

**PLACER COUNTY  
AIR POLLUTION CONTROL DISTRICT**

**2009 TRIENNIAL PROGRESS REPORT**

**PREPARED IN COMPLIANCE WITH  
THE CALIFORNIA CLEAN AIR ACT**

**August 2010**

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## **1 OVERVIEW OF AIR QUALITY PLANNING PROCESS**

### **1.1 Background**

The Placer County Air Pollution Control District (District) is one of 35 local air districts established pursuant to Section 40002 of the California Health & Safety Code (HSC). The District is a “county” district with its jurisdiction being the County of Placer extending from the Lake Tahoe in the East, over the crest of the Sierra Nevada, to the Sacramento Valley in the West. With these special topographic features portions of Placer County are within the boundaries of three air basins: the Sacramento Valley Air Basin (SVAB), the Mountain Counties Air Basin (MCAB), and the Lake Tahoe Air Basin (LTAB).

The California Clean Air Act (CCAA) of 1988 required the California Air Resources Board (CARB) to establish and adopt ambient air quality standards to protect public health, safety, and welfare. Under the CCAA requirement, the CARB established criteria for designating areas as attainment or nonattainment for the state standards. According to the area designation adopted in 1989, the SVAB and MCAB portions of Placer County were designed as non-attainment for the state ozone standard<sup>1</sup> and the entire county was designed as non-attainment for the state particulate matter standard for ten microns and less in size (PM<sub>10</sub>).

The CCAA requires any air district which has not attained the state air quality standards to prepare a plan to attain these standards by the earliest practicable date. However, when the California legislature passed the CCAA in 1988, it recognized the difficulty in managing PM<sub>10</sub>. Therefore, State law does not require attainment plans for the state PM<sub>10</sub> standard. In compliance with the CCAA, the District prepared the 1991 Air Quality Attainment Plan (AQAP) which was designed to make expeditious progress toward attaining the state ozone standard and contained proposed control programs and strategies on stationary sources, transportation, and indirect sources. The 1991 AQAP was adopted by the District’s Board of Directors on April 7, 1992 and approved by the California Air Resources Board (CARB) on March 12, 1993.

In addition to the AQAP, the CCAA also required that by the end of 1994 and once every three years thereafter, the air districts not attaining the ozone standard prepare a report to demonstrate their progress toward attaining the state air quality standards. Triennial progress reports should include the air quality improvement and the amount of emission reductions achieved from control measures for the preceding three year period. The districts must also review and revise their attainment plan, if necessary, to correct deficiencies in meeting progress goals and to incorporate new data or projections. The 2009 Triennial Progress Report is prepared to fulfill these requirements.

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<sup>1</sup> The LTAB is designed by CARB as nonattainment for the state ozone standard in March 2010. The future planning requirement will be determined by the Tahoe Regional Planning Agency (TRPA) and CARB.

## **1.2 Triennial Reports Since 1991**

The CCAA requirement for the first Triennial Progress Report and revision of the AQAP was fulfilled with the preparation and adoption of the 1994 Sacramento Area Regional Ozone Attainment Plan (1994 Ozone SIP [State Implementation Plan]). This 1994 Ozone SIP was prepared to demonstrate how and when the Sacramento Federal Ozone Nonattainment Area (SFONA) would attain the federal ambient air quality standards for ozone and was construed by CARB to also fulfill the 1994 requirements of the CCAA with certain appendices attached. The 1994 Ozone SIP was adopted by the District's Board of Directors on December 20, 1994, approved by CARB and submitted to U.S. Environmental Protection Agency (U.S. EPA) on December 29, 1994, and approved by U.S. EPA on September 26, 1996.

The 1997 Triennial Progress Report was a requirement of the CCAA to assess the progress in the three years following the 1994 Plan. The District's Board of Directors approved the 1997 Triennial Progress Report on July 16, 1998. CARB conditionally approved this plan on August 27, 1998. This approval was based on the District's review of the document Identification of Achievable Performance Standards and Emerging Technologies for Stationary Sources, March 1998, to identify further measures for emission reductions. Further discussions on these control measures were outlined in the 2000 Triennial Progress Report.

On April 11, 2001, the District's Board of Directors approved the 2000 Triennial Progress Report. This Report met the requirement of the CCAA to assess the implementation progress of the 1997 Triennial Progress Report. Three (3) ROG control measures listed in 1997 Triennial Progress Report were still pending adoption during this period. These were Polyester Resin Operations, Pleasure Craft Coating, and Internal Combustion Engines. Since these control measures were not adopted, there was a deficiency in meeting the 1997 Triennial Progress Report commitments.

On October 13, 2005, the District's Board of Directors approved the 2003 Triennial Progress Report. The three ROG control measured pending in the 2000 Triennial Progress Report were adopted by this approval date. In addition, the District also adopted one NOx control measure (Stationary Internal Combustion Engine) to fulfill a commitment the District made in the 1994 Ozone SIP.

## **1.3 2009 Triennial Report**

The Triennial Progress Report is a requirement of the CCAA to assess the progress made towards attaining the state air quality standards in Placer County during the past (2) triennial evaluation periods (2003-2005 and 2006-2008). The triennial progress report will 1) describe the historical trends in ambient air quality levels; 2) provide information on the emission inventories in Placer County; 3) summarize the progress of emissions reductions from 2003 to 2008 in Placer County; and 4) conclude with an overview of air quality planning progress.

The historical trends in ambient air quality levels show improvement in Placer County. Air quality indicators demonstrate significant overall progress toward reducing exceedences of the ambient ozone standards since the late 1990's.

Emission inventories for ozone precursor pollutants take into account stationary sources, area-wide sources, and mobile sources, excluding biogenic sources. The emission inventories indicate the majority of ROG and NOx emissions in Placer County are from mobile sources. Between 1990 and 2008, emission inventory trends in Placer County show that overall ROG emissions declined from 39 tons per day to 25 tons per day, about a 35% decrease. The NOx emissions declined from 36 tons per day to 31 tons per day, about a 14% decrease. These emission reductions have mainly occurred from on-road and off-road mobile sources. From 2008 to 2020, overall ROG emissions are expected to continue decreasing another 3% with NOx emissions decreasing another 37%. Projected emission forecasts to 2020 show a more gradual declining trend.

## 2 AIR QUALITY TRENDS

The Health and Safety Code (section 40924 (b)) requires air districts to report their air quality improvement progress for ozone achieved during the preceding three-year evaluation period based on ambient concentration measurements and air quality indicators (statistical derived values based on air quality monitoring data). In addition, the Health and Safety Code (section 39607 (f)) requires the air districts to use one or more State approved air quality indicators to assess the progress in attaining the state ambient health standards (HSC section 39607(f)). The following section discusses ozone air quality trends using the CARB air quality indicators.

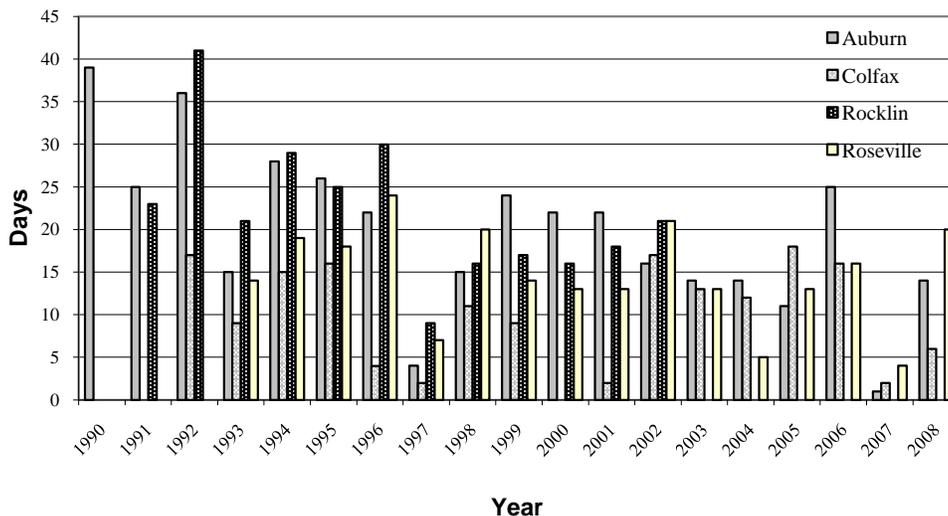
### 2.1 Ozone Exceedences

The number of days, exceeding the ozone standard, is the most common method to assess the air quality trend for ozone. The State ambient air quality standard for 1-hour ozone was set at 0.09 parts per million (ppm) in 1988. In 2005, the CARB approved the 8-hour ozone standard at 0.070 ppm. Exceedences occur when the monitored ozone concentrations exceed these standards.

Currently, there are three monitoring stations operating in Placer County: Auburn, Colfax, and Roseville. The District operates the Auburn and Colfax stations with the CARB operating the Roseville station. The Auburn station has the most complete ozone data available since it began operation in 1974. A fourth monitoring station in Rocklin operated from 1991 until 2002.

Figure 2-1 shows the number of days at each monitoring site in Placer County that exceeded the state 1-hour ozone standard (0.09 ppm) since 1990. An exceedence of this standard occurs when the monitored ambient concentration level is greater than 0.095 ppm.

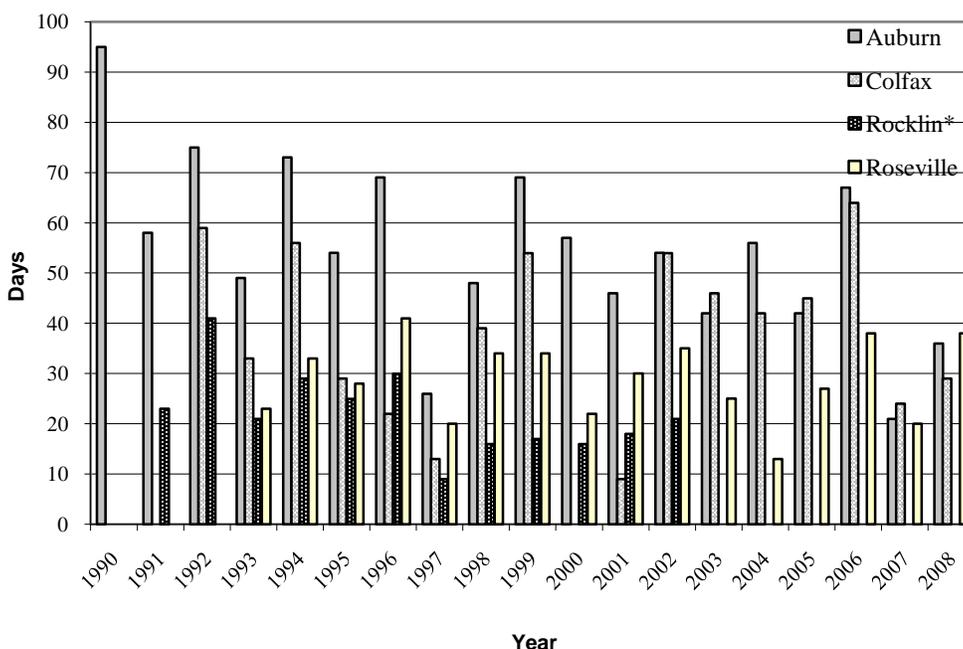
Figure 2-1  
 Days over State 1- hour Ozone Standard (0.09 ppm) by stations



\* Ozone data from Rocklin are only available from 1991 to 2002.

