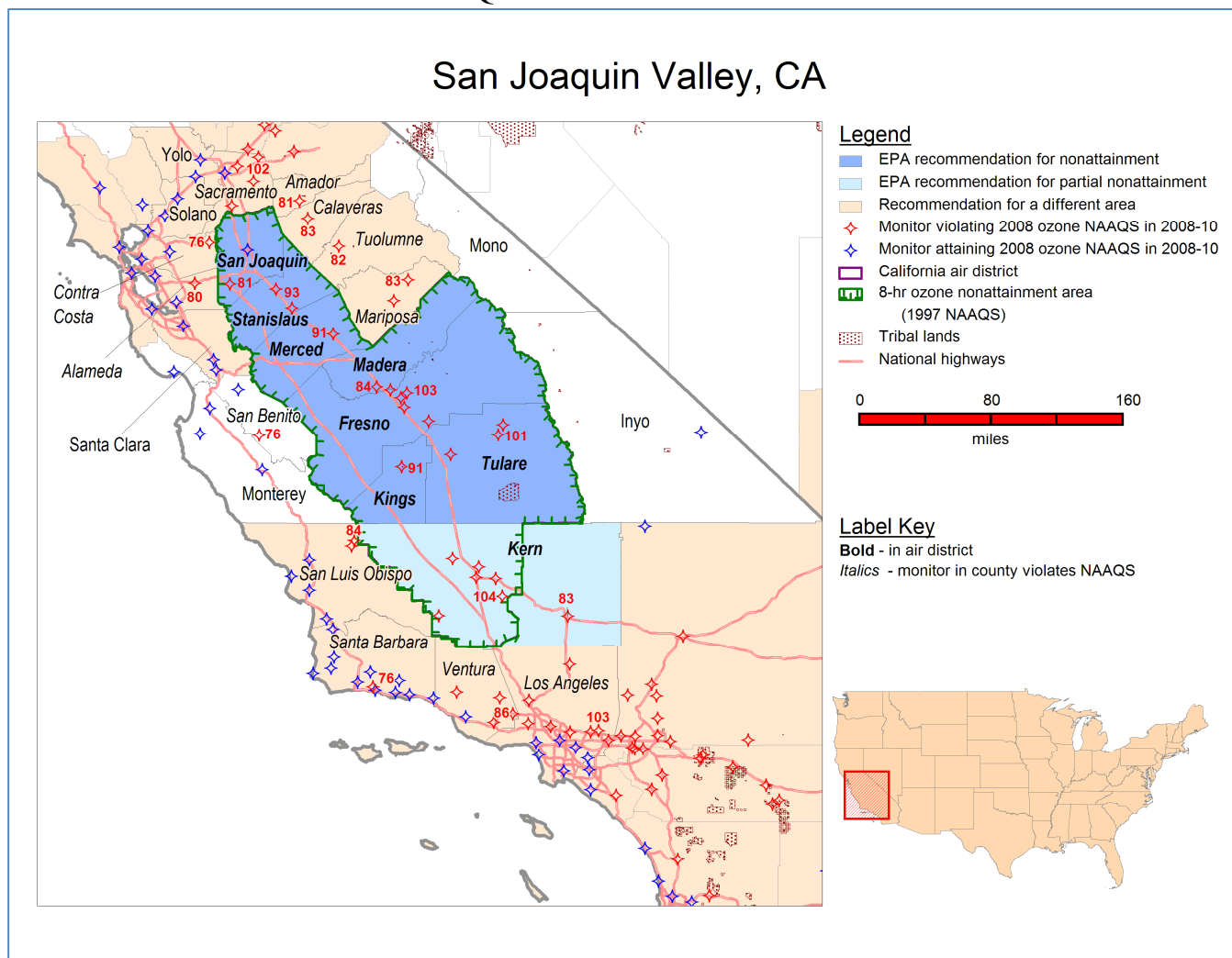


Figure 1

Note: The map shown in Figure 1 provides 8-hour ozone design values in parts per billion (ppb) based on data from 2008-2010 (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. For each particular area, Factor 1 and Appendix 3 describe the air quality data relevant for our intended nonattainment decisions.

For purposes of the 1997 8-hour ozone NAAQS, this area was designated nonattainment. The boundary for the nonattainment area for the 1997 ozone NAAQS included the entire counties of San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings and Tulare and part of Kern County (western part). Several areas of Indian country were included in the nonattainment area. These are the same tribes that are listed in Table 1, below.

In March 2009, California recommended that the same counties or parts of counties be designated as nonattainment for the 2008 ozone NAAQS based on air quality data from 2006-2008 (letter from James Goldstene, Executive Officer, California Air Resources Board, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, dated March 11, 2009). California provided an update to the original recommendation in October 2011 based on air quality data from 2008-2010 and preliminary 2009-2011 data, but did not revise its recommendation for San Joaquin Valley. These 2009 and 2011 recommendations are based on data from Federal Equivalent Method (FEM) monitors sited and operated in accordance with 40 CFR Part 58 (letter from Lynn Terry, Deputy Executive Officer, California Air Resources Board, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, dated October 12, 2011).

In November 2011, the Picayune Rancheria of the Chukchansi Indians recommended that portions of Picayune Rancheria in Madera County be designated as “unclassifiable” for the 2008 ozone NAAQS (letter from Nancy Ayala, Tribal Council Vice Chairwoman, Picayune Rancheria of the Chukchansi Indians, to Jared Blumenfeld, Regional Administrator, U.S. EPA Region IX, November 14, 2011).

After considering these recommendations and based on EPA's technical analysis described below, EPA intends to designate seven counties and one partial county in California, and areas of Indian country (identified in Table 1 below) as “nonattainment” for the 2008 ozone NAAQS as part of the San Joaquin Valley multi-jurisdictional nonattainment area.

Table 1. State or Tribe's Recommended and EPA's Intended Designated Nonattainment Counties or Areas of Indian country for San Joaquin Valley.

| San Joaquin Valley | State or Tribe-Recommended Nonattainment Counties or Areas of Indian country | EPA Intended Nonattainment Counties or Areas of Indian country |
|---------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------|
| San Joaquin County | San Joaquin County | San Joaquin County |
| Stanislaus County | Stanislaus County | Stanislaus County |
| Merced County | Merced County | Merced County |
| Madera County | Madera County | Madera County |
| Fresno County | Fresno County | Fresno County |
| Kings County | Kings County | Kings County |
| Tulare County | Tulare County | Tulare County |
| Kern County | Kern County (p) | Kern County (p) |
| Big Sandy Mono Indians of California | N/A | Big Sandy Mono Indians of California |
| California Valley Miwok Tribe ¹ | N/A | California Valley Miwok Tribe |
| Cold Springs Rancheria of Mono Indians of California | N/A | Cold Springs Rancheria of Mono Indians of California |
| North Fork Rancheria of Mono Indians of California | N/A | North Fork Rancheria of Mono Indians of California |
| Picayune Rancheria of Chuckchansi Indians of California | Unclassifiable | Picayune Rancheria of Chuckchansi Indians of California |
| Santa Rosa Rancheria Tachi Yokut Tribe | N/A | Santa Rosa Rancheria Tachi Yokut Tribe |
| Table Mountain Rancheria of California | N/A | Table Mountain Rancheria of California |
| Tule River Indian Tribe of the Tule River Reservation | N/A | Tule River Indian Tribe of the Tule River Reservation |

p = partial

N/A = Tribe did not submit a recommendation.

EPA intended modifications to state or tribe recommendations are shown in **bold**.

¹California Valley Miwok Tribe has lands in the San Joaquin Valley and Central Mountain Counties intended nonattainment areas. Non-contiguous lands of the California Valley Miwok Tribe will be designated with the surrounding nonattainment areas. This technical analysis addresses only those areas of Indian country within the intended San Joaquin Valley nonattainment area.

Factor Assessment

Factor 1: Air Quality Data

For this factor, we considered 8-hour ozone design values in parts per million (ppm) for air quality monitors in counties in the existing San Joaquin Valley nonattainment area, based on data from the 2008-2010 period (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. A monitor's DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2008 ozone NAAQS are met at a monitor when the annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years, is 0.075 ppm (75 parts per billion (ppb)) or less. A DV is only valid if minimum data completeness criteria are met (see

40 CFR part 50 Appendix P). Where several monitors are located in a county (or a designated nonattainment area or maintenance area), the DV for the county or area is determined by the monitor with the highest level.

[Note: Monitors that are eligible for providing design value data generally include State and Local Air Monitoring Stations (SLAMS) that are sited in accordance with 40 CFR Part 58, Appendix D (Section 4.1) and operating with a federal reference method (FRM) or federal equivalent method (FEM) monitor that meets the requirements of 40 CFR part 58, appendix A. All data from a special purpose monitor (SPM) using an FRM or FEM which has operated for more than 24 months is eligible for comparison to the NAAQS unless the monitoring agency demonstrates that the data came from a particular period during which the requirements of appendix A (quality assurance requirements) or appendix E (probe and monitoring path siting criteria) were not met.]

The existing San Joaquin Valley nonattainment area comprises San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings and Tulare Counties, and the western portion of Kern County (see Map 13a in Appendix 2). The 2010 DVs for the ozone NAAQS for counties in the existing San Joaquin Valley nonattainment area are shown in Table 2.

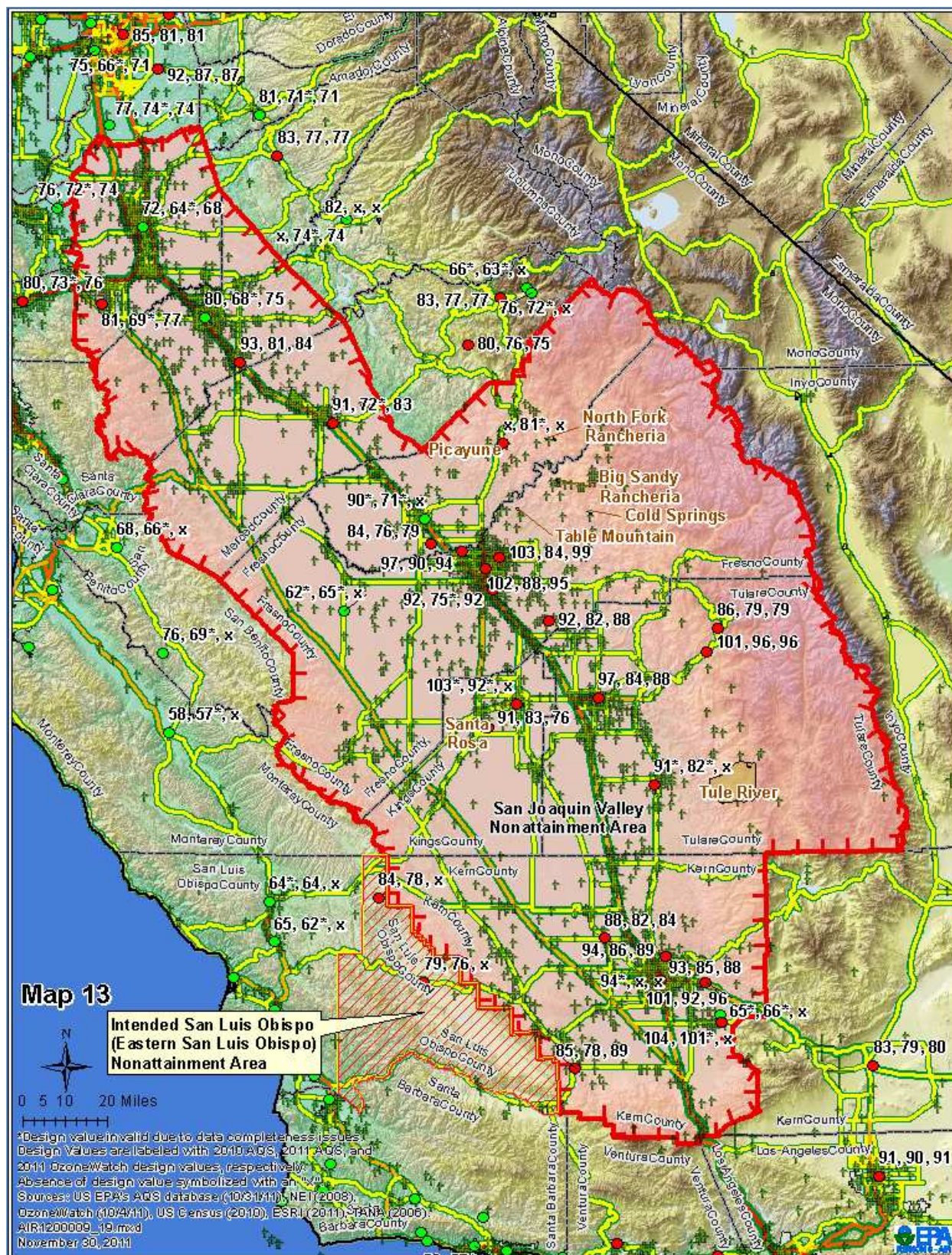
Table 2. Air Quality Data.

| County | State Recommended Nonattainment? | 2008-2010 Design Value (parts per billion) |
|-----------------|----------------------------------|--------------------------------------------|
| Fresno, CA | Yes | 103 |
| Kern, CA | Yes (partial) | 104 |
| Kings, CA | Yes | 91 |
| Madera, CA | Yes | 84 |
| Merced, CA | Yes | 91 |
| San Joaquin, CA | Yes | 81 |
| Stanislaus, CA | Yes | 93 |
| Tulare, CA | Yes | 101 |

Ozone monitors relevant for comparison to the NAAQS and information from additional data sources within the existing San Joaquin Valley nonattainment area are shown in Appendix 1, Map 13. California's ozone season encompasses the entire year. Certified, quality assured data are available in EPA's Air Quality System (AQS) for all areas through calendar year 2010. Map 13 in Appendix 1 includes preliminary 2011 DVs for the existing San Joaquin Valley nonattainment area for informational purposes only. For each monitor, Appendix 1 lists the monitor, the 2008-2010 DV (certified and quality assured in AQS), the preliminary 2009-2011 DV (as available in AQS as of October 31, 2011), and a preliminary 2009-2011 DV using 2011 data from OzoneWatch¹. Absence of a DV is symbolized with an "x".

Appendix 3 lists the DVs for monitors in the existing San Joaquin Valley nonattainment area. Monitors shown in bold are the DV monitors (i.e., the monitor with the highest DV) for each individual county. Monitors shown in red font are the DV monitor for the nonattainment area. Values with an asterisk do not meet data completeness, and therefore those DVs are not relevant for comparison to the NAAQS and are solely provided for informational purposes.

¹ The preliminary 2009-2011 design values indicated by OzoneWatch are based on AQS ozone data from 2009, 2010, and 2011, supplemented with 2011 data reported to AirNow (<http://airnow.gov/>) on days for which no data currently exist in the AQS database. 2009 and 2010 AQS data were retrieved on July 20, 2011; 2011 AQS and AirNow data were compiled on October 4, 2011. Ultimately, attainment of the 8-hour ozone NAAQS will be determined entirely from data in AQS.



From Appendix 1, Map 13: For map legend describing monitors, emissions, traffic, population, and boundaries, see Appendix 1

Monitors in every county listed above in Table 1 show a violation of the 2008 8-hour ozone standard based on 2008-2010 data. Therefore, these areas are included in the intended San Joaquin Valley nonattainment area. A county (or partial county) must also be designated nonattainment if it contributes to a violation in a nearby area. Each county without a violating monitor that is located near a county with a violating monitor has been evaluated based on the weight of evidence of the five factors to determine whether it contributes to the nearby violation.

Factor 2: Emissions and Emissions-Related Data

EPA evaluated emissions of ozone precursors, nitrogen oxides (NO_x) and volatile organic compounds (VOC), and other emissions-related data that provide information on areas contributing to violating monitors.

Emissions data

EPA evaluated county-level emission data for NO_x and VOC derived from the 2008 National Emissions Inventory (NEI), version 1.5. This is the most recently available NEI. (See <http://www.epa.gov/ttn/chief/net/2008inventory.html>) Emissions in a nearby area indicate the potential for the area to contribute to observed violations. We will also consider any additional information we receive on changes to emissions levels that are not reflected in recent inventories. These changes include emissions reductions due to permanent and enforceable emissions controls that will be in place before final designations are issued and emissions increases due to new sources.

Table 3 shows emissions of NO_x and VOC (given in tons per year) for violating and nearby counties that we considered for inclusion in the San Joaquin Valley area.

Table 3. Total 2008 NO_x and VOC Emissions.

| County | State Recommended Nonattainment? | NO _x (tpy) | VOC (tpy) |
|-----------------|----------------------------------|-----------------------|-----------|
| Fresno, CA | Yes | 37,561 | 27,617 |
| Kern, CA | Yes (partial) | 70,256 | 32,300 |
| Kings, CA | Yes | 9,139 | 5,230 |
| Madera, CA | Yes | 10,006 | 6,398 |
| Merced, CA | Yes | 17,857 | 10,223 |
| San Joaquin, CA | Yes | 31,674 | 16,587 |
| Stanislaus, CA | Yes | 16,769 | 15,394 |
| Tulare, CA | Yes | 15,411 | 16,273 |
| Areawide: | | 208,673 | 130,022 |

The ozone precursor emissions listed for these eight counties contribute to monitored violations in the San Joaquin Valley. Emissions in the San Joaquin Valley of NO_x and VOCs are approximately half of the NO_x and VOC emissions in the Los Angeles-South Coast Air Basin nonattainment area, and are substantially greater than emissions within the Sacramento Metro nonattainment area (70,578 and 56,819 tons per year of NO_x and VOC, respectively). San Joaquin Valley's total NO_x emissions are higher and VOC emissions are slightly lower than emissions within the San Francisco Bay Area nonattainment area (172,116 and 140,546 tons per year of NO_x and VOC, respectively). Stationary source emissions of ozone precursors are clustered along the major roadways that run northwest-southeast through the center of the valley (see Map 13 in Appendix 1). Kern County, located in the southern portion of the San Joaquin Valley is the largest source of NO_x and VOC emissions in the San

Joaquin Valley. The majority of sources in Kern County are in the western portion of the county, which is the portion included in the San Joaquin Valley nonattainment area. The majority of the eastern portion of Kern County is intended to comprise a separate nonattainment area, the Kern County (Eastern Kern) nonattainment area. San Joaquin County, in the northern portion of the San Joaquin Valley, and Fresno County, in the central portion of the San Joaquin Valley, are the second and third highest sources of NO_x and VOCs, indicating that sources of ozone precursor emissions are distributed throughout the San Joaquin Valley.

