

**PLACER COUNTY
AIR POLLUTION CONTROL DISTRICT**

2015 TRIENNIAL PROGRESS REPORT

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

September 2015

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1 OVERVIEW OF THE 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” level agency, with its jurisdiction being the County of Placer which extends from North Lake Tahoe in the east, over the crest of the Sierra Nevada, to the Sacramento Valley in the west. With its special topographic features, portions of Placer County are located 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 requires 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, 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 designated as nonattainment for the state ozone standard¹ and the entire county was designated as nonattainment for the state particulate matter standard (PM₁₀).

The CCAA requires that an air district which has not attained the state air quality standards shall 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 PM₁₀ and does not require attainment plans for the state PM₁₀ 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. The AQAP contained proposed control programs/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, nonattainment districts prepare a progress report to demonstrate their progress toward attaining the state air quality standards. The triennial progress report should include air quality improvement with the amount of emission reductions achieved from control measures adopted for the preceding three year period. The districts must also review and revise their attainment plan, and if necessary, correct deficiencies in meeting the progress goals, along with incorporating new data or projections. This 2015 Triennial Progress Report is prepared to fulfill these requirements for the years 2012-2014.

1.2 Triennial Progress Reports Since 1991

The CCAA requirement for the first Triennial Progress Report, along with the revision of the AQAP, was fulfilled with the preparation and adoption of the 1994 Sacramento Area Regional Ozone Attainment Plan (1994 Ozone SIP). 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

¹ The LTAB was designated by CARB as nonattainment-transitional for the state ozone standard in March 2010. This latest area designation may result in the revision of AQAP prepared by local air districts as well as the Regional Plan Updates developed by Tahoe Regional Planning Agency (TRPA). The future planning requirement under CCAA will be determined by the collaborative efforts between TRPA and CARB.

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 and approved by the U.S. Environmental Protection Agency (EPA) on September 26, 1996.

The 1997 Triennial Progress Report was a requirement of the CCAA to assess the progress in the three years since the 1994 Plan. The District's Board of Directors approved the adoption of the 1997 Triennial Progress Report on July 16, 1998. The 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, which identified further measures for emission reductions. Discussion on these control measures were outlined under the 2000 Triennial Progress Report Section.

On April 11, 2001, the District's Board of Directors approved the 2000 Triennial Progress Report. This Triennial Progress Report met the requirement of the CCAA in assessing the progress since the adoption of the 1997 Triennial Progress Report. Three (3) ROG control measures listed in the 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 the 1997 Triennial Progress Report.

On October 13, 2005, the District's Board of Directors approved the 2003 Triennial Progress Report. The three (3) ROG control measures pending in the 2000 Triennial Progress Report were adopted during this triennial review period. In addition, the District also adopted one NOx control measure (Stationary Internal Combustion Engine) to fulfill the commitment the District made in the 1994 Ozone SIP.

On August 12, 2010, the District's Board of Directors approved the 2009 Triennial Progress Report for two triennial review periods (2003-2005 and 2006-2008). In this Triennial Progress Report, a total of nine stationary/area-wide control rules were amended or adopted. Although not all of these rule actions resulted in significant emission reductions, the District has achieved about 0.66 tons per day emission reductions in ROG from these rule activities.

On October 10, 2013, the District's Board of Directors approved the 2012 Triennial Progress Report for the district's air quality progress from 2009 to 2011. In this Triennial Progress Report, three (3) existing rules were amended, with two (2) additional proposed rules removed after further evaluation due to economic concerns. As a result, the expected emission reductions from these rules for ROG are .245 tons/day. In addition, another eight (8) rules were amended and/or adopted which may not be quantifiable or qualifiable, but demonstrate the District's efforts to look for opportunities to improve air quality.

The District has implemented proactive strategies to help offset mobile sources along with other emissions in Placer County. These include participating in regional incentives programs, implementing District managed grant programs, sponsoring and participating in forest biomass-related projects and providing financial assistance through the Technology Assessment Program (TAP) for the development of air pollution reducing technologies.

1.3 2015 Triennial Progress Report

The 2015 Triennial Progress Report is a requirement of the CCAA to assess the progress made towards attaining the state air quality standards in Placer County from the evaluation period of 2012 – 2014.

The triennial progress report 1) describes the historical trends in ambient air quality levels; 2) provides information on the emission inventories in Placer County; 3) summarizes the progress of emissions reductions from 2012 to 2014 in Placer County; and 4) concludes with an overview of air quality planning progress.

The historical trends in ambient air quality continue to present an improvement in air quality in Placer County. Air quality indicators show significant overall progress toward reducing exceedances of the ambient ozone standards since the late 1990's.

The emission inventories indicate the majority of ROG and NOx emissions in Placer County are from mobile sources. Between 1990 and 2015, emission inventory trends in Placer County show that the overall ROG emissions declined from 39 tons per day to 21 tons per day, a 47% decrease; and the NOx emissions declined from 36 tons per day to 21 tons per day, a 43% decrease. These emission reductions have mainly occurred from on-road and off-road mobile sources. Projected emission forecasts to 2025 show a more gradual declining trend. From 2015 to 2025, overall Placer County ROG emissions are expected to continue decreasing another 6%, as well as NOx emissions decreasing another 30%.

2 AIR QUALITY TRENDS

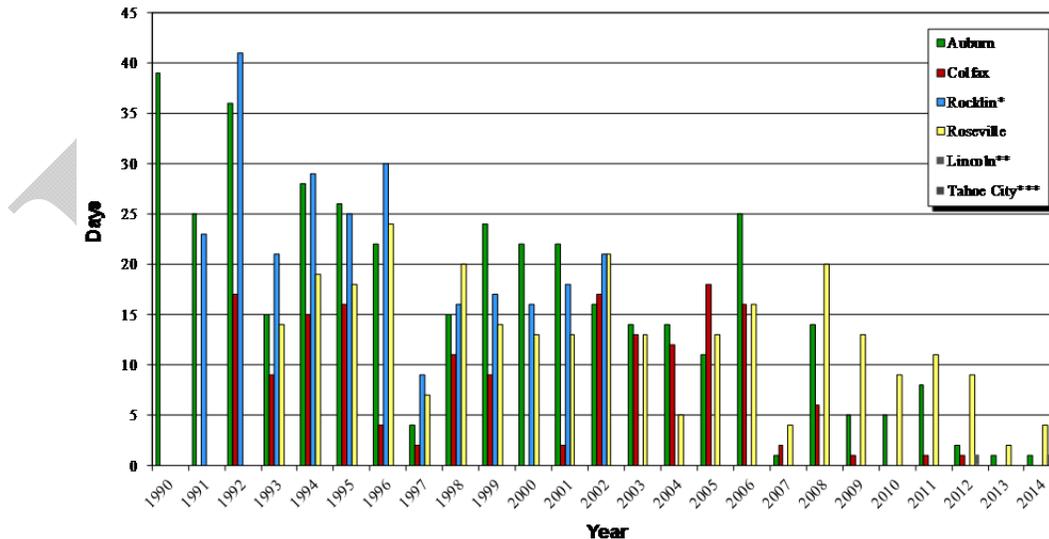
The Health and Safety Code (HSC section 40924 (b)) requires districts to report their progress of air quality improvement for ozone that was achieved during the preceding three-year evaluation period based on ambient concentration measurements and air quality indicators (statistically derived values based on monitoring air quality data). In addition, the Health and Safety Code (HSC section 39607 (f)) requires 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 CARB has approved three indicators for use: the Expected Peak Day Concentration or EPDC indicator, the 1-hour population weighted exposure indicator, and the 1-hour area weighted exposure indicator. This section discusses the ozone air quality trends using these CARB air quality indicators.