Figure 2-2 shows the number of days at each monitoring site that exceeded the state 8-hour ozone standard (0.070 ppm) since 1990. An exceedence of this standard occurs when the hourly monitored ambient concentrations, averaged over an 8-hour period, and is greater than 0.071 ppm. The purpose of showing exceedences of the state 8-hour ozone standard prior to 2005 is to show the trend of air quality improvement using the more restrictive air quality standard.

Figure 2-2  
 Days over State 8- hour Ozone Standard (0.070 ppm) by stations



\* Ozone data from Rocklin are only available from 1991 to 2002.

The numbers of days over state ozone standards from each station is different due to differences in meteorology and economic activity around the station from year to year. The complexity of meteorological conditions and economic activities causes the different photochemical regime to result in different ozone concentration measurements at each station in the same year. Therefore, Figure 2-2 cannot show a clear and consistent pattern to verify the trend of air quality in Placer County. Figure 2-3 and 2-4 shows the number of days in Placer County exceeding the state 1-hour and 8-hour ozone standard, respectively. An exceedance day in Placer County presents a day when an ozone exceedance occurred at any monitoring station in Placer County. With trend lines, Figure 2-3 and 2-4 show a trend downward in general, suggesting that the worst years for air quality have become less severe and the better air quality years have become cleaner.

Figure 2-3  
 Days over State 1- hour Ozone Standard (0.09 ppm) in Placer County

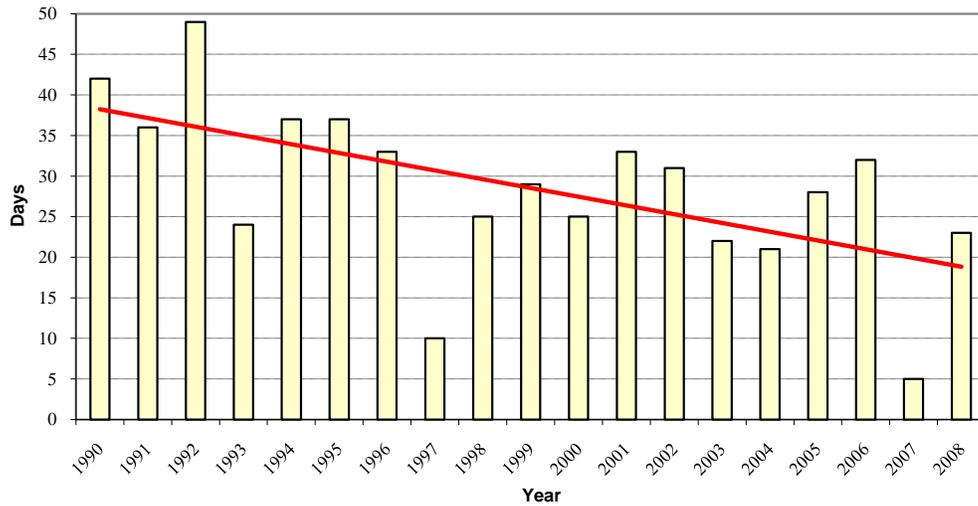
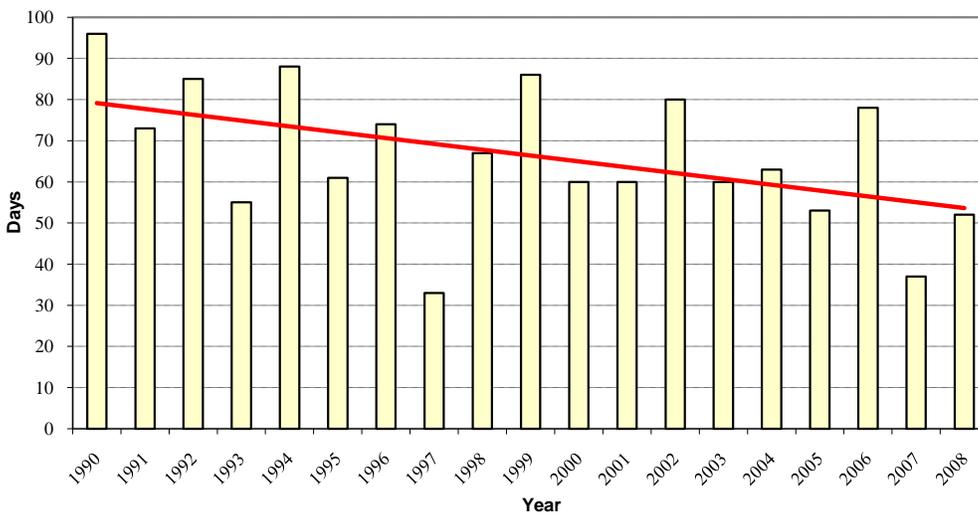


Figure 2-4  
 Days over State 8- hour Ozone Standard (0.070 ppm) in Placer County



## 2.2 Ozone Exposure Indicators

In July 1993, the California Air Resources Board approved three progress-reporting indicators for use in assessing improvement toward attaining the state health standards.

“An indicator is a way of summarizing measured air quality data so as to represent one aspect of air quality in a specific area. An indicator summarizes and represents air quality in the same sense that the Dow Jones Industrial Average (DJIA) summarizes

and represents the condition of the stock market. An air quality-related indicator is based on measured air quality data, whereas the DJIA is based on stock price data. One application for indicators is measuring and reporting the progress that has been made in attaining the State standards. In this case, progress means the change or improvement in air quality over time that can be attributed to a reduction in emissions rather than the influence of other factors, such as variable meteorology.”<sup>2</sup>

The three indicators are:

- 1) the expected peak day concentration (EPDC),
- 2) the population weighted exposure indicator, and
- 3) the area weighted exposure indicator.

These indicators represent three different aspects of air quality data that measure progress or changes in air quality over time.

### **2.2.1. Ozone Expected Peak Day Concentrations**

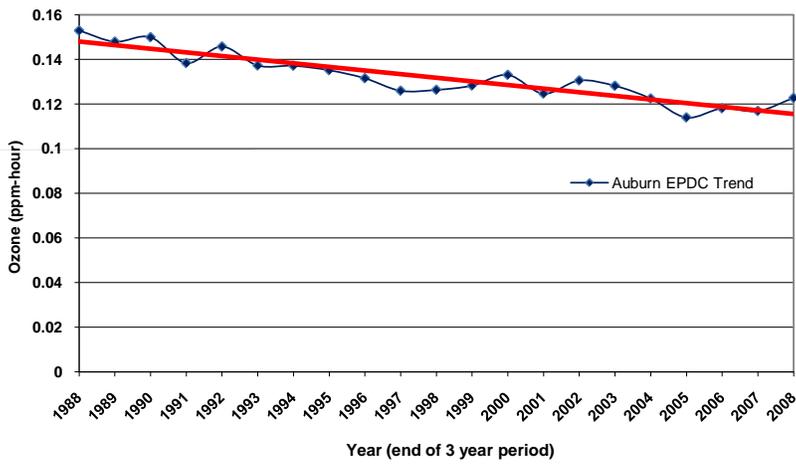
The expected peak day concentration (EPDC) is used as the “hot spot” indicator. This peak indicator is derived by a statistical method and is representative of specific monitoring sites. This indicator assesses air quality trends at specific locations and does not include trends in air quality from surrounding areas. The EPDC is defined as the air quality concentration expected to recur at a rate of once a year. Each EPDC value is calculated using three years of monitoring data; for example, the EPDC for 2002 uses 2000 - 2002 data.

Figures 2-5 to 2-7 illustrate the ozone EPDC indicators from 1990 to 2008 with the most current available data from the three monitoring sites (Auburn, Colfax, and Roseville) in Placer County. There is no air monitoring data past 2003 from the Rocklin site. Only the Auburn - Dewitt monitoring site can be used to document the EPDC progress from the base period (1986 - 1988) to the end period (2006 - 2008) as it has been located in the same place for the analyzed time. The Auburn site shows a 19.7% decrease in the EPDC from the base period through the end period. The Colfax monitoring site showed a 17.4% decrease between 1990 and 2008. The Roseville site had an 11.9% decrease between 1993 and 2008. Overall this particular indicator shows a decrease in the local peak ozone concentrations; equating to an improvement of air quality.

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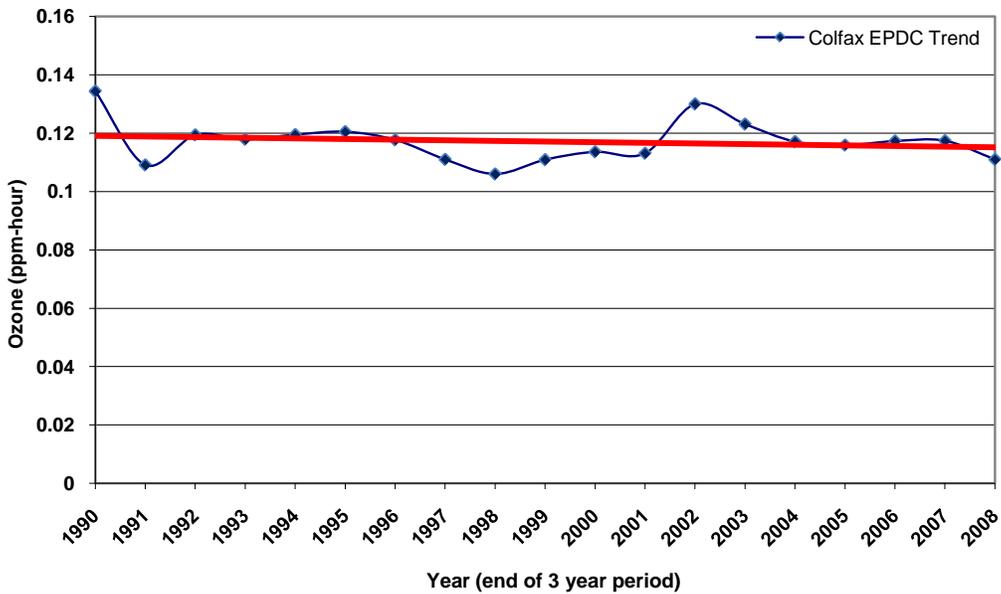
<sup>2</sup> Guidance for Using Air Quality-Related Indicators in Reporting Progress in Attaining the State Ambient Air Quality Standards. California Air Resources Board, September 1993.