Population density and degree of urbanization

EPA evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. These include ozone-creating emissions from on-road and off-road vehicles and engines, consumer products, residential fuel combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NO_x and VOC emissions, which contribute to ozone formation. Rapid population or growth in vehicle miles traveled (VMT) (see below) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the area associated with area source and mobile source emissions as part of the nonattainment area. Table 4 shows the population, population density, and population growth information for each county in the area.

Table 4. Population and Growth.

| County | State Recommended Nonattainment? | 2010 Population | 2010 Population Density (1000 pop/sq mi) | Absolute change in population (2000-2010) | Population % change (2000-2010) |
|-----------------|----------------------------------|-----------------|------------------------------------------|-------------------------------------------|---------------------------------|
| Fresno, CA | Yes | 930,450 | 0.15 | 128,327 | +16% |
| Kern, CA | Yes (partial) | 839,631 | 0.10 | 176,121 | +27% |
| Kings, CA | Yes | 152,982 | 0.11 | 23,206 | +18% |
| Madera, CA | Yes | 150,865 | 0.07 | 27,293 | +22% |
| Merced, CA | Yes | 255,793 | 0.13 | 44,241 | +21% |
| San Joaquin, CA | Yes | 685,306 | 0.48 | 117,283 | +21% |
| Stanislaus, CA | Yes | 514,453 | 0.34 | 64,745 | +14% |
| Tulare, CA | Yes | 442,179 | 0.09 | 73,484 | +20% |
| Areawide: | | 3,971,659 | 0.14 | 654,700 | +20% |

Sources: U.S. Census Bureau population estimates for 2010 as of August 4, 2011

(http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_PL_GCTPL2.STO5&prodType=table)

During the 2000 - 2010 period, population in the eight counties that comprise the San Joaquin Valley nonattainment area exhibited among the strongest growth of all nonattainment areas in California. Although the total population in San Joaquin Valley (nearly 4 million people) is small compared to the population of Los Angeles-South Coast Air Basin Population (17 million), the absolute change in population over this period in San Joaquin Valley is similar to the absolute change in population in the Sacramento Metro and San Francisco Bay Area nonattainment areas (located upwind of the San Joaquin Valley) combined. Population growth is associated with even greater growth in VMT, which are themselves associated with emissions of ozone precursors (see next section).

Traffic (VMT) data

EPA evaluated the commuting patterns of residents in the area, as well as the total VMT for each county. In combination with the population/population density data and the location of main transportation arteries (see above), this information helps identify the probable location of non-point source emissions. A county with high VMT indicates the presence of motor vehicle emissions that may contribute to ozone formation that contributes to nonattainment in the area. Rapid population or VMT growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 5 shows total 2008 VMT.

Table 5. Traffic (VMT) data.

| County | State Recommended Nonattainment? | 2008 VMT* (million miles) |
|-----------------|----------------------------------|---------------------------|
| Fresno, CA | Yes | 8,307 |
| Kern, CA | Yes (partial) | 8,578 |
| Kings, CA | Yes | 1,101 |
| Madera, CA | Yes | 1,763 |
| Merced, CA | Yes | 2,231 |
| San Joaquin, CA | Yes | 5,261 |
| Stanislaus, CA | Yes | 3,773 |
| Tulare, CA | Yes | 4,357 |
| Areawide: | | 35,372 |

*MOBILE model VMTs are those inputs into the NEI version 1.5.

Total VMT in the San Joaquin Valley is lower than VMT in the South Coast Air Basin (nearly 143 billion VMT in 2008) and the upwind nonattainment area of the San Francisco Bay Area (nearly 58 billion VMT in 2008). Highest truck and non-truck traffic volumes occur along the major roadways that run north-south through the San Joaquin Valley (see Map 13 in Appendix 1), with relatively lighter traffic on roadways that run east-west to other nonattainment counties or counties in attainment with the 2008 ozone NAAQS.

Factor 3: Meteorology (weather/transport patterns)

EPA evaluated available meteorological data to help determine how meteorological conditions, such as weather, transport patterns and stagnation conditions, would affect the fate and transport of precursor emissions contributing to ozone formation.

Wind flow most frequently comes from the west-northwest, as shown by the 30-year average of National Weather Service summer wind direction frequencies computed by EPA and depicted in the “radar”-style wind rose diagram below (Figure 2). This is consistent with the geographic orientation of the San Joaquin Valley and its relationship to the Golden Gate (at the mouth of San Francisco Bay), the key route for air flow between the Pacific Ocean and the Central Valley of California. San Joaquin and Stanislaus, the northernmost two counties, have an additional southerly component more than the other counties, which may reflect their locations closer to the Sacramento Valley, the northern half of California’s Central Valley.

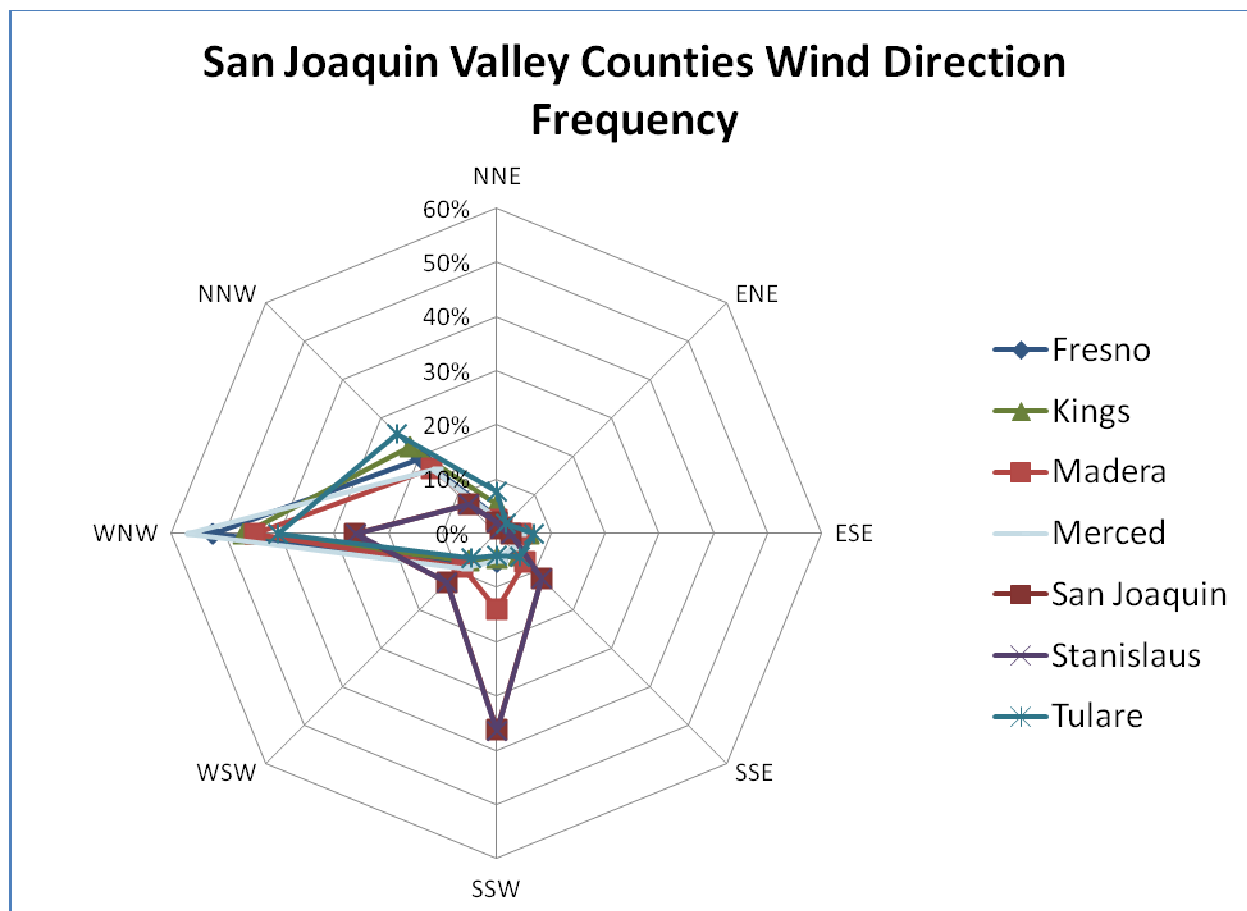


Figure 2

The San Joaquin Valley 2007 Ozone Plan² includes a conceptual description of ozone formation in the area. It notes phenomena conducive to high ozone concentrations in the San Joaquin Valley. These include the Sierra Nevada, Tehachapi, and South Coast mountain ranges that surround the San Joaquin Valley on the east, south, and west, and which restrict air flow and ventilation. The summers are hot with little rainfall or cloud cover (Fresno averages 36 days per year with temperatures 100°F or hotter), and with frequent inversions that trap pollutants below them. Sea breezes (or “marine flows”) may bring pollutants from coastal areas into the San Joaquin Valley from the northwest. Recirculation of San Joaquin Valley pollutants can occur via nighttime drainage winds (“slope flows”), which return pollutants that were transported up into mountain valleys during the day. Recirculation can also occur via the “Fresno eddy”, a counterclockwise flow that returns polluted air that would otherwise escape through southern mountain passes. All of these contribute to the buildup of ozone and precursors, due to enhanced photochemical formation and to restricted dispersion. Also noted are various flow patterns, including transport between the San Joaquin Valley and both the Sacramento Valley to the north and the San Francisco Bay Area to the northwest. While there is interchange of air between San Joaquin Valley and these nearby areas, its unique flow patterns make it meteorologically distinct from those areas.

While there is no topographic barrier between the San Joaquin Valley and the Sacramento Valley to the north, and at times there can be transport between them, generally the air flow from the Pacific Ocean

² “Photochemical Modeling Protocol for Developing Strategies to Attain the Federal 8-hour Ozone Air Quality Standard in Central California,” California Air Resources Board, May 22, 2007; included as Appendix C to the ARB Staff Report. See especially pp.6-8. Available at <http://www.arb.ca.gov/planning/sip/2007sip/sjv8hr/sjvozone.htm>

through Golden Gate toward the east tends to bifurcate where the two valleys meet, providing some degree of separation much of the time.

EPA notes that the San Joaquin Valley may influence ozone concentrations in the Southern Mountain Counties and perhaps the Central Mountain Counties of the “Mountain Counties Air Basin”, namely Amador, Calaveras, Mariposa, and Tuolumne Counties. The western portions of these counties are likely also subject to the meteorology of the San Joaquin Valley, but even at their western ends those counties are in the foothills of the Sierra Nevada mountain range, rather than in the flats of San Joaquin Valley, and on the whole those counties are more rural and largely mountainous.

Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis evaluates the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the area.

The San Joaquin Valley is the southern half of the large, flat, Central Valley of California. Except to the north, it is surrounded on all sides by tall mountains. These include the Sierra Nevadas to the east, the Tehachapis to the south and southwest, and South Coast ranges to the west. These ranges tend to restrict air flow and ventilation.

While there is no topographic barrier between the San Joaquin Valley and the Sacramento Valley to the north, and at times there can be transport between them, generally the air flow from the Pacific Ocean through Golden Gate toward the east tends to bifurcate where the two valleys meet, providing some degree of separation much of the time.

Factor 5: Jurisdictional boundaries

For each potential nonattainment area, we considered existing jurisdictional boundaries to provide a clearly defined legal boundary and to help identify the areas appropriate for carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment area boundaries for ozone or other urban-scale pollutants, county lines, air district boundaries, township boundaries, areas covered by a metropolitan planning organization, state lines, areas of Indian country, and urban growth boundary. Where existing jurisdictional boundaries were not adequate or appropriate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates were considered.

The San Joaquin Valley area has previously established nonattainment boundaries associated with both the 1-hour and the 1997 8-hour ozone NAAQS. The state has recommended the same boundary for the 2008 ozone NAAQS.

The state recommended the same boundary for the San Joaquin Valley as the San Joaquin Valley Air Pollution Control District’s (SJVAPCD’s) jurisdictional boundary. This large district manages one of the only extreme nonattainment areas in the nation. It contains seven whole counties (San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings and Tulare) and part of Kern County (western part). The boundary between west and east Kern County is a generally north-south line bisecting the county along the Sierra Nevada mountain range. This line is also the boundary between the jurisdictions of the SJVAPCD and the Eastern Kern Air Pollution Control District (Eastern Kern APCD). The boundary of the SJVAPCD in Kern County is also the boundary of the San Joaquin Valley Air Basin. The eastern

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portion of Kern County lies to the east of the Sierra Nevada mountain range and lies in the Mojave Desert Air Basin.

The San Joaquin Valley intended nonattainment area includes the Fresno-Madera combined statistical area (CSA), the entireties of the Stockton, Modesto, Merced, Hanford-Corcoran, and Visalia-Porterville metropolitan statistical areas (MSA). The entirety of Kern County forms the Bakersfield-Delano MSA, which EPA intends to split between the San Joaquin Valley and the East Kern County nonattainment areas.

The San Joaquin Valley area also includes areas of Indian country. As defined at 18 U.S.C. 1151, “Indian country” refers to: “(a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.” EPA recognizes the sovereignty of tribal governments, and has attempted to take the desires of the tribes into account in establishing appropriate nonattainment area boundaries.

The California Valley Miwok Tribe (California Valley) is a federally recognized tribe with non-contiguous reservation lands in both Calaveras County and San Joaquin County. The Tribe’s reservation lands and the surrounding proposed nonattainment areas are shown in Maps 1a and 13a in Appendix 2. Due to the non-contiguous nature of these lands, the portions of California Valley in San Joaquin County will be designated as part of the San Joaquin Valley nonattainment area.

Evaluation of Recommendation from Picayune Rancheria of Chuckchansi Indians of California

Pursuant to section 107(d) of the Clean Air Act, EPA must designate as “nonattainment” those areas that violate the NAAQS and those areas that contribute to violations. EPA has evaluated the recommendation of the Picayune Rancheria of Chuckchansi Indians of California (Picayune Rancheria) based on currently available information.

The Picayune Rancheria is a federally recognized tribe located in the central portion of the Madera-Chowchilla metropolitan area, in Madera County. Map 13a in Appendix 2 shows the locations of the areas of Indian country within the San Joaquin Valley nonattainment area.

In 2004, EPA previously established the San Joaquin Valley nonattainment area boundaries for the 1997 ozone NAAQS that included Madera County which encompasses Picayune Rancheria.

In a letter dated November 14, 2011, Picayune Rancheria recommended that the Tribe be designated as “unclassifiable” for the 2008 ozone NAAQS. Based on the factors discussed below, EPA preliminarily concludes that the Picayune Rancheria should be designated “nonattainment” as part of the San Joaquin Valley nonattainment area for the 2008 ozone NAAQS.

Air Quality Data

Currently, Picayune Rancheria operates one ozone monitor within the tribal boundaries. Map 13 in Appendix 1 shows monitor locations for the San Joaquin Valley nonattainment area. For each monitor, Appendix 1 shows the monitor location and lists the 2008-2010 design value, the preliminary 2009-2011 design value (as available in AQS as of October 31, 2011), and a preliminary 2009-2011 design value using 2011 data from OzoneWatch³.

The typical pattern for ozone concentrations in the San Joaquin Valley is an increase in concentration to the south and the east. Ozone concentrations tend to increase with elevation in the Sierra Nevada Mountains as a result of transport of precursors and ozone by the upslope flow discussed in Factor 3 above. The Picayune monitor started reporting data to AQS in August of 2011, and therefore does not have three years of data necessary for calculating a valid design value. Picayune's currently available data for August 2011 shows eight days in that month with 8-hour ozone concentrations exceeding the standard. Surrounding monitors in Madera and other neighboring counties show violations of the 2008 8-hour standard based on 2008-2010 data. We believe that these air monitoring data are representative of the air quality on the Tribe's reservation land.

Emissions and Emissions-Related Data

The Picayune Rancheria consists of 820.89 acres of reservation lands, which is home to approximately 1,000 tribal members. The Picayune Rancheria does not have any major stationary sources within the tribal boundaries. Sources include a casino and hotel, several restaurants, a gas station, and a wastewater treatment plant. Also, California State Route Highway 41 passes through the Picayune Rancheria.

General information on emissions, population density and degree of urbanization, traffic and commuting patterns for the San Joaquin Valley nonattainment area can be found in Factor 2 of the intended San Joaquin Valley nonattainment area technical analysis, above. This information is relevant for both the densely-populated coastal areas as well as the less-populated inland areas that are extensive throughout the intended San Joaquin Valley nonattainment area.

Meteorology (Weather/Transport Patterns)

The Picayune Rancheria is in the foothills on the eastern side of the San Joaquin Valley and is similar to other eastern parts of the central and southern San Joaquin Valley. Therefore, the information for the intended San Joaquin Valley nonattainment area discussed in Factor 3 of the intended San Joaquin Valley nonattainment area technical analysis, above, adequately characterizes meteorology and transport patterns for the Picayune Rancheria.

Geography/Topography

Although the terrain is complex, the Picayune Rancheria area does not have any geographical or topographical barriers that would prevent air pollution transport from the intended San Joaquin Valley nonattainment area from the west. Therefore, geography and topography support including the Picayune Rancheria with the surrounding area.

