

**OZONE REDESIGNATION REQUEST  
AND MAINTENANCE PLAN  
FOR SAN DIEGO COUNTY**

**December 2002**

**SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT  
9150 CHESAPEAKE DRIVE  
SAN DIEGO, CA 92123**

# OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR SAN DIEGO COUNTY

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## **1.0 INTRODUCTION**

In 2001, San Diego County reached a major milestone for regional air quality improvement and public health when it attained the one-hour ozone National Ambient Air Quality Standard (NAAQS). Attainment is the direct result of an effective emission control program, which has led to a long-term downtrend in peak ozone levels and in the number of exceedances of the standard, despite substantial growth in population and motor vehicles. Attainment clearly demonstrates emission control measures for industries, motor vehicles, and consumer products are working.

Notwithstanding compliance with the standard, San Diego County will remain designated a “serious ozone nonattainment area” until the San Diego County Air Pollution Control District (“the District”) submits a redesignation request and supporting documentation to the California Air Resources Board (ARB), ARB approves and forwards the request to the U.S. Environmental Protection Agency (EPA), and EPA finds that the statutory criteria for redesignation have been met, pursuant to Section 107(d)(3)(E) of the Clean Air Act,<sup>1</sup> and redesignates the area to attainment.

The District has reviewed the statutory criteria and EPA policy guidance addressing redesignation, and concludes redesignation to attainment is warranted. Accordingly, the District hereby requests redesignation to attainment of the one-hour ozone NAAQS. Full justification for redesignation is provided herein.

### **1.1 BACKGROUND**

#### **1.1.1 National Ambient Air Quality Standards for Ozone**

One-Hour Standard. EPA established the current one-hour ozone NAAQS in 1979.<sup>2</sup> In simple terms, the standard is attained when each monitor in the region has no more than three days in a three-year period with a maximum hourly average ozone concentration greater than or equal to 0.125 parts per million. San Diego County has recorded three years of complete, quality-assured, violation-free ambient ozone monitoring data for 1999-2001, thereby demonstrating attainment of the one-hour ozone NAAQS.<sup>3</sup>

Eight-Hour Standard. EPA established an additional, more stringent ozone standard in 1997, based on an eight-hour averaging period.<sup>4</sup> Several parties filed suits challenging the standard. In early 2001, the U.S. Supreme Court upheld EPA’s authority to establish the standard, but ordered EPA to develop a new implementation policy, and deferred resolution of remaining legal challenges to the U.S. Court of Appeals. In early 2002, the Court of Appeals unanimously rejected all remaining

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<sup>1</sup> The Clean Air Act is codified, as amended, in the US Code at 42 USC Sections 7401, et seq.

<sup>2</sup> Federal Register, Volume 44, Page 8220 (44 FR 8220); see also Code of Federal Regulations, Title 40, Part 50.9 (40 CFR 50.9), “National One-Hour Primary and Secondary Ambient Air Quality Standards for Ozone,” and Appendix H to Part 50, “Interpretation of the One-Hour Primary and Secondary National Ambient Air Quality Standards for Ozone.”

<sup>3</sup> A complete demonstration of attainment is presented herein in Chapter 2: Attainment of the One-Hour Ozone NAAQS.

<sup>4</sup> 62 FR 38856; 40 CFR 50.10, “National Eight-Hour Primary and Secondary Ambient Air Quality Standards for Ozone.”

legal challenges. Consequently, EPA is now proceeding with developing federal requirements to implement the eight-hour standard in the near future.

### **1.1.2 Emissions Sources**

Ozone is not emitted directly into the air, but is formed by complex chemical reactions of ozone precursors (volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>)) in the presence of sunlight. These reactions are stimulated by sunlight and temperature so that peak ozone levels occur during the warmer times of the year, typically April through October.

VOC are emitted from a variety of sources, including motor vehicles, chemical plants, factories, consumer and commercial products, and other industrial sources. VOC are also emitted by natural sources such as vegetation. NO<sub>x</sub> is emitted primarily from motor vehicles, other mobile sources (e.g., trains, ships, and aircraft), power plants, and other sources of fuel combustion.

### **1.1.3 Health and Welfare Effects of Ozone**

Ozone is a colorless gas with a pungent, irritating odor. Ozone in the upper atmosphere (stratospheric ozone) is beneficial by shielding the earth from harmful ultraviolet radiation from the sun. However, high concentrations of ground-level (tropospheric) ozone can damage living tissues and man-made materials.

The health effects of ozone focus on the respiratory tract. When inhaled, ozone can irritate and inflame the lining of the lungs, much like sunburn damage on skin. People with respiratory problems are most vulnerable, but even healthy people that are active outdoors can be affected when ozone levels are high. Potential health impacts include aggravated asthma, reduced lung capacity, and increased susceptibility to respiratory illnesses like pneumonia and bronchitis.

Ground-level ozone can also hurt the economy by affecting crop yield and the durability of materials. Ozone interferes with a plant's ability to produce and store food, compromising its growth and reproduction. Additionally, ozone chemically attacks natural rubber and certain synthetic polymers, textile fibers and dyes, and, to a lesser extent, paints. Rubber cracks and dyes fade after prolonged exposure to ozone.

### **1.1.4 Designation History of San Diego County**

San Diego County's air quality designations with respect to NAAQS (attainment, nonattainment, or unclassifiable) are specified in federal regulation.<sup>5</sup> The region was originally designated nonattainment for ozone on March 3, 1978,<sup>6</sup> pursuant to the Clean Air Act, Section 107, as amended in 1977. The ozone nonattainment designation was reaffirmed by operation of law on November 6, 1991,<sup>7</sup> pursuant to Section 107(d)(1)(C)(i) of the Clean Air Act, as amended in 1990.

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<sup>5</sup> 40 CFR 81.305, "Designation of Areas for Air Quality Planning Purposes – California."

<sup>6</sup> 43 FR 8964.

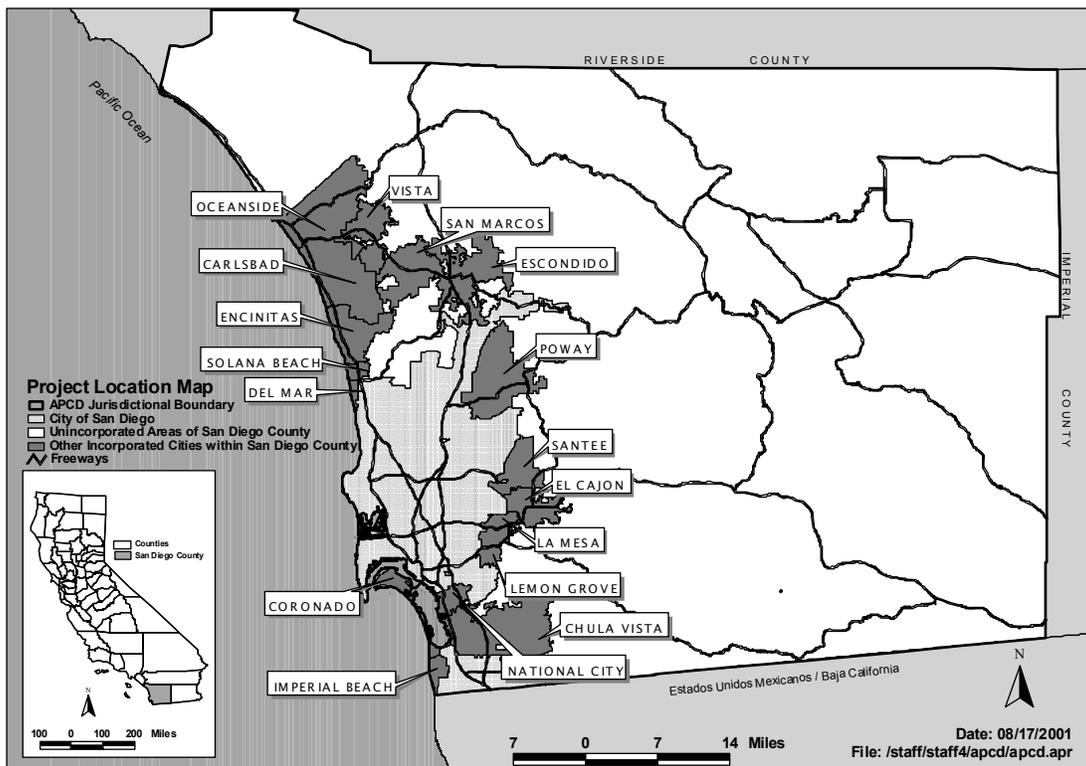
<sup>7</sup> 56 FR 56694.