Figure 2-5  
 Expected Peak Day Concentration (EPDC) Ozone Trend  
 Auburn Monitoring Site



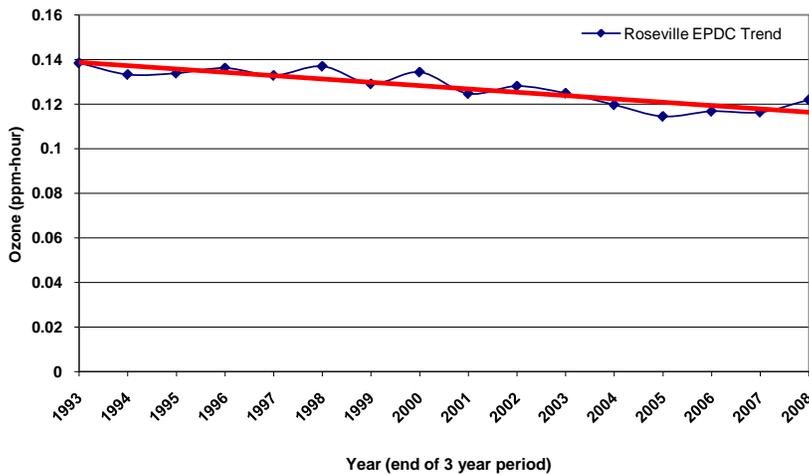
EPDC data source: California Air Resource Board

Figure 2-6  
 Expected Peak Day Concentration (EPDC) Ozone Trend  
 Colfax Monitoring Site



EPDC data source: California Air Resource Board

Figure 2-7  
Expected Peak Day Concentration (EPDC) Ozone Trend  
Roseville Monitoring Site



EPDC data source: California Air Resource Board

### 2.2.2. Population-Weighted Exposure Indicator

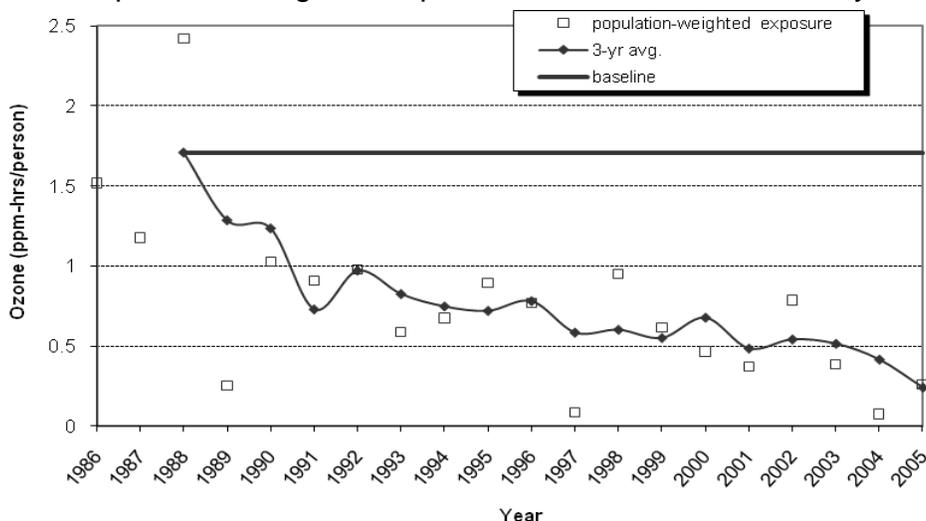
The population-weighted exposure indicator is a statistically derived air quality indicator provided by CARB. The purpose of the population-weighted indicator is to characterize the potential average outdoor exposure per person to concentrations above the level of the state ozone standard. The population-weighted exposure (PWE) represents a composite of exposures around each monitoring site that is weighted to emphasize equally the exposure for each person in the area. Exposure can be thought of as the annual sum of the number of hours above the state health standard. For example, a measured ozone concentration of 0.13 ppm for 2 hours represents an exposure of 0.8 ppm-hours above the state ozone standard of 0.09 ppm  $((0.13 \text{ ppm} - 0.09 \text{ ppm}) \times 2 \text{ hours} = 0.8 \text{ ppm-hours})$ .

Table 2-1 and Figure 2-8 summarize the population-weighted ozone exposure for the 3-year average base period (1986-1988) and for the 3-year average end period (2003-2005). Due to funding and workload challenges, CARB was not able to provide the population-weighted exposure indicators for the period of 2006-2008. According to the comparison, there is an 86% decrease in population-weighted ozone exposure between the based period and the 2003-2005 periods. Comparing this with the previous triennial period (2000-2002), there is a 55% decrease in population-weighted ozone exposure. The results present a definite downward trend in ozone exposure above the state standard.

Table 2-1  
Summary of Population-Weighted Exposure in Placer County

Exposure Indicator	Base Period (1986 - 1988) 3-year average	Previous Triennial Period (2000-2002)	End Period (2003 - 2005) 3-year average	Reduction (%) Compare with Based Period	Reduction (%) Compare with 2000-2002 Period
Population Weighted (ppm-hrs/person)	1.707	0.541	0.241	85.88%	55.45%

Figure 2-8  
Population-Weighted Exposure Trends in Placer County



Exposure data source: California Air Resource Board

### 2.2.3. Area Weighted Exposure Indicator

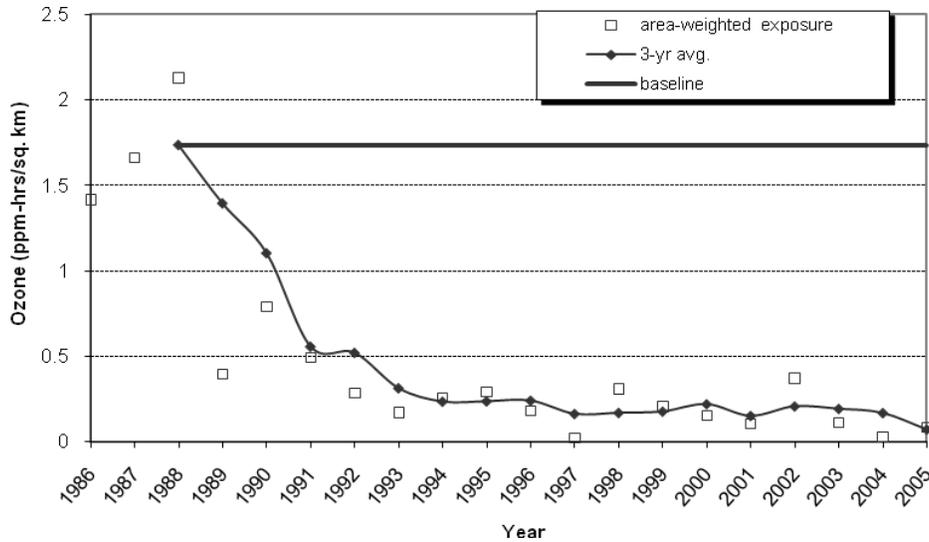
The purpose of the area-weighted exposure (AWE) indicator is to characterize the potential average annual outdoor exposure per unit area. The area-weighted exposure indicator represents a composite of exposure at individual locations that have been weighted to emphasize equal exposures throughout the area.

Table 2-2 and Figure 2-9 summarize the area-weighted ozone exposure for the 3-year average base period (1986 - 1988) and for the 3-year average end period (2003 - 2005) within Placer County. According to the table, there is almost a 96% decrease in area-weighted ozone exposure between the base period and the 2003-2005 periods. Comparing this with the previous triennial period, there is a 65% decrease in area-weighted ozone exposure. As with the population-weighted ozone indicator, the area-weighted ozone exposure also shows a definite downward trend in ozone exposure above the state standard.

Table 2-2  
Summary of Area-Weighted Exposure in Placer County

Exposure Indicator	Base Period (1986 - 1988) 3-year average	Previous Triennial Period (2000-2002)	End Period (2003 -2005) 3-year average	Reduction (%) Compare with Based Period	Reduction (%) Compare with 2000-2002 Period
Area Weighted (ppm-hrs/sq. km)	1.735	0.209	0.074	95.73%	64.59%

Figure 2-9  
Area-Weighted Exposure Trends in Placer County



Exposure data source: California Air Resource Board

### 2.3 Summary of Results of Air Quality Indicators

Air Quality Indicators are technical tools used for exposure analysis in local air quality within Placer County. The exposure analysis is based solely on ambient (outdoor) ozone measurements. The calculation methodology assumes that an “exposure” occurs when a person experiences a 1-hour ozone concentration outdoors that is higher than 0.09 ppm, the level of the State ozone standard.

The analysis of the expected peak day concentration levels, the population-weighted and area-weighted indicators all show a declining trend in ozone exposure concentrations. This decrease demonstrates the current air quality control progress made in reducing the peak ozone concentrations and the ozone exposure above the state standard, which is an improvement in air quality.

### **3 EMISSION INVENTORY**

#### **3.1 Development of Emission Inventories**

An emission inventory is an estimate of air pollutants emitted into the air over a specific period such as a day or a year. Information from the emission inventory includes source types, source locations, and the current amount of pollutant emissions emitted in our region. The emission inventory provides a foundation to validate the reduction resulting from the federal, state, and local regulations; it also can be used to assess the progress that the region is making toward attaining the California air ambient quality standards. In order to determine the extent various sources within the region are responsible for ozone precursor production, emission inventories have been developed for ROG and NO<sub>x</sub>.

The emission inventories for these two ozone precursors are divided into four major categories. These include stationary, area-wide, on-road mobile, and other mobile groupings. Stationary sources include facilities such as cogeneration, or concrete/asphalt plants, while area-wide sources include an aggregate of individual small sources, when grouped together have significant emissions such as dry cleaners or gasoline stations. On-road mobile sources consist of cars and trucks that travel on streets and highways. Other mobile sources include agricultural and construction equipment, trains, aircrafts, and recreational vehicles. There are a number of subcategories within each major category.

The emission inventory represents estimates of actual emissions that are calculated using reported or estimated process rates and emission factors. For example; emissions from a facility will be calculated by process rates reported by the facility and emission factors estimated by source tests. Motor vehicle emissions will be estimated by the fleet mix, vehicle mile traveled, vehicle speeds, and vehicle emission factors.

To derive future year emission inventories, a current base year inventory is projected forward based on expected growth rates of population, travel, employment, industrial/commercial activities, and energy use. In addition, the emission projections take into account the control factors based on historical and anticipated emission reduction effects from previously control measures adopted by federal, state, and local government.

#### **3.2 Emission Inventory Updates**

Emission inventories are constantly updated and improved to better reflect the conditions within the region and to better determine the contribution of various sources of air pollution. The updated inventories represented in this report will show emission increases and decreases since 1990. Tables 3-1 and 3-2 provide updated source category estimates of daily emissions for ROG and NO<sub>x</sub> for the years 1990, 1995, 2000, 2005, 2008, 2010, 2015, and 2020. These updates include emission forecasts through 2020 based on the 2008 emission data and the expected growth and control factors, so that future emission trends can be forecasted.