³ The preliminary 2009-2011 design values indicated by OzoneWatch are based on AQS ozone data from 2009, 2010, and 2011, supplemented with 2011 data reported to AirNow (<http://airnow.gov/>) on days for which no data currently exist in the AQS database. 2009 and 2010 AQS data were retrieved on July 20, 2011; 2011 AQS and AirNow data were compiled on October 4, 2011. Ultimately, attainment of the 8-hour ozone NAAQS will be determined entirely from data in AQS

Jurisdictional Boundaries

The Picayune Rancheria is a federally recognized tribe located in the central portion of the Madera-Chowchilla metropolitan area, in Madera County. Map 13a in Appendix 2 shows the locations of the areas of Indian country within the San Joaquin Valley nonattainment area.

Conclusion for Picayune Rancheria

The Picayune Rancheria recommended that the Tribe be designated as “unclassifiable”, based on the lack of complete monitoring data from their monitor. However, due to available representative data from surrounding monitors and indications of exceedances from the limited data available from the Tribe’s monitor, EPA preliminarily concludes that Picayune Rancheria should be designated “nonattainment” as part of the San Joaquin Valley intended nonattainment area for the 2008 ozone NAAQS.

Conclusion

Based on the assessment of factors described above, EPA has preliminarily concluded that the following counties should be included as part of the San Joaquin Valley nonattainment area because they are violating the 2008 ozone NAAQS: San Joaquin County, Stanislaus County, Merced County, Madera County, Fresno County, Kings County, Tulare County, and Kern County (partial). EPA’s intended boundary for San Joaquin Valley also includes eight different areas of Indian country, as listed in Table 1.

The Clean Air Act requires EPA to designate any area as nonattainment if it violates a NAAQS or if it contributes to a violation in a nearby area. Air quality data (Factor 1) show that monitors in each of the counties of the existing San Joaquin Valley nonattainment area (which includes counties as listed above in Table 1) show a violation of the 2008 8-hour ozone standard based on 2008-2010 data. Therefore, Factor 1 suggests that these areas should be included in the San Joaquin Valley nonattainment area.

EPA’s review of emissions and emission related data (Factor 2), as well as meteorology and weather or transport patterns (Factor 3), geography and topography (Factor 4), and jurisdictional boundaries (Factor 5) support the nonattainment boundaries recommended by the state. The state’s recommendation for the San Joaquin Valley nonattainment area for the 2008 ozone standard is consistent with the existing nonattainment area under the 1997 8-hour ozone NAAQS. The area has its own air pollution control district and this district is one of the largest in the nation. The area also is coterminous with the entirety of the San Joaquin Valley Air Basin. The area contains major population centers and other sources of ozone precursor emissions that contribute to violations in the air basin.

The split of Kern County between the San Joaquin Valley and the East Kern County intended nonattainment areas is consistent with current ozone designations, the state’s recommendations for these areas, and with the factors that EPA applies to setting nonattainment area boundaries. EPA intends to designate the western portion of the county as nonattainment with San Joaquin Valley and the eastern portion with the East Kern County nonattainment area. The county is bisected in a north-south direction in the central part of the county by the southern end of the Sierra Nevada mountain range, which results in different meteorology in the two portions of the county. The Eastern Kern APCD separates the eastern portion of the county from the San Joaquin Valley APCD portion.

Given the preceding analysis, EPA intends to designate the same area as nonattainment for the 2008 ozone NAAQS that is currently nonattainment for the 1997 ozone NAAQS.

EPA's intended boundary for San Joaquin Valley also includes eight different areas of Indian country. EPA received a recommendation from the Picayune Rancheria to be designated "unclassifiable" based on the lack of complete monitoring data from its monitor. Based on available information from surrounding monitors, the limited, available data from the Tribe's monitor, and the analysis described above, EPA has preliminarily concluded that Picayune Rancheria should be designated "nonattainment" as part of the San Joaquin Valley nonattainment area for the 2008 ozone NAAQS. Therefore, these eight areas of Indian country are included in the intended San Joaquin Valley nonattainment area.

Technical Support Document for 2008 Ozone NAAQS Designations

California Area Designations for the 2008 Ozone National Ambient Air Quality Standards

Technical Analysis for San Luis Obispo (Eastern San Luis Obispo)

Figure 1 is a map of San Luis Obispo County. The map provides other relevant information including the locations and design values of air quality monitors, county names and boundaries and indicates EPA's intended partial county nonattainment designation. If this nonattainment designation is finalized, San Luis Obispo (Eastern San Luis Obispo) would be a new ozone nonattainment area. See Map 14 in Appendix 1 (and inserted under Factor 1, below) for a detailed map of the partial county boundary that EPA intends to designate nonattainment.

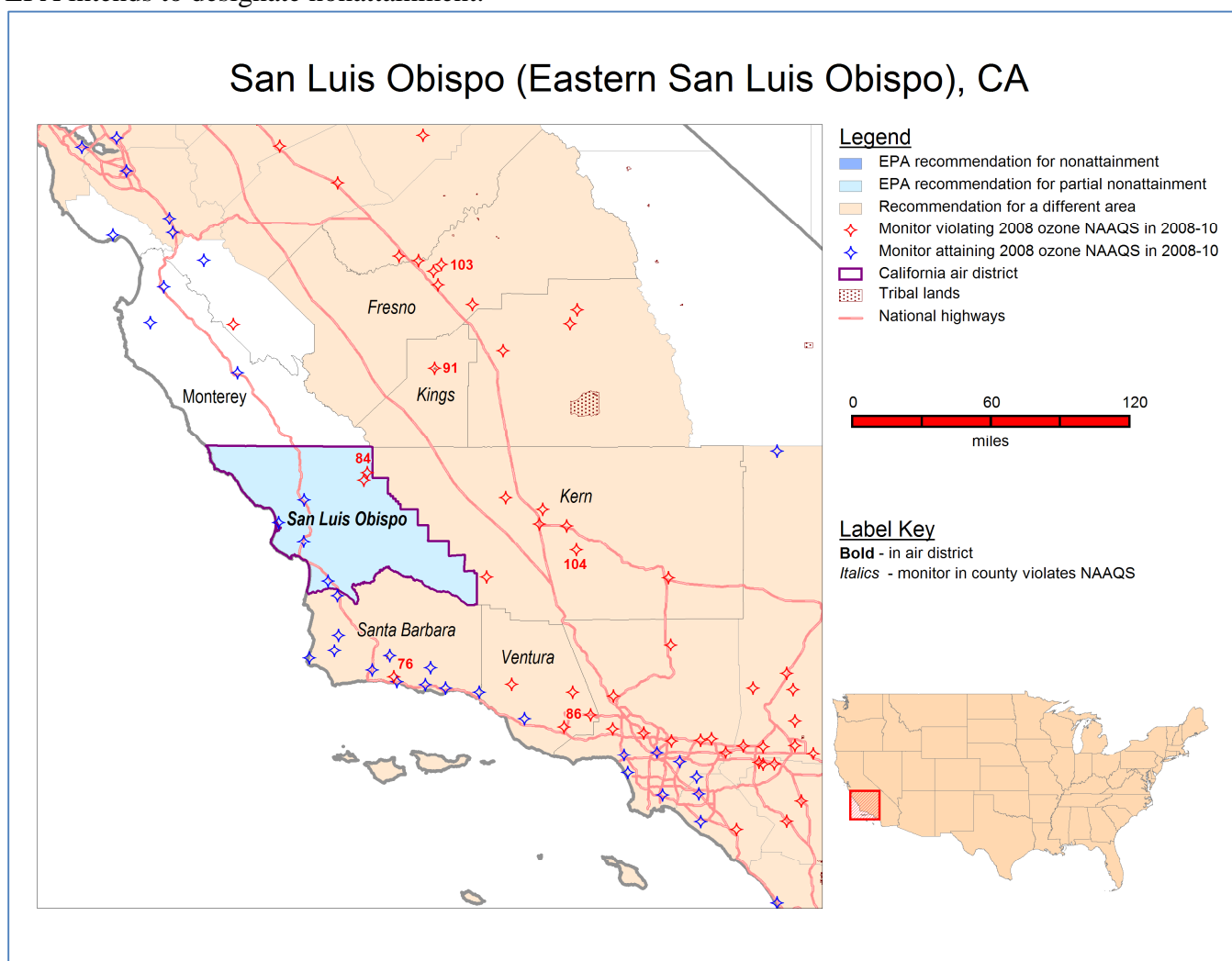


Figure 1

Note: The map shown in Figure 1 provides 8-hour ozone design values in parts per billion (ppb) based on data from the 2008-2010 period (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. For each particular area, Factor 1 and Appendix 3 describe the air quality data relevant for our intended nonattainment decisions.

In March 2009, California recommended that a new partial-county area be designated as “nonattainment” for the 2008 ozone NAAQS based on air quality data from 2006-2008 (letter from James Goldstene, Executive Officer, California Air Resources Board, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, dated March 11, 2009). California provided an update to the original recommendation in October 2011 based on air quality data from 2008-2010 and preliminary 2009-2011 data, but did not revise its recommendation for San Luis Obispo County. The 2009 and 2011 recommendations are based on data from Federal Equivalent Method (FEM) monitors sited and operated in accordance with 40 CFR Part 58 (letter from Lynn Terry, Deputy Executive Officer, California Air Resources Board, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, dated October 12, 2011).

After considering these recommendations and based on EPA's technical analysis described below, EPA intends to designate San Luis Obispo County (partial) in California as “nonattainment” for the 2008 ozone NAAQS, as the San Luis Obispo (Eastern San Luis Obispo) nonattainment area.

Table 1. State’s or Tribe’s Recommended and EPA’s Intended Designated Nonattainment Counties or Areas of Indian country for San Luis Obispo (Eastern San Luis Obispo).

| San Luis Obispo (Eastern San Luis Obispo) | State or Tribe-Recommended Nonattainment Counties or Areas in Indian country | EPA Intended Nonattainment Counties or Areas in Indian Country |
|------------------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------|
| San Luis Obispo County | San Luis Obispo County (p) | San Luis Obispo County (p) |
| No areas of Indian country located within the nonattainment area | | |

p = partial

Factor Assessment

Factor 1: Air Quality Data

For this factor, we considered 8-hour ozone design values in parts per million (ppm) for air quality monitors in San Luis Obispo County, based on data from the 2008-2010 period (i.e., the 2010 design value, or DV) and preliminary data from the 2009-2011 period (i.e., the preliminary 2011 DV). A monitor’s DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2008 ozone NAAQS are met at a monitor when the annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years, is 0.075 ppm (75 parts per billion (ppb)) or less. A DV is only valid if minimum data completeness criteria are met. See 40 CFR part 50 Appendix P. Where several monitors are located in a county (or a designated nonattainment area or maintenance area), the DV for the county or area is determined by the monitor with the highest level.

[Note: Monitors that are eligible for providing design value data generally include State and Local Air Monitoring Stations (SLAMS) that are sited in accordance with 40 CFR Part 58, Appendix D (Section 4.1) and operating with a federal reference method (FRM) or federal equivalent method (FEM) monitor that meets the requirements of 40 CFR part 58, appendix A. All data from a special purpose monitor (SPM) using an FRM or FEM which has operated for more than 24 months is eligible for comparison to the NAAQS unless the monitoring agency demonstrates that the data came from a particular period during which the requirements of appendix A (quality assurance requirements) or appendix E (probe and monitoring path siting criteria) were not met.]

Certified, quality assured data are available in EPA's Air Quality System (AQS) for all areas through calendar year 2010. Ozone monitors relevant for comparison to the NAAQS and information from additional data sources within San Luis Obispo County are shown in Appendix 1, Map 14 (also inserted below). The 2010 DV for the ozone NAAQS for San Luis Obispo County is shown in Table 2.

Table 2. Air Quality Data.

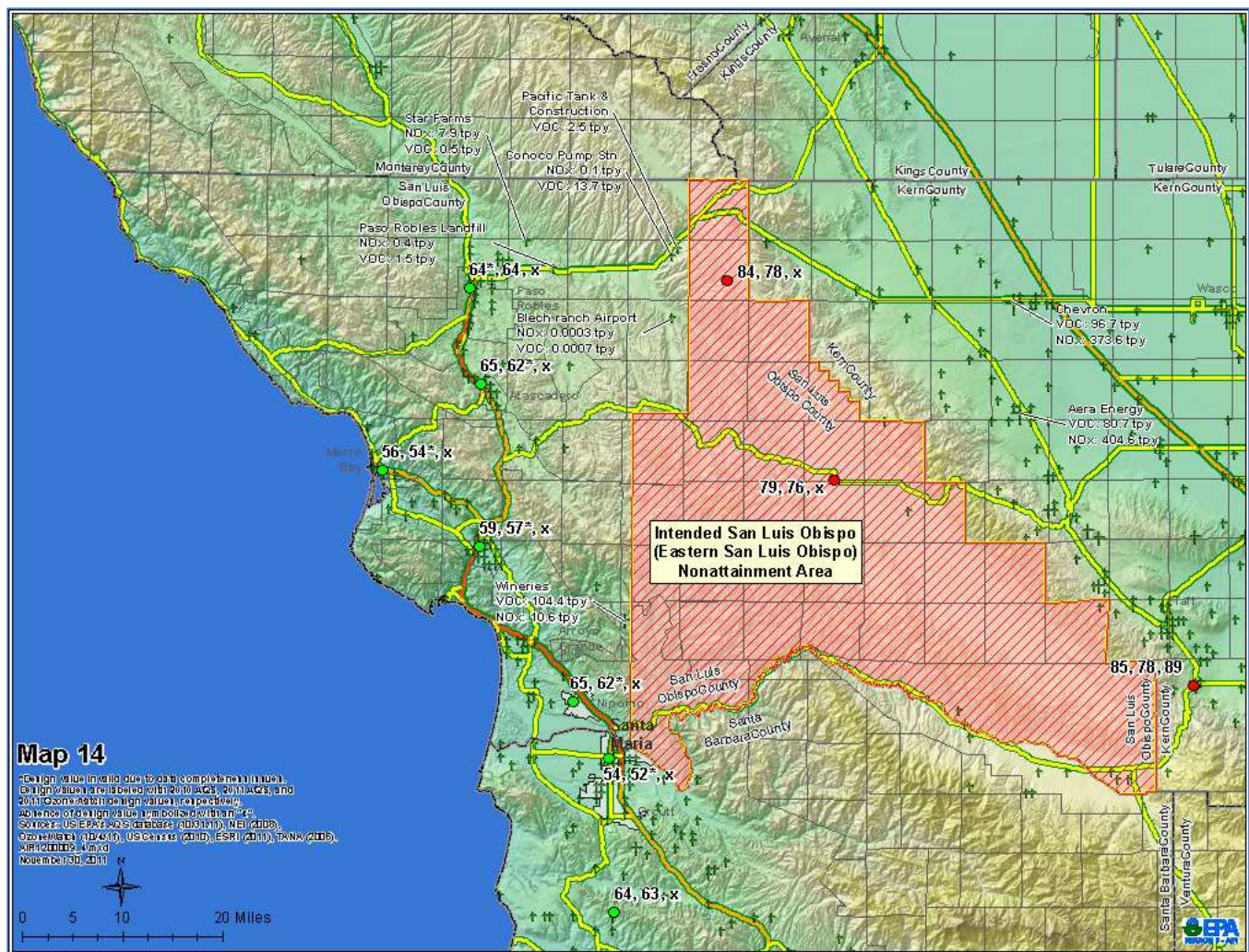
| County | State Recommended Nonattainment? | 2008-2010 Design Value (parts per billion) |
|---------------------|-------------------------------------|-----------------------------------------------|
| San Luis Obispo, CA | Yes (partial) | 84 |

California's ozone season encompasses the entire year. Preliminary data from part of calendar year 2011 is available in AQS for most areas, however, these data have not yet been certified and quality assured. States are required to certify data by May 1st of the following year. California Air Resources Board (ARB) and San Luis Obispo Air Pollution Control District (APCD) have indicated that they plan to certify 2011 data early for San Luis Obispo County. EPA's designation recommendation for this area is therefore based on certified 2008-2010 data and is further informed by preliminary 2009-2011 data.

Maps contained in Appendix 1 show the geographic distribution of monitors. Map 14 shows monitor locations for San Luis Obispo County. For each monitor, Appendix 1 lists the monitor, the 2008-2010 DV (certified and quality assured in AQS), the preliminary 2009-2011 DV (as available in AQS as of October 31, 2011), and a preliminary 2009-2011 DV using 2011 data from OzoneWatch¹. Absence of a DV is symbolized with an "x".

Appendix 3 lists preliminary 2009-2011 DVs for San Luis Obispo County, either from AQS (as available in AQS as of October 31, 2011) or from OzoneWatch (as calculated on October 4, 2011). Appendix 3 lists the higher of these two preliminary 2009-2011 DVs. Monitors shown in bold are the DV monitors (i.e., the monitor with the highest DV) for each individual county. Monitors shown in red font are the DV monitor for the nonattainment area. Values with an asterisk do not meet data completeness, and therefore those DVs are not relevant for comparison to the NAAQS and are solely provided for informational purposes.

¹ The preliminary 2009-2011 design values indicated by OzoneWatch are based on AQS ozone data from 2009, 2010, and 2011, supplemented with 2011 data reported to AirNow (<http://airnow.gov/>) on days for which no data currently exist in the AQS database. 2009 and 2010 AQS data were retrieved on July 20, 2011; 2011 AQS and AirNow data were compiled on October 4, 2011. Ultimately, attainment of the 8-hour ozone NAAQS will be determined entirely from data in AQS.



From Appendix 1, Map 14: For map legend describing monitors, emissions, traffic, population, and boundaries, see Appendix 1.

The State of California recommended a partial county nonattainment designation for San Luis Obispo County. As shown on Map 14 in Appendix 1, the only violating monitors in San Luis Obispo County are in the eastern portion of the county, based on both 2008-2010 data and preliminary 2009-2011 data. All five monitors in the western portion of the county are attaining the 2008 ozone NAAQS and both monitors in the eastern portion of the county are violating using both 2010 DVs and preliminary 2011 DVs.