2.1 Ozone Exceedances

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

From 2012 to 2014, there were five monitoring stations operating in Placer County: Auburn, Colfax, Lincoln, Tahoe City, and Roseville for ozone monitoring². The District operates the Auburn, Colfax, Lincoln, and Tahoe City stations, with CARB maintaining the Roseville station. The Auburn station has the most complete ozone data available from 1974 to present. The Rocklin station operated from 1991 until it closed in 2002.

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



* Ozone data from Rocklin was available from 1991 to 2002.

** Ozone monitoring at Lincoln station was from 2012.

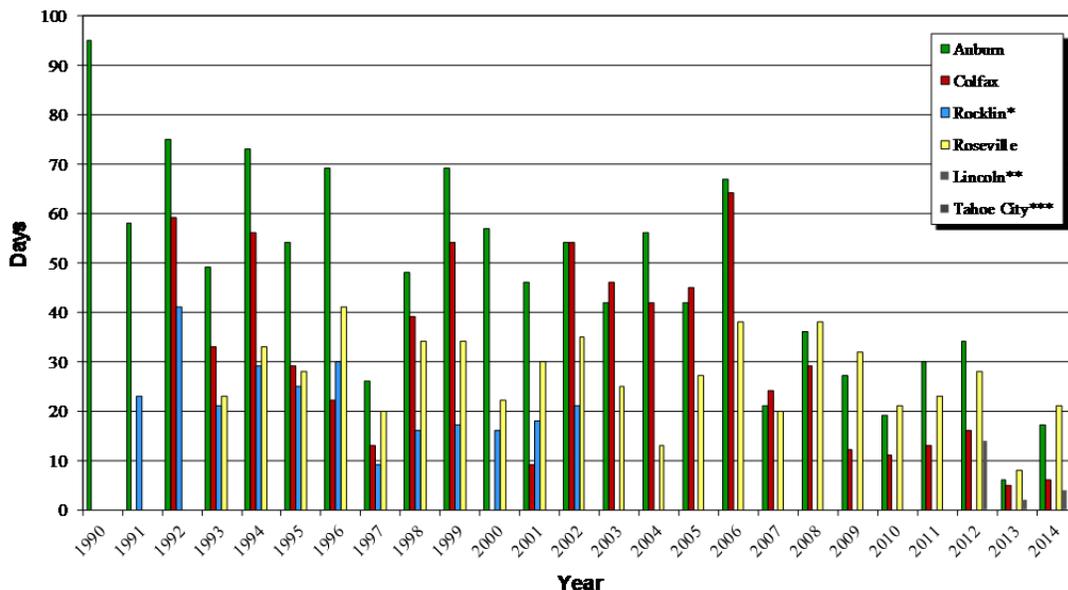
*** Ozone monitoring at Tahoe City station was from 2013.

² The District added the Lincoln station into the ozone monitoring network in January 2012 and the Tahoe City station in November 2013.

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

Figure 2-2 shows the number of days at each monitoring site that has exceeded the State 8-hour ozone standard (0.070 ppm) since 1990. An exceedance of this standard occurs when the hourly monitored ambient concentrations averaged over an 8-hour period is greater than 0.071 ppm.

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



* Ozone data from Rocklin was available from 1991 to 2002.

** Ozone monitoring at Lincoln station was from 2012.

*** Ozone monitoring at Tahoe City station was from 2013.

The ozone exceedances from each station are different due to meteorology and the economic activity patterns around that station from year to year. Although not all patterns show a steady decline, they do show a trend downward in general. It suggests that the worst years for air quality are becoming less severe and the best air quality years are becoming cleaner with fewer exceedance days.

2.2 Ozone Exposure Indicators

In July 1993, the California Air Resources Board approved three progress-reporting indicators for use in assessing advancement toward attaining the state air quality 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

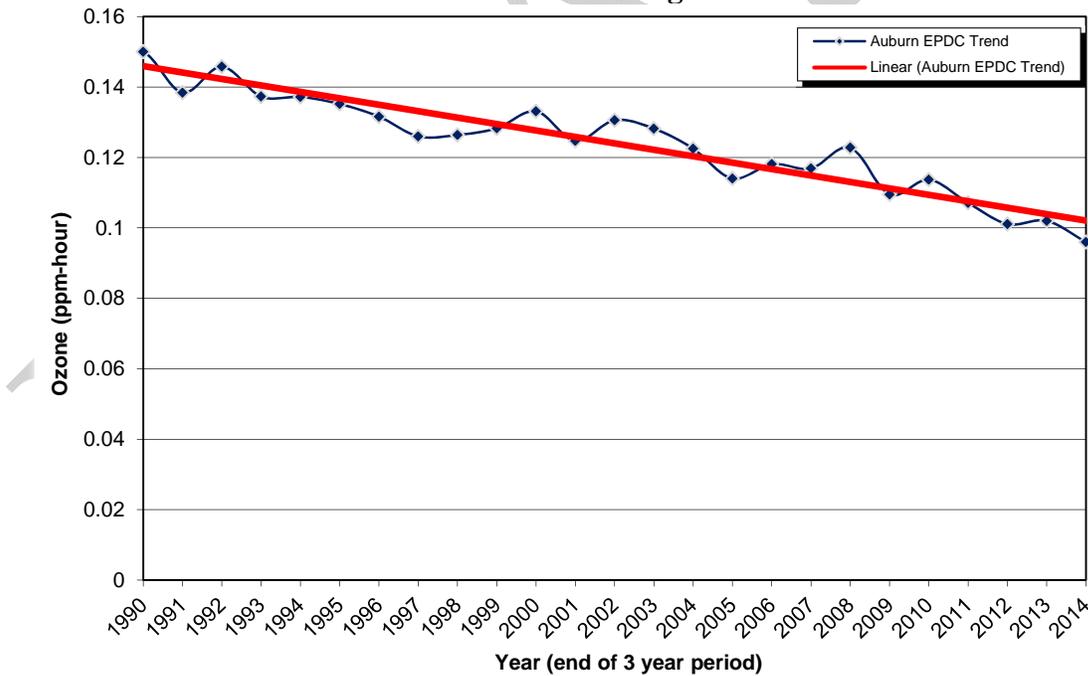
the influence of other factors, such as variable meteorology.”³ These are 1) the expected peak day concentration, 2) the population-weighted exposure indicator, and 3) the area-weighted exposure indicator. These indicators represent three different aspects of air quality data that measure progress or changes in air quality over time.

2.2.1. 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 air monitor 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 2-3 to 2-5 illustrates the ozone EPDC indicators from 1990 to 2014 at three monitoring sites (Auburn, Colfax, and Roseville) in Placer County. There is no monitoring data from the Rocklin site since it was closed in 2002. In addition, ozone monitoring at the Lincoln and Tahoe City sites began from 2012 and 2013, respectively. There is no EPDC indicator available during the 2012-2014 period.