Table 3-1  
Placer County ROG Emission Inventory

ROG Emissions (tons per day) - Placer County*								
	1990	1995	2000	2005	2008	2010	2015	2020
<b>Stationary Sources</b>								
FUEL COMBUSTION	0.28	0.31	0.37	0.44	0.43	0.44	0.45	0.46
WASTE DISPOSAL	0.26	0.24	0.08	0.09	0.10	0.10	0.11	0.12
CLEANING AND SURFACE COATINGS	3.27	3.10	1.62	1.63	1.67	1.74	1.90	2.05
PETROLEUM PRODUCTION AND MARKETING	0.94	0.74	0.73	0.71	0.72	0.73	0.79	0.85
INDUSTRIAL PROCESSES	2.67	3.20	1.34	1.54	1.65	1.74	1.95	2.13
<b>Total Stationary Sources</b>	<b>7.42</b>	<b>7.58</b>	<b>4.15</b>	<b>4.41</b>	<b>4.57</b>	<b>4.75</b>	<b>5.20</b>	<b>5.61</b>
<b>Area-Wide Sources</b>								
CONSUMER PRODUCTS	1.90	1.83	1.93	1.92	1.97	2.04	2.20	2.38
ARCHITECTURAL COATINGS/SOLVENTS	0.59	0.70	0.84	0.87	0.91	0.93	1.01	1.09
PESTICIDES/FERTILIZERS	0.16	0.67	0.19	0.19	0.19	0.19	0.19	0.19
ASPHALT PAVING / ROOFING	0.18	0.16	0.20	0.21	0.21	0.21	0.22	0.22
RESIDENTIAL FUEL COMBUSTION	1.66	1.82	1.98	2.11	2.16	2.18	2.26	2.34
FARMING OPERATIONS	0.52	0.52	0.51	0.51	0.51	0.51	0.51	0.51
MISCELLANEOUS PROCESSES	1.19	1.20	0.89	0.89	0.90	0.90	0.91	0.92
<b>Total Area-Wide Sources</b>	<b>6.21</b>	<b>6.91</b>	<b>6.54</b>	<b>6.70</b>	<b>6.85</b>	<b>6.96</b>	<b>7.30</b>	<b>7.66</b>
<b>ON-Road Mobile Sources</b>								
PASSENGER	6.55	5.24	4.14	2.66	1.64	1.34	0.87	0.67
LIGHT DUTY TRUCKS	5.46	4.60	3.75	2.49	1.82	1.62	1.31	1.10
MEDIUM DUTY TRUCKS (MDV)	0.81	0.91	0.80	0.67	0.46	0.41	0.37	0.35
HEAVY DUTY GAS TRUCKS	2.27	2.32	1.95	1.52	0.96	0.83	0.69	0.63
HEAVY DUTY DIESEL TRUCKS	1.07	0.75	0.74	0.80	0.79	0.73	0.54	0.40
MOTORCYCLES (MCY)	0.65	0.59	0.39	0.81	0.65	0.63	0.62	0.64
BUSES	0.08	0.05	0.05	0.04	0.04	0.03	0.03	0.03
MOTOR HOMES (MH)	0.09	0.08	0.06	0.04	0.02	0.02	0.01	0.01
<b>Total On-Road Motor vehicles</b>	<b>16.98</b>	<b>13.64</b>	<b>11.06</b>	<b>8.36</b>	<b>5.91</b>	<b>5.19</b>	<b>4.08</b>	<b>3.46</b>
<b>Off-Road Mobile Sources</b>								
AIRCRAFT	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
TRAINS	0.18	0.19	0.20	0.21	0.20	0.20	0.20	0.21
RECREATIONAL BOATS	4.31	4.31	4.58	4.05	3.82	3.63	3.40	3.35
OFF-ROAD RECREATIONAL VEHICLES	1.34	1.40	1.43	2.06	2.29	2.41	2.72	3.17
OFF-ROAD EQUIPMENT	2.03	1.86	1.78	1.64	1.43	1.32	1.08	0.96
FARM EQUIPMENT	0.30	0.28	0.25	0.21	0.18	0.17	0.11	0.07
FUEL STORAGE AND HANDLING	0.37	0.37	0.37	0.30	0.21	0.19	0.15	0.13
<b>Total Off-Road Motor Vehicles</b>	<b>8.54</b>	<b>8.44</b>	<b>8.65</b>	<b>8.50</b>	<b>8.16</b>	<b>7.94</b>	<b>7.69</b>	<b>7.91</b>
<b>Grand Total</b>	<b>39.15</b>	<b>36.57</b>	<b>30.41</b>	<b>27.96</b>	<b>25.48</b>	<b>24.84</b>	<b>24.26</b>	<b>24.64</b>

\*Data source: CARB Emission Projection Data, base year: 2008

Table 3-2  
Placer County NOx Emission Inventory

NOx Emissions (tons per day) - Placer County*								
	1990	1995	2000	2005	2008	2010	2015	2020
<b>Stationary Sources</b>								
FUEL COMBUSTION	2.34	2.77	2.96	3.23	3.24	3.41	3.57	3.68
WASTE DISPOSAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INDUSTRIAL PROCESSES	0.08	0.09	0.12	0.14	0.14	0.15	0.16	0.18
<b>Total Stationary Sources</b>	<b>2.42</b>	<b>2.85</b>	<b>3.08</b>	<b>3.37</b>	<b>3.38</b>	<b>3.56</b>	<b>3.73</b>	<b>3.86</b>
<b>Area-Wide Sources</b>								
RESIDENTIAL FUEL COMBUSTION	0.97	0.95	0.97	0.98	0.98	0.98	0.99	1.00
MISCELLANEOUS PROCESSES	0.09	0.10	0.10	0.11	0.11	0.11	0.11	0.12
<b>Total Area-Wide Sources</b>	<b>1.06</b>	<b>1.04</b>	<b>1.07</b>	<b>1.08</b>	<b>1.09</b>	<b>1.09</b>	<b>1.10</b>	<b>1.11</b>
<b>ON-Road Mobile Sources</b>								
PASSENGER	4.68	4.05	3.39	2.07	1.29	1.07	0.68	0.45
LIGHT DUTY TRUCKS	5.53	5.37	4.72	3.04	2.05	1.77	1.24	0.86
MEDIUM DUTY TRUCKS (MDV)	1.04	1.38	1.38	1.18	0.75	0.64	0.48	0.35
HEAVY DUTY GAS TRUCKS	1.60	1.28	1.04	0.93	0.73	0.70	0.66	0.62
HEAVY DUTY DIESEL TRUCKS	8.69	9.04	10.17	13.10	12.30	11.05	7.27	4.87
MOTORCYCLES (MCY)	0.08	0.08	0.07	0.20	0.18	0.19	0.20	0.21
BUSES	0.24	0.23	0.27	0.35	0.29	0.29	0.27	0.24
MOTOR HOMES (MH)	0.16	0.20	0.17	0.16	0.12	0.11	0.09	0.07
<b>Total On-Road Motor vehicles</b>	<b>22.01</b>	<b>21.63</b>	<b>21.21</b>	<b>21.03</b>	<b>17.71</b>	<b>15.82</b>	<b>10.88</b>	<b>7.67</b>
<b>Off-Road Mobile Sources</b>								
AIRCRAFT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRAINS	3.84	3.85	4.11	3.22	2.88	2.73	2.87	2.99
RECREATIONAL BOATS	1.15	1.20	1.18	1.55	1.68	1.64	1.56	1.54
OFF-ROAD RECREATIONAL VEHICLES	0.03	0.03	0.03	0.05	0.06	0.06	0.08	0.10
OFF-ROAD EQUIPMENT	4.05	3.73	3.77	3.54	3.21	2.99	2.32	1.72
FARM EQUIPMENT	1.66	1.41	1.22	1.05	0.92	0.85	0.61	0.40
FUEL STORAGE AND HANDLING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Off-Road Motor Vehicles</b>	<b>10.72</b>	<b>10.22</b>	<b>10.33</b>	<b>9.42</b>	<b>8.74</b>	<b>8.27</b>	<b>7.44</b>	<b>6.74</b>
<b>Grand Total</b>	<b>36.20</b>	<b>35.74</b>	<b>35.69</b>	<b>34.90</b>	<b>30.92</b>	<b>28.74</b>	<b>23.16</b>	<b>19.39</b>

\*Data source: CARB Emission Projection Data, base year: 2008

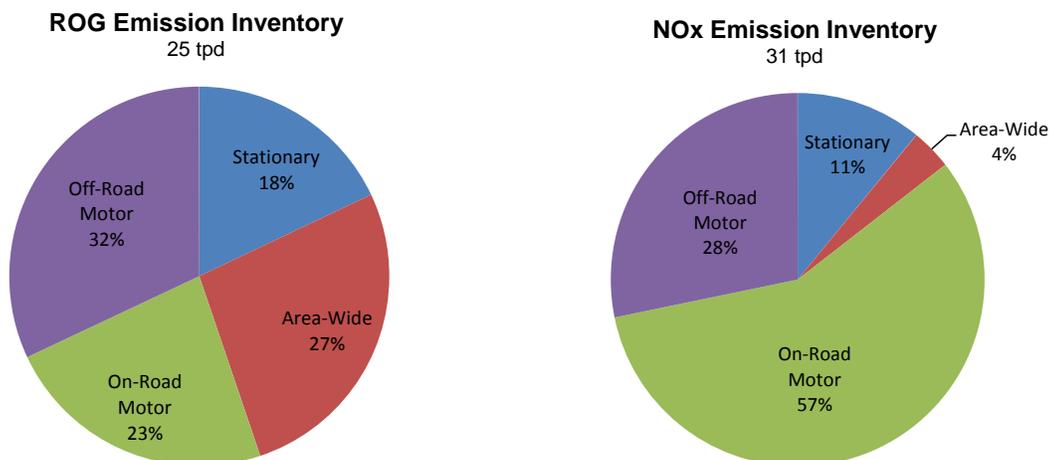
According to Tables 3-1 and 3-2, the primary contribution from stationary sources result from cleaning and surface coatings, petroleum production and marketing, and industrial processes for ROG emissions and fuel combustion for NOx emissions. The ROG emissions from area-wide source categories are primarily from consumer products, residential fuel combustion, with the major NOx emissions from area-wide source categories from residential fuel combustion. The emissions estimates for the two source categories are based on actual throughput data and source test results reported from facilities or population-related methodology developed by CARB or local districts.

The majority of ROG and NOx emissions in Placer County come from on-road and off-road mobile sources. These mobile source emission categories consist of light-duty automobiles, the various truck categories, recreational boats, off-road construction/industrial equipment, farm equipment, and trains. The EMFAC 2007 motor vehicle emission model developed by CARB to estimate on-road mobile source

emissions by using a wide variety of on-road motor vehicle types, vehicle emission factors, vehicle population, and vehicle miles traveled. CARB also developed the OFFROAD emission model to estimate average seasonal daily emissions from a large spectrum of diesel powered off-road equipment, and developed forecasts based on anticipated growth and controls within each equipment category. The emission inventory shows that the major contribution to ROG emissions is from light-duty vehicles and recreational boats and the major contribution to NOx emissions from heavy-duty trucks and trains.