If ARB and San Luis Obispo APCD do not certify the 2011 air quality data early for San Luis Obispo County, EPA will base its decisions on the certified air quality data from 2008-2010. As previously noted, the geographic distribution of violating monitors remains the same using 2010 data and using preliminary 2011 data.

A county (or partial county) must also be designated nonattainment if it contributes to a violation in a nearby area. Each county without a violating monitor that is located near a county with a violating monitor has been evaluated based on the weight of evidence of the five factors to determine whether it contributes to the nearby violation.

Factor 2: Emissions and Emissions-Related Data

EPA evaluated emissions of ozone precursors, nitrogen oxides (NO_x) and volatile organic compounds (VOC), and other emissions-related data that provide information on areas contributing to violating monitors.

Emissions data

EPA evaluated county-level emission data for NO_x and VOC derived from the 2008 National Emissions Inventory (NEI), version 1.5. This is the most recently available NEI (see <http://www.epa.gov/ttn/chief/net/2008inventory.html>). Emissions in a nearby area indicate the potential for the area to contribute to observed violations. We will also consider any additional information we receive on changes to emissions levels that are not reflected in recent inventories. These changes include emissions reductions due to permanent and enforceable emissions controls that will be in place before final designations are issued and emissions increases due to new sources.

Table 3 shows emissions of NO_x and VOC (given in tons per year) for San Luis Obispo County.

Table 3. Total 2008 NO_x and VOC Emissions.

| County | State Recommended Nonattainment? | NO _x (tpy) | VOC (tpy) |
|---------------------|----------------------------------|-----------------------|-----------|
| San Luis Obispo, CA | Yes (partial) | 7,463 | 8,460 |
| Areawide: | | 7,463 | 8,460 |

The eastern part of San Luis Obispo County has very few sources (see Map 14 of Appendix 1). Almost all stationary sources in the county are found at lower elevations and are located in the western part of the county, close to attaining monitors within the county and a substantial distance away from any violating monitors. In contrast, there are a large number of large stationary sources beyond the county lines to the east, on the other side of the coastal range that divides the coastal portion of the San Luis Obispo County from the San Joaquin Valley.

Population density and degree of urbanization

EPA evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. These include ozone-creating emissions from on-road and off-road vehicles and engines, consumer products, residential fuel combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NO_x and VOC emissions, which contribute to ozone formation. Rapid population growth or growth in vehicle miles traveled (VMT) (see below) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the area associated with area source and mobile source emissions as part of the nonattainment area. Table 4 shows the population, population density, and population growth information for San Luis Obispo County.

Table 4. Population and Growth.

| County | State Recommended Nonattainment? | 2010 Population | 2010 Population Density (1000 pop/sq mi) | Absolute change in population (2000-2010) | Population % change (2000-2010) |
|---------------------|----------------------------------|-----------------|------------------------------------------|-------------------------------------------|---------------------------------|
| San Luis Obispo, CA | Yes (partial) | 269,637 | 0.08 | 21,761 | +9% |
| Areawide: | | 269,637 | 0.08 | 21,761 | +9% |

Sources: U.S. Census Bureau population estimates for 2010 as of August 4, 2011

(http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_PL_GCTPL2.STO5&prodType=table)

Emissions associated with the population centers in San Luis Obispo County are not expected to cause violations at the higher elevation air quality monitors in the eastern part of San Luis Obispo County. There are relatively few population centers in San Luis Obispo County and they occur primarily on the western portion of the county, near the coast as well as along the major roadways (see Map 14a in Appendix 2). The largest population centers of San Luis Obispo, Atascadero, and Paso Robles are still quite small compared to population centers in neighboring Kern County in the San Joaquin Valley nonattainment area (for example, the Bakersfield-Delano Metro Area – see Map 13a in Appendix 2). The population density of the county is slightly lower than Kern County (approximately 1.3 times smaller) and the overall population of San Luis Obispo County is over 3 times smaller than Kern County. Compared to other nonattainment coastal counties like Ventura County or San Diego County, San Luis Obispo County has a very low population density: over 5 times lower than Ventura County and nearly 9 times lower than San Diego County.

Over 2000 - 2010, the population of San Luis Obispo County has grown at a rate of approximately 10%, comparable to Ventura County and San Diego County. The population growth rate of the neighboring Kern County over the same period was 27%. Population growth is associated with even greater growth in traffic and commuting patterns, which are themselves associated with emissions of ozone precursors (see next section).

Traffic (VMT) data

EPA evaluated the commuting patterns of residents in the area, as well as the total VMT for each county. In combination with the population/population density data and the location of main transportation arteries (see above), this information helps identify the probable location of non-point source emissions. A county with high VMT indicates the presence of motor vehicle emissions that may contribute to ozone formation and nonattainment in the area. Rapid population or VMT growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 5 shows total 2008 VMT.

Table 5. Traffic (VMT) data.

| County | State Recommended Nonattainment? | 2008 VMT* (million miles) |
|---------------------|----------------------------------|---------------------------|
| San Luis Obispo, CA | Yes (partial) | 3,043 |
| Areawide: | | 3,043 |

*MOBILE model VMTs are those inputs into the NEI version 1.5.

VMT in San Luis Obispo County is roughly 11 times lower than the VMT of San Diego County and 2.6 times lower than the VMT of Ventura County. Similarly, the VMT in San Luis Obispo County is 2.8 times lower than the VMT in Kern County within the adjacent San Joaquin Valley nonattainment area.

Major roads are primarily located near the coast and travel between the northern and southern portions of the county (see Map 14 of Appendix 1). There are relatively few roads that link the eastern and western portions of the county, and these roads experience relatively light non-truck traffic. The greatest non-truck traffic occurs on relatively short stretches of roadway, linking San Luis Obispo to Santa Maria along the coastal route to the south, Morro Bay to the northwest, and Atascadero and Paso Robles to the north. These traffic patterns indicate that the western and eastern portions of the county are generally isolated from each other, with most of the traffic flowing generally in a north-south direction.

Factor 3: Meteorology (weather/transport patterns)

EPA evaluated available meteorological data to help determine how meteorological conditions, such as weather, transport patterns and stagnation conditions, would affect the fate and transport of precursor emissions contributing to ozone formation. EPA reviewed information provided by the State, including the State's 2009 recommendation for the ozone area boundaries, and the 2001 "Assessment of the Impacts of Transported Pollutants on Ozone Concentrations in California." In addition, EPA simulated back trajectories for several days when exceedances of the eight hour ozone NAAQS were measured in 2010 in San Luis Obispo County. EPA also reviewed the wind frequency distribution of wind direction data based on an average of 30 years of National Weather Service information for the months of June, July, and August.

The state argues that in the absence of transport from outside the County, it is likely that exceedances would not occur at the monitoring sites in the eastern portion of San Luis Obispo County. The State recommends that, given that ozone exceedances are limited to the eastern portion of the County, and all other sites in the county meet the standard, that only the eastern portion of San Luis Obispo County should be designated as nonattainment. The State has presented the following information for the eastern portion of San Luis Obispo County as a basis for the March 2009 recommendation for the area's boundaries:²

"San Luis Obispo County is located in California's south central coast region and encompasses coastal, as well as inland areas. The design value³ for the County is 0.084 ppm, measured at the Carrizo Plains School-9640 Carrizo site in the eastern part of the County. This site is located in a populated area and was originally sited to provide information on transport impacts from the San Joaquin Valley. The design value for a second inland, eastern County site, Red Hills, is also above the standard at a level of 0.088 ppm, but only two years of data are available. In contrast to Carrizo Plains, the Red Hills site is located in an unpopulated area. Design values for all other sites in San Luis Obispo County are below the level of the standard, as are design values for sites in counties located both to the north and to the south of San Luis Obispo County. Previous studies have shown that ozone and ozone precursor emissions from the San Joaquin Valley are transported west, impacting sites in eastern San Luis Obispo County, including Carrizo Plains and Red Hills. Ozone concentrations can also be impacted by transport south from the San Francisco Bay Area. In the absence of transport, it is likely that exceedances would not occur at these sites. Therefore, reducing the transport

² Recommended Area Designations for the 2008 Federal 8-Hour Ozone Standard Staff Report State of California Air Resources Board, Revised: March 3, 2009.

³ This information is based on the design value for 2006-2008. The current design values are discussed in Factor 1, above.

impact will be critical to attaining the federal standard. Given that exceedances are limited to the eastern portion of the County, and all other sites meet the standard, ARB recommends that only the eastern portion of San Luis Obispo County be designated as nonattainment.”

The “Assessment of the Impacts of Transported Pollutants on Ozone Concentrations in California”⁴ (California Environmental Protection Agency, Air Resources Board, March 2001), includes a detailed analysis of the transport of ozone from the San Francisco Bay Area and the San Joaquin Valley to San Luis Obispo County. Although the analysis addresses the transport on days with exceedances of the state 1-hour ozone standard in 1998, the discussion of the transport mechanisms provided in the analysis is also applicable to the 2008 8-hour ozone NAAQS.

“All 1996 through 1998 ozone exceedance days were first screened to determine which were violations of the State Ambient Air Quality Standard using the criteria for extreme concentrations. All the violation days were examined with the focus on analyzing examples of “overwhelming”, “significant”, and “inconsequential” ozone transport...

...The major findings supporting the [ARB] staff’s conclusion that the northern County was impacted by significant emissions from the SFBAAB [San Francisco Bay Area Air Basin] are listed below:

- high ozone concentrations in the southern SFBAAB;
- low ozone concentrations at the surface in the NCCAB [North Central Coast Air Basin];
- high ozone concentrations in the elevated portions of NCCAB at Pinnacles;
- surface and aloft northwest to north winds within the first few thousand feet;
- mid-afternoon SFBAAB emissions impact on Pinnacles;
- the progression of the time of the southern SFBAAB to the northern County peak ozone concentration;
- the Paso Robles early evening (1900 PST) ozone concentration peak occurring with increasing northerly winds; and
- light surface northerly winds at Atascadero.

In addition, the following findings suggest that the northern County was impacted by significant emissions from the SJVAB [San Joaquin Valley Air Basin]:

- high ozone concentrations in the SJVAB;
- offshore flow aloft throughout central California;
- State 1-hour ozone exceedances at Black Mountain; and
- deep vertical mixing over the County and southern NCCAB.”⁵

⁴ <http://www.arb.ca.gov/regact/trans01/isor.pdf>

⁵ p. F-15. California Environmental Protection Agency, Air Resources Board. “Assessment of the Impacts of Transported Pollutants on Ozone Concentrations in California”, and p. F-21. “Technical Support for Assessments” <http://www.arb.ca.gov/aqd/transport/assessments/assessments.htm>

The conclusion of ARB's staff was that the northern San Luis Obispo County was impacted by emissions from the San Francisco Bay Area Air Basin and the San Joaquin Valley Air Basin. EPA intends to designate both the San Francisco Bay Area and San Joaquin Valley as their own nonattainment areas.

In addition to reviewing the State's documentation of transport of ozone to San Luis Obispo County, provided above, EPA simulated back trajectories for several days when exceedances of the 8-hour ozone NAAQS were measured in 2010 in San Luis Obispo County. The 8-hour ozone NAAQS was exceeded in San Luis Obispo County on 17 days in 2010. There were several exceedances measured at the Red Hills monitoring site (AQS number 06-079-8005) on July 30, August 24-25, September 1-4 and 24-28, and October 12-15, 2010. There was one exceedance measured at the Carrizo monitoring site (AQS number 06-079-8006) on July 24, 2010. HYSPLIT⁶ back trajectories are presented below for the Red Hills monitoring site (AQS number 06-079-8005) for one day of each episode, specifically August 24, 2010, September 2, 2010, and October 13, 2010. HYSPLIT back trajectories are presented below for the Carrizo monitoring site (AQS number 06-079-8006) on July 24, 2010. Each set of back trajectories is consistent with the state's characterization of transport of ozone and ozone precursors from the San Joaquin Valley to San Luis Obispo County (see Figures 2 - 5, below).

| AQS Number | Site Address | Latitude (N) | Longitude (W) |
|-------------|------------------------------------------------|--------------|---------------|
| 06-079-8005 | 3601 Gillis Canyon Road, San Luis Obispo CA | 35.64366 | -120.23134 |
| 06-079-8006 | 9640 Carrizo Highway, CA | 35.35472 | -120.04000 |

⁶ Hybrid Single-Particle Lagrangian Integrated Trajectory model, National Oceanic and Atmospheric Administration, <http://ready.arl.noaa.gov/HYSPLIT.php>

Site: Red Hills AQS 06-079-8005
Date: August 24, 2010

NOAA HYSPLIT MODEL
Backward trajectories ending at 0300 UTC 24 Aug 10
EDAS Meteorological Data

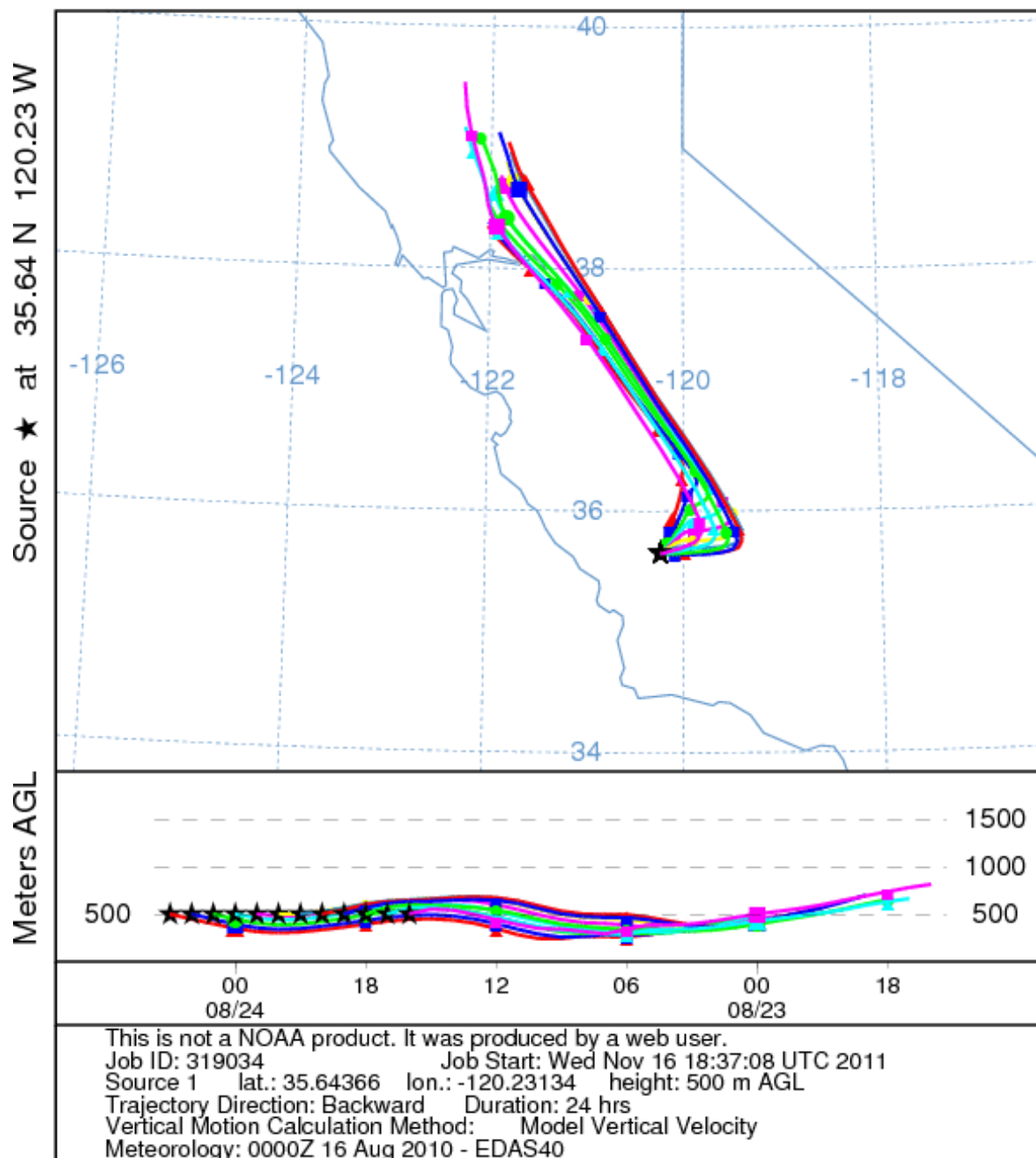


Figure 2

Site: Red Hills AQSS 06-079-8005

Date: September 2, 2010

NOAA HYSPLIT MODEL
Backward trajectories ending at 0300 UTC 02 Sep 10
EDAS Meteorological Data