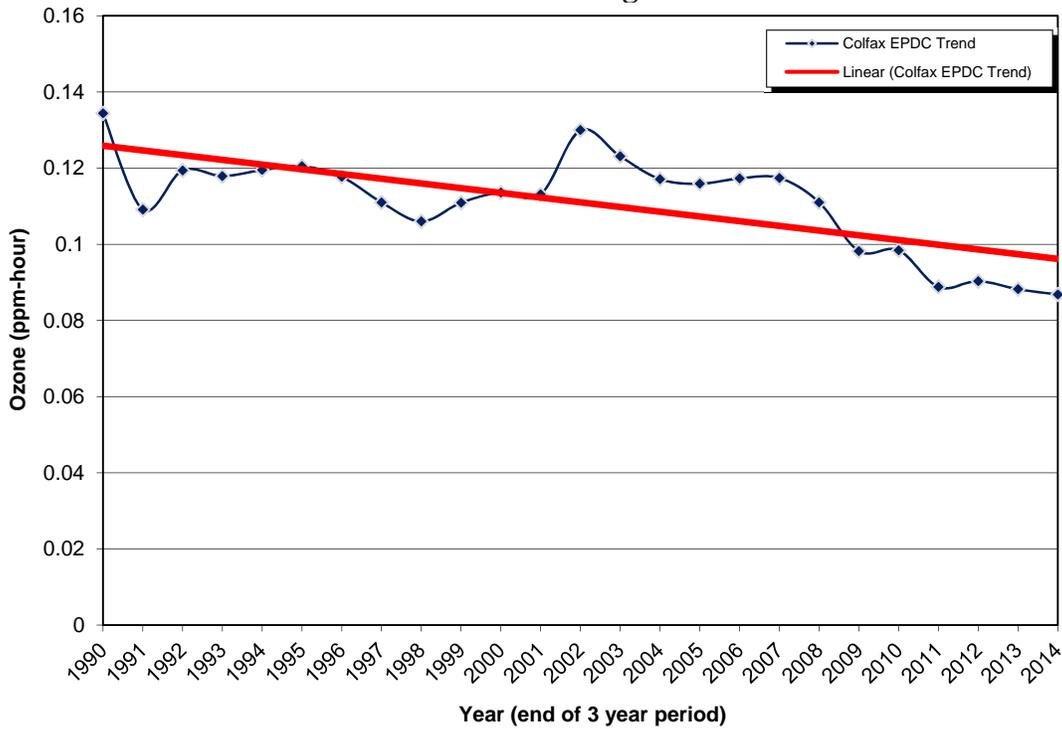
Figure 2-3
Expected Peak Day Concentration (EPDC) Ozone Trend
Auburn Monitoring Site



EPDC data source: California Air Resources Board

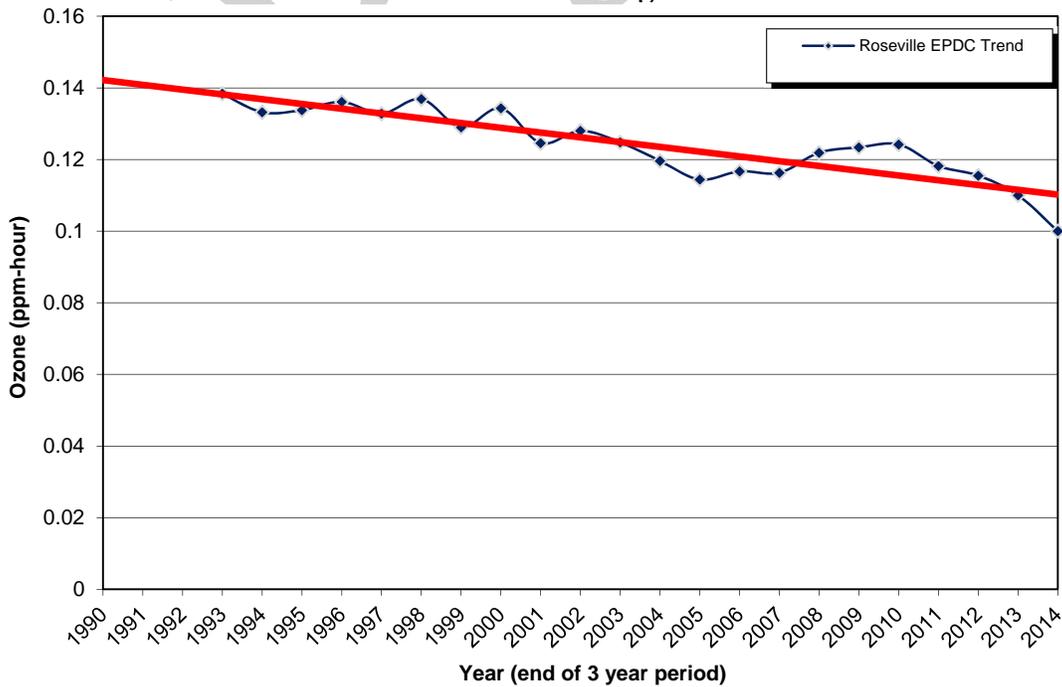
³ Guidance for Using Air Quality-Related Indicators in Reporting Progress in Attaining the State Ambient Air Quality Standards. California Air Resources Board, September 1993.

Figure 2-4
Expected Peak Day Concentration (EPDC) Ozone Trend
Colfax Monitoring Site



EPDC data source: California Air Resources Board

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



EPDC data source: California Air Resources Board

The Auburn - Dewitt monitoring site is the only location in Placer County which can be used to document the EPDC progress from the base period (1986 - 1988) to the end period (2012 - 2014) as it has been located in the same community for the analyzed time. At the Auburn site, there was a 37.25% decrease in the EPDC from the base period through the end period. At the Colfax monitoring site there was a 33.04 % decrease in the EPDC between 1990 and 2014. And there was a 27.75% decrease in the EPDC occurring at the Roseville monitoring site between 1993 and 2014. Overall this particular indicator shows a decrease in the local peak ozone concentrations; which equates to an improvement of air quality.