The pie charts in Figure 3-1 show the ROG and NOx emission inventories in Placer County separated into the four source categories. The total ROG contribution in 2008 is comprised of 18% from stationary sources, 27% from area-wide sources, 23% from on-road mobile sources, and 32% from off-road mobile sources. The total NOx contribution 11% from stationary sources, 4% from area-wide sources, 57% from on-road mobile sources, and 28% from off-road mobile sources.

Figure 3-1  
2008 Emission Inventories in Placer County

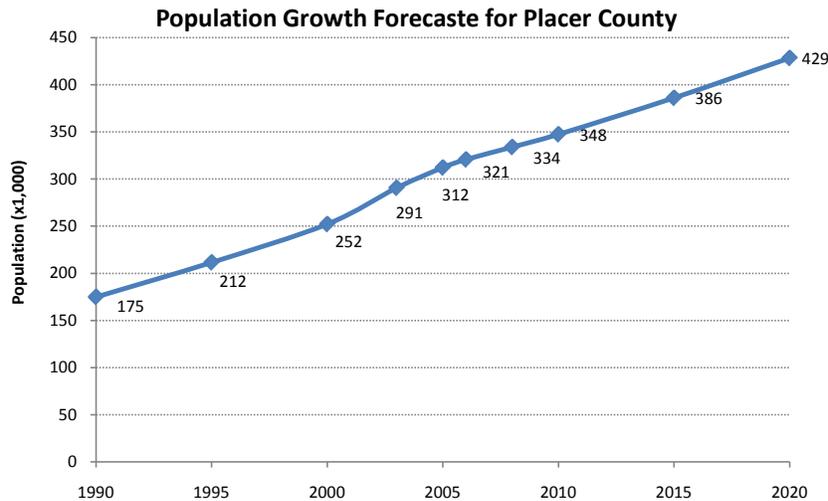


### 3.3 Population and Vehicle Miles Traveled (VMT)

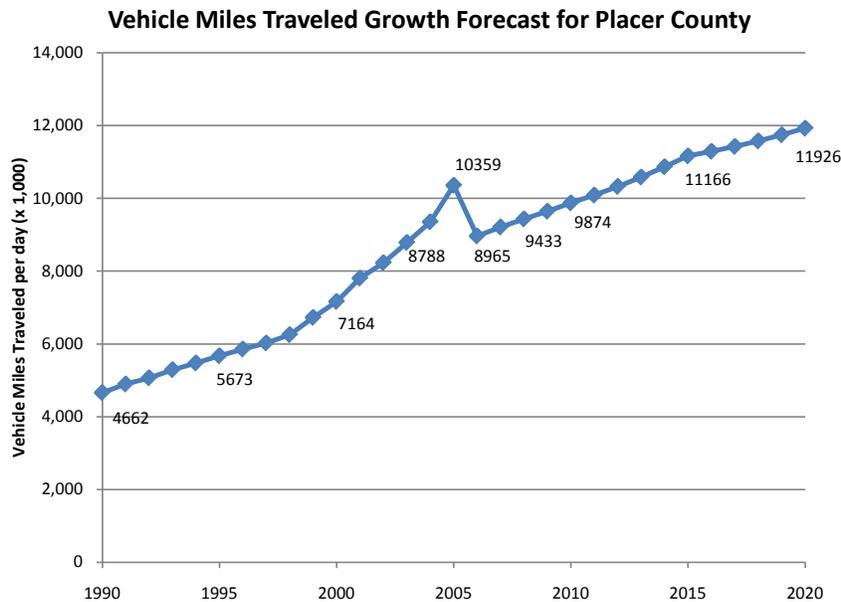
In addition to updates of the methodologies, process rates, and emission factors for individual emission source categories, updates in growth factors can also affect emission inventory forecasts. Changes in the most recent growth assumptions for Placer County population and daily vehicle miles traveled (VMT) could contribute to some of the emission differences in population-related area sources and on-road/off-road mobile sources.

Figure 3-2 illustrates the growth curve of the population and daily VMT between 1990 and 2020. According to the data, Placer County's population increased about 7% from 2003 to 2005 and about 6% from 2006 to 2008. Overall the population increase has been about 91% between 1990 and 2008. The population growth forecast is expected to increase 28% from 2008 to 2020.

Figure 3-2  
Placer County Population and Vehicle Miles Traveled Growth



Source: California Department of Finance



Source: CARB 2009 Almanac of Emissions and Air Quality

Continued population growth contributes to the increases in daily VMT. In 2008, overall VMT in Placer County was estimated at 9.4 million miles per day, a 102% increase with VMT estimates from 1990. From 2003 to 2005, the daily VMT increased about 18% with another 5% increase from 2006 to 2008. According to the data forecast, there is an expected increase of 26% from 2008 to 2020. Placer County has been one of the fastest growing counties in California within the last decade, with the growth of population and VMT contributing to emission changes and emission inventory trends in the future.

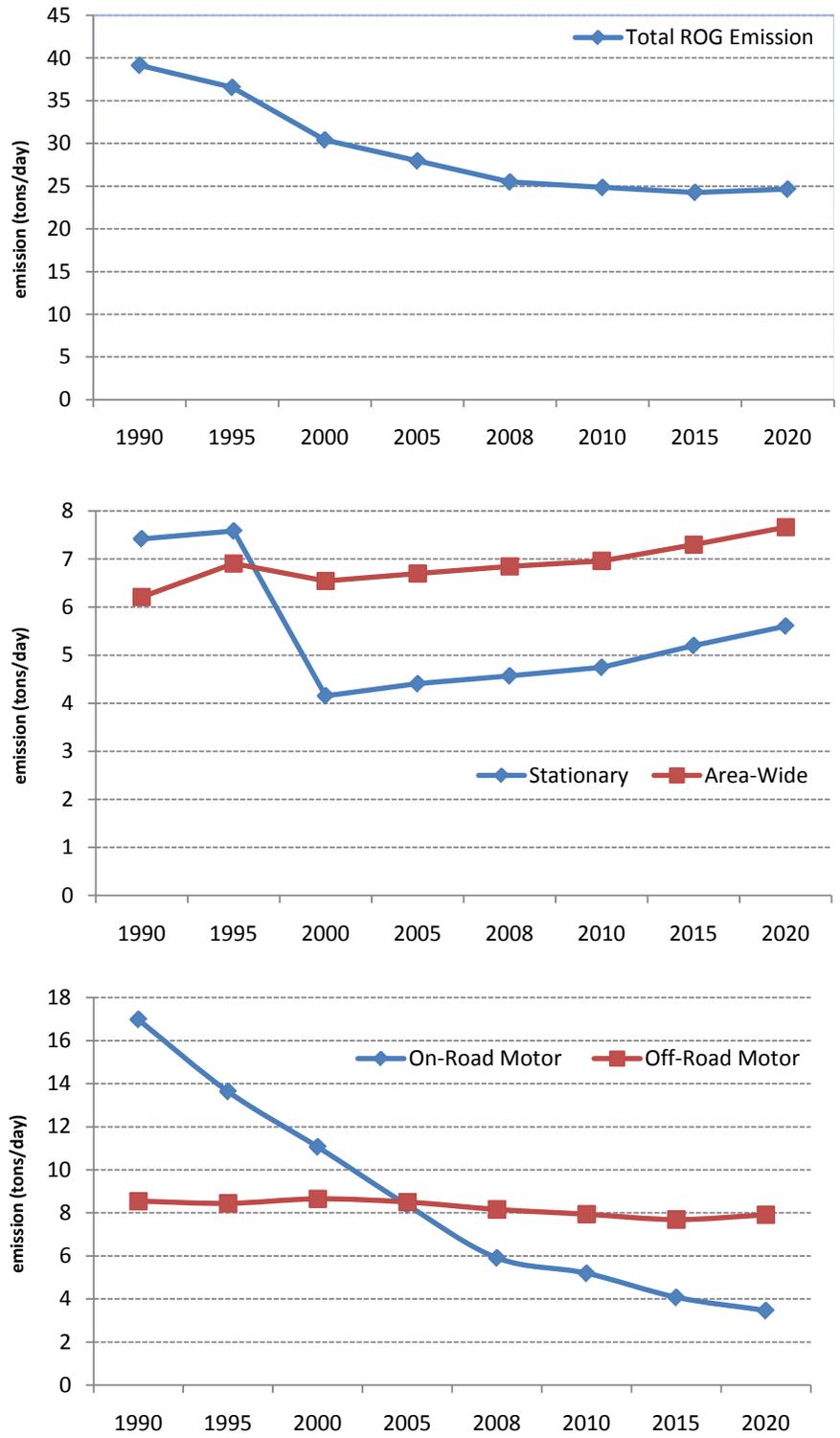
### **3.4 Emission Inventory Trends**

Figures 3-3 and 3-4 show ROG and NOx emissions trends from 1990 to 2020. In general, emission trends of ROG and NOx show a declining pattern. Between 1990 and 2008, overall ROG emissions declined about 35% with NOx emissions decreasing about 15%. From 2005 to 2008, overall ROG emissions reduced about 9% and NOx emission reduced about 11%. From 2008 to 2020, overall ROG emissions are expected to continue decreasing about 3% with NOx emissions decreasing about 37%. These emission reductions are mostly from the on-road and off-road mobile sources categories.

Statewide mobile source regulations such as low emission vehicle programs and reformulated gasoline have been very effective in reducing ROG emissions from mobile sources, despite the significant growth in the number of vehicle miles traveled. The results have shown a significant decrease on ROG emissions from mobile sources in the past decade. In addition, the more stringent mobile source emission standards, cleaner burning fuels, and advanced technologies for engine design or exhaust treatment have also contributed to the steady decline in NOx emissions.