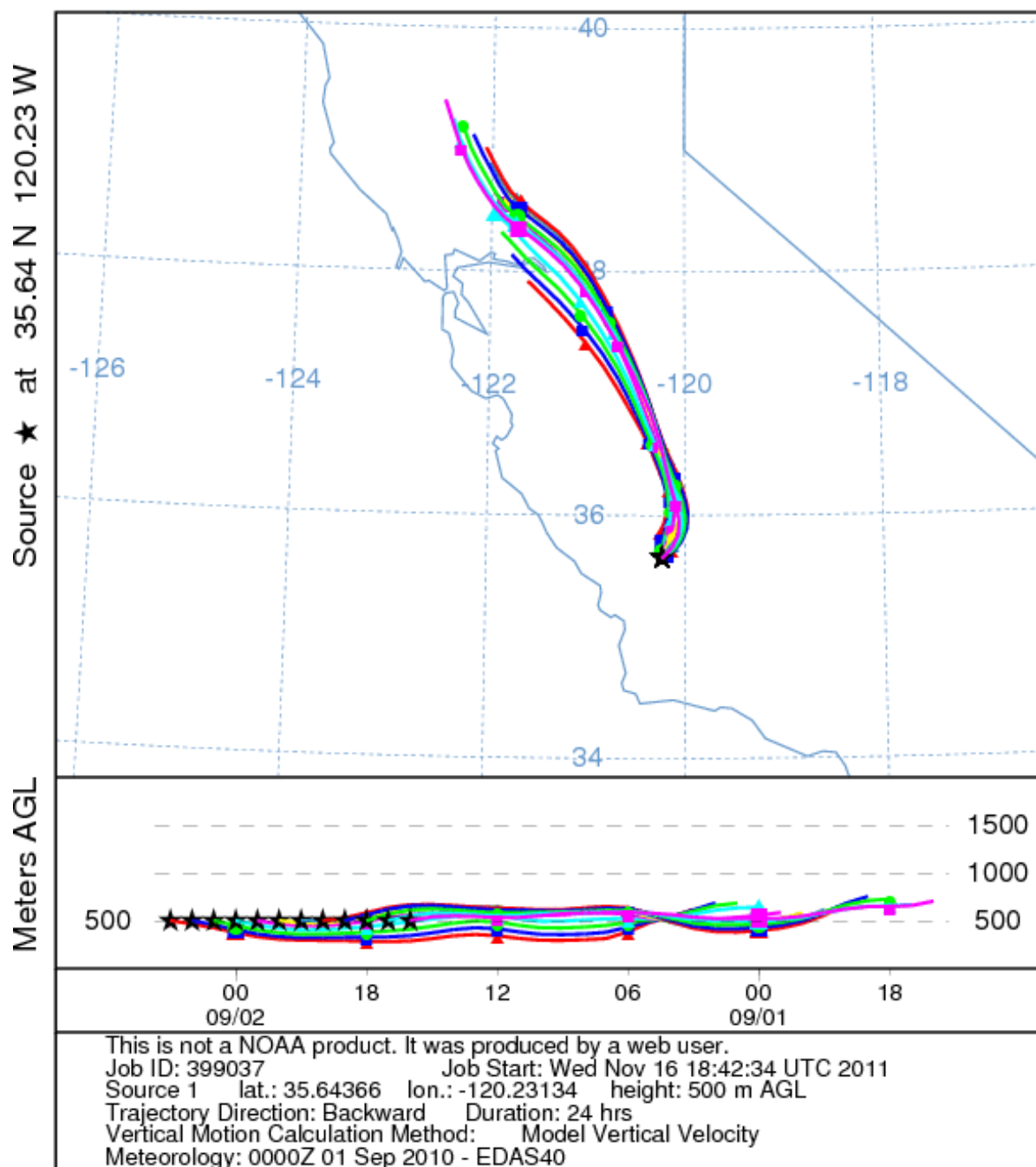


Figure 3

Site: Red Hills AQS 06-079-8005
Date: October 10, 2010

NOAA HYSPLIT MODEL
Backward trajectories ending at 0300 UTC 13 Oct 10
EDAS Meteorological Data

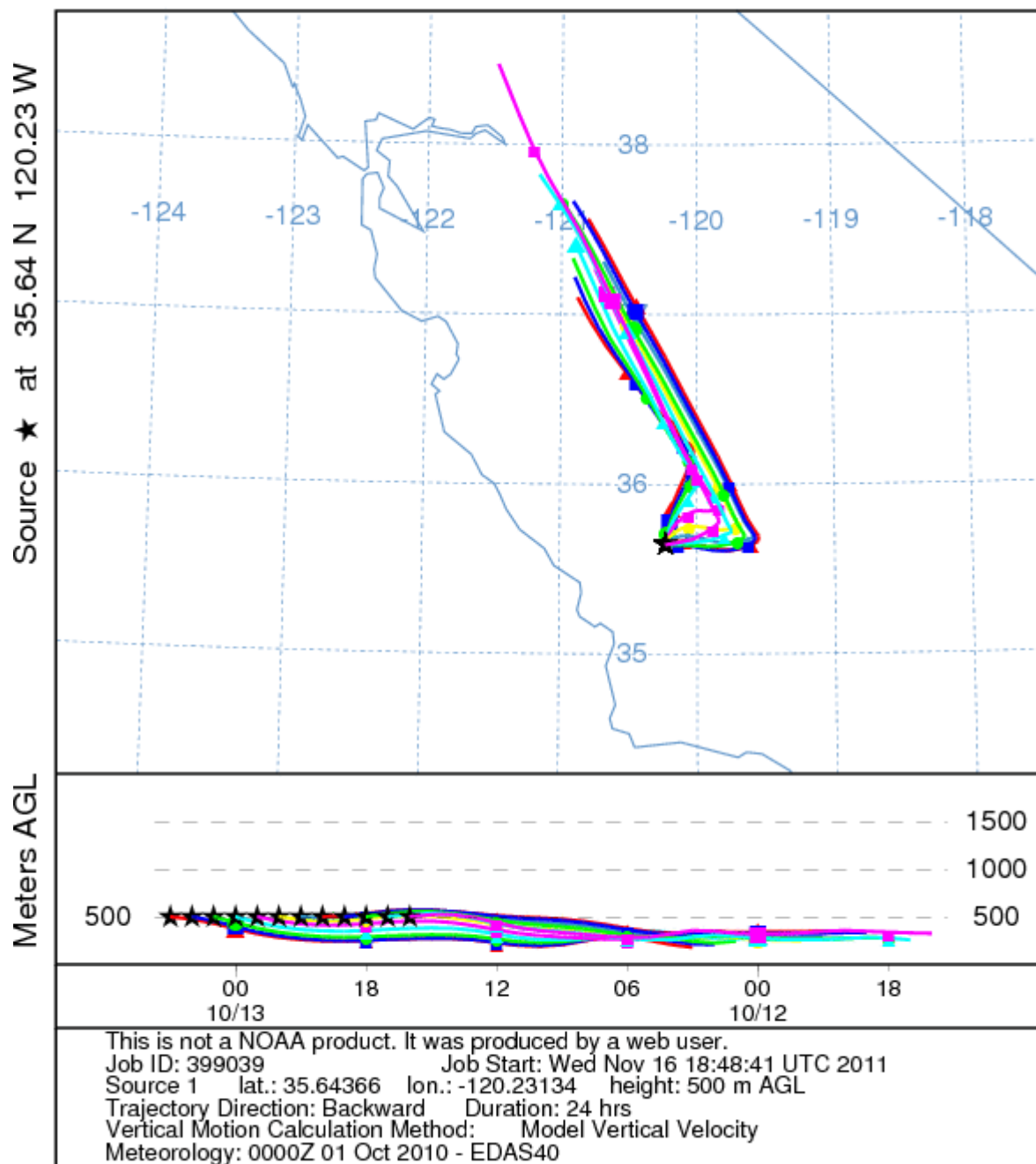


Figure 4

NOAA HYSPLIT MODEL
Backward trajectories ending at 0300 UTC 24 Jul 10
EDAS Meteorological Data

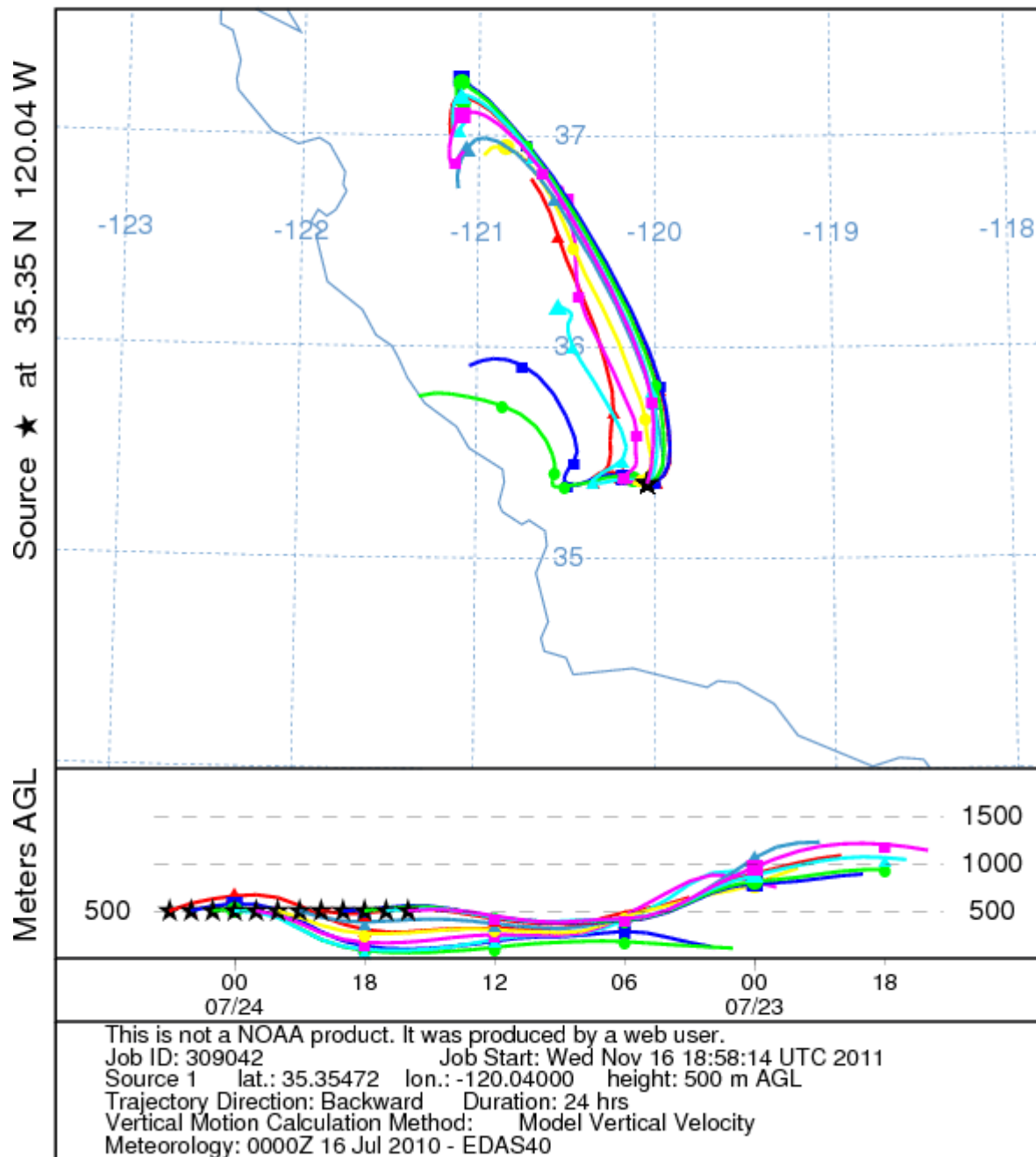


Figure 5

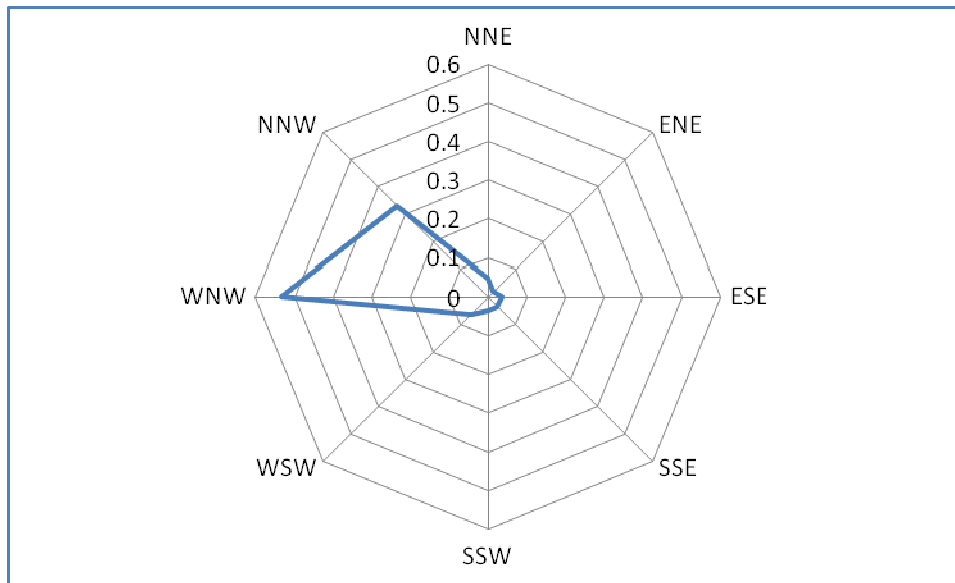


Figure 6: San Luis Obispo County Summer Wind Frequency Distribution

The wind frequency distribution of wind direction data in Figure 6, above, is based on an average of 30 years of National Weather Service information for the months of June, July, and August. The prevailing winds during the ozone season have a strong northwesterly component. This differs from the distribution of wind direction for days when the measured ozone levels are elevated, when, as discussed above, there appears to be transport of ozone and ozone precursors from the San Joaquin Valley.

The analysis of ozone transport to San Luis Obispo County provided by the State, and EPA's back trajectory analysis of current exceedances of the 8-hour ozone NAAQS, indicate transport of ozone and ozone precursors to San Luis Obispo County from the San Joaquin Valley Air Basin. EPA intends to designate San Joaquin Valley as its own nonattainment area.

Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis evaluates the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the area.

San Luis Obispo County area is shown in Appendix 2, Map 14a. The County consists of three geographic regions:

- 1) The coastal plateau along the Pacific Ocean,
- 2) The upper Salinas River Valley in the northern section of the county; and
- 3) The east county plain which consists mostly of the Carrizo Plain, a large drainage basin. The Carrizo Plain borders the Temblor Mountain range to the east, which lies in a northwest-southeast direction along the western side of the San Joaquin Valley Air Basin. The only major break in the range occurs at the Cholame Pass (elevation 1155 feet) in the northern end of the mountain range.

The intended San Luis Obispo nonattainment area represents only the eastern portion of San Luis Obispo County.

Factor 5: Jurisdictional boundaries

For each potential nonattainment area, we considered existing jurisdictional boundaries to provide a clearly defined legal boundary and to help identify the areas appropriate for carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment area boundaries for ozone or other urban-scale pollutants, county lines, air district boundaries, township boundaries, areas covered by a metropolitan planning organization, state lines, areas of Indian country, and urban growth boundary. Where existing jurisdictional boundaries were not adequate or appropriate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates were considered.

The state's recommended boundary is defined by the county line on the north, east, and south. The north and east county boundary also forms the California air basin boundary between the South Central Coast Air Basin and the San Joaquin Valley Air Basin⁷. The county line also follows the same boundary for the transportation planning agency, the San Luis Obispo Council of Governments (SLOCOG). SLOCOG has jurisdiction for transportation planning within the entire county. The local air planning agency, the San Luis Obispo County APCD, also uses the county line to define the boundary of its jurisdiction.

To the west, the state recommends drawing a line using specific latitudes and longitudes in a generally north and south orientation through the middle of the county (see Map 14 in Appendix 1). This line does not appear to be based on jurisdictional considerations. However, the boundary for the recommended nonattainment area to the north, south and east is based upon recognized jurisdictions and EPA intends to use those boundaries for designating the east San Luis Obispo County nonattainment area for the 2008 ozone NAAQS.

Conclusion

Based on the assessment of factors described above, EPA has preliminarily concluded that the eastern part of San Luis Obispo County should be designated nonattainment, as the San Luis Obispo (Eastern San Luis Obispo) nonattainment area, because the area violates the 2008 ozone NAAQS.

The Clean Air Act requires EPA to designate any area as nonattainment if it violates a NAAQS or if it contributes to a violation in a nearby area. Air quality data (Factor 1) show that monitors in the eastern part of San Luis Obispo County show a violation of the 2008 8-hour ozone standard based on 2008-2010 data. Therefore, Factor 1 supports designating San Luis Obispo County (Eastern San Luis Obispo) as nonattainment.

Emissions and emission-related data (Factor 2) support the state's recommended boundary, encompassing only the mountainous eastern portion of San Luis Obispo County, because this area is likely affected by emissions from sources located in San Joaquin Valley, not in the county itself. EPA intends to designate San Joaquin Valley as a separate nonattainment area (see the technical analysis for San Joaquin Valley).

⁷ <http://www.arb.ca.gov/ei/maps/statemap/abmap.htm>

Under Factor 3 (meteorology and weather or transport patterns), which may be influenced by geography and topography (Factor 4), the analysis of ozone transport to San Luis Obispo County provided by the state, and EPA's back trajectory analysis of current exceedances of the 8-hour ozone NAAQS, indicate transport of ozone and ozone precursors to San Luis Obispo County from the San Joaquin Valley Air Basin. EPA concurs with the state that, in the absence of this transport from outside the county, it is likely that exceedances would not occur at the monitoring sites in the eastern portion of San Luis Obispo County. Factors 3 and 4 support the state's recommendation that the eastern portion of San Luis Obispo County be designated as nonattainment. As previously noted, EPA intends to designate San Joaquin Valley as a separate nonattainment area (see the technical analysis for San Joaquin Valley).

In considering jurisdictional boundaries (Factor 5), it is not clear why the state has chosen to draw the specific north-south line it is using as a western boundary to the nonattainment area. This line runs according to specific latitudes and longitudes provided by the state, but the state has not explained how it derived the coordinates for drawing the line. However, the roughly triangular area recommended by the state is fairly large in size, about half of the county. It also generally includes the higher elevation portions of the county, consistent with the observed ozone NAAQS violations at monitors in the more mountainous part of the county. For an area receiving transport from San Joaquin Valley, it is appropriate to make a partial county nonattainment designation for San Luis Obispo County, and EPA preliminarily concludes that the western boundary proposed by the state is acceptable.

EPA's review of air quality data (Factor 1), emissions and emission related data (Factor 2), as well as meteorology and weather or transport patterns (Factor 3), geography and topography (Factor 4), and jurisdictional boundaries (Factor 5), supports the proposed nonattainment boundaries recommended by the state. EPA preliminarily concurs with the state's recommendation on boundaries for the intended San Luis Obispo (Eastern San Luis Obispo) nonattainment area.