2.2.2. Population-Weighted Exposure Indicator

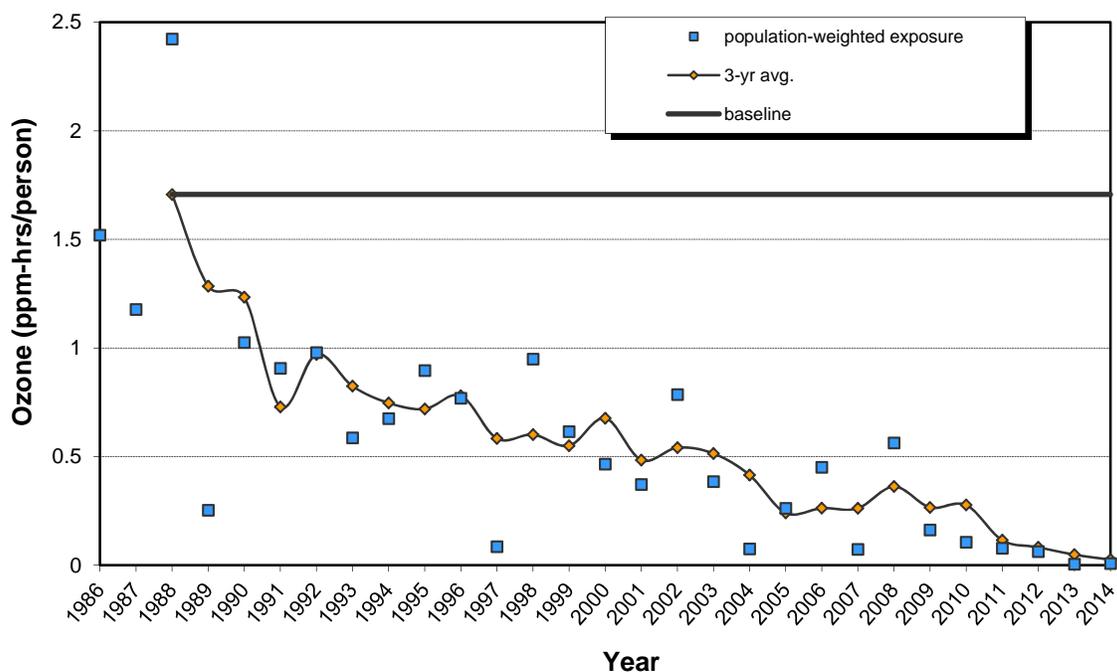
The population-weighted exposure indicator is a statistically derived air quality indicator provided by CARB. The purpose of the population-weighted indicator is to characterize the potential average outdoor exposure per person to concentrations above the level of the state ozone standard. The population-weighted 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 2-6 summarize the population-weighted ozone exposure for the 3-year average base period (1986 - 1988) and the 3-year average period (2011 - 2014) within Placer County. There has been a 98.5% decrease in the population-weighted ozone exposure between the base period and the 2012-2014 period. Compared with the previous triennial review period (2009-2011), there is a 78% decrease in population-weighted ozone exposure. The results represent a defined downward trend in ozone exposure below the baseline.

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

Exposure Indicator	Base Period (1986 - 1988) 3-year average	Previous Triennial Period (2009-2011)	End Period (2012 - 2014) 3-year average	Reduction (%) Compare with Base Period	Reduction (%) Compare with 2009-2011 Period
Population Weighted (ppm-hrs/person)	1.707	0.115	0.025	98.52%	78.09%

Figure 2-6
Population-Weighted Exposure Trends in Placer County



Exposure data source: California Air Resources Board

2.2.3. Area-Weighted Exposure Indicator

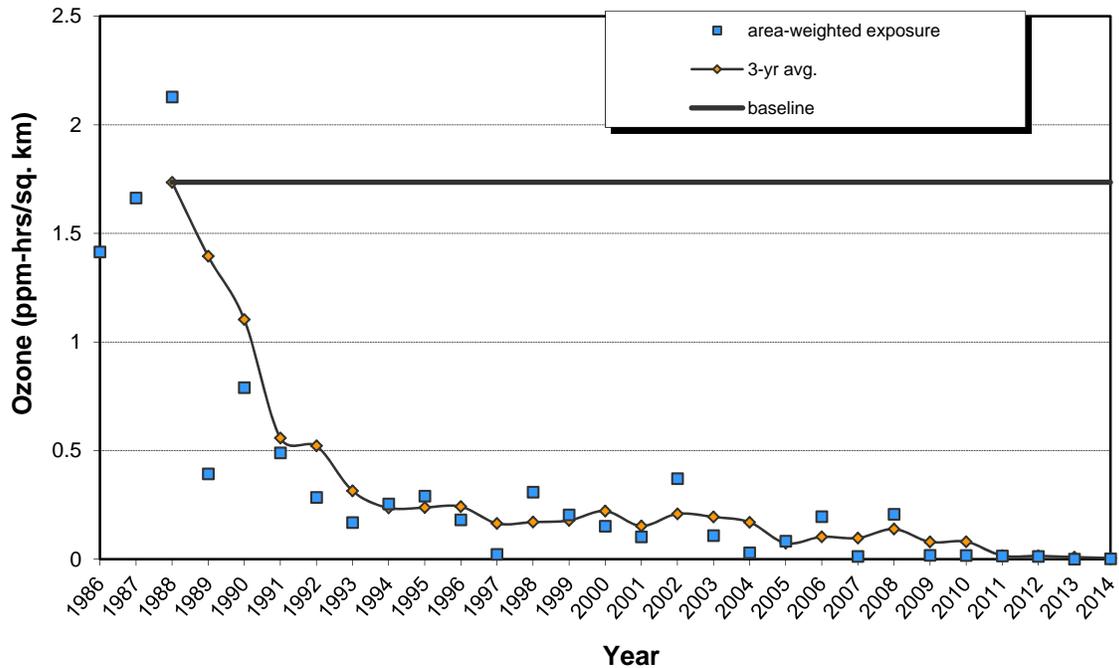
The purpose of the area-weighted exposure (AWE) indicator is to characterize the potential average annual outdoor exposure per unit area. The area-weighted exposure indicator represents a composite of exposure at individual locations that have been weighted to emphasize equal exposures throughout the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

Table 2-2 and Figure 2-7 summarizes the area-weighted ozone exposure for the 3-year average base period (1986 - 1988) and the 3-year average end period (2012 - 2014) within Placer County. According to the table, there is a 99.7% decrease in the area-weighted ozone exposure between the based period and the 2012-2014 period. Compared with the previous triennial review period, there is a 69.2% decrease in area-weighted ozone exposure. As the population-weighted ozone indicator, the area-weighted ozone exposure also represents a defined 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 (2009-2011)	End Period (2012 -2014) 3-year average	Reduction (%) Compare with Base Period	Reduction (%) Compare with 2009-2011 Period
Area Weighted (ppm-hrs/sq. km)	1.735	0.017	0.005	99.70%	69.20%

Figure 2-7
Area-Weighted Exposure Trends in Placer County



Exposure data source: California Air Resources Board

2.3 Summary of the Results of Air Quality Indicators

Air Quality Indicators are technical tools used for the exposure analysis on local air quality within Placer County. The population-weighted exposure and area-weighted exposure analyses are based solely on ambient (outdoor) ozone measurements using the 1-hour ozone standard. 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 Expected Peak Day Concentration analysis shows the trend at the various air monitoring locations.

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 measured within Placer County. This decrease demonstrates an improvement in the current air quality control progress made in reducing the peak ozone concentrations and the ozone exposure.

3 EMISSION INVENTORY

3.1 Development of Emission Inventories

The emission inventory provides a foundation to validate the reduction of emissions resulting from 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 to what extent various sources within the region are responsible for ozone precursor production, emission inventories have been developed for ROG and NO_x.

The emission inventories for these two ozone precursors are divided into four major source categories: stationary, area-wide, on-road mobile, and other mobile source groupings. Stationary sources include facilities such as cogeneration or concrete/asphalt plants, while area-wide sources include an aggregate of individual small sources, which 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, aircraft, and recreational vehicles. Each major category has a number of subcategories.

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 are calculated by process rates reported by the facility and emission factors estimated by source tests. Motor vehicle emissions are estimated by the fleet mix, vehicle miles traveled, vehicle speeds, and vehicle emission factors.

To derive future year emission inventories, a current base year inventory is projected forward based on the expected growth rates of the 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 previous control measures adopted by federal, state and local governments.