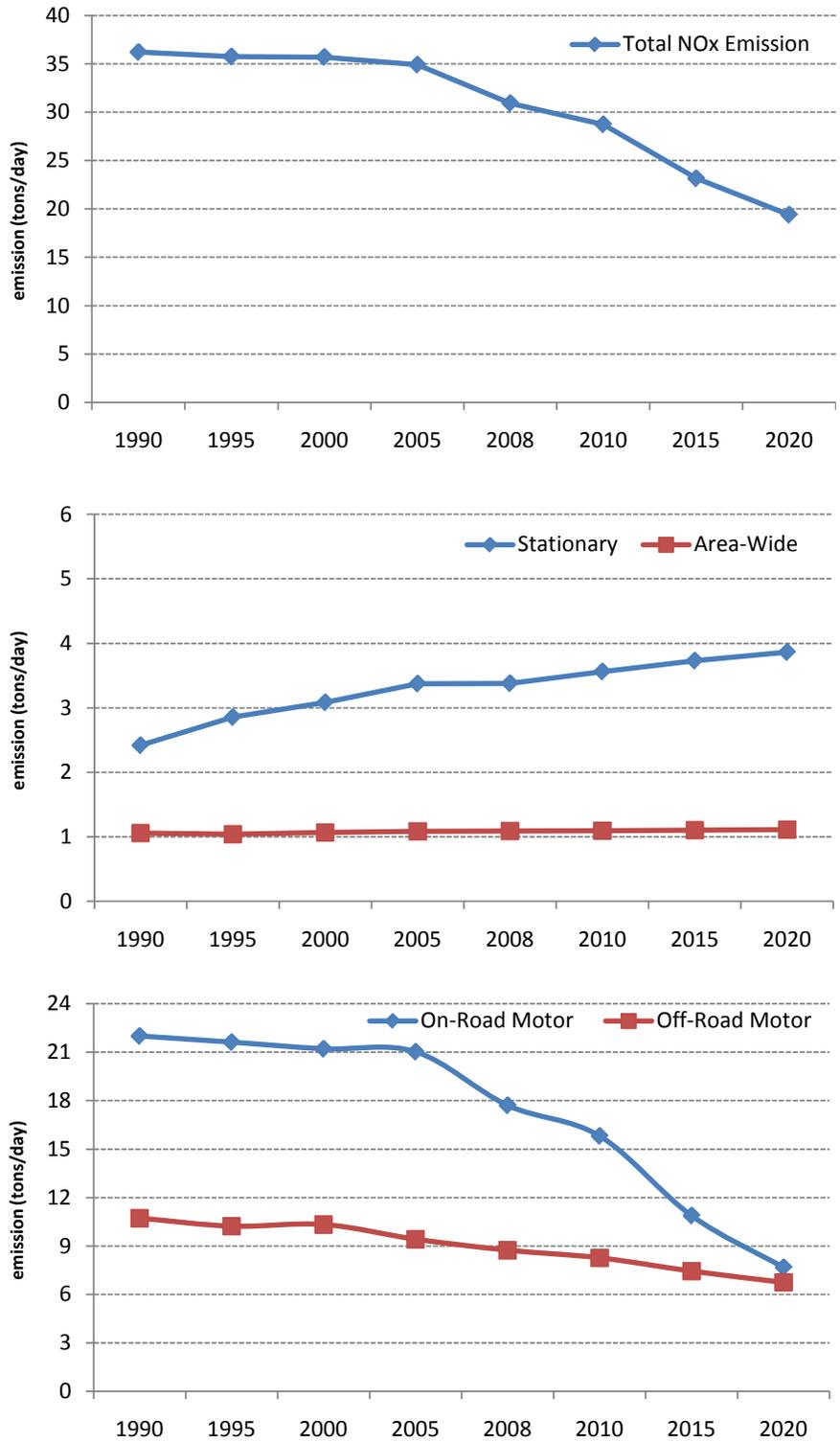
On the other hand, the ROG and NOx emissions from stationary and area-wide sources have increased slightly since 2000. This can be attributed to Placer County's population growth and subsequent housing and associated energy demands along with increased emissions in fuel combustion, cleaning and surface coatings, and consumer products. To help decrease the emissions growth, the District has identified emission reductions, through rulemaking. Several related District rules (discussed in the following chapter) have been adopted or amended between 2003 and 2008 to control and limit emissions from industrial coating and solvent usage, architectural coating, adhesives and sealants usage, and fuel combustion processes. CARB also has focused much of its control efforts on consumer products. These control efforts are expected to provide additional ROG and NOx emission reductions in Placer County in the following years.

Figure 3-3  
 Placer County ROG Emission Inventory Trends  
 (Base Year: 2008)



Source: CARB 2009 Almanac of Emissions and Air Quality

Figure 3-4  
 Placer County NOx Emission Inventory Trends  
 (Base Year: 2008)



Source: CARB 2009 Almanac of Emissions and Air Quality

#### **4. IMPLEMENTATION OF EMISSION REDUCTION IN PLACER COUNTY**

The California Clean Air Act (CCAA) under Section 40924 of the Health and Safety Code (H&SC) requires that each triennial plan should include the expected and revised emission reductions for each measure scheduled for adoption in the preceding three-year period. Therefore, this chapter will review and summarize the progress of emission reduction harvested from the overall control strategies (including stationary, area, and mobile sources) implemented by the District from 2003 to 2008.

##### **4.1 Reduction from Stationary and Area Sources Control Measures**

The District has scheduled to adopt or amend feasible control measures during the triennial evaluation period to meet the District's commitment for reducing ROG and NOx emissions. Two control measures were committed for further study in the 2003 Triennial Report and were amended during the next triennial evaluation period (2003-2005).

District Rule 235 - Adhesives was amended on April 8, 2004 to meet regional commitments. The purpose of the amendment to Rule 235 was to add and enhance the same control measures and standards in effect in equivalent rules in the other air districts. This rule applies to all operations applying adhesives and sealants. The rule affects anyone who supplies, sells, offers for sale, or uses an adhesive or sealant product or a surface preparation and cleanup solvent. The estimated additional ROG reduction from this rule amendment is 0.05 tons ROG per day.

District Rule 239 – Graphic Arts Operations was amended on April 8, 2004 to meet regional commitments. The purpose of the amendment to Rule 239 was to add and enhance the same control measures and standards in effect in equivalent rules in the other air districts. This rule applies to all graphic arts operations. The estimated additional ROG reduction from this rule amendment is 0.1 tons ROG per day.

In addition to the two rule amendments above, there were several rule amendments and a new rule adopted by the District during these two triennial evaluation periods (2003-2005 and 2006-2008):

- District Rule 237 - Municipal Landfills was amended on October 9, 2003, modifying the Non-Methane Organic Compounds (NMOC) control policy.
- District Rule 216 - Organic Solvent Cleaning and Degreasing Operations was amended on December 11, 2003, which provided an estimated additional 0.37 tons per day of ROG reduction.
- District Rule 240 - Surface Preparation and Cleanup was amended on December 11, 2003, which provided an estimated additional 0.14 tons per day of ROG.
- District Rule 238 - Factory Coating of Flat Wood Paneling was amended on February 18, 2004, to modify the control measures and standards to allow a newer product, "Low Solids" VOC-containing coatings.
- District Rule 233 - Biomass Boilers was amended on October 11, 2007, to modify the definitions of startup and shutdown and allow alternative emission limits during startup and shutdown. This rule amendment was later withdrawn and replaced with an amendment adopted December 30, 2009.

- District Rule 206 - Incinerator Burning was amended on October 9, 2008, to modify the exemption for crematories.
- District Rule 245 - Surface Coating of Metal Parts and Products was adopted on December 11, 2008, to regulate the ROG emissions associated with metal part coating operation and to be in compliance with the 2006 Reasonably Available Control Technology (RACT) SIP analysis. Only four existing facilities are potentially subject to this new rule; the potential emission reduction is minimal (<0.001 tons per day). This Rule was amended again on August 20, 2009, to address deficiencies identified by U.S. EPA comments.

## **4.2 Reduction from Mobile Sources Control Measures**

Mobile Sources (including on-road and off-road) account for 55% of total ROG emissions and about 85% of total NO<sub>x</sub> emissions. The District does not have the authority to directly control mobile source emissions through the regulatory process. The District may promote market-based incentive programs to complement the progress requirement in reducing mobile source emissions.

### **4.2.1 Regional Incentive Programs for Mobile Sources**

The District works with the other local air districts in the Sacramento area in the development of an air quality management plan, known as the Sacramento Regional 8-hour Ozone State Implementation Plan (Sacramento 8-hr Ozone SIP) for that portion of Placer County located within the Sacramento Federal Ozone Nonattainment Area (SFONA). The major contributors in the regional NO<sub>x</sub> emission inventory are mobile sources. Local air districts do not have the authority to regulate the mobile sources; however, reductions can be achieved through market-based incentive programs to promote the lower emission technologies. These regional incentive programs include the Carl Moyer Memorial Program, the Sacramento Emergency Clean Air and Transportation (SECAT) program, and the Lawn Mower Exchange Program.

The Carl Moyer Memorial Program is a state-funded program codified in H&SC Section 44275 et seq.: it provides incentives on the replacement of agricultural pumps and off-road and on-road heavy-duty diesel equipment. The SECAT Program is a partnership between the Sacramento Metropolitan AQMD and the Sacramento Area Council of Governments (SACOG). The Program's goal is to reduce harmful emissions from on-road heavy-duty vehicles operating in the Sacramento region. The Sacramento regional Lawn Mower Exchange program is an annual one-day event sponsored by local air districts (El Dorado County AQMD, Placer County APCD, Sacramento Metropolitan AQMD, and Yolo-Solano AQMD) along with the Sacramento Municipal Utility District (SMUD). The purpose of the program is to exchange gas powered lawnmowers for new electric lawnmowers to benefit regional air quality.

These programs are administered on a regional level, which makes it hard to quantify the emission reductions in the District's portion of the SFONA. According to the Sacramento Metropolitan AQMD's 2009 Triennial Report, the Sacramento Region has received about 19.2 million funds for the Carl Moyer Memorial Program and 23 million funds for the SECAT Program between 2004 and 2008. Since 2003 there have been

over 800 on-road and 640 off-road vehicle applications awarded that have achieved NOx emission reductions of 3.16 tons per day with on-road heavy-duty vehicles accounting for 1.13 tons per day and the off-road mobile portion for 2.03 tons per day. According to the SMUD report, the Regional Lawn Mower Exchange Program has replaced over 4,900 old gas-powered lawnmowers between 2003 and 2008 and achieved about 0.03 tons per day ROG emission reduction.

#### **4.2.2 District's Clean Air Grant Program**

In addition to the regional mobile source incentive programs, the District has established its own Clean Air Grant (CAG) Program since 2001 which makes funds available to public and private agencies and individuals for projects that achieve cost-effective air pollution reductions in Placer County. Funding comes from two sources: the Department of Motor Vehicle (DMV) Surcharge Fund and the District's Air Quality Offsite Mitigation Fund.

##### DMV Surcharge Fee

The District was authorized by two Assembly Bills, AB 2766 and AB 923, to impose a \$6 surcharge fee on vehicles registered in Placer County. The surcharge revenues are used solely to reduce air pollution from on-road motor vehicles and for related planning, monitoring, enforcement, and technical studies necessary for the implementation of the California Clean Air Act of 1988. The District commits \$4 of every DMV surcharge fee to the annual CAG program.

##### Air Quality Offsite Mitigation Funds

The District receives funding from project proponents of developments within Placer County through the District's Offsite Mitigation Program. Off-site mitigation measures that are recommended by the District can include implementing off-site emission reduction projects, or the payment of in-lieu-of fees to the District's Off-site Mitigation Funds in accordance with the District's Board approved Policy regarding Land Use Air Quality Mitigation Funds. Participation in the Offsite Air Quality Mitigation Funds offsets a project's related air quality impacts when the on-site mitigation is insufficient.