The 1990 Clean Air Act Amendments further required that ozone nonattainment areas be classified by operation of law as marginal, moderate, serious, severe, or extreme, depending on the severity of their air quality problem. San Diego County was initially classified as severe,<sup>7</sup> but was reclassified as serious on January 19, 1995,<sup>8</sup> based upon the District's finding and EPA's concurrence that the ozone value used in the original classification was incorrect.

### 1.1.5 San Diego County Ozone Attainment Area Boundaries

The San Diego County ozone nonattainment area boundaries – and proposed attainment area boundaries – are contiguous with San Diego County (and District) jurisdictional boundaries, as specified in federal regulation.<sup>9</sup> San Diego County encompasses approximately 4,260 square miles and is bounded on the north by Orange and Riverside Counties, on the east by Imperial County, on the west by the Pacific Ocean, and on the south by the State of Baja California, Mexico (as illustrated in Figure 1-1).

**FIGURE 1-1**  
**SAN DIEGO COUNTY**  
**PROPOSED ATTAINMENT AREA BOUNDARIES**



<sup>8</sup> 60 FR 3771.

<sup>9</sup> 40 CFR 81.164 (“San Diego Intrastate Air Quality Control Region”), and 40 CFR 81.305 (“Designation of Areas for Air Quality Planning Purposes – California.”)

### **1.1.6 Attainment Deadlines**

The statutory attainment date for serious ozone nonattainment areas is November 15, 1999, as prescribed by the Clean Air Act, Section 181(a). Unfortunately, transported pollution from the South Coast Air Basin<sup>10</sup> in 1998 prevented San Diego County from meeting the 1999 attainment date.

EPA is authorized to grant up to two one-year extensions of the attainment date under specified conditions, pursuant to the Clean Air Act, Section 181(a)(5). San Diego County met these conditions and on October 11, 2000, was granted a one-year extension of the attainment deadline, to November 15, 2000.<sup>11</sup> Similarly, on August 6, 2001, San Diego County was granted another one-year extension of the attainment deadline, to November 15, 2001.<sup>12</sup> The 2001 attainment deadline has been met.

## **1.2 REDESIGNATION CRITERIA**

Section 107(d)(3)(E) of the Clean Air Act identifies the following five criteria that must be met before EPA can redesignate an area from nonattainment to attainment.

1. EPA has determined that the area attained the NAAQS.
2. EPA has fully approved the applicable Ozone State Implementation Plan pursuant to Section 110(k) of the Clean Air Act. Section 110(k) addresses completeness findings, deadlines for EPA actions, types of EPA actions, and sanctions that may be applied to areas failing to meet Clean Air Act requirements.
3. The area has met all requirements in Section 110 and Part D of the Clean Air Act. Section 110 describes general requirements for State Implementation Plans (SIPs), while Part D pertains to requirements applicable to nonattainment areas.
4. EPA has determined that the area's improved air quality is due to permanent and enforceable emissions reductions resulting from the implementation of the applicable State Implementation Plan.
5. EPA has fully approved a Maintenance Plan for the area as meeting the requirements of Clean Air Act Section 175A. Section 175A requires demonstrating that the area will maintain (continue to attain) the standard for at least ten years after redesignation to attainment, and specifying contingency measures to be implemented if a violation is monitored at any time during the ten-year maintenance period.

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<sup>10</sup> The South Coast Air Basin lies directly north of the San Diego Air Basin and is comprised of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties.

<sup>11</sup> 65 FR 60362.

<sup>12</sup> 66 FR 40908.

### 1.3 EPA POLICY GUIDANCE

EPA has provided policy guidance on redesignation requests in the documents identified below. San Diego County's redesignation request and supporting documentation herein have been prepared consistent with statutory requirements and the following EPA policy guidance.

1. "General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990," April 16, 1992 (57 FR 13498), and supplemented on April 28, 1992 (57 FR 18070). (General Preamble, 1992)
2. "Procedures for Processing Requests to Redesignate Areas to Attainment," John Calcagni, Director, Air Quality Management Division, September 4, 1992. (Calcagni, September 1992)
3. "Part D New Source Review (part D NSR) Requirements for Areas Requesting Redesignation to Attainment," Mary D. Nichols, Assistant Administrator for Air and Radiation, October 14, 1994. (Nichols, October 1994)

## 2.0 ATTAINMENT OF THE ONE-HOUR OZONE NAAQS

### 2.1 MONITORING NETWORK

The District operates an extensive ozone monitoring network, continuously monitoring ambient ozone levels at numerous sites throughout San Diego County<sup>1</sup> in compliance with federal requirements.<sup>2</sup> The data generated at these monitors are used to define the nature and severity of ozone pollution in San Diego County and determine the ozone NAAQS attainment status.

A map indicating the location of all ozone monitors operated during the three-year attainment period (1999-2001) is presented in Figure 2-1. Each monitor remained at the same location for the duration of the three-year period.

FIGURE 2-1

#### OSONE MONITORS IN SAN DIEGO COUNTY OPERATED DURING THE THREE-YEAR ATTAINMENT PERIOD 1999 THROUGH 2001



<sup>1</sup>These monitors collectively form San Diego County's State and Local Air Monitoring Stations (SLAMS) network, including National Air Monitoring Stations (NAMS).

<sup>2</sup> 40 CFR Part 58, "Ambient Air Quality Surveillance."

## 2.2 METHODOLOGY

The method for demonstrating attainment of the one-hour ozone NAAQS is prescribed in federal regulation.<sup>3</sup> Attainment status must be determined for each monitor and is based on three complete, consecutive calendar years of quality-assured monitoring data that have been recorded in EPA's Aerometric Information Retrieval System (AIRS).

In its simplest form, an attainment demonstration is relatively straightforward. The number of exceedances<sup>4</sup> in each year are recorded for each monitor and then averaged over the past three years to determine if the average for each monitor is less than or equal to one, which signifies attainment. Averaging over a three-year period reduces the variable influence of year-to-year meteorology changes and thus better represents the air quality trend.

An official demonstration of attainment must account for any days when an exceedance might have occurred but monitoring did not occur due to calibrations, maintenance, or repair of monitoring equipment. This calculated value is known as the “estimated number” of exceedances for a given year. The estimated number of exceedances for each of three consecutive years is averaged to determine the “expected number” of exceedances per year. The standard is attained when the expected number of exceedances per year at each monitor is less than or equal to one.

## 2.3 ATTAINMENT DEMONSTRATION

San Diego County's ozone attainment demonstration is summarized in Table 2-1 and is based on the three-year period January 1, 1999, through December 31, 2001. The supporting monitoring data have been quality-assured and recorded in EPA's AIRS database, and are available for public review.

As indicated in Table 2-1, the expected number of exceedances per year is well below one at each monitoring site. Thus, the one-hour ozone NAAQS has been attained. Accordingly, on October 23, 2002, EPA issued a final determination that the San Diego area attained the one-hour ozone NAAQS by the deadline required by the Clean Air Act.<sup>5</sup>

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<sup>3</sup> 40 CFR 50.9 (“National One-Hour Primary and Secondary Ambient Air Quality Standards for Ozone”), and Appendix H to Part 50 (“Interpretation of the One-Hour Primary and Secondary National Ambient Air Quality Standards for Ozone”).

<sup>4</sup> An exceedance is a day with a maximum hourly average ozone measurement that exceeds the one-hour ozone NAAQS. However, an exceedance does not necessarily cause a violation. A violation occurs when there are four or more exceedances at a single site during a three-year period.

<sup>5</sup> 67 FR 65043.

**TABLE 2-1**  
**ONE-HOUR OZONE NAAQS EXCEEDANCES IN SAN DIEGO COUNTY**  
**1999 THROUGH 2001**

Monitoring Site	1999		2000		2001		Expected Exceedances Per Year
	Monitored	Estimated	Monitored	Estimated	Monitored	Estimated	
Chula Vista	0	0.0	0	0.0	0	0.0	0
El Cajon	0	0.0	0	0.0	0	0.0	0
Oceanside	0	0.0	0	0.0	0	0.0	0
San Diego (Overland Ave.)	0	0.0	0	0.0	1	1.0	0.3
Del Mar	0	0.0	0	0.0	0	0.0	0
Escondido	0	0.0	0	0.0	1	1.0	0.3
Alpine	0	0.0	0	0.0	1	1.0	0.3
San Diego (12 <sup>th</sup> St.)	0	0.0	0	0.0	0	0.0	0
Camp Pendleton	0	0.0	0	0.0	0	0.0	0
Otay Mesa	0	0.0	0	0.0	0	0.0	0

Source: EPA's Aerometric Information Retrieval System (AIRS), June 2002.