3.2 Emission Inventory Updates

Emission inventories are updated and improved to reflect the conditions within the region and to better determine the contribution of various sources of air pollution. Tables 3-1 and 3-2 provide updated source category estimates of Placer County daily emissions (tons per day) of ROG and NO_x for 1990, 1995, 2000, 2005, 2010, 2012, 2015, 2020, and 2025. These are the latest updated inventories from CARB, including calculated emissions in past years and the projected emissions for future years. Please note that the projected emissions from 2015 through 2025 are based on the most current 2012 base year emission estimates⁴, along with the expected growth and control factors, so the emission trends can be forecasted.

⁴ The California Almanac of Emissions and Air Quality, 2013 Edition <http://www.arb.ca.gov/aqd/almanac/almanac.htm>

**Table 3-1
Placer County ROG Emission Inventory**

ROG Emissions (tons per day) - Placer County*									
	1990	1995	2000	2005	2010	2012	2015	2020	2025
Stationary Sources									
FUEL COMBUSTION	0.28	0.31	0.33	0.43	0.42	0.43	0.46	0.44	0.45
WASTE DISPOSAL	0.26	0.24	0.08	0.09	0.10	0.11	0.12	0.13	0.13
CLEANING AND SURFACE COATINGS	3.27	3.10	1.76	1.81	2.01	2.09	2.36	2.54	2.55
PETROLEUM PRODUCTION AND MARKETING	0.94	0.74	0.66	0.70	0.78	0.80	0.89	0.95	0.99
INDUSTRIAL PROCESSES	2.67	3.20	1.30	1.53	1.55	1.60	1.85	2.10	2.36
Total Stationary Sources	7.42	7.58	4.13	4.56	4.86	5.03	5.68	6.16	6.48
Area-Wide Sources									
CONSUMER PRODUCTS	1.90	1.83	1.92	1.94	1.87	1.85	1.94	2.09	2.25
ARCHITECTURAL COATINGS/SOLVENTS	0.59	0.70	0.95	0.99	1.04	0.80	0.88	0.94	1.03
PESTICIDES/FERTILIZERS	0.16	0.67	0.19	0.12	0.12	0.13	0.14	0.15	0.15
ASPHALT PAVING / ROOFING	0.18	0.16	0.20	0.21	0.21	0.22	0.23	0.24	0.24
RESIDENTIAL FUEL COMBUSTION	1.66	1.82	2.65	1.99	1.77	1.76	1.87	1.86	1.86
FARMING OPERATIONS	0.52	0.52	0.37	0.37	0.37	0.37	0.39	0.39	0.39
MISCELLANEOUS PROCESSES	1.19	1.20	0.49	0.51	0.54	0.52	0.55	0.56	0.56
Total Area-Wide Sources	6.21	6.91	6.77	6.13	5.92	5.65	6.00	6.23	6.48
ON-Road Mobile Sources									
PASSENGER	6.55	5.24	3.79	2.48	1.80	1.39	0.83	0.51	0.39
LIGHT DUTY TRUCKS	5.46	4.60	4.39	4.37	3.19	2.59	1.66	1.10	0.91
MEDIUM DUTY TRUCKS	0.81	0.91	0.66	0.84	0.78	0.75	0.62	0.55	0.50
HEAVY DUTY GAS TRUCKS	2.27	2.32	0.50	0.62	0.55	0.47	0.37	0.31	0.24
HEAVY DUTY DIESEL TRUCKS	1.07	0.75	0.52	0.64	0.45	0.44	0.33	0.29	0.29
MOTORCYCLES	0.65	0.59	0.45	0.53	0.48	0.46	0.39	0.40	0.43
BUSES	0.08	0.05	0.05	0.07	0.02	0.01	0.01	0.01	0.01
MOTOR HOMES (MH)	0.09	0.08	0.07	0.03	0.02	0.02	0.01	0.01	0.00
Total On-Road Motor vehicles	16.98	14.54	10.43	9.58	7.29	6.13	4.22	3.18	2.77
Off-Road Mobile Sources									
AIRCRAFT	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
TRAINS	0.18	0.19	0.21	0.21	0.14	0.14	0.13	0.10	0.09
COMMERCIAL HARBOR CRAFT	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
RECREATIONAL BOATS	4.29	4.29	4.47	3.92	3.30	3.02	2.68	2.21	1.82
OFF-ROAD RECREATIONAL VEHICLES	1.34	1.40	0.90	1.17	1.04	0.94	0.89	0.85	0.84
OFF-ROAD EQUIPMENT	2.03	1.86	1.48	1.50	1.09	1.03	0.93	0.84	0.85
FARM EQUIPMENT	0.30	0.28	0.25	0.22	0.17	0.15	0.11	0.07	0.06
FUEL STORAGE AND HANDLING	0.37	0.37	0.37	0.30	0.19	0.17	0.15	0.13	0.12
Total Off-Road Motor Vehicles	8.54	8.44	7.72	7.36	5.97	5.49	4.93	4.24	3.82
Grand Total	39.15	37.47	29.05	27.63	24.04	22.30	20.83	19.81	19.55

*Data source: CARB Emission Projection Data, base year: 2012

**Table 3-2
Placer County NOx Emission Inventory**

NOx Emissions (tons per day) - Placer County*									
	1990	1995	2000	2005	2010	2012	2015	2020	2025
Stationary Sources									
FUEL COMBUSTION	2.34	2.77	3.44	3.16	3.40	3.54	4.10	4.22	4.38
INDUSTRIAL PROCESSES	0.08	0.09	0.09	0.14	0.09	0.09	0.10	0.13	0.15
Total Stationary Sources	2.42	2.85	3.53	3.30	3.49	3.63	4.20	4.35	4.53
Area-Wide Sources									
RESIDENTIAL FUEL COMBUSTION	0.97	0.95	0.92	0.83	0.83	0.82	0.94	0.96	0.95
MISCELLANEOUS PROCESSES	0.09	0.10	0.11	0.12	0.13	0.12	0.14	0.15	0.15
Total Area-Wide Sources	1.06	1.04	1.03	0.95	0.96	0.94	1.08	1.11	1.10
ON-Road Mobile Sources									
PASSENGER	4.68	4.05	3.30	2.03	1.37	1.08	0.76	0.48	0.34
LIGHT DUTY TRUCKS	5.53	5.37	4.85	2.20	1.42	1.18	0.86	0.53	0.37
MEDIUM DUTY TRUCKS	1.04	1.38	1.23	1.60	1.27	1.13	0.92	0.66	0.46
HEAVY DUTY GAS TRUCKS	1.60	1.28	0.46	0.74	0.73	0.69	0.62	0.52	0.43
HEAVY DUTY DIESEL TRUCKS	8.69	9.04	9.90	12.69	8.34	7.63	6.10	4.05	2.77
MOTORCYCLES	0.08	0.08	0.06	0.11	0.13	0.14	0.14	0.15	0.16
BUSES	0.24	0.23	0.33	0.41	0.32	0.32	0.28	0.21	0.19
MOTOR HOMES (MH)	0.16	0.20	0.18	0.13	0.13	0.12	0.11	0.09	0.07
Total On-Road Motor vehicles	22.01	21.63	20.31	19.91	13.71	12.29	9.79	6.69	4.79
Off-Road Mobile Sources									
AIRCRAFT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRAINS	3.84	3.85	4.09	3.22	2.07	2.15	2.25	2.12	1.89
COMMERCIAL HARBOR CRAFT	0.30	0.30	0.31	0.30	0.28	0.27	0.20	0.15	0.14
RECREATIONAL BOATS	0.85	0.89	0.53	0.66	0.63	0.61	0.60	0.59	0.59
OFF-ROAD RECREATIONAL VEHICLES	0.03	0.03	0.01	0.04	0.04	0.04	0.05	0.06	0.07
OFF-ROAD EQUIPMENT	4.05	3.73	2.74	4.04	1.90	1.87	1.71	1.21	0.94
FARM EQUIPMENT	1.66	1.41	1.22	1.05	0.84	0.75	0.61	0.40	0.27
Total Off-Road Motor Vehicles	10.72	10.22	8.90	9.31	5.76	5.69	5.42	4.53	3.90
Grand Total	36.20	35.74	33.77	33.47	23.92	22.55	20.49	16.68	14.32