##### Other Mitigation Funds

In addition to the two major sources of CAG funding, the District also received 1) mitigation funds from CARB to replace old, polluted emergency generators in 2003, 2) monies from Union Pacific Railroad (UPRR) based on an Agreement signed in 2004 between the District and UPRR to reduce the Roseville rail yard associated air quality impacts, and 3) funds from the CARB's Low Emission School Bus Program for school bus retrofit purchases in 2007. These additional mitigation funds were managed in concert with the District's CAG program in the year received.

From 2003 to 2008 the District has spent approximately \$7.9 million to award emission reduction projects through the District's CAG program. The overall project lifetime of emission reduction for NOx is about 520 tons, about 0.24 tons per day reduction.

### **4.3 Reduction from the Roseville Rail Yard Mitigation**

On October 14, 2004, CARB released the report entitled Roseville Rail Yard Study (Study), which addressed diesel emissions at their Roseville facility and the related health risks. The Study primary focused on the diesel particulate matter (DPM) impacts resulting from the rail yard activities. Based on the results, UPRR and the District signed an Agreement in December 2004. In the Agreement, UPRR committed to the goal of reducing DPM emissions from its Roseville operations by at least 25% from the baseline period (1999-2000) by the end of 2007. Although the Agreement primary focused on the DPM emission reduction, its proposed mitigation strategies would reduce not only DPM emissions but also NOx emissions.

In 2008, a report was provided by the UPRR to the District summarizing its proposed mitigation measures and demonstrating the achievement of its emission reduction objectives. The report showed that the DPM emissions resulting from the rail yard activities were reduced from 19.8 tons in 2005 to 14.5 tons in 2008. For the same four-year period (2005 to 2008), the total NOx emissions reduced about 27% from 806 tons in 2005 to 585 tons in 2008 (about 0.2 tons per day reduction). The results have been examined by the monitoring data collected for the Roseville Railyard Air Monitoring Project (RRAMP) and verified in the final RRAMP report<sup>3</sup>.

### **4.4 Reduction from Land Use and Miscellaneous Programs**

#### **4.4.1 District's Land Use Program**

One of the District's goals is to "mitigate effects of growth through reviewing development plans for impacts on air quality and working toward mitigating those impacts through initiatives and programs that reduce emissions". As part of an ongoing effort to improve air quality, the District reviews and comments on California Environmental Quality Act (CEQA) documents which are prepared for discretionary development proposals that may result in significant air pollutant emissions. As a part of our review process, the District makes recommendations for reducing emissions to mitigate potential air quality impacts. These recommendations are provided to the County, incorporated municipalities, and other agencies, relatively early in the planning process.

One of the District's feasible mitigation measures is the offsite mitigation measure which allows an offsite project (e.g., retrofitting vehicles, alternative fuel application, etc.) to be implemented by an applicant or a payment of fees to the District's Offsite Mitigation Funds in lieu of on-site reductions. In April 2001, the District's Board approved the Policy regarding "Land Use Air Quality Mitigation Funds" for the use of offsite mitigation measures. If a proponent of a project chooses to implement the

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<sup>3</sup> The final RRAMP report can be downloaded from the District's website:  
<http://www.placer.ca.gov/Departments/Air/railroad.aspx>

mitigation by paying the fee, the fee received is applied towards emission reduction projects through the District's annual CAG program. This provides an alternative when a land use project is required to offset the project's related emissions (e.g. vehicle exhaust, water heater, and consumer products) and where on-site mitigation measures are not sufficient to offset the emissions resulting from the projects.

During the 2003 to 2008 period, the District received approximately \$2.3 million in mitigation monies. These monies were managed in concert with the DMV Surcharge fee to provide incentives for emission reduction projects. The overall project lifetime emission reduction for NOx is about 150 tons, which is equal to 0.06 tons per day.

In addition to mitigating emissions through CEQA review process, the District has committed to the development and implementation of an Indirect Source Review (ISR) rule in the federal 8-Hour Ozone Attainment plan. An ISR rule is designed to reduce emissions generated during the operational phase of indirect sources to achieve the attainment of ambient air quality standards<sup>4</sup>. An indirect source is defined as any facility, building, structure or installation, or combination thereof, which generates or attracts mobile source activity that results in emissions of any pollutant for which there is a state ambient air quality standard. According to the definition, land use projects are indirect sources. The proposed rule will require indirect sources to mitigate a portion of their emissions through a combination of on-site and off-site mitigation measures to achieve the required emission reductions when on-site mitigation is insufficient. The District committed to adopt this rule in 2013 with implementation in 2015.

#### **4.4.2 District's Falling Leaves and Pine Needle Drop-Off Program**

The Placer County Meadow Vista Community Plan identified smoke from the burning of leaves and pine needles by area residents to be an air pollution concern. In 1997, in an effort to decrease smoke impacts from this burning, the Placer County APCD, Placer County Facility Services Solid Waste Division and the Auburn Placer Disposal Service (APDS) jointly sponsored a leaves and pine needles drop off at the Meadow Vista Transfer Station.

A debris box, specifically for leaves and pine needles is located at the Meadow Vista Transfer station for a four (4) month period every year. Information regarding the program is primarily through the distribution of bright orange "Door Hanger" flyers hung on garbage can totes on APDS' two garbage routes. Those with garbage service receive these notifications. Flyers were distributed by APDS to the local schools, fire district, and several community locations and also posted on the District's webpage.

Due to the collection of this material, there has been a reduction in outdoor residential burning. Leaves and pine needles collected in the debris boxes are transported to the Western Regional Recovery Facility for recycling/composting. Based on the data from the Placer County Facility Services Department, the overall emission reduction for ROG from 2003 to 2008 is approximate 11.2 tons.

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<sup>4</sup> California Health and Safety Code, §40716

#### 4.5 Reduction Summary

Emission reductions from the rule activities and incentive programs in this report review period are shown in Table 4-1. Between the 2003 and 2008 time period, the District has achieved about 0.67 tons per day emission reductions for ROG and 0.44 tons per day for NOx resulting from the rules amended and incentive programs managed by the District. In addition, there are about 0.03 tons per day emission reductions for ROG and 3.16 tons per day for NOx resulting from the regional incentive programs (Carl Moyer Memorial Program, SECAT Program, and Lawnmower Exchange Program) managed by the other agencies (Sacramento Metropolitan AQMD and SMUD).

Table 4-1  
Emission Reduction by the District Control Strategies Implementation between 2003 and 2008

Source Categories	Associated Rules/Programs	Emission Reduction	
		ROG (tpd)	NOx (tpd)
Stationary/Area-wide Sources	District Rule 216	0.37	
	District Rule 235*	0.05	
	District Rule 239*	0.1	
	District Rule 240	0.14	
	District Rule 245	<0.001	
Mobile Sources (including on-road and off-road mobiles)	District's Clean Air Grant (CAG) Program		0.24
	District's Railyard Mitigation Agreement with UPRR		0.2
	District's Fallen leaves and Pine Needle Drop-off program	0.005	
<b>Total Emissions from District's Rule/Program</b>		<b>0.67</b>	<b>0.44</b>
Mobile Sources (including on-road and off-road mobiles)	Regional Mobile Source Incentive Programs		3.16
	Regional Lwanmower Exchange program	0.03	
<b>Total Emissions from Regional Programs**</b>		<b>0.03</b>	<b>3.16</b>

\* The rules were committed in the 2003 Triennial Plan.

\*\* Emission Reductions occur throughout the Sacramento Federal Ozone Nonattainment Area

#### 4.6 Other Non-Quantifiable Rule Activities

The following is a list of other non-quantifiable rule activities during the 2003-2008 time period. Although emission reductions cannot be quantified for these rule activities, the list shows the District's efforts to look for the opportunities to improve air quality:

Placer County APCD  
2009 Triennial Progress Report

- District Rule 507 – Federal Operating Permit Program was amended on April 8, 2004 to modify the permit procedures and supplemental fee for Title V Federal Operating Permit Program.
- District Rule 502 – New Source Review was amended on December 9, 2004 to comply with the requirement of the 2003 State Ozone Transport Mitigation Regulation Amendment.
- District Rule 514 – Federal Major Modification was adopted on October 12, 2006 to address the differing state and federal requirements applicable to modifications of federal major sources.
- District Rule 225 – Wood Burning Appliances was amended on December 13, 2007 to modify the rule applicable County wide to require the most efficient wood burning appliance technology for PM emission reduction.
- District Rule 601 – Permit Fees, was amended on December 13, 2007 to include fees for agricultural engines.
- District Rule 411 – Indemnification of District was adopted on February 14, 2008 to authorize the District to add an indemnification agreement on the permit application for risk management purposes.
- District Rule 412 – Registration Requirements for Stationary and Portable Compression Ignition Engines Used in Agricultural Operations, was adopted on December 13, 2007 and amended on August 14, 2008 to comply with new requirements in an amended CARB Airborne Toxic Control Measure (ATCM) for diesel PM from stationary compression ignition engines.
- District Rule 515 – Stationary Rail Yard Control Emission Reduction Credits was adopted on October 9, 2008 which provides opportunities to generate surplus PM<sub>10</sub>/PM<sub>2.5</sub>, NO<sub>x</sub>, SO<sub>x</sub>, and/or ROG emission reduction credits (ERC) through the addition of stationary control equipment to treat locomotive diesel engine exhaust.

## **5 COMMUNITY EDUCATION PROGRAMS**

As a required element under the District's 1991 Air Quality Attainment Plan (AQAP), the District continues to support public outreach programs. However, the emission reductions from some of public outreach programs are not easily quantifiable. Below includes a list of existing public outreach efforts by the District.

### **5.1 Spare the Air Program**

Spare the Air is a voluntary summertime effort aimed at reducing air pollution (specifically, ground-level ozone). The program works by notifying residents, in advance when air quality is forecasted to reach unhealthy levels: designated Spare the Air days. This program is a cooperative effort that is jointly funded by the El Dorado County AQMD, Placer County APCD, Sacramento Metropolitan AQMD, and Yolo-Solano AQMD for the Sacramento Region. This program is coordinated with the Spare the Air Programs in the San Francisco Bay Area and the San Joaquin Valley to maintain statewide program consistency.

The program provides an air quality forecast on its website which allows people to keep track of air quality conditions. The program offers a free air alert service where one can be notified via email, or text messaging when air quality is forecast to reach unhealthy levels. These days are designated Spare the Air days. In addition, the program educates people about air pollution and encourages them to change their behavior to minimize it. On the website, people can find answers to frequently asked questions about air pollution and health effects. It also has information on how various communities and employers are working to prevent pollution, personal clean air tips, and a variety of other educational resources.