### **3.0 CLEAN AIR ACT COMPLIANCE**

For purposes of redesignation, San Diego County must comply with Section 110 and Part D of the Clean Air Act, and the applicable SIP must have been fully approved by EPA pursuant to Clean Air Act Section 110(k). As specified in the following sections, these requirements will have been fully met by the time EPA acts on this redesignation request.

#### **3.1 COMPLIANCE WITH CLEAN AIR ACT SECTION 110 AND PART D**

Section 110 of the Clean Air Act identifies general SIP provisions, and Part D identifies specific requirements for nonattainment SIPs. On December 28, 1983,<sup>1</sup> EPA approved San Diego's Ozone SIP as meeting the requirements of Section 110 and Part D of the Clean Air Act as amended in 1977. On January 8, 1997,<sup>2</sup> EPA approved the San Diego portion of the 1994 California SIP for Ozone as meeting the Clean Air Act as amended in 1990, which included revisions to Section 110 and Part D.

There were two possible issues, pertaining to Part D requirements for Reasonably Available Control Technology and for New Source Review rules. The issues have been resolved as follows.

##### **3.1.1 Reasonably Available Control Technology (RACT)**

Part D of the Clean Air Act (Section 182(b)(2)) requires RACT rules for major sources of VOC that are covered by RACT guidance ("Control Technique Guidelines") issued by EPA. The District had previously adopted all required RACT rules for major sources present in San Diego County that are covered by RACT guidance. On September 23, 1998,<sup>3</sup> EPA approved the District's Control Technique Guidelines Negative Declaration, certifying there are no major sources present in San Diego County for the remaining Control Technique Guidelines source categories, including Wood Furniture, and therefore associated RACT rules were not required pursuant to Part D of the Clean Air Act. However, a wood products coating operation was recently determined to exceed the RACT applicability threshold. Accordingly, a RACT rule for wood products coating operations (Rule 67.11.1) was adopted by the District Board on September 25, 2002. The rule has been transmitted to ARB for submittal to EPA as a SIP revision. Upon EPA approval of this rule, all RACT requirements will have been fully met.

##### **3.1.2 New Source Review (NSR) Rules**

The District's NSR Rules 20.1 through 20.4 were submitted on May 13, 1999, but have not been fully approved by EPA. The District is developing NSR rule amendments to address rule deficiencies identified by EPA. Nevertheless, EPA policy guidance indicates full NSR rule approval is not a prerequisite to redesignation, provided the NSR program is not relied upon for demonstrating maintenance of the ozone standard.<sup>4</sup>

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<sup>1</sup> 48 FR 57130.

<sup>2</sup> 62 FR 1150.

<sup>3</sup> 63 FR 50764.

<sup>4</sup> Nichols, October 1994, at page 1.

The Part D NSR program, which is required only of federal nonattainment areas, is not relied upon for the maintenance demonstration in Section 5.2. Indeed, no emission reduction credit associated with NSR requirements is claimed herein. Therefore, EPA-approval status of NSR rules is not an issue for redesignation.

### **3.2 FULLY-APPROVED SIP PURSUANT TO CLEAN AIR ACT SECTION 110(k)**

Section 110(k) of the Clean Air Act describes EPA's actions on SIPs, including completeness findings, deadlines for EPA actions, types of EPA actions, and sanctions that may be applied to areas failing to meet Clean Air Act requirements. As indicated above, EPA fully approved the San Diego portion of the "1994 California SIP for Ozone" on January 8, 1997.<sup>2</sup> With anticipated EPA approval of the RACT Rule 67.11.1 for wood products coating operations (described above), the requirement for a fully approved SIP pursuant to Clean Air Act Section 110(k) will have been met.

#### **4.0 ATTAINMENT DUE TO PERMANENT, ENFORCEABLE EMISSIONS REDUCTIONS**

To be redesignated, attainment must have resulted from permanent and enforceable emissions reductions. As discussed below, neither an economic downturn nor exceptionally cool temperatures were responsible for San Diego County attaining the one-hour ozone NAAQS. Rather, attainment resulted from permanent and enforceable reductions of VOC and NO<sub>x</sub> emissions.

#### **4.1 PERMANENT, ENFORCEABLE EMISSIONS REDUCTIONS**

Documentation prepared pursuant to EPA policy guidance<sup>1</sup> follows, identifying the percent emissions reductions (from the 1990 base year) achieved from federal (EPA), state (ARB), and local (District) control measures. As indicated in Table 4-1, between 1990 and 2001 California's mobile source control programs achieved 63% VOC and 28% NO<sub>x</sub> reductions from on-road motor vehicles, and 28% VOC and 26% NO<sub>x</sub> reductions from offroad equipment, while the consumer solvent products control program reduced VOC emissions from that category by 18%. Concurrently, the District's stationary source control programs achieved 16% VOC and 29% NO<sub>x</sub> reductions. Because the ARB and District control programs are equivalent or more stringent than the related federal programs, and because EPA generally has not yet required significant controls for source categories under exclusive federal jurisdiction, no emissions reductions are attributed to federal control programs for purposes of this demonstration.

**TABLE 4-1**  
**SAN DIEGO COUNTY**  
**1990-2001 REDUCTIONS IN OZONE PRECURSOR EMISSIONS**  
**(tons per day)**

<b>Source Category</b>	<b>Jurisdiction</b>	<b>VOC 1990</b>	<b>VOC 2001</b>	<b>% VOC Reduction</b>	<b>NO<sub>x</sub> 1990</b>	<b>NO<sub>x</sub> 2001</b>	<b>% NO<sub>x</sub> Reduction</b>
Stationary Sources	District	57.5	48.4	16%	22.4	16.0	29%
Consumer Solvent Products	ARB	27.7	22.8	18%	--	--	--
On-road Motor Vehicles	ARB	230.1	85.8	63%	201.9	145.4	28%
Off-road Equipment	ARB	17.2	12.3	28%	54.9	40.6	26%

Source: California Air Resources Board, October 2002.

Notes: Emissions data reflect a "summer day," as required by EPA policy guidance.<sup>1</sup>  
Emissions data assume no emissions reductions from NSR or Title V permit programs.  
Source category-specific data are listed in Attachment A to this Ozone Redesignation Request.

<sup>1</sup> Calcagni, September 1992.

## 4.2 NO ECONOMIC DOWNTURN

Long-term trend data for annual gross regional product and daily vehicle miles traveled are presented in Table 4-2 and illustrated in Figure 4-1 to demonstrate attainment did not result from temporary reductions in emissions due to an economic downturn. Rather, economic and travel activity continually increased from the mid-1990s through 2001, while emissions steadily decreased and air quality continued to improve as a result of effective emission control measures.

**TABLE 4-2**  
**SAN DIEGO COUNTY TRENDS IN**  
**ECONOMIC AND TRAVEL ACTIVITY AND AIR QUALITY**

Year	Gross Regional Product (\$Billions)	Vehicle Miles Traveled (Millions)	Emissions (tons/day) (VOC+NOx)/10	One-Hour Ozone Design Value (pphm)	Basin-wide Exceedance Days
1990	76	61	70	19	39
1991	76	61	67	17	27
1992	75	62	65	17	19
1993	75	61	62	15	14
1994	76	63	59	15	9
1995	78	64	56	15	12
1996	80	65	55	14	2
1997	85	66	53	14	1
1998	89	69	51	14	9
1999	93	71	49	14	0
2000	98	72	47	13	0
2001	103	74	46	12	2

Source: San Diego Assoc. of Governments (May 2002) and California Air Resources Board (October 2002).

Notes: Gross Regional Product in constant 1996 dollars (billions).

Emissions data are based on a 2001 base year and reflect "summer day."