*Data source: CARB Emission Projection Data, base year: 2012

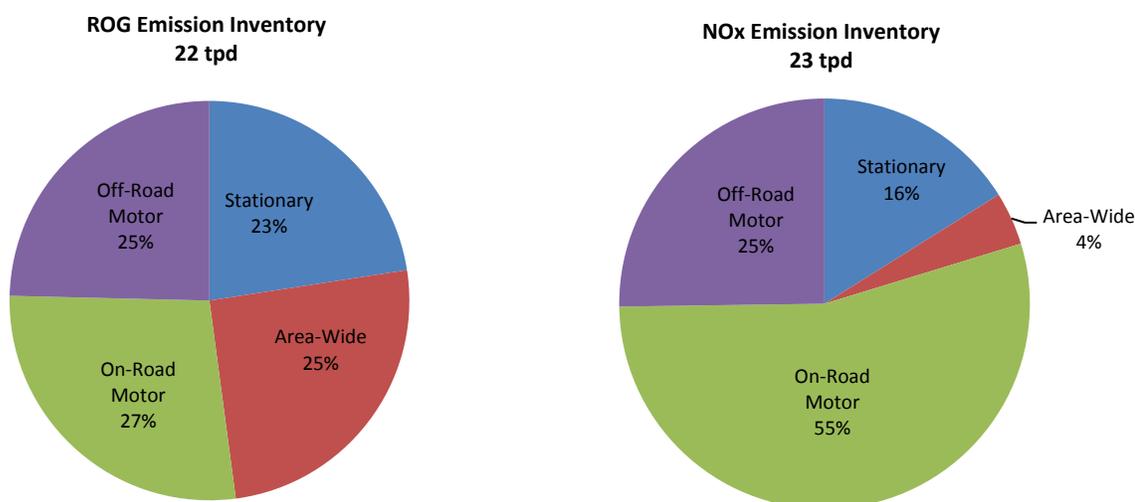
According to Tables 3-1 and 3-2, the stationary source emissions contribution is a result primarily from cleaning and surface coatings activities, petroleum production and marketing, industrial processes for ROG emissions and fuel combustion for NOx emissions. The ROG emissions from area-wide source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

In 2012, the majority of ROG and NOx emissions in Placer County came from on-road and off-road mobile sources. These mobile source emission categories consist of light-duty automobiles, various truck categories, recreational boats, off-road construction/industrial equipment, farm equipment, and trains. The EMFAC 2011 motor vehicle emission model developed by CARB is designed 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 from mobile sources is from light-duty vehicles and recreational boats. The major contribution to NOx emissions is from heavy-duty trucks and trains.

Figure 3-1 shows pie charts of the ROG and NOx emission inventories by the four source categories. The contribution from these major source categories to total ROG emissions in 2012 is 23% from stationary sources, 25% from area-wide sources, 27% from on-road mobile sources, and 25% from off-road mobile sources. The contribution to total NOx emissions is 16% from stationary sources, 4% from area-wide sources, 55% from on-road mobile sources, and 25% from off-road mobile sources. The District regulates emissions from stationary sources, with CARB having direct authority over mobile sources.

Figure 3-1
2012 Emission Inventories in Placer County



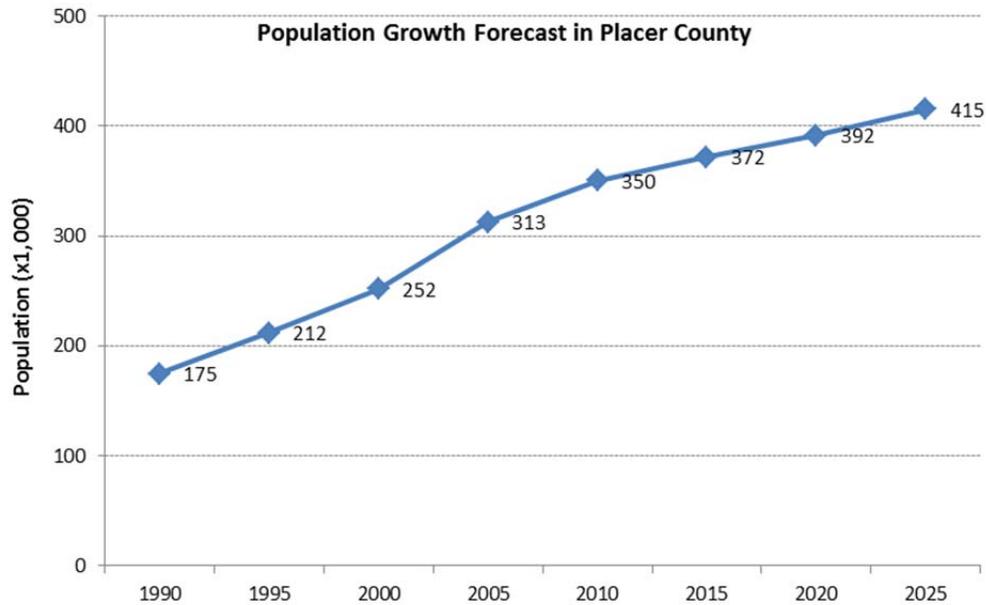
3.3 Population and Vehicle Miles Traveled (VMT)

In addition to the updates in the methodologies, process rates, and emission factors for individual emission source categories, updates in growth factors can also affect the emission inventory forecasts. Changes to the most recent growth assumptions for the 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.