Regional awareness of our air quality problem and the Spare the Air programs remain high. Based on 2004-2008 surveys conducted by Aurora Research Group, the results indicated that more than half a million (591,000) drivers in the nonattainment area were aware of the Spare the Air programs. In terms of specific awareness, about quarter of a million (274,000) drivers in the region remembered hearing the specific request not to drive on a Spare the Air Day. Employer participation in the Spare the Air program has remained stable at about 20% for the last three years, higher than it was in the 2003 and 2004 time period (both 16%). According to the research results, the estimated emission reductions from the Spare the Air program during 2004-2006 time period was about 0.1 to 0.2 tons per day for ROG and NOx each. For 2007 and 2008, the estimated emission reductions have declined to below 0.1 tons per day for ROG and NOx.

### **5.2 Additional Public Outreach Efforts**

The District has continued existing public outreach efforts, including:

- Participation of the Clean Air Public Awareness Program managed by the Breathe California of Sacramento-Emigrant Trails
- Participation in Earth Day Events

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- Sponsorship of Placer County's Bike to Work Day
- Development of Sacramento Ozone Non-Attainment Air Quality Survey
- Response to public inquires and continued news media coverage
- Development of informational brochures, newsletters and fact sheets and Utilization of the District's website: <http://www.placer.ca.gov/apcd>
- Continued Development of a Regional Land Use Development Handbook

## **6 TRANSPORT MITIGATION REGULATION**

The CCAA requires CARB to assess the contribution of ozone and ozone precursors from upwind regions on ozone concentrations that violate the State ozone standard in downwind areas. The CCAA also directs CARB to establish mitigation requirements for upwind districts designed to mitigate their impact on downwind districts. According to the CCAA requirement, CARB originally established mitigation requirements in 1990 which are contained in Title 17, California Code of Regulations, Sections 70600, and 70601. These regulations were amended in 1993 and in 2003. The CARB Board adopted amendments on May 22, 2003, which became effective on January 3, 2004.

The 2003 State Ozone Transport Mitigation Regulation Amendment requires upwind districts to 1) consult with their downwind neighbors and adopt and implement “all feasible measures” and 2) amend their “no net increase” thresholds for permitting so that they are as stringent as those of their downwind neighbors no later than December 31, 2004. This Amendment is intended to make sure that upwind districts that impact downwind districts with their transported air pollution should implement control measures that are at least as stringent as the downwind district. The CARB has identified the “Broader Sacramento Area” as transporting to the upper Sacramento Valley, the San Joaquin Valley, the San Francisco Bay Area, and the Mountain Counties. According to the definition, the Placer County APCD is in the Broader Sacramento Area.

The first requirement of all feasible measures was addressed during the consultation and creation of the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan. An extensive all feasible measures analysis for each air district in the SFONA was completed in the plan. The second requirement was implemented by an amendment of the District Rule 502 New Source Review by the District’s Board on December 9, 2004. This rule amendment modified the offset threshold for ROG and NOx to 10 tons per year as the most stringent thresholds adopted by our downwind districts like the San Joaquin Unified APCD for permitting requirement.

## **7 EVALUATION OF FUTURE EMISSION REDUCTION**

Health and Safety Code Section 40914 requires that an air district with nonattainment designation achieve a reduction in district-wide emissions of 5% or more per year of ozone precursor emissions averaged every consecutive three-year period. According to the emission inventories shown in Table 3-1 and 3-2, the overall average rate of total ROG and NO<sub>x</sub> emission reduction between 2005 and 2008 in Placer County is about 3% per year. Since this overall averaged emission reduction is less than the required 5% annual emission reduction required by the CCAA, the District is obligated to demonstrate that the failure to achieve the 5% reduction occurred despite the inclusion of every feasible measure in the plan and an expeditious adoption schedule.

### **7.1 Commitments for the Next Triennial Review Period**

#### **7.1.1 All Feasible Measures**

The District is committed to reviewing and analyzing all control measures which are feasible to reduce ozone precursor emissions in Placer County. This includes the consideration of all feasible measures adopted across California by the other air districts to obtain future emissions reductions. District Staff, in conjunction with CARB and other air districts within the SFNOA, completed a rigorous analysis of all feasible control measures during the development of the federal 8-hour ozone attainment plan which contained the District's control measures commitment. This was recently submitted to EPA for approval in April 2009. However, the progress of annual reduction rate required by Federal Clean Air Act (FCAA) is 3% which is less than the required 5% per year reduction required by the CCAA. Therefore, the District must review other control measures which were adopted by the other air districts in California, CARB's suggested control measures (SCMs), and EPA's Control Technique Guidance documents, to identify additional emission reduction opportunities.

Table 7-1 includes six control measures committed in the federal 8-hour ozone attainment plan. Although the committed adoption year for those six control measures are not within the next triennial period, the District would consider amending or adopting them earlier to increase emission reductions in Placer County. Three of them (Rule 218 Architectural Coatings, Rule 234 Auto Refinishing Operations, and Rule 245 Surface Coating of Metal Parts and Products) are scheduled to be amended during 2009 to 2011 period. The proposed adoption schedule for three new rules (Asphaltic Concrete, Large Water Heaters and Boilers, and Indirect Source Review) cannot be determined at this time. Further detailed analysis for these three new rules will be conducted and evaluated in the report for the next triennial period.

As a result of the inter-agency rule evaluation activities and District's analysis, additional stationary and area-wide source rules have been identified for potential adoption or amendment. Table 7-1 contains a list of the control measures that are to be evaluated in detail for possible amendment or adoption for the next triennial period (2009-2011). The actual emission reductions cannot be estimated for those identified control measures at this time. They will be determined during the actual rule evaluation and development process and summarized in the next triennial report.

### 7.1.2 Mobile Source Incentive Programs

For the next triennial periods through 2012, the District will continue participating in the regional mobile source incentive programs and regional lawnmower exchange program to increase the emission reductions from on-road and off-road mobile sources. In addition to the regional incentive programs, the District will continue implementing the District annual CAG program by using \$4 of every DMV surcharge fee and offsite mitigation fees received to provide incentives on cost-effective emission reduction projects in Placer County.

Table 7-1  
List of Rules Proposed to be Considered Amendment/Adoption Through 2012

Emission Source Control Categories	Associated District Rule Name	Proposed Schedule of Amendment/Adoption	8-hour Ozone SIP Commitment	Proposed Action
Fugitive Emissions	Cutback and Emulsified Asphalt Paving Materials (Rule 217)	Possible amendment between 2009 and 2011		Evaluate for amendments needed to meet FCAA RACT and CCAA BARCT requirements
Surface Preparation & Cleanup Solvents	Organic Solvent Cleaning and Degreasing Operations (Rule 216)	Possible amendment between 2009 and 2011		Evaluate for amendments needed to meet FCAA RACT and CCAA BARCT requirements
Architectural Coatings	Architectural Coatings (Rule 218)	Possible amendment between 2009 and 2011	yes (2012)	Evaluate for amendments needed to meet FCAA RACT and CCAA BARCT requirements
Auto Refinishing	Auto Refinishing Operations (Rule 234)	Possible amendment between 2009 and 2011	yes (2015)	Amend to meet CARB SCM standards
Adhesives	Adhesives (Rule 235)	Possible amendment between 2009 and 2011		Evaluate for amendments needed to meet FCAA RACT and CCAA BARCT requirements
Graphic Arts	Graphic Arts Operations (Rule 239)	Possible amendment between 2009 and 2011		Evaluate for amendments needed to meet FCAA RACT and CCAA BARCT requirements
Metal Part Coating	Surface Coating of Metal Parts and products (Rule 245)	Possible amendment between 2009 and 2011	yes (2009)	Evaluate for amendments needed to meet FCAA RACT and CCAA BARCT requirements
Asphaltic Concrete	Asphaltic Concrete (new rule)	for future study	yes (2013)	Regulate NOx emissions from burners
Land Use Development	Indirect Source Rule (new rule)	for future study	yes (2013)	Mitigate emissions from indirect and areawide sources from new land use development
Large Water Heaters and Small Boilers	Large Water Heaters (new rule)	for future study	yes (2015)	Regulate NOx emissions for all new large water heaters (75,000 to 1,000,000 Btu/hr)

### 7.2 Proposed Projects for Future Emission Reduction

In addition to the committed feasible measure evaluations and mobile source programs, the District continues to look for the other opportunities which may provide additional emission reductions from non-regulatory sources. The District, in conjunction with the Placer County, is actively working with public and private forest management organizations, including the U.S. Forest Service (USFS), CAL FIRE, and local Fire Safe

Councils, on a number of forest fuels reduction projects to reduce the potential for catastrophic wildfire events.

Placer County has over one-half million acres of forested land, stretching from Auburn to Lake Tahoe, covering parts of three national forests. Homes and business are integrated next to and within the forests. Years of successful fire suppression activities have left the forests with an unnaturally dense, overstocked and very hazardous fuel load. The County has had four major fires since 2001 that have impacted over 30,000 acres of forested landscape. Private and public forest land managers are planning to conduct numerous forest fuels hazardous reduction and forest restoration projects over the coming years to in order to mitigate the potential for catastrophic wildfire events. These projects include selective thinning and removal of trees and brush to return forest ecosystems to more natural stocking levels, resulting in a more fire-resilient forest.

Thinning and restoration projects produce significant quantities of forest “slash”. The forest slash is frequently burned in open piles in the vicinity of the generation site. Using an alternative disposal or utilization such as siting a biomass energy facility near the slash harvest is not economically viable. Burning of forest biomass in open slash piles, or wildfire events produces significant quantities of VOC and NOx. Detailed District evaluations have conclusively determined that reductions in VOC of 98% and NOx of over 60% can be achieved through the chipping, transport, and utilization of biomass in a controlled energy facility, considering emissions from the diesel engines required for the chipping and grinding operations. The District is planning to actively sponsor and evaluate forest treatment and biomass energy projects which will produce emissions reduction benefits.

## **8 CONCLUSION**

Placer County has made considerable progress in improving air quality. Air quality indicators show significant overall reductions of peak ambient ozone and county-wide exposure to unhealthy concentrations since 1990. It demonstrates that overall exposure of residents to ozone continues to decrease.

Emission inventories show significant overall reductions of ozone precursor emissions between the 2003 and 2008 time period. However, Table 3-1 and Table 3-2 shows that the overall average rate of total ROG and NOx emission reduction between 2005 and 2008 in Placer County is about 3% per year, which is less than the 5% annual emission reduction required by the CCAA. The District is obligated to demonstrate that the failure to achieve the 5% reduction occurred despite the inclusion of every feasible measure in the plan and an expeditious adoption schedule. The District has conducted an “all feasible measures” analysis and committed to amending existing rules and adopting new rules to further reduce ozone precursor emissions. Table 7-1 shows the proposed commitment for the next triennial period (2009-2011). Incentive programs such as the Carl Moyer Program and the District’s Offsite Mitigation Program continue to assist in reducing additional NOx emissions from mobile sources. The District believes that this effort demonstrates progress towards attaining the state ozone standards in accordance with the CCAA requirements.