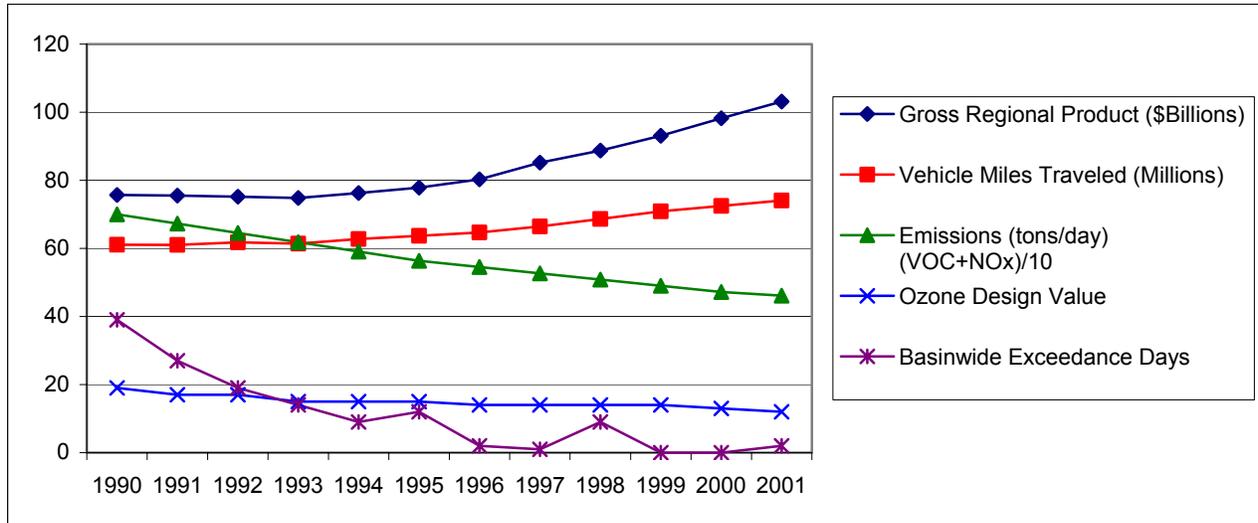
Emissions data assume no emissions reductions from NSR or Title V permit programs.

Source category-specific data are listed in Attachment A to this Ozone Redesignation Request.

One-hour ozone design value is the fourth highest daily maximum concentration during the three-year period ending in the indicated year.

Basin-wide exceedance days is the number of days in the indicated year with daily maximum concentrations exceeding the one-hour ozone NAAQS at any monitoring site within the air basin.

**FIGURE 4-1**  
**SAN DIEGO COUNTY TRENDS IN**  
**ECONOMIC AND TRAVEL ACTIVITY AND AIR QUALITY**



### 4.3 NO UNUSUALLY FAVORABLE METEOROLOGY

Meteorological parameters correlated with ozone formation have been analyzed to verify attainment did not result from unusually favorable meteorology during the three-year attainment period. Ozone formation is influenced by a variety of atmospheric variables. Temperature is a principal determinant, such that higher ozone concentrations occur on warmer days, and lower concentrations occur on cooler days. Thus, the “ozone season” for San Diego County is from April through October (the relatively warmer months).

The District reviewed historical temperature records to verify that the 1999–2001 attainment period was not unusually cool. Specifically, April-to-October “ozone season” average temperatures were calculated for each year from 1993 (the earliest year available in the District’s meteorological database) through 2001. Then, to reflect the three-year measurement period of the one-hour ozone NAAQS, three-year temperature averages were calculated for the three-year periods ending with each year from 1995 through 2001. An overall long-term, nine-year average was also calculated for the entire 1993–2001 period, to establish the temperature norm. Finally, the difference between each three-year average and the long-term average was calculated, to determine the extent to which each three-year period deviated from the norm.

The results are presented in Table 4-3. The “Surface” column identifies ground-level temperatures at the Alpine monitoring site, which historically experiences the highest peak ozone concentrations and the vast majority of the exceedances in San Diego County. The “Aloft” column identifies temperatures aloft at approximately 1500 meters above sea level, measured using a balloon-borne

instrument (rawinsonde). Temperatures aloft are less variable than surface temperatures, and therefore are considered more representative of the air basin as a whole.

**TABLE 4-3**  
**SAN DIEGO COUNTY**  
**THREE-YEAR AVERAGE OZONE SEASON TEMPERATURES**  
**(Degrees Fahrenheit)**

<b>Three-Year Periods</b>	<b>Surface</b>	<b>Deviation</b>	<b>Aloft</b>	<b>Deviation</b>
1993-1995	68.2	-0.4	63.6	0.3
1994-1996	69.1	0.5	64.3	1.0
1995-1997	69.6	1.0	64.2	0.9
1996-1998	68.9	0.3	62.9	-0.4
1997-1999	68.2	-0.4	62.0	-1.3
1998-2000	67.9	-0.7	62.0	-1.3
1999-2001	68.7	0.1	63.9	0.6
<b>Long-Term Avg.</b>				
1993-2001	68.6	--	63.3	--

Source: Surface temperature data for the Alpine monitoring site, compiled by the District. Temperature aloft data from the National Weather Service, averaged from 5:00 a.m (Pacific Daylight Time) daily weather balloons at the 850 millibar pressure level.

As indicated in Table 4-3, the three-year average temperature for 1999–2001 was not unusually cool. Rather, both the surface and aloft temperatures, on average, were slightly higher than the norm. Thus, attainment did not result from unusually favorable meteorology during the three-year attainment period. These findings are further justified by the long-term downtrend in peak ozone levels and days exceeding the ozone standard, presented above in Table 4-2 and Figure 4-1.

## **5.0 MAINTENANCE PLAN**

For purposes of redesignation, the District must have an EPA-approved Maintenance Plan, pursuant to Clean Air Act Section 175A, demonstrating that the area will maintain (continue to attain) the one-hour ozone NAAQS for at least ten years after redesignation to attainment, and specifying contingency measures to be implemented if a violation is monitored at any time during the ten-year maintenance period. EPA policy guidance<sup>1</sup> requires, in addition to the maintenance demonstration and contingency measures, that the Maintenance Plan must also identify the attainment inventory, and commit to continued air quality monitoring and verification of continued attainment. As specified in the following sections, the Maintenance Plan presented herein complies with the requirements of the Clean Air Act and EPA policy guidance.

### **5.1 ATTAINMENT INVENTORY**

The Maintenance Plan must identify the total regionwide level of ozone-precursor emissions that provided for attainment.<sup>1</sup> Because the standard was attained in 2001, total daily VOC and NOx emissions in 2001 represent the Attainment Inventory (see Table 5-1).

**TABLE 5-1**  
**SAN DIEGO COUNTY**  
**2001 OZONE ATTAINMENT INVENTORY**

<b>Pollutant</b>	<b>Average Total Daily Emissions (tons)</b>
Volatile organic compounds (VOC)	220.8
Nitrogen oxides (NOx)	240.7

Source: California Air Resources Board, October 2002.

Notes: Emissions data reflect a "summer day," as required by EPA policy guidance.<sup>1</sup>  
Emissions data assume no emissions reductions from NSR or Title V permit programs.  
Source category-specific data are listed in Attachment A to this Ozone Redesignation Request.

### **5.2 MAINTENANCE DEMONSTRATION**

The Maintenance Plan must include a demonstration that the standard will be maintained for at least ten years after redesignation to attainment.<sup>2</sup> The 2001 Attainment Inventory of ozone precursors (Table 5-1) represents the regionwide emissions level that is sufficient to attain the one-hour ozone NAAQS. Maintenance is demonstrated by showing that future emissions will not exceed the level established by the 2001 Attainment Inventory. Specifically, VOC emissions must stay below 220.8 tons per day and NOx emissions must stay below 240.7 tons per day.

<sup>1</sup> Calcagni, September 1992.

<sup>2</sup> Clean Air Act, Section 175A(a).

The future effective date of redesignation is not yet certain. EPA is likely to final the redesignation in 2003, but Clean Air Act Section 107(d)(3)(D) allows EPA up to 18 months to perform its review, so the redesignation could potentially occur in 2004. Therefore, the Maintenance Plan horizon year must be 2014, to provide a 10-year maintenance period from 2004 to 2014. As indicated in Table 5-2, total regionwide emissions of VOC and NO<sub>x</sub> will steadily decline through the maintenance period due to the existing emissions control program (despite forecasted growth in population, employment, travel, and military activities), to well below the 2001 level that provided for attainment. In fact, by 2014, San Diego County ozone precursor emissions are projected to decrease by 50 tons per day (23%) for VOC and 73 tons per day (30%) for NO<sub>x</sub>, relative to the 2001 Attainment Inventory. Consequently, future violations of the ozone standard are not anticipated and maintenance is thus demonstrated.

**TABLE 5-2**

**OZONE MAINTENANCE DEMONSTRATION  
2001 – 2014 MAINTENANCE PERIOD  
PROJECTED INVENTORY OF OZONE PRECURSORS**

Pollutant	Average Total Daily Emissions in San Diego County (tons)			
	2001	2005	2010	2014
VOC	220.8	189.7	177.2	170.7
NO <sub>x</sub>	240.7	218.4	192.1	167.4

Source: California Air Resources Board, October 2002.