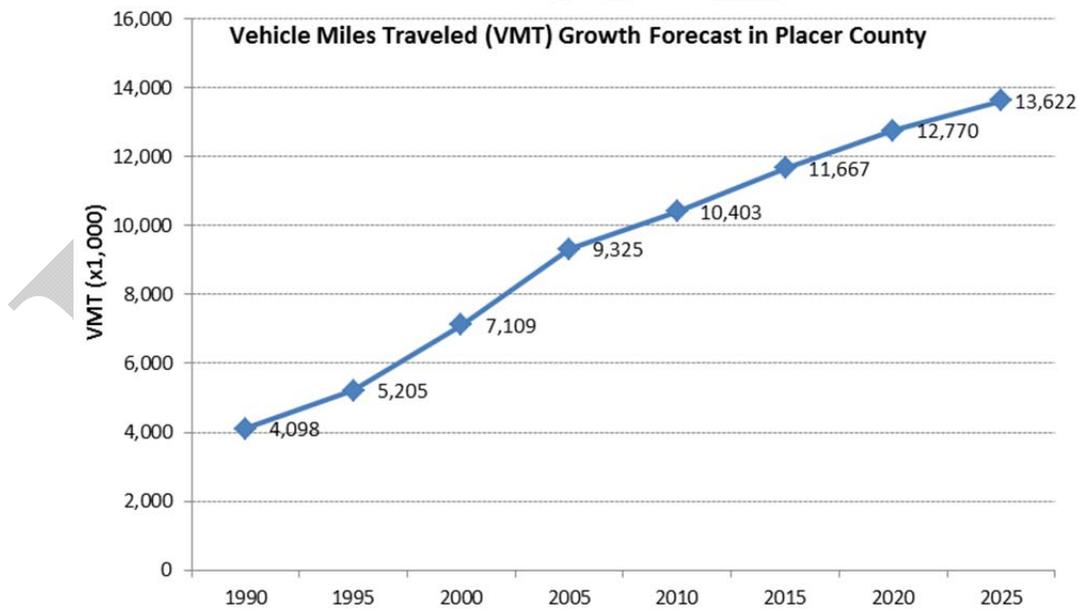
Figure 3-2 illustrates the growth curve of the population and daily VMT between 1990 and 2025. According to the data, the Placer County population has increased about 6% from 2010 to 2015. Overall when comparing the population between 1990 and 2015, the Placer County population has grown about 112%. Based on the growth forecast, the expected population in 2025 would be around 415,000, an expected increase of 12% from 2015 to 2025. The continued population growth contributes to the increases in daily VMT. In 2015, overall VMT in Placer County was estimated at 11.6 million miles per day, about a 184% increase with VMT estimates from 1990 and about 12% increase from 2010. According to the data forecast, there is an expected increase of 17% from 2015 to 2025. With Placer County's rapid growth over the last decade, VMT will

contribute to emission changes in the future, which will be reflected in the emission inventory trends.

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



Source: California Air Resources Board 2013 Almanac of Emissions and Air Quality



Source: California Air Resources Board 2013 Almanac of Emissions and Air Quality

3.4 Emission Inventory Trends

Figures 3-3 and 3-4 show the declining trend of both ROG and NO_x emissions between 1990 and 2025. Between 1990 and 2015, the overall ROG emissions declined about 47%, and NO_x emissions decreased about 43%. From 2010 to 2015, the overall ROG emissions reduced about

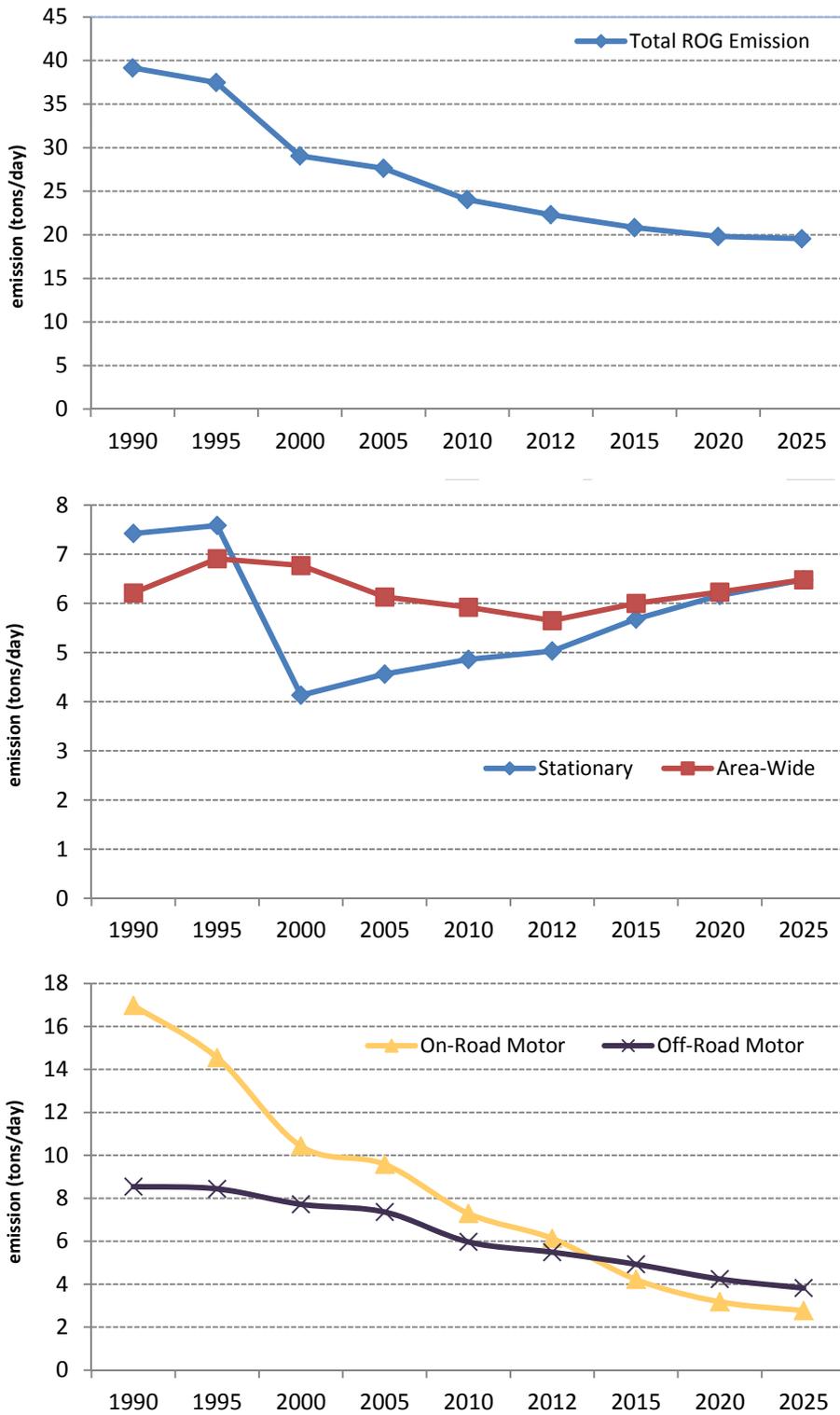
13% and NOx emissions reduced about 14%. From 2015 to 2025, overall ROG emissions are expected to continue decreasing about 6% with NOx emissions decreasing about 30%.

These emission reductions are mostly from the on-road and off-road mobile sources categories, of which CARB has primary regulatory authority. 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. In addition, the more stringent mobile source emission standards, which are set by CARB, cleaner burning fuels, and advanced technologies for engine design or exhaust treatment have also largely contributed to the steady decline in NOx emissions.

However, for stationary and area-wide sources, the ROG and NOx emissions have increased slightly since 2000, due to Placer County's population growth and subsequent housing and associated energy demands. These demands have increased emissions in fuel combustion, cleaning and surface coatings, and consumer products.