Technical Support Document for 2008 Ozone NAAQS Designations

California Area Designations for the 2008 Ozone National Ambient Air Quality Standards

Technical Analysis for Tehama County (Tuscan Buttes)

Figure 1 is a map of Tehama County. The map provides other relevant information including the locations and design values of air quality monitors, county names and boundaries and indicates EPA's intended partial county nonattainment designation. If this designation is finalized, Tuscan Buttes, an area comprised of two small mountaintop areas, would be a new ozone nonattainment area. See Map 15 in Appendix 1 (and inserted under Factor 1, below) for a detailed map of the partial county boundary that EPA intends to designate nonattainment.

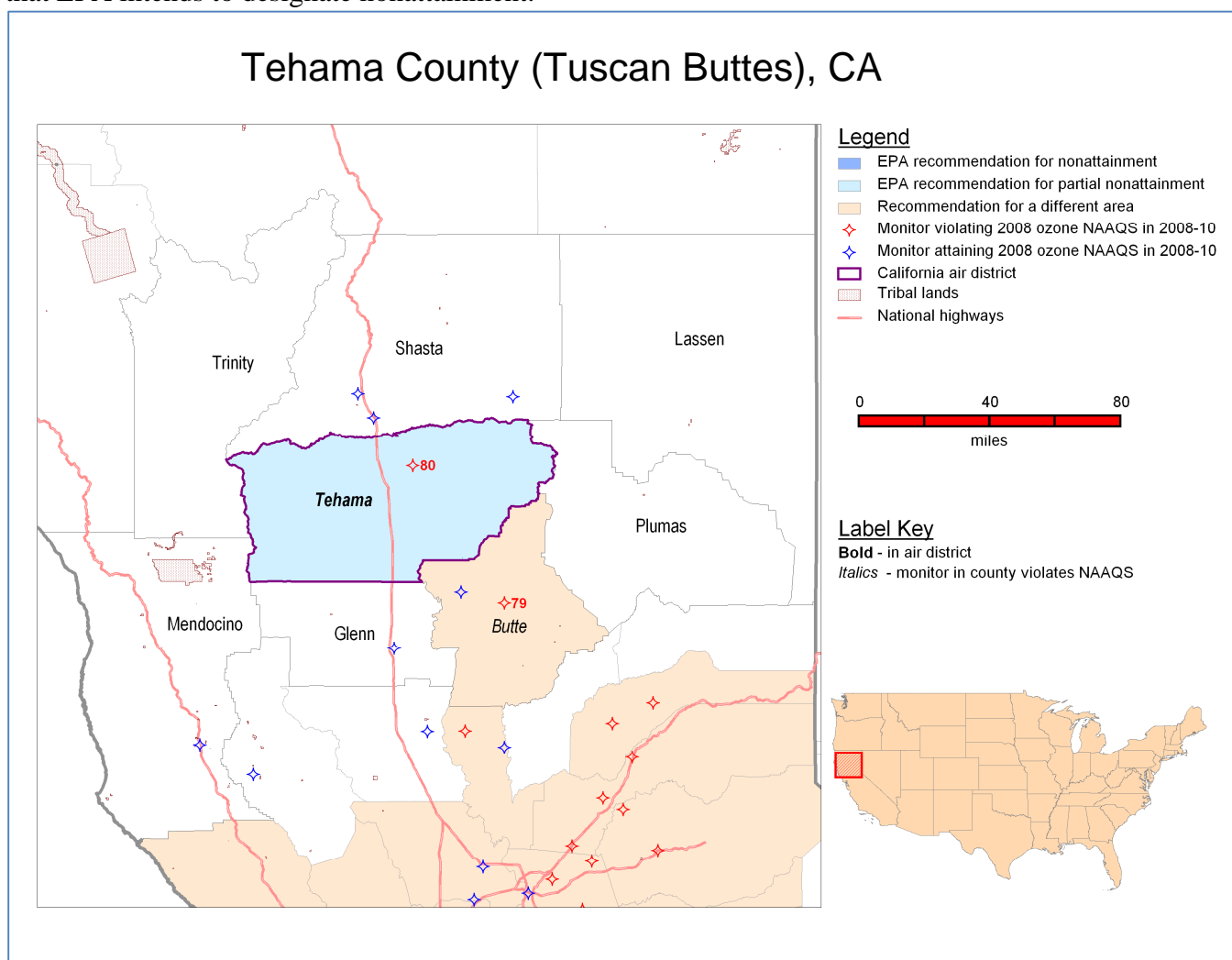


Figure 1

Note: The map shown in Figure 1 provides 8-hour ozone design values in parts per billion (ppb) based on data from the 2008-2010 period (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. For each particular area, Factor 1 and Appendix 3 describe the air quality data relevant for our intended nonattainment decisions.

In March 2009, California recommended that a new partial-county area be designated as “nonattainment” for the 2008 ozone NAAQS based on air quality data from 2006-2008 (letter from James Goldstene, Executive Officer, California Air Resources Board, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, dated March 11, 2009). California provided an update to the original recommendation in October 2011 based on air quality data from 2008-2010 and preliminary 2009-2011 data, but did not revise its recommendation for this area. The 2009 and 2011 recommendations are based on data from Federal Equivalent Method (FEM) monitors sited and operated in accordance with 40 CFR Part 58 (letter from Lynn Terry, Deputy Executive Officer, California Air Resources Board, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, dated October 12, 2011).

After considering these recommendations and based on EPA's technical analysis described below, EPA intends to designate Tehama County (partial) (identified in Table 1 below) as “nonattainment” for the 2008 ozone NAAQS, as the Tuscan Buttes nonattainment area.

Table 1. State’s or Tribe’s Recommended and EPA’s Intended Designated Nonattainment Counties or Areas of Indian country for Tuscan Buttes.

| Tuscan Buttes | State or Tribe-Recommended Nonattainment Counties or Areas in Indian country | EPA Intended Nonattainment Counties or Areas in Indian country |
|-------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------|
| Tehama County | Tehama County (p) | Tehama County (p) |
| No areas of Indian country in this nonattainment area | | |

p = partial county

Factor Assessment

Factor 1: Air Quality Data

For this factor, we considered 8-hour ozone design values in parts per million (ppm) for air quality monitors in Tehama County, based on data from the 2008-2010 period (i.e., the 2010 design value, or DV) and preliminary data from the 2009-2011 period (i.e., the preliminary 2011 DV). A monitor’s DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2008 ozone NAAQS are met at a monitor when the annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years, is 0.075 ppm (75 parts per billion (ppb)) or less. A DV is only valid if minimum data completeness criteria are met. See 40 CFR part 50 Appendix P. Where several monitors are located in a county (or a designated nonattainment area or maintenance area), the DV for the county or area is determined by the monitor with the highest level.

[Note: Monitors that are eligible for providing design value data generally include State and Local Air Monitoring Stations (SLAMS) that are sited in accordance with 40 CFR Part 58, Appendix D (Section 4.1) and operating with a federal reference method (FRM) or federal equivalent method (FEM) monitor that meets the requirements of 40 CFR part 58, appendix A. All data from a special purpose monitor (SPM) using an FRM or FEM which has operated for more than 24 months is eligible for comparison to the NAAQS unless the monitoring agency demonstrates that the data came from a particular period during which the requirements of appendix A (quality assurance requirements) or appendix E (probe and monitoring path siting criteria) were not met.]

The intended Tuscan Buttes nonattainment area comprises the portions of Tehama County above 1800 feet (see Map 15a in Appendix 2). Certified, quality assured data are available in EPA’s Air Quality

System (AQS) for all areas through calendar year 2010. Ozone monitors relevant for comparison to the NAAQS and information from additional data sources within Tehama County are shown in Appendix 1, Map 15 (also inserted below). The 2010 DV for the ozone NAAQS for Tehama County is shown in Table 2.

Table 2. Air Quality Data.

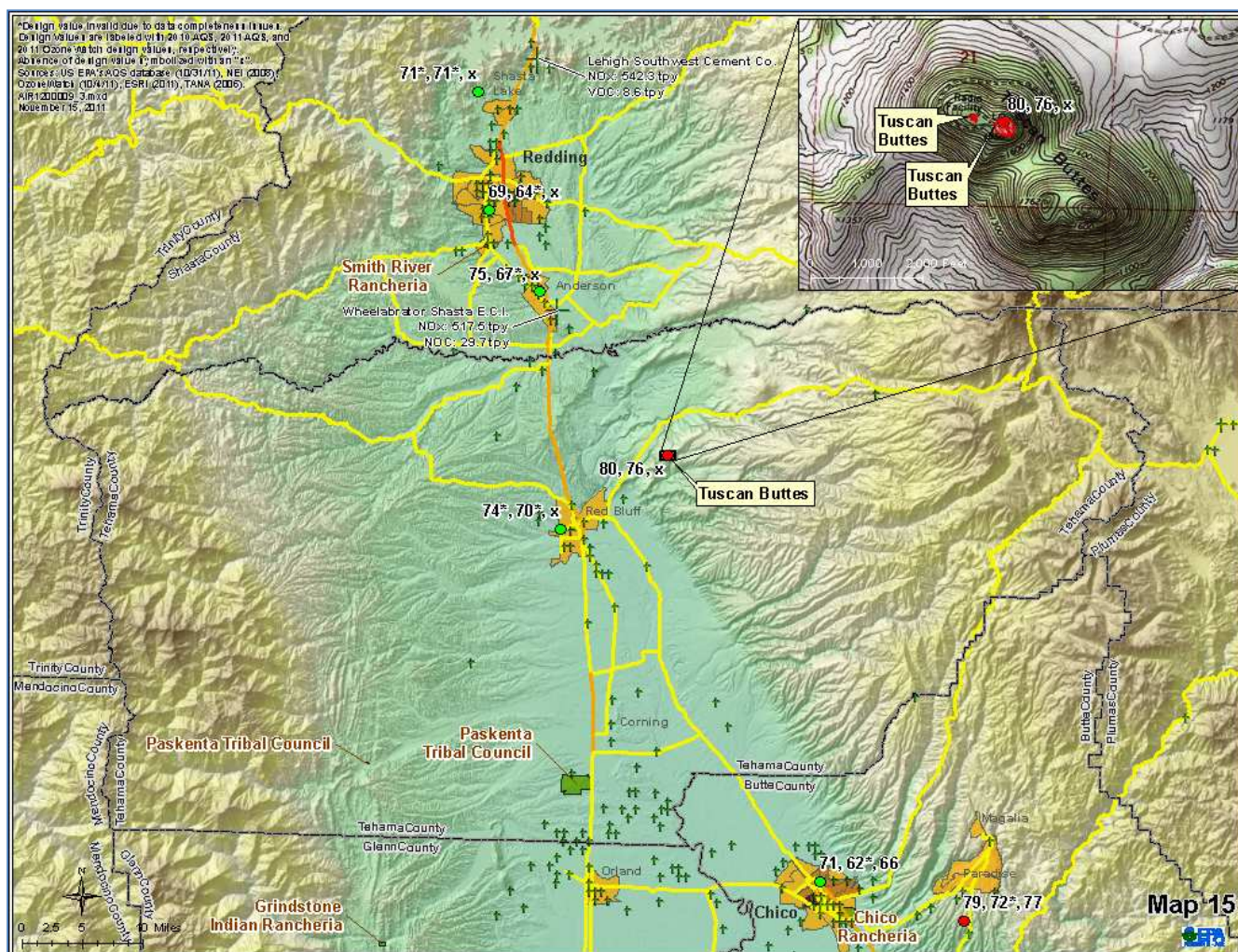
| County | State Recommended Nonattainment? | 2008-2010 Design Value (parts per billion) |
|------------|----------------------------------|--------------------------------------------|
| Tehama, CA | Yes (partial) | 80 |

California's ozone season encompasses the entire year, however, the ozone monitor in the intended Tuscan Buttes nonattainment area has been approved to operate on a seasonal schedule per 40 CFR part 58, Appendix D, section 4.1(i). Preliminary data from part of calendar year 2011 is available in AQS for most areas, but these data have not yet been certified and quality assured. States are required to certify data by May 1st of the following year. California Air Resources Board (ARB) and Tehama County Air Pollution Control District (APCD) have indicated that they plan to certify 2011 data early for Tehama County. EPA's designation recommendation for this area is therefore based on certified 2008-2010 data and is further informed by preliminary 2009-2011 data.

Maps contained in Appendix 1 show the geographic distribution of monitors. Map 15 shows monitor locations for Tehama County. For each monitor, Appendix 1 lists the monitor, the 2008-2010 DV (certified and quality assured in AQS), the preliminary 2009-2011 DV (as available in AQS as of October 31, 2011), and a preliminary 2009-2011 DV using 2011 data from OzoneWatch¹. Absence of a DV is symbolized with an "x".

Appendix 3 lists preliminary 2009-2011 DVs for Tehama County, either from AQS (as available in AQS as of October 31, 2011) or from OzoneWatch (as calculated on October 4, 2011). Appendix 3 lists the higher of these two preliminary 2009-2011 DVs. Monitors shown in bold are the DV monitors (i.e., the monitor with the highest DV) for each individual county. Monitors shown in red font are the DV monitor for the nonattainment area. Values with an asterisk do not meet data completeness, and therefore those DVs are not relevant for comparison to the NAAQS and are solely provided for informational purposes.

¹ The preliminary 2009-2011 design values indicated by OzoneWatch are based on AQS ozone data from 2009, 2010, and 2011, supplemented with 2011 data reported to AirNow (<http://airnow.gov/>) on days for which no data currently exist in the AQS database. 2009 and 2010 AQS data were retrieved on July 20, 2011; 2011 AQS and AirNow data were compiled on October 4, 2011. Ultimately, attainment of the 8-hour ozone NAAQS will be determined entirely from data in AQS.



From Appendix 1, Map 15: For map legend describing monitors, emissions, traffic, population, and boundaries, see Appendix 1.

The monitor in the Tuscan Buttes area of Tehama County shows a violation of the 2008 8-hour ozone standard based on 2008-2010 data and preliminary 2009-2011 data. Therefore, this area is included in the intended Tuscan Buttes nonattainment area. A county (or partial county) must also be designated nonattainment if it contributes to a violation in a nearby area. Each county without a violating monitor that is located near a county with a violating monitor has been evaluated based on the weight of evidence of the five factors to determine whether it contributes to the nearby violation.

Factor 2: Emissions and Emissions-Related Data

EPA evaluated emissions of ozone precursors, nitrogen oxides (NO_x) and volatile organic compounds (VOC) and other emissions-related data that provide information on areas contributing to violating monitors.

Emissions data

EPA evaluated county-level emission data for NO_x and VOC derived from the 2008 National Emissions Inventory (NEI), version 1.5. This is the most recently available NEI (see <http://www.epa.gov/ttn/chief/net/2008inventory.html>). Emissions in a nearby area indicate the potential for the area to contribute to observed violations. We will also consider any additional information we

receive on changes to emissions levels that are not reflected in recent inventories. These changes include emissions reductions due to permanent and enforceable emissions controls that will be in place before final designations are issued and emissions increases due to new sources.

Table 3 shows emissions of NO_x and VOC (given in tons per year) for Tehama County.

Table 3. Total 2008 NO_x and VOC Emissions.

| County | State Recommended Nonattainment? | NO _x (tpy) | VOC (tpy) |
|------------|----------------------------------|-----------------------|-----------|
| Tehama, CA | Yes (partial) | 6,027 | 3,403 |
| Areawide: | | 6,027 | 3,403 |

Stationary emission sources in Tehama County are all small (less than 100 tons per day of VOCs or NO_x) and are mostly located around Red Bluff, in the central part of the county, and in the southern part of the county, near its borders with Glenn County and Butte County (see Map 15 in Appendix 1). These stationary sources are located at lower elevations and to the south and southwest of the violating monitor. Emissions of NO_x and VOCs in Tehama County are approximately 1.4 times and 2.2 times lower, respectively, than emissions in Butte County, the neighboring nonattainment county to the southeast. Two large sources of NO_x emissions (greater than 500 tons per year) are located north of Tehama County, in Shasta County, near Anderson, California, and Shasta Lake, California. The large stationary NO_x source near Anderson is approximately 5 miles from the Shasta-Tehama County line. The large stationary NO_x source near Shasta Lake is approximately 25 miles from the Shasta-Tehama County line.

Population density and degree of urbanization

EPA evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. These include ozone-creating emissions from on-road and off-road vehicles and engines, consumer products, residential fuel combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NO_x and VOC emissions, which contribute to ozone formation. Rapid population growth or growth in vehicle miles traveled (VMT) (see below) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the area associated with area source and mobile source emissions as part of the nonattainment area. Table 4 shows the population, population density, and population growth information for Tehama County.

Table 4. Population and Growth.

| County | State Recommended Nonattainment? | 2010 Population | 2010 Population Density (1000 pop/sq mi) | Absolute change in population (2000-2010) | Population % change (2000-2010) |
|------------|----------------------------------|-----------------|------------------------------------------|-------------------------------------------|---------------------------------|
| Tehama, CA | Yes (partial) | 63,463 | 0.02 | 7,328 | +13% |
| Areawide: | | 63,463 | 0.02 | 7,328 | +13% |

Sources: U.S. Census Bureau population estimates for 2010 as of August 4, 2011

(http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_PL_GCTPL2.STO5&prodType=table)

Maps 15 and 15a in Appendices 1 and 2, respectively, show population in this area. The main population center in Tehama County is in the Red Bluff Micropolitan Area (see Map 15a in Appendix 2), located to the southwest of the Tuscan Buttes. The 2010 population of Tehama County is quite low, as is the 2010

population density. Although Butte County, to the southeast of Tehama County, is also sparsely populated, with a population of 220,000 and a population density of 0.12, Tehama County is still nearly 3.5 times smaller than Butte County in terms of population, with a population density that is over 6 times lower than Butte County. Although population growth in Tehama County over 2000 - 2010 was larger than the growth observed in Butte County (8%), because of the substantially lower population in Tehama County the absolute change in population in Butte County was still over two times greater than the absolute increase in Tehama County.