Notes: Emissions data are based on a 2001 base year and reflect “summer day.”

Emissions data assume no emissions reductions from NSR or Title V permit programs.

Source category-specific data are listed in Attachment A to this Ozone Redesignation Request.

### 5.3 CONFORMITY EMISSIONS BUDGETS

#### 5.3.1 On-Road Motor Vehicle Emissions Budgets For Transportation Conformity

The federal transportation conformity regulation<sup>3</sup> requires the Maintenance Plan to specify on-road motor vehicle emissions budgets for the horizon year, and any interim milestone years, that represent the allowable levels of on-road motor vehicle emissions to conform to the Maintenance Plan.<sup>4</sup> Emissions budgets are established in this Maintenance Plan for the 2014 horizon year and an interim year, 2010 (Table 5-3). The 2014 horizon year emissions budgets will also apply to all post-2014 future transportation conformity analysis years, as authorized in the federal transportation conformity rule.<sup>5</sup>

<sup>3</sup> 40 CFR 93 (“Determining Conformity of Federal Actions to State or Federal Implementation Plans”).

<sup>4</sup> 40 CFR 93.118 (“Criteria and Procedures: Motor Vehicle Emissions Budget”).

<sup>5</sup> 40 CFR 93.118(b)(2) (“Criteria and Procedures: Motor Vehicle Emissions Budget”).

**TABLE 5-3**  
**SAN DIEGO COUNTY**  
**ON-ROAD MOTOR VEHICLE EMISSIONS BUDGETS**  
**OZONE MAINTENANCE PERIOD**  
**(tons per day)**

Pollutant	2010	2014 and Subsequent Years
VOC	46	36
NO <sub>x</sub>	88	66

Note: Emissions budgets are based on ARB's EMFAC2002 motor vehicle emissions model and reflect "summer day."

The emissions budgets presented in Table 5-3 represent the on-road motor vehicle emissions levels projected for 2010 and 2014, as determined using ARB's EMFAC2002 on-road motor vehicle emissions estimation model, with travel activity forecasts updated by the San Diego Association of Governments (SANDAG). The budgets are environmentally conservative in that they are substantially lower (more stringent) than needed to provide for maintenance of the one-hour ozone NAAQS. These budgets readily provide for such maintenance, as well as continue the region's progress toward attaining the more-stringent eight-hour ozone NAAQS.

The emissions budgets presented in Table 5-3 have been slightly adjusted<sup>6</sup> to account for imprecision in the on-road motor vehicle emissions modeling process, and potential slight emission increases associated with recent state legislation affecting smog check requirements.<sup>7</sup> Because the emissions budgets are expressed as whole numbers, on-road motor vehicle emissions estimates (in tons per day) should be rounded to whole numbers using standard rounding conventions (.49 rounds down; .50 rounds up), prior to being compared to the emissions budgets for purposes of transportation conformity determinations.

### 5.3.2 Military Growth Increment For General Conformity

The federal general conformity regulation<sup>8</sup> and District Rule 1501<sup>9</sup> require federal agencies proposing major federal actions to make a determination that the proposed action will conform to the SIP. One method for demonstrating that an action conforms to the SIP is specifically

<sup>6</sup> To establish the emissions budgets, the 2010 and 2014 on-road motor vehicle emissions estimates were adjusted by rounding up to the next whole number (tons), and adding one.

<sup>7</sup> California Assembly Bill 2637 (2002 Statutes).

<sup>8</sup> 40 CFR 51, subpart W ("Determining Conformity of General Federal Actions to State or Federal Implementation Plans).

<sup>9</sup> District Rule 1501, "Conformity of General Federal Actions," which was fully approved by EPA on April 23, 1999 (64 FR 19916).

identifying and accounting for the anticipated emissions from the proposed action in the attainment or maintenance demonstration.<sup>10</sup>

Anticipating potential actions at Navy and Marine Corps facilities in San Diego County over the next decade that could require conformity determinations, the Department of the Navy (DoN) developed, for inclusion in the maintenance demonstration, a projection of future mobile source emissions from military actions that may occur during the maintenance period.<sup>11</sup> Accordingly, the NO<sub>x</sub> emissions projections for the maintenance demonstration (Section 5.2) include a Military Growth Increment of 11.4 tons per day (see Attachment A, Table 2 and Figure 2). DoN does not anticipate growth in mobile source VOC emissions from future military activities.

#### 5.4 MAINTENANCE STRATEGY

All control measures in the Ozone Nonattainment SIP for San Diego County are retained in this Maintenance Plan. Although the New Source Review program specified in the Clean Air Act, Title I, Part D (“Plan Requirements for Nonattainment Areas”) is not relied upon for the maintenance demonstration herein, the existing emission offset requirement is being retained in this Maintenance Plan. Specifically, new sources with actual or potential emissions of 50 tons or more per year of VOC or NO<sub>x</sub>, and modified sources that would increase VOC or NO<sub>x</sub> emissions by 25 tons or more per year, will continue to be required to offset emission increases at a 1.2-to-1 ratio. However, upon redesignation to attainment, two requirements will be revised as specifically authorized by the Clean Air Act. Lowest Achievable Emission Rate (LAER) requirements will cease to apply, and will be replaced by Best Available Control Technology (BACT) requirements. Also, the major source threshold for ozone precursors pursuant to the Clean Air Act, Title V (“Permits”), will be a source with actual or potential emissions of 100 tons per year or more of VOC or NO<sub>x</sub>,<sup>12</sup> rather than the 50-ton per year threshold that applies to San Diego County as a serious ozone nonattainment area. Further, pursuant to the federal general conformity regulation<sup>13</sup> and District Rule 1501<sup>14</sup>, upon redesignation to attainment, the applicability threshold for general conformity determinations will also be emissions of 100 tons per year or more for VOC or NO<sub>x</sub>, rather than the 50-ton per year threshold that applies to San Diego County as a serious ozone nonattainment area.

#### 5.5 CONTINUED MONITORING

The District commits to continued operation of the ambient ozone monitoring network, complying with the criteria set forth in 40 CFR 58, "Ambient Air Quality Surveillance." Effective March 2002, the District slightly modified its ozone monitoring network, closing the Oceanside monitoring station (Mission Avenue), which was determined unnecessary and duplicative of the District's existing ozone monitor in the Camp Del Mar area of Camp Pendleton (just two miles to the north).<sup>15</sup>

<sup>10</sup> 40 CFR 51.858(a)(1).

<sup>11</sup> “Navy/Marine Corps Mobile Source Emissions Growth Projection and SIP Planning,” Department of the Navy, San Diego County, California, June 6, 2002.

<sup>12</sup> Clean Air Act Sections 501(2)(B) and 302(j).

<sup>13</sup> 40 CFR 51, subpart W (“Determining Conformity of General Federal Actions to State or Federal Implementation Plans), section 51.853, “Applicability”.

<sup>14</sup> District Rule 1501, “Conformity of General Federal Actions,” section 1551.853, “Applicability”.

<sup>15</sup> Maximum hourly average ozone concentrations at the Camp Pendleton monitor are typically higher than those at the Oceanside (Mission Avenue) monitor. Camp Pendleton data are considered a better indicator of air pollution levels in the Oceanside area.

## 5.6 VERIFICATION OF MAINTENANCE

The District commits to annually reviewing ozone monitoring data from the three most recent, consecutive years to verify continued attainment of the one-hour ozone NAAQS through the maintenance period. However, the maintenance verification requirement shall cease to apply if the one-hour ozone NAAQS is revoked by EPA.

## 5.7 CONTINGENCY PLAN

Despite best efforts to ensure continued compliance with the one-hour ozone NAAQS, it is possible, although not anticipated, that future ambient ozone concentrations could violate the NAAQS. Therefore, pursuant to the Clean Air Act, Section 175A(d), the Maintenance Plan must identify contingency measures to be implemented to correct any future violation that might occur after the region has been redesignated to attainment.

Typically, contingency measures are held in reserve and implemented only if an area violates the standard in the future. However, California's on-going emissions control program creates a unique situation, allowing this Maintenance Plan to identify several ARB mobile source control regulations as contingency measures that will be implemented regardless of monitored ozone levels (see Table 5-4). These measures provide additional emissions reductions during the maintenance period, beyond those needed for attainment.

**TABLE 5-4**

### **ARB REGULATIONS IDENTIFIED AS CONTINGENCY MEASURES**

<b>Measure</b>	<b>Implementation Dates</b>
Lower Light- and Medium-Duty Vehicle Standards (Low-Emission Vehicles II)	2004-2007
Lower Heavy-Duty Vehicle Standards	2004, 2007
Lower Off-Road Engine Standards	2003-2008

These contingency measures will provide significant continuing emissions reductions through the maintenance period (and for sometime thereafter), and thus provide adequate additional reductions to address the Clean Air Act's contingency requirements. As previously indicated (Table 5-2), by 2014, the existing control program is projected to reduce San Diego County ozone precursor emissions by 50 tons per day (23%) for VOC, and 73 tons per day (30%) for NO<sub>x</sub>, below the 2001 level that provided for attainment. Therefore, if new violations were to occur during the maintenance period, sufficient continuing emissions reductions are projected to ensure any violation will be quickly corrected and then provide for continued maintenance of the one-hour ozone NAAQS in San Diego County through the maintenance period.

Additionally, Clean Air Act, Section 175A(d) requires that the contingency measures include a commitment that, should there be a violation after redesignation to attainment, the region will implement all control measures contained in its Ozone Nonattainment SIP prior to redesignation. As previously indicated (Section 5.4), all measures in the Ozone Nonattainment SIP for San Diego County are retained in this Maintenance Plan. Therefore, there are no deferred SIP measures to transfer into the contingency plan.

Further, EPA policy guidance specifies that if an ozone attainment area that has no NSR emission offset requirement experiences violations, it must implement, as a contingency measure, a requirement for new or modified sources with actual or potential emissions of 100 tons per year or more of VOC or NO<sub>x</sub> to provide emission offsets at a 1:1 ratio.<sup>16</sup> However, as indicated in Section 5.4, this Maintenance Plan retains the existing NSR emission offset requirement. Consequently, upon redesignation to attainment, new sources with actual or potential emissions of 50 tons or more per year of VOC or NO<sub>x</sub>, and modified sources that would increase VOC or NO<sub>x</sub> emissions by 25 tons or more per year, will continue to be required to offset emission increases at a 1.2-to-1 ratio. Thus, this Maintenance Plan surpasses the contingency requirement in EPA policy guidance.

In addition to the above contingency measures, if a violation of the one-hour ozone NAAQS is recorded, the District commits to work with ARB to ensure the adoption, submittal as a SIP revision, and expeditious implementation of any additional feasible measure(s) needed to ensure maintenance of the one-hour ozone NAAQS. Potential selection of additional contingency measures will be based on considerations such as emission reduction potential, cost effectiveness, and other environmental, economic, legal, social, technological, and energy factors prevailing in the region.

## **5.8 SUBSEQUENT PLAN REVISIONS**

As required by federal law,<sup>17</sup> the District commits to submitting a revised Maintenance SIP eight years after the effective date of redesignation. Such SIP will provide for maintenance of the one-hour ozone NAAQS for an additional ten-year period. However, the revised Maintenance SIP requirement shall cease to apply if the one-hour ozone NAAQS is revoked by EPA.

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<sup>16</sup> Nichols, October 1994, at page 4.

<sup>17</sup> Clean Air Act Section 175A(b).

## Attachment A

### TABLE 1 VOC PROJECTED EMISSIONS INVENTORY (tons/day)

AIRBASIN: SAN DIEGO	BASE YEAR = 2001						
<u>SOURCE CATEGORY</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2001</u>	<u>2005</u>	<u>2010</u>	<u>2014</u>
<b>STATIONARY SOURCES</b>							
<u>FUEL COMBUSTION</u>							
ELECTRIC UTILITIES	0.1	0.1	0.1	<b>0.5</b>	0.3	0.7	0.7
COGENERATION	1.9	1.8	1.7	<b>1.7</b>	1.8	1.8	1.9
MANUFACTURING AND INDUSTRIAL	0.6	0.6	0.8	<b>0.8</b>	0.9	1.1	1.2
FOOD AND AGRICULTURAL PROCESSING	0	0	0	<b>0</b>	0	0	0
SERVICE AND COMMERCIAL	0.1	0.1	0.8	<b>0.5</b>	0.4	0.5	0.5
OTHER (FUEL COMBUSTION)	0	0	0	<b>0.2</b>	0.2	0.2	0.2
-----							
*TOTAL FUEL COMBUSTION	2.7	2.6	3.4	<b>3.7</b>	3.6	4.3	4.5
<u>WASTE DISPOSAL</u>							
SEWAGE TREATMENT	0	0	0	<b>0</b>	0	0	0
LANDFILLS	4.2	3.7	2.7	<b>2.8</b>	3	3.2	3.4
INCINERATORS	0	0	0	<b>0</b>	0	0	0
SOIL REMEDIATION	0	0	0	<b>0</b>	0	0	0
OTHER (WASTE DISPOSAL)	0	0	0	<b>0</b>	0	0	0
-----							
*TOTAL WASTE DISPOSAL	4.2	3.7	2.7	<b>2.8</b>	3	3.2	3.4
<u>CLEANING AND SURFACE COATINGS</u>							
LAUNDERING	0.1	0.1	0.1	<b>0.1</b>	0.1	0.1	0.1
DEGREASING	2.3	1.9	1.8	<b>1.8</b>	1.8	1.9	2.1
COATINGS AND RELATED PROCESS SOLVENTS	30.6	21.2	23.5	<b>24.9</b>	29.3	34.9	39.2
PRINTING	3.6	3.3	3.8	<b>3.9</b>	4	4.4	4.7
ADHESIVES AND SEALANTS	5.3	3.6	3.6	<b>3.5</b>	3.2	2.8	2.6
OTHER (CLEANING AND SURFACE COATINGS)	0	0	0	<b>0.2</b>	0.3	0.3	0.3
-----							
*TOTAL CLEANING AND SURFACE COATINGS	41.9	30.1	32.8	<b>34.4</b>	38.7	44.4	49.0
<u>PETROLEUM PRODUCTION AND MARKETING</u>							
PETROLEUM MARKETING	6.3	6.0	6.1	<b>6</b>	6.4	7.0	7.6
-----							
*TOTAL PETROLEUM PRODUCTION AND MARKETING	6.3	6.0	6.1	<b>6.0</b>	6.4	7.0	7.6
<u>INDUSTRIAL PROCESSES</u>							
CHEMICAL	1.5	4.5	0.8	<b>0.8</b>	1.5	1.9	2.2
FOOD AND AGRICULTURE	0	0	0.1	<b>0.1</b>	0.1	0.1	0.1
MINERAL PROCESSES	0.7	0.3	0.2	<b>0.1</b>	0.2	0.2	0.2
METAL PROCESSES	0	0	0	<b>0</b>	0	0	0
OTHER (INDUSTRIAL PROCESSES)	0.2	0.2	0.3	<b>0.5</b>	0.6	0.8	0.9
-----							
*TOTAL INDUSTRIAL PROCESSES	2.4	5.0	1.4	<b>1.5</b>	2.4	3.0	3.4
-----							
<b>**TOTAL STATIONARY SOURCES</b>	<b>57.5</b>	<b>47.4</b>	<b>46.4</b>	<b>48.4</b>	<b>54.1</b>	<b>61.9</b>	<b>67.8</b>