Traffic (VMT) data

EPA evaluated the commuting patterns of residents in the area, as well as the total VMT for each county. In combination with the population/population density data and the location of main transportation arteries (see above), this information helps identify the probable location of non-point source emissions. A county with high VMT indicates the presence of motor vehicle emissions that may contribute to ozone formation and nonattainment in the area. Rapid population or VMT growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 5 shows total 2008 VMT.

Table 5. Traffic (VMT) data.

| County | State Recommended Nonattainment? | 2008 VMT* (million miles) |
|------------|----------------------------------|---------------------------|
| Tehama, CA | Yes (partial) | 449 |
| Areawide: | | 449 |

*MOBILE model VMTs are those inputs into the NEI version 1.5.

Map 15 in Appendix 1 shows relatively low non-truck traffic volume between Tehama County and Butte County, its neighboring nonattainment county. The highest traffic density appears to occur between Red Bluff and Anderson or Redding to the north in Shasta County, which is in attainment for the 2008 ozone NAAQS. Very few major roads run in the east-west direction across Tehama County.

Factor 3: Meteorology (weather/transport patterns)

EPA evaluated available meteorological data to help determine how meteorological conditions, such as weather, transport patterns and stagnation conditions, would affect the fate and transport of precursor emissions contributing to ozone formation.

As discussed under Factor 4, Tehama County is at the northern end of California's Central Valley, the northern half of which is also called the Sacramento Valley. The Valley has hot, dry summers, including some stagnant periods, and cool, wet winters. The location at the end of the valley may enhance stagnation under some conditions. These could be conducive to ozone formation in the summer, but there do not appear to be sufficient local emissions to create high ozone concentrations.

Previous assessments of pollution transport found that the broader Sacramento area (which is roughly equivalent to the non-mountainous portions of the Sacramento Metropolitan ozone nonattainment area – see Map 10 in Appendix 1) can have an overwhelming impact on counties of the Upper Sacramento

Valley, including Tehama County.² EPA intends to designate the Sacramento Metro area as its own nonattainment area.

The Tuscan Buttes ozone monitor is at a rather unique high-elevation location. It is located at over 1,800 feet (500 meters) above mean sea level (MSL) at the summit of Tuscan Buttes, which rises abruptly from the 1,000 feet (300 meters) elevation of the surrounding foothills. Meteorological conditions at the monitor are thus likely different than in the main part of Tehama County. As compared to the wide foothills around the perimeter of the county (to the east, north, and west – see Map 15 in Appendix 1), the slopes of Tuscan Buttes are too short to develop substantial upslope flow, so the ozone concentrations at the top are likely not representative of the rest of the county. In addition, the Tuscan Buttes monitor concentrations may not represent counties immediately to the south, such as Butte County. It likely represents longer range transport aloft from the Sacramento metropolitan area.³ As previously noted, EPA intends to designate the Sacramento Metro area as its own nonattainment area.

A generally north-south flow pattern is seen in the 30-year average of National Weather Service summer wind direction frequencies computed by EPA, as shown in the “radar”-style wind rose diagram below (see Figure 2). This is consistent with the north-south orientation of the Central Valley, and with upslope and downslope flow on the hills to the north, and with ozone transport from areas to the south.

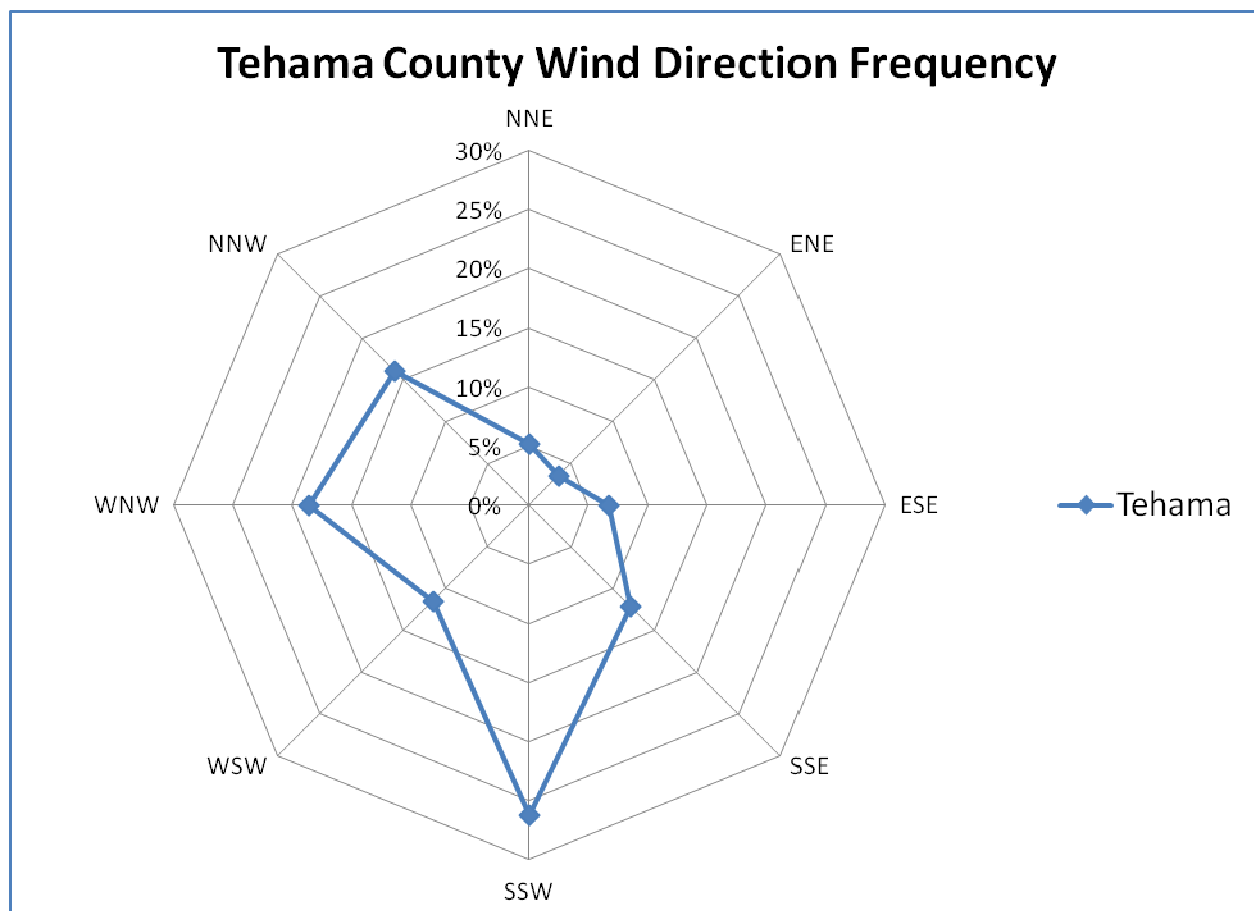


Figure 2

² “Second Triennial Review of the Assessment of the Impacts of Transported Pollutants on Ozone Concentrations in California (Revised)”, California Environmental Protection Agency, Air Resources Board, November 1996, p.61.
<http://www.arb.ca.gov/aqd/transport/assessments/assessments.htm>

³ *ibid.* p.62

Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis evaluates the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the area.

Tehama County is at the northern end of the large, flat, Central Valley of California, the northern half of which is also called the Sacramento Valley. The foothills of the Coast Ranges to the west and the Sierra Nevada mountains to the east converge to close the northern end of the valley, just north of the city of Red Bluff. These foothills and mountain ranges tend to limit flow in all direction except the south, where the Central Valley continues.

Red Bluff has an elevation of 299 feet (91 meters) above MSL; starting at some 5 miles (8 kilometers) to the northeast the foothills start to rise. They rise gradually to 1,000 feet (300 meters) above MSL after 8 kilometers, and then abruptly the Tuscan Buttes rise to over 1,800 feet (500 meters) above MSL over just a half-kilometer distance. Elevation drops as quickly in all directions from the summits of this pair of tall, isolated hills, except for a small ridge to the northeast.

The ozone monitor is at the top of the taller of the two hills, a rather unique location within Tehama County. The uniqueness of this high elevation location means the monitored values are unlikely to be representative of the rest of the county, though they could represent transport aloft from areas farther south.

Factor 5: Jurisdictional boundaries

For each potential nonattainment area, we considered existing jurisdictional boundaries to provide a clearly defined legal boundary and to help identify the areas appropriate for carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment area boundaries for ozone or other urban-scale pollutants, county lines, air district boundaries, township boundaries, areas covered by a metropolitan planning organization, state lines, areas of Indian country, and urban growth boundary. Where existing jurisdictional boundaries were not adequate or appropriate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates were considered.

The boundary the state recommends as nonattainment for Tehama County (Tuscan Buttes) is not associated with a jurisdictional boundary. The boundary relates to consideration of the other four factors described above, especially the unique location of the monitor at the high-elevation summit of the Tuscan Buttes and the topographical implications on meteorology and likely source impacts. The Tuscan Buttes are in Tehama County, in the northern Sacramento Valley. This county comprises the Red Bluff micropolitan statistical area. Red Bluff is not part of any larger Combined Statistical Area (CSA).

Conclusion

Based on the assessment of factors described above, EPA has preliminarily concluded that part of Tehama County (above 1,800 feet) should be designated nonattainment, as the Tuscan Buttes nonattainment area, because the area violates the 2008 ozone NAAQS.

The Clean Air Act requires EPA to designate any area as nonattainment if it violates a NAAQS or if it contributes to a violation in a nearby area. Air quality data (Factor 1) show that the monitor in the Tuscan Buttes area of Tehama County shows a violation of the 2008 8-hour ozone standard based on 2008-2010 data. Therefore, Factor 1 supports designating Tuscan Buttes as nonattainment.

Although there are stationary and mobile sources of emissions as well as a discrete population center in Tehama County, emissions and emission-related data (Factor 2) support the state's recommended boundary for the intended Tuscan Buttes nonattainment area. EPA expects that this area is predominantly affected by transport from the Sacramento Metro area (see Factor 3), rather than emissions from within Tehama County or adjacent counties. EPA intends to designate Sacramento Metro as a separate nonattainment area.

Meteorology and weather or transport patterns (Factor 3) and geography and topography (Factor 4) suggest that a mountaintop nonattainment area is appropriate considering the violating monitor atop Tuscan Buttes. The ozone concentrations measured at the Tuscan Buttes monitor are likely influenced by long-range transport from upwind areas, especially the proposed Sacramento Metro nonattainment area. EPA therefore believes that the violating area (in this case, the mountaintop areas atop Tuscan Buttes) and the possible contributing areas (upwind areas such as Sacramento Metro and conceivably Chico (Butte County)), should be designated "nonattainment". EPA intends to designate Sacramento Metro and Chico (Butte County) as separate nonattainment areas.

In considering jurisdictional boundaries (Factor 5), EPA notes that the boundary the state recommended as nonattainment for Tehama County (Tuscan Buttes) is not associated with a jurisdictional boundary. The unique location of the monitor at the high-elevation summit of the Tuscan Buttes suggests that the state's recommended nonattainment area boundary is appropriate. EPA used a similar approach in making designations for the 1997 8-hour ozone NAAQS, for example, designating Sutter Buttes in Sutter County in 2004 as an area that was not attaining.

Based on the five factor analysis and information currently available, EPA intends to designate portions of Tehama County, as identified in Table 1, as the Tuscan Buttes nonattainment area.

Technical Support Document for 2008 Ozone NAAQS Designations

California Area Designations for the 2008 Ozone National Ambient Air Quality Standards

Technical Analysis for Ventura County

Figure 1 is a map of the intended Ventura County nonattainment area. The map provides other relevant information including the locations and design values of air quality monitors, county names and boundaries and indicates EPA's intended nonattainment designation. Also shown is the boundary of the existing area that is designated nonattainment for the 1997 ozone NAAQS.

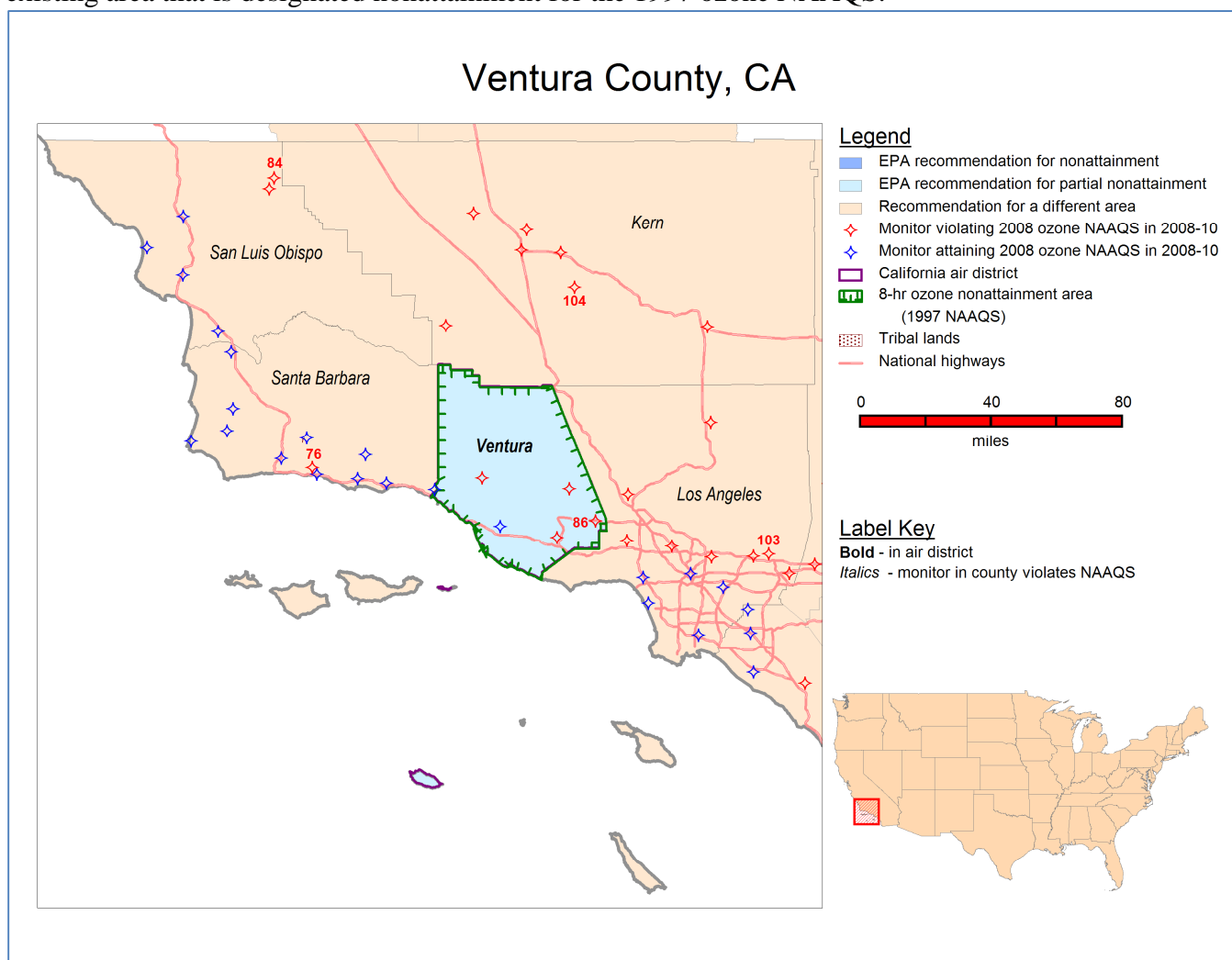


Figure 1

Note: The map shown in Figure 1 provides 8-hour ozone design values in parts per billion (ppb) based on data from the 2008-2010 period (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. For each particular area, Factor 1 and Appendix 3 describe the air quality data relevant for our intended nonattainment decisions.

For purposes of the 1997 8-hour ozone NAAQS, this area was designated nonattainment. The boundary for the nonattainment area for the 1997 ozone NAAQS included the continental portion of Ventura County.

In March 2009, California recommended that Ventura County be designated as nonattainment for the 2008 ozone NAAQS based on air quality data from 2006-2008 (letter from James Goldstene, Executive Officer, California Air Resources Board, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, dated March 11, 2009). California provided an update to the original recommendation in October 2011 based on air quality data from 2008-2010 and preliminary 2009-2011 data, but did not revise its recommendation for Ventura County. These 2009 and 2011 recommendations are based on data from Federal Equivalent Method (FEM) monitors sited and operated in accordance with 40 CFR Part 58 (letter from Lynn Terry, Deputy Executive Officer, California Air Resources Board, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, dated October 12, 2011).

After considering these recommendations and based on EPA's technical analysis described below, EPA intends to designate the continental portion of Ventura County in California (identified in Table 1 below) as the Ventura County nonattainment area for the 2008 ozone NAAQS.

Table 1. State's or Tribe's Recommended and EPA's Intended Designated Nonattainment Counties or Areas of Indian country for Ventura County.

| Ventura County | State or Tribe-Recommended Nonattainment Counties or Areas of Indian country | EPA Intended Nonattainment Counties or Areas of Indian country |
|-------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------|
| Ventura County | Ventura County (p) (excludes Anacapa and San Nicolas islands) | Ventura County (p) |
| No areas of Indian country in this nonattainment area | | |

p = partial

Factor Assessment

Factor 1: Air Quality Data

For this factor, we considered 8-hour ozone design values in parts per million (ppm) for air quality monitors in Ventura County, based on data from 2008-2010 (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. A monitor's DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2008 ozone NAAQS are met at a monitor when the annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years, is 0.075 ppm (75 parts per billion (ppb)) or less. A DV is only valid if minimum data completeness criteria are met (see 40 CFR part 50 Appendix P). Where several monitors are located in a county (or a designated nonattainment area or maintenance area), the DV for the county or area is determined by the monitor with the highest level.

[Note: Monitors that are eligible for providing design value data generally include State and Local Air Monitoring Stations (SLAMS) that are sited in accordance with 40 CFR Part 58, Appendix D (Section 4.1) and operating with a federal reference method (FRM) or federal equivalent method (FEM) monitor that meets the requirements of 40 CFR part 58, appendix A. All data from a special purpose monitor (SPM) using an FRM or FEM which has operated for more than 24 months is eligible for comparison to the NAAQS unless the monitoring agency demonstrates that the data came from a particular period

during which the requirements of appendix A (quality assurance requirements) or appendix E (probe and monitoring path siting criteria) were not met.]

The existing Ventura County nonattainment area comprises the continental portion of Ventura County (see Map 16a in Appendix 2). The 2010 DV for the ozone NAAQS for Ventura County is shown in Table 2.

Table 2. Air Quality Data.

| County | State Recommended Nonattainment? | 2008-2010 Design Value (parts per billion) |
|-------------|----------------------------------|--------------------------------------------|
| Ventura, CA | Yes (partial) | 86 |

Ozone monitors relevant for comparison to the NAAQS and information from additional data sources within Ventura County are shown in Appendix 1, Map 16. California's ozone season encompasses the entire year. Certified, quality assured data are available in EPA's Air Quality System (AQS) for all areas through calendar year 2010. Map 16 in Appendix 1 includes preliminary 2011 DVs for the existing Ventura County nonattainment area for informational purposes only. For each monitor, Appendix 1 lists the monitor, the 2008-2010 DV (certified and quality assured in AQS), the preliminary 2009-2011 DV (as available in AQS as of October 31, 2011), and a preliminary 2009-2011 DV using 2011 data from OzoneWatch¹. Absence of a DV is symbolized with an "x".

Appendix 3 lists the DVs for monitors in Ventura County. Monitors shown in bold are the DV monitors (i.e., the monitor with the highest DV) for each individual county. Monitors shown in red font are the DV monitor for the nonattainment area. Values with an asterisk do not meet data completeness, and therefore those DVs are not relevant for comparison to the NAAQS and are solely provided for informational purposes.

¹ The preliminary 2009-2011 design values indicated by OzoneWatch are based on ozone data from 2009, 2010, and 2011 stored in AQS, combined with 2011 data reported to AirNow on days which no data currently exist in the AQS database. The 2009 and 2010 data were retrieved from AQS on July 20, 2011. The 2011 data are based on data submitted AQS or AirNow (<http://airnow.gov/>) as of October 4, 2011. Ultimately, attainment of the 8-hour ozone NAAQS will be determined entirely from data in AQS.



From Appendix 1, Map 16: For map legend describing monitors, emissions, traffic, population, and boundaries, see Appendix 1

Monitors in the continental portion of Ventura County show a violation of the 2008 8-hour ozone standard based on 2008-2010 data. Therefore, this area is included in the intended Ventura County nonattainment area. There are no violating monitors on the islands of Ventura County or in Santa Barbara County, based on preliminary 2011 data (see discussion in this Technical Support Document, State of California Summary, and monitor values in Appendix 3), to the west of the mainland portion of the county. A county (or partial county) must also be designated nonattainment if it contributes to a violation in a nearby area. Each county without a violating monitor that is located near a county with a violating monitor has been evaluated based on the weight of evidence of the five factors to determine whether it contributes to the nearby violation.

Factor 2: Emissions and Emissions-Related Data

EPA evaluated emissions of ozone precursors, nitrogen oxides (NO_x) and volatile organic compounds (VOC), and other emissions-related data that provide information on areas contributing to violating monitors.

Emissions data

EPA evaluated county-level emission data for NO_x and VOC derived from the 2008 National Emissions Inventory (NEI), version 1.5. This is the most recently available NEI. (See <http://www.epa.gov/ttn/chief/net/2008inventory.html>) Emissions in a nearby area indicate the potential for the area to contribute to observed violations. We will also consider any additional information we receive on changes to emissions levels that are not reflected in recent inventories. These changes include emissions reductions due to permanent and enforceable emissions controls that will be in place before final designations are issued and emissions increases due to new sources.

Table 3 shows emissions of NO_x and VOC (given in tons per year) for Ventura County.

Table 3. Total 2008 NO_x and VOC Emissions.

| County | State Recommended Nonattainment? | NO _x (tpy) | VOC (tpy) |
|-------------|----------------------------------|-----------------------|-----------|
| Ventura, CA | Yes (partial) | 15,608 | 16,136 |
| Areawide: | | 15,608 | 16,136 |

Point source emissions of ozone precursors are generally located in the southern part of Ventura County, near population centers such as Ventura, Oxnard, Thousand Oaks, and Simi Valley, and along major roadways (see Map 16 of Appendix 1 and Map 16a of Appendix 2). NO_x emissions from Ventura County are over 14 times lower than NO_x emissions from neighboring Los Angeles County to the south and east, and VOC emissions are over 7 times lower than VOC emissions from Los Angeles County. EPA intends to designate neighboring Los Angeles and Kern Counties as nonattainment as well. Santa Barbara County, located to the west of Ventura County, shows attainment with the 2008 ozone NAAQS using preliminary 2011 data, and has emissions of ozone precursors that are over 1.3 times lower than emissions from Ventura County.

Population density and degree of urbanization

EPA evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. These include ozone-creating emissions from on-road and off-road vehicles and engines, consumer products, residential fuel

combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NO_x and VOC emissions, which contribute to ozone formation. Rapid population growth or growth in vehicle miles traveled (VMT) (see below) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the area associated with area source and mobile source emissions as part of the nonattainment area. Table 4 shows the population, population density, and population growth information for Ventura County.

Table 4. Population and Growth.

| County | State Recommended Nonattainment? | 2010 Population | 2010 Population Density (1000 pop/sq mi) | Absolute change in population (2000-2010) | Population % change (2000-2010) |
|-------------|----------------------------------|-----------------|------------------------------------------|-------------------------------------------|---------------------------------|
| Ventura, CA | Yes (partial) | 823,318 | 0.44 | 66,904 | +9% |
| Areawide: | | 823,318 | 0.44 | 66,904 | +9% |

Sources: U.S. Census Bureau population estimates for 2010 as of August 4, 2011

(http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_PL_GCTPL2.STO5&prodType=table)

The population of Ventura County is nearly double Santa Barbara County, but smaller than other counties in the Los Angeles-South Coast Air Basin nonattainment area. The population density of Ventura County is nearly three times higher than Santa Barbara County. Los Angeles and Orange Counties are more densely populated than Ventura County, while compared to Ventura County, Riverside and San Bernardino Counties are more sparsely populated (see technical analysis for Los Angeles-South Coast Air Basin). Similar to the location of point sources, the population of Ventura County is centered mostly in the southern portion of the county, around Oxnard, Thousand Oaks, and Simi Valley, with additional population centers north of Oxnard, in Ventura and Mira Monte (see Maps 16 and 16a in Appendices 1 and 2, respectively). Over 2000-2010, the population of Ventura County has grown by 9%, which is a higher rate of growth compared to Los Angeles and Orange Counties, but lower than growth rates observed in Riverside and San Bernardino Counties. Population growth is associated with even greater growth in traffic and commuting patterns, which are themselves associated with emissions of ozone precursors (see next section).

Traffic (VMT) data

EPA evaluated the commuting patterns of residents in the area, as well as the total VMT for each county. In combination with the population/population density data and the location of main transportation arteries (see above), this information helps identify the probable location of non-point source emissions. A county with high VMT indicates the presence of motor vehicle emissions that may contribute to ozone formation and nonattainment in the area. Rapid population or VMT growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 5 total 2008 VMT for Ventura County.

Table 5. Traffic (VMT) data.

| County | State Recommended Nonattainment? | 2008 VMT* (million miles) |
|-------------|----------------------------------|---------------------------|
| Ventura, CA | Yes (partial) | 7,795 |
| Areawide: | | 7,795 |

*MOBILE model VMTs are those inputs into the NEI version 1.5.

In Ventura County, 2008 VMT is nearly double the VMT in Santa Barbara County, but is relatively low

compared to counties in the Los Angeles-South Coast Air Basin, where counties range from over 20,000 to nearly 80,000 VMT in 2008. Non-truck traffic is highest between Oxnard and Los Angeles County to the southeast, and in the Simi Valley area in the southeast portion of Ventura County, near the Los Angeles County border.

Factor 3: Meteorology (weather/transport patterns)

EPA evaluated available meteorological data to help determine how meteorological conditions, such as weather, transport patterns and stagnation conditions, would affect the fate and transport of precursor emissions contributing to ozone formation. EPA reviewed the discussion of ozone formation in the “Final Ventura County 2007 Air Quality Management Plan,” as well as the wind frequency distribution of wind direction data.

The “Final Ventura County 2007 Air Quality Management Plan,” by Ventura County Air Pollution Control District (APCD), discusses the meteorological conditions that would affect the fate and transport of precursor emissions contributing to ozone formation.² This information is presented below:

“In Ventura County, ozone generally reaches peak levels by mid-afternoon and, along with ozone precursors, is often blown inland by the prevailing winds. Thus, inland areas such as Simi Valley³, Thousand Oaks, Ojai, Fillmore, and Piru often have higher ozone levels and the most days over the federal and state ozone standards than the county’s coastal areas. The smoggiest days tend to occur from May through October (smog season) when high temperatures and stable atmospheric conditions produce conditions conducive to ozone formation and accumulation.”

The modeling protocol also discusses how meteorological conditions would affect the fate and transport of precursor emissions contributing to ozone formation. This discussion provides a rationale for considering Ventura and Los Angeles-South Coast as separate air basins.

“[...] the political boundary between Los Angeles and Ventura Counties is also a region of convergent air flow. Therefore, it was appropriate to represent Ventura County as a subregion separate from Los Angeles County.”⁴

In addition, EPA reviewed the wind frequency distribution of wind direction data in Figure 2 below. The figure is based on an average of 30 years of National Weather Service information for the months of June, July, and August. The prevailing winds during the ozone season have a strong west-southwesterly component. This information is consistent with the information provided in the “Final Ventura County 2007 Air Quality Management Plan.”

² Ventura County 2007 Air Quality Management Plan, May 13, 2008. Ventura County Air Pollution Control District. http://www.vcapcd.org/pubs/Planning/AQMP/VC07_AQMP_Final_w_Appendices.pdf

³ P. 6, “Final Ventura County 2007 Air Quality Management Plan,” May 13, 2008.

⁴ D-4, “Final Ventura County 2007 Air Quality Management Plan,” May 13, 2008.

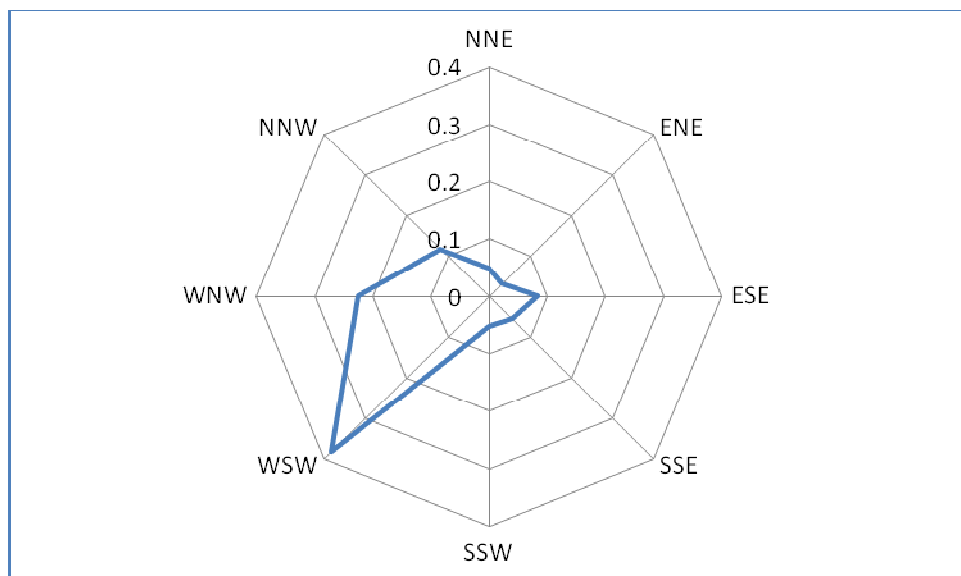


Figure 2: Ventura County - Summer Wind Frequency Distribution

Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis evaluates the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the area.

The Ventura County area is shown in Appendix 1, Map 16. The Coastal Plain and Valley is bounded by the Pacific Ocean on the west and south, the Santa Monica-Santa Susana Mountains on the east, and the Western Transverse Ranges on the north. The Santa Clara River Valley extends for approximately 45 miles (72 kilometers) from the mouth of the Santa Clara River to east of Castaic Junction in Los Angeles County and ranges in elevation from sea level to approximately 1,010 feet (308 meters), measured from the riverbed to Castaic Junction (in Los Angeles County). The valley trends east to west, and is the largest valley in Ventura County, and generally bisects the county north and south geographically.

The Santa Monica-Santa Susana Mountains trend east and west, with its western terminus at the eastern end of the Oxnard Plain. The mountains at the northwestern end of the Santa Monica Mountains are called the Conejo Mountains. The Santa Monica Mountains extend eastward towards Los Angeles, ending at the Los Angeles River in the Griffith Park area (in Los Angeles County) and are part of the Transverse Ranges and generally included within the Western Transverse Ranges sub-region of the California Floristic Province. These mountains are rugged and have high relief, ranging from sea level along their southern edge to 948 meters (3,111 feet) on Sandstone Peak, immediately south of Boney Mountain, both located within Ventura County. The Santa Susana Mountains also trend east-west, originating in the west at the northeast corner of the Oxnard Plain and extend eastward to the Newhall Pass in Los Angeles County. The Santa Clara River Valley creates the northern boundary of these mountains.

The Western Transverse Ranges are the dominant landform of Ventura County, occupying the northern two-thirds of the land area of the county. The Western Transverse Ranges are a collection of east-west trending mountain ranges with intervening valleys. The Western Transverse Ranges are extremely

ugged and have high relief, ranging from sea level west of Ventura along the Rincon coast to 2,682 meters (8,831 feet) on Mount Piños at the very northern edge of Ventura County.⁵

Factor 5: Jurisdictional boundaries

For each potential nonattainment area, we considered existing jurisdictional boundaries to provide a clearly defined legal boundary and to help identify the areas appropriate for carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment area boundaries for ozone or other urban-scale pollutants, county lines, air district boundaries, township boundaries, areas covered by a metropolitan planning organization, state lines, areas of Indian country, and urban growth boundary. Where existing jurisdictional boundaries were not adequate or appropriate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates were considered.

The Ventura County area has previously established nonattainment boundaries associated with both the 1-hour and the 1997 8-hour ozone NAAQS. The state has recommended the same boundary for the 2008 ozone NAAQS. The Ventura County Air Pollution Control District has jurisdiction over the entirety of Ventura County, including the continental portion as well as the Anacapa and San Nicolas islands portions. Likewise, the entire county's (mainland and island portions) transportation planning falls under the jurisdiction of the Southern California Association of Governments (SCAG), which is the Metropolitan Planning Organization (MPO) for the region. The mainland portion of Ventura County forms the southern end of California's South Central Coast Air Basin. The entirety of Ventura County forms the Oxnard-Thousand Oaks-Ventura metropolitan statistical area (MSA). This MSA is part of the larger Los Angeles-Long Beach-Riverside combined statistical area (CSA). Therefore, the state recommendation for a partial county designation is not along jurisdictional lines, but is due to the physical separation of the islands from the mainland.

However, jurisdiction is a factor in designating this mainland portion of Ventura County as a separate area from San Joaquin Valley to the north. San Joaquin Valley is its own air district, is a separate air basin with a mountain range separating it from Ventura County, and at the southern end of the valley has a separate MPO, Kern Council of Governments, from the SCAG MPO that has jurisdiction over Ventura County. Kern County in San Joaquin Valley is also not a part of the Los Angeles-Long Beach-Riverside CSA.

Similar distinctions can be made between the mainland portion of Ventura County, Santa Barbara County, which is attaining the standard, and the South Coast area, which EPA intends to designate as a separate nonattainment area. Santa Barbara County, which is west of Ventura, is a separate air basin and has a separate air district from Ventura County. The intended Los Angeles-South Coast nonattainment area, which is east and south of Ventura, is also a separate air basin and has a separate air district from Ventura County.

Conclusion

Based on the assessment of factors described above, EPA has preliminarily concluded that the continental portion of Ventura County should be designated nonattainment because the area violates the 2008 ozone NAAQS.

⁵ Ventura County Geography <http://venturaflora.com/files/vcgeography.htm>

The Clean Air Act requires EPA to designate any area as nonattainment if it violates a NAAQS or if it contributes to a violation in a nearby area. Air quality data (Factor 1) indicate that monitors in the existing Ventura County nonattainment area (which includes the continental portion county as noted in Table 1) show a violation of the 2008 8-hour ozone standard based on 2008-2010 data. Additionally, there are no violating monitors on the islands of Ventura County or in Santa Barbara County, based on preliminary 2011 data (see discussion in this Technical Support Document, State of California Summary), to the west of the mainland portion of the county. Therefore, Factor 1 supports the state's recommended boundary of the continental portion of Ventura County for nonattainment.

EPA's review of emissions and emission related data (Factor 2) shows that sources of ozone precursor emissions from Ventura County are higher than those from Santa Barbara County to the west, and lower than those from adjacent counties in the San Joaquin Valley or South Coast Air Basin. EPA believes that the state's recommended nonattainment area encompasses both source and receptor populations in the county.

Based on our consideration of meteorology and weather or transport patterns (Factor 3), geography and topography (Factor 4), and jurisdictional boundaries (Factor 5), EPA concurs with the state's recommendation and intends to designate the continental portion of Ventura County as nonattainment for the 2008 ozone NAAQS. This boundary is the same as the boundaries used for earlier ozone NAAQS (both 1-hour and the 1997 8-hour) and essentially follows the boundaries of the county, the air district, the MPO and the air basin.