**Attachment A**

**TABLE 1 (Continued)  
VOC PROJECTED EMISSIONS INVENTORY (tons/day)**

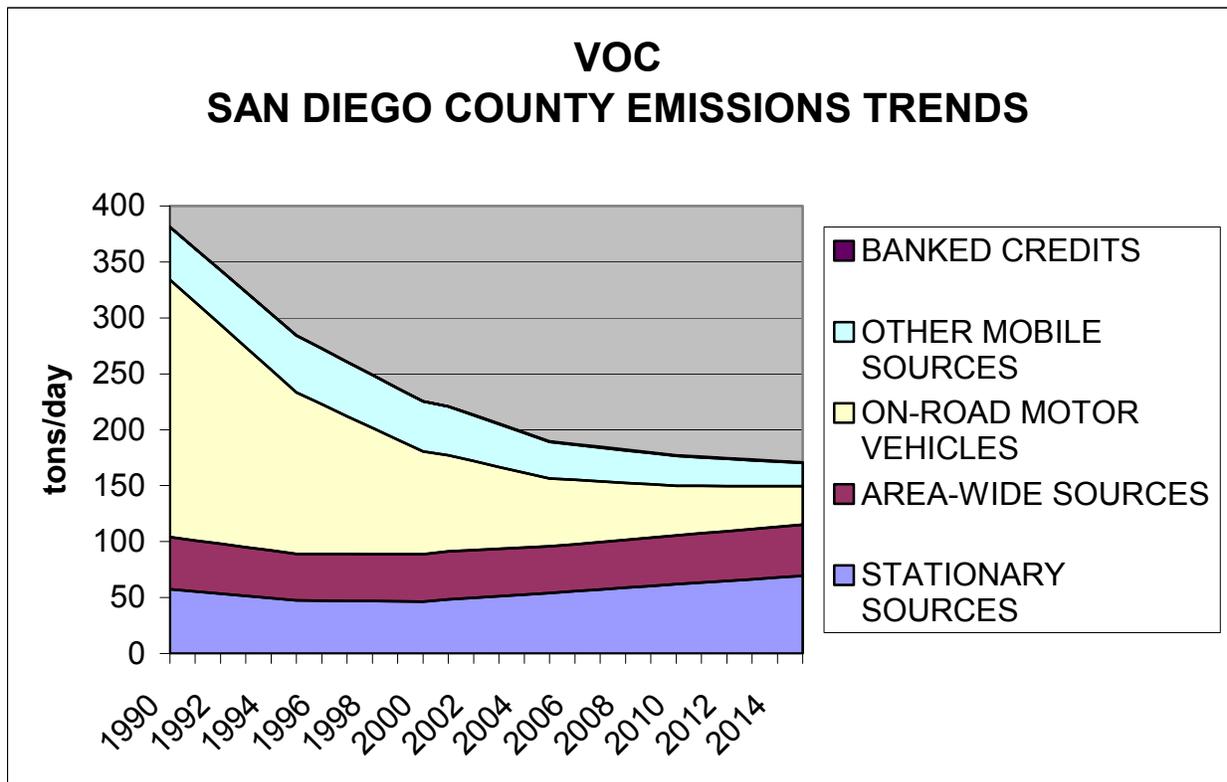
<u>SOURCE CATEGORY</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2001</u>	<u>2005</u>	<u>2010</u>	<u>2014</u>
<b>AREA-WIDE SOURCES</b>							
<u>SOLVENT EVAPORATION</u>							
CONSUMER PRODUCTS	27.7	23.0	22.4	<b>22.8</b>	21.0	22.5	23.5
ARCHITECTURAL COATINGS AND RELATED PROCESS SOLVENTS	10.6	11.4	12.3	<b>12.4</b>	13.0	13.5	14.0
PESTICIDES/FERTILIZERS	1.7	1.3	1.3	<b>1.3</b>	1.1	0.9	1.0
ASPHALT PAVING / ROOFING	1.7	1.4	1.7	<b>1.7</b>	1.7	1.7	1.8
-----							
*TOTAL SOLVENT EVAPORATION	41.7	37.1	37.7	<b>38.2</b>	36.8	38.6	40.2
<u>MISCELLANEOUS PROCESSES</u>							
RESIDENTIAL FUEL COMBUSTION	0.7	0.7	0.7	<b>0.7</b>	0.7	0.7	0.8
FARMING OPERATIONS	2	1.7	1.6	<b>1.6</b>	1.6	1.6	1.6
FIRES	0	0	0	<b>0</b>	0	0.1	0.1
WASTE BURNING AND DISPOSAL	0.6	0.6	0.6	<b>0.6</b>	0.6	0.5	0.5
COOKING	1.6	1.5	1.7	<b>1.7</b>	1.9	2.0	2.2
-----							
*TOTAL MISCELLANEOUS PROCESSES	4.9	4.5	4.6	<b>4.6</b>	4.8	4.9	5.1
-----							
<b>**TOTAL AREA-WIDE SOURCES</b>	<b>46.6</b>	<b>41.6</b>	<b>42.3</b>	<b>42.8</b>	<b>41.6</b>	<b>43.5</b>	<b>45.3</b>
<b>MOBILE SOURCES</b>							
<u>ON-ROAD MOTOR VEHICLES</u>							
LIGHT DUTY PASSENGER (LDA)	127.2	75.9	49.2	<b>45.5</b>	29.7	19.4	14.1
LIGHT DUTY TRUCKS - 1 (LDT1)	37.3	22.6	14.4	<b>13.6</b>	9.7	7.1	5.6
LIGHT DUTY TRUCKS - 2 (LDT2)	22.9	14.3	11.6	<b>10.9</b>	8.3	6.9	5.7
MEDIUM DUTY TRUCKS (MDV)	8.4	7.9	5.0	<b>4.7</b>	3.7	3.2	2.7
LIGHT HEAVY DUTY GAS TRUCKS - 1 (LHDV1)	11.9	8.7	2.1	<b>1.6</b>	0.8	0.6	0.6
LIGHT HEAVY DUTY GAS TRUCKS - 2 (LHDV2)	0.7	0.5	0.3	<b>0.3</b>	0.3	0.3	0.2
MEDIUM HEAVY DUTY GAS TRUCKS (MHDV)	7.4	3.8	1.7	<b>1.6</b>	1.2	0.9	0.7
HEAVY HEAVY DUTY GAS TRUCKS (HHDV)	4.6	2.8	1.4	<b>1.4</b>	1.1	0.8	0.6
LIGHT HEAVY DUTY DIESEL TRUCKS - 1 (LHDV1)	0.0	0.0	0.0	<b>0.0</b>	0.1	0.1	0.1
LIGHT HEAVY DUTY DIESEL TRUCKS - 2 (LHDV2)	0.1	0.1	0.1	<b>0.1</b>	0.1	0.1	0.0
MEDIUM HEAVY DUTY DIESEL TRUCKS (MHDV)	0.1	0.2	0.2	<b>0.2</b>	0.3	0.3	0.2
HEAVY HEAVY DUTY DIESEL TRUCKS (HHDV)	2.2	1.9	1.9	<b>1.9</b>	1.8	1.5	1.2
MOTORCYCLES (MCY)	4.9	3.6	1.9	<b>1.9</b>	1.7	1.6	1.6
HEAVY DUTY DIESEL URBAN BUSES (UB)	0.1	0.2	0.3	<b>0.3</b>	0.3	0.3	0.2
HEAVY DUTY GAS URBAN BUSES (UB)	0.7	0.6	1.1	<b>1.2</b>	1.2	1.1	1.1
SCHOOL BUSES (SB)	0.4	0.3	0.1	<b>0.1</b>	0.1	0.1	0.1
MOTOR HOMES (MH)	1.2	1.1	0.6	<b>0.6</b>	0.5	0.3	0.2
-----							
*TOTAL ON-ROAD MOTOR VEHICLES	230.1	144.3	91.9	<b>85.8</b>	60.8	44.4	34.9

Attachment A

**TABLE 1 (Concluded)**  
**VOC PROJECTED EMISSIONS INVENTORY (tons/day)**

<u>SOURCE CATEGORY</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2001</u>	<u>2005</u>	<u>2010</u>	<u>2014</u>
<u>OTHER MOBILE SOURCES</u>							
AIRCRAFT	3.5	3.2	3.3	<b>3.3</b>	3.3	3.3	3.4
TRAINS	0.1	0.1	0.1	<b>0.1</b>	0.1	0.1	0.1
SHIPS AND COMMERCIAL BOATS	1.4	1.3	1.3	<b>1.3</b>	1.4	1.4	1.6
RECREATIONAL BOATS	13.1	16.8	16.7	<b>16.1</b>	13.2	9.5	6.1
OFF-ROAD RECREATIONAL VEHICLES	3.7	3.4	1.8	<b>1.9</b>	1.1	1.2	1.3
OFF-ROAD EQUIPMENT	17.2	17.8	13.0	<b>12.3</b>	10.2	8.4	6.8
FARM EQUIPMENT	1.0	1.0	0.8	<b>0.8</b>	0.7	0.5	0.4
FUEL STORAGE AND HANDLING	7.1	7.5	7.9	<b>8.0</b>	2.6	2.2	2.3
-----							
*TOTAL OTHER MOBILE SOURCES	47.1	51.1	44.9	<b>43.8</b>	32.6	26.6	22.0
-----							
<b>**TOTAL MOBILE SOURCES</b>	<b>277.2</b>	<b>195.4</b>	<b>136.7</b>	<b>129.6</b>	<b>93.3</b>	<b>71.1</b>	<b>56.9</b>
-----							
*TOTAL SAN DIEGO BANKED CREDITS	381.2	284.4	225.4	<b>220.8</b>	189.0	176.5	170.0
					0.7	0.7	0.7
-----							
<b>*TOTAL VOC</b>	<b>381.2</b>	<b>284.4</b>	<b>225.4</b>	<b>220.8</b>	<b>189.7</b>	<b>177.2</b>	<b>170.7</b>

FIGURE 1



**Attachment A**

**TABLE 2  
NO<sub>x</sub> PROJECTED EMISSIONS INVENTORY (tons/day)**

AIRBASIN: SAN DIEGO      BASE YEAR = 2001

<u>SOURCE CATEGORY</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2001</u>	<u>2005</u>	<u>2010</u>	<u>2014</u>
<b>STATIONARY SOURCES</b>							
<u>FUEL COMBUSTION</u>							
ELECTRIC UTILITIES	11.3	8.2	1.2	<b>5.7</b>	3.7	8.6	8.6
COGENERATION	5.0	5.1	2.6	<b>2.6</b>	2.7	2.8	3.0
MANUFACTURING AND INDUSTRIAL	3.7	3.5	4.4	<b>4.6</b>	5.3	6.1	6.7
FOOD AND AGRICULTURAL PROCESSING	0	0	0	<b>0</b>	0	0	0
SERVICE AND COMMERCIAL	1.5	1.4	7.8	<b>2.0</b>	1.8	2.1	2.2
OTHER (FUEL COMBUSTION)	0.3	0	0	<b>0.7</b>	0.6	0.8	0.8
-----							
*TOTAL FUEL COMBUSTION	21.8	18.2	16.0	<b>15.6</b>	14.1	20.4	21.2
 <u>WASTE DISPOSAL</u>							
SEWAGE TREATMENT	0	0.1	0.2	<b>0.1</b>	0.1	0.1	0.1
LANDFILLS	0	0	0.1	<b>0.1</b>	0.1	0.1	0.1
INCINERATORS	0	0	0	<b>0</b>	0	0	0
-----							
*TOTAL WASTE DISPOSAL	0	0.1	0.3	<b>0.2</b>	0.2	0.2	0.2
 <u>INDUSTRIAL PROCESSES</u>							
CHEMICAL	0	0	0	<b>0</b>	0	0	0
MINERAL PROCESSES	0.6	0.2	0.2	<b>0.1</b>	0.1	0.2	0.2
METAL PROCESSES	0	0	0	<b>0</b>	0	0	0
OTHER (INDUSTRIAL PROCESSES)	0	0	0	<b>0.1</b>	0.1	0.1	0.2
-----							
*TOTAL INDUSTRIAL PROCESSES	0.6	0.2	0.2	<b>0.2</b>	0.2	0.3	0.4
-----							
<b>**TOTAL STATIONARY SOURCES</b>	<b>22.4</b>	<b>18.5</b>	<b>16.5</b>	<b>16.0</b>	<b>14.5</b>	<b>20.9</b>	<b>21.8</b>
 <b>AREA-WIDE SOURCES</b>							
<u>MISCELLANEOUS PROCESSES</u>							
RESIDENTIAL FUEL COMBUSTION	1.7	1.7	1.8	<b>1.8</b>	1.8	1.9	1.9
FIRES	0	0	0	<b>0</b>	0	0	0
WASTE BURNING AND DISPOSAL	0	0	0	<b>0</b>	0	0	0
-----							
*TOTAL MISCELLANEOUS PROCESSES	1.7	1.7	1.8	<b>1.8</b>	1.8	1.9	1.9
-----							
<b>**TOTAL AREA-WIDE SOURCES</b>	<b>1.7</b>	<b>1.7</b>	<b>1.8</b>	<b>1.8</b>	<b>1.8</b>	<b>1.9</b>	<b>1.9</b>

## Attachment A

**TABLE 2 (Concluded)**  
**NO<sub>x</sub> PROJECTED EMISSIONS INVENTORY (tons/day)**

<u>SOURCE CATEGORY</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2001</u>	<u>2005</u>	<u>2010</u>	<u>2014</u>
<b>MOBILE SOURCES</b>							
<u>ON-ROAD MOTOR VEHICLES</u>							
LIGHT DUTY PASSENGER (LDA)	78.2	61.1	43.9	<b>40.9</b>	26.6	17.9	12.8
LIGHT DUTY TRUCKS - 1 (LDT1)	27.8	23.3	15.9	<b>14.8</b>	9.3	6.2	4.5
LIGHT DUTY TRUCKS - 2 (LDT2)	25.7	22.4	18.1	<b>16.9</b>	12.0	9.0	6.7
MEDIUM DUTY TRUCKS (MDV)	7.7	11.0	7.0	<b>6.7</b>	4.9	3.8	2.9
LIGHT HEAVY DUTY GAS TRUCKS - 1 (LHDV1)	2.4	2.9	1.6	<b>1.4</b>	1.2	1.4	1.4
LIGHT HEAVY DUTY GAS TRUCKS - 2 (LHDV2)	0.9	0.6	0.4	<b>0.4</b>	0.4	0.3	0.3
MEDIUM HEAVY DUTY GAS TRUCKS (MHDV)	2.7	2.1	1.4	<b>1.4</b>	1.2	1.0	0.7
HEAVY HEAVY DUTY GAS TRUCKS (HHDV)	4.6	4.5	3.1	<b>3.0</b>	2.2	1.3	0.8
LIGHT HEAVY DUTY DIESEL TRUCKS - 1 (LHDV1)	0.1	0.2	1.0	<b>1.4</b>	1.7	1.3	0.9
LIGHT HEAVY DUTY DIESEL TRUCKS - 2 (LHDV2)	0.8	0.9	1.0	<b>1.1</b>	1.0	0.8	0.6
MEDIUM HEAVY DUTY DIESEL TRUCKS (MHDV)	6.7	7.5	9.5	<b>9.8</b>	9.2	7.4	5.3
HEAVY HEAVY DUTY DIESEL TRUCKS (HHDV)	37.4	35.7	40.4	<b>40.8</b>	37.8	30.0	21.4
MOTORCYCLES (MCY)	0.5	0.5	0.3	<b>0.4</b>	0.4	0.5	0.5
HEAVY DUTY DIESEL URBAN BUSES (UB)	3.3	3.2	3.8	<b>4.0</b>	3.6	3.5	3.2
HEAVY DUTY GAS URBAN BUSES (UB)	0.4	0.5	0.5	<b>0.4</b>	0.4	0.5	0.5
SCHOOL BUSES (SB)	0.7	0.8	0.9	<b>0.9</b>	1.0	1.1	1.0
MOTOR HOMES (MH)	1.7	2.3	1.3	<b>1.3</b>	1.2	0.9	0.7
-----							
*TOTAL ON-ROAD MOTOR VEHICLES	201.9	179.4	150.1	<b>145.4</b>	114.1	86.7	64.2
<u>OTHER MOBILE SOURCES</u>							
AIRCRAFT	4.2	4.4	4.9	<b>5.0</b>	5.4	5.8	6.1
TRAINS	2.5	2.1	2.0	<b>2.0</b>	1.5	1.2	1.2
SHIPS AND COMMERCIAL BOATS	19.5	19.1	19.1	<b>19.1</b>	21.2	23.3	25.8
RECREATIONAL BOATS	3.6	3.8	4.4	<b>4.5</b>	5.7	5.9	5.7
OFF-ROAD RECREATIONAL VEHICLES	0.3	0.4	0.4	<b>0.4</b>	0.4	0.5	0.5
OFF-ROAD EQUIPMENT	54.9	43.2	41.2	<b>40.6</b>	37.0	30.1	25.2
FARM EQUIPMENT	7.9	6.5	6.1	<b>5.9</b>	5.1	4.1	3.2
-----							
*TOTAL OTHER MOBILE SOURCES	92.9	79.5	78.1	<b>77.5</b>	76.3	70.9	67.8
-----							
<b>**TOTAL MOBILE SOURCES</b>	<b>294.8</b>	<b>258.9</b>	<b>228.2</b>	<b>222.9</b>	<b>190.4</b>	<b>157.6</b>	<b>132.0</b>
-----							
*TOTAL SAN DIEGO	318.9	279.1	246.5	<b>240.7</b>	206.7	180.4	155.7
<i>MILITARY GROWTH INCREMENT</i>					<i>11.4</i>	<i>11.4</i>	<i>11.4</i>
<i>BANKED CREDITS</i>					<i>0.3</i>	<i>0.3</i>	<i>0.3</i>
-----							
<b>*TOTAL NO<sub>x</sub></b>	<b>318.9</b>	<b>279.1</b>	<b>246.5</b>	<b>240.7</b>	<b>218.4</b>	<b>192.1</b>	<b>167.4</b>

FIGURE 2