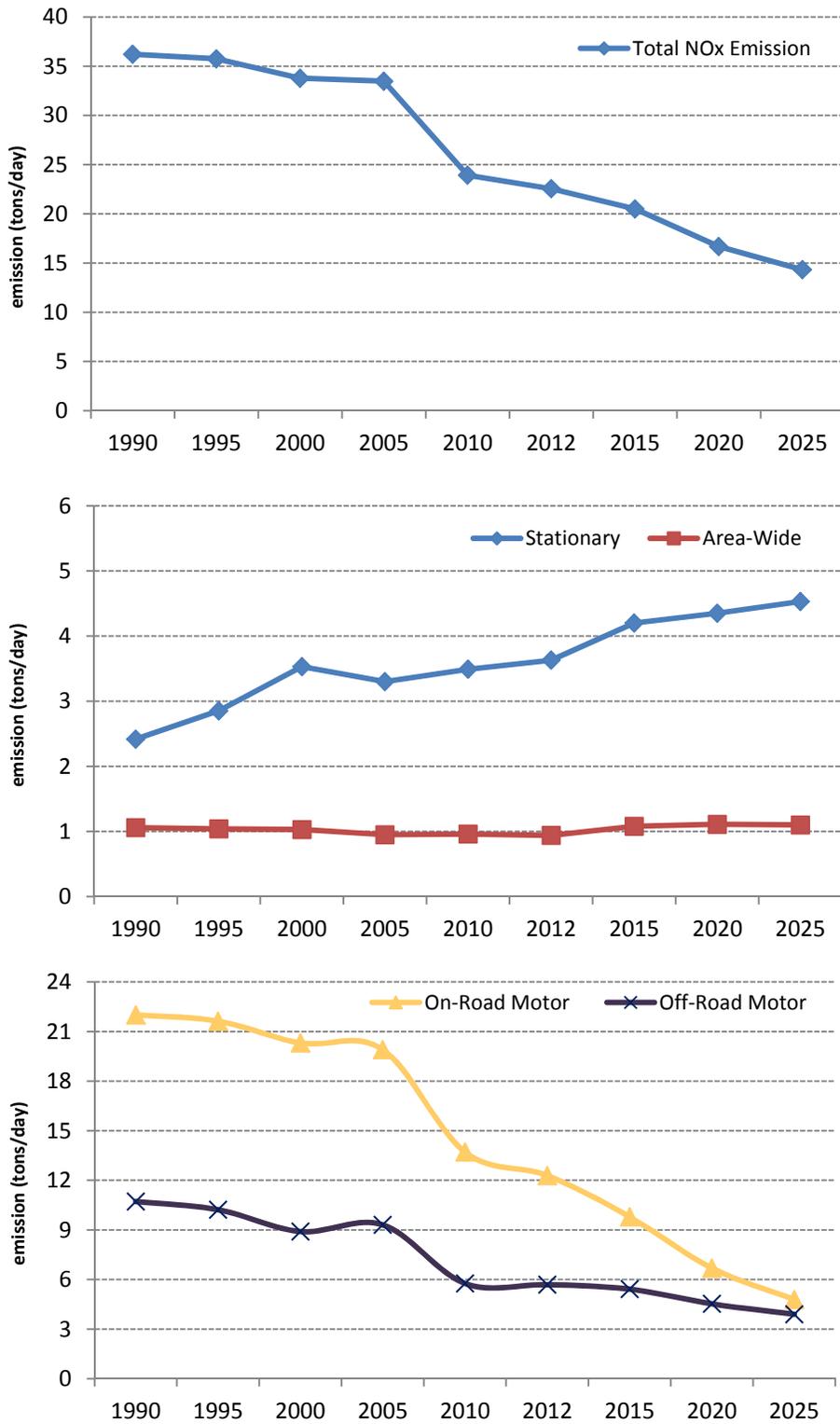
The District has focused on rulemaking for stationary and area sources. Several District related rules (discussed in the following chapter) have been adopted or amended between 2012 and 2014 to control and limit emissions from industrial coating and solvent usage, adhesives and sealants usage, and fuel combustion processes. These control efforts will continue providing additional ROG and NOx emission reductions in Placer County in the following years.

Figure 3-3
Placer County ROG Emission Inventory Trends
 (Base Year: 2012)



Source: CARB 2013 Almanac of Emissions and Air Quality

Figure 3-4
Placer County NO_x Emission Inventory Trends
(Base Year: 2012)



Source: CARB 2013 Almanac of Emissions and Air Quality

4 IMPLEMENTATION OF EMISSION REDUCTIONS IN PLACER COUNTY

The California Clean Air Act (CCAA) under Section 40924 of the Health and Safety Code (H&SC) requires that each triennial progress plan should include the expected and revised emission reductions for each measure scheduled for adoption in the preceding three-year period. This chapter will review and summarize the progress of emission reductions from the overall control strategies (including stationary, area, and mobile sources) implemented by the District from 2012 to 2014.

4.1 Reduction from Stationary and Area Sources Control Measures

The District has committed to evaluate feasible control measures during the triennial review period for potential rule amendment or adoption to meet the District's commitment for reducing ozone precursor emissions in Placer County. Eight of eleven control measures, which were committed for evaluation in the 2012 Triennial Progress Report, were amended or adopted during this triennial review period (2012-2014).

- District Rule 206 - Incinerator Burning was amended on April 11, 2013, to resolve conflicting requirements for human/animal cremation. The amendment removed the operating requirements for cremation to a new District Rule 241, Crematories, to clearly address the operating requirements for human and animal remains cremation. In addition, the amendment also addresses requirements for non-crematory waste incineration. No additional emission reduction can be quantified for this rule amendment during this triennial review period.
- District Rule 213 - Gasoline Transfer into Stationary Storage Containers was amended on February 21, 2013. The amendment adds the provisions of Standing Loss Vapor Recovery Control (SLC) which were promulgated by CARB to require the use of specific white, sun reflective paint on the external surface of the tank along with the use of specific pressure/vacuum relief (P/V) values. In addition to the SLC provisions, the format of the rule is modified to be consistent with the current District format for rules. Some definitions, references, and wording were updated without altering the original meaning. A definition for CARB CERTIFIED has been added. No additional emission reductions can be quantified for this rule amendment during this triennial review period.
- District Rule 214 - Transfer of Gasoline into Vehicle Fuel Tanks was amended on February 21, 2013, to address the U.S. EPA's comments for the SIP approval. No additional emission reductions can be quantified for this rule amendment during this triennial review period.
- District Rule 233 - Biomass Boilers was amended on June 14, 2012, to address the U.S. EPA's comments for the SIP approval. The amendment changes the NO_x limitation during startup and shutdown to meet the RACT requirements. Since the rule is only applicable to two biomass boilers in Placer County that already meet the new emission limitations, no additional emission reductions can be quantified for this rule amendment during this triennial review period.
- District Rule 235 - Adhesives was amended on October 11, 2012. The amendment was made to address the latest Control Technology Guidance (CTG) issued by U.S. EPA and to meet

the RACT requirements for the SIP approval. No additional emission reductions can be quantified for this rule amendment during this triennial review period.

- District Rule 239 - Graphic Arts Operations was amended on October 11, 2012. The amendment was made to address the latest CTG requirements and to meet the RACT requirements for the SIP approval. No additional emission reductions can be quantified for this rule amendment during this triennial review period.
- District Rule 247 – Natural Gas-Fired Water Heaters, Small Boilers, and Process Heaters was adopted on October 10, 2013, to fulfill the regional ozone SIP commitment. The original commitment was to adopt a new rule for reducing NOx emissions for all natural gas fired large water heaters and small boilers with rated input size in the range of 75,000 up to 1,000,000 Btu/hr by 2015. This new Rule covers the size range from 75,000 Btu/hr up to less than 5,000,000 Btu/hr which is beyond the original SIP commitment. In addition, the rule also limits NOx emissions for new boilers and water heaters to 20 ppmv. The estimated additional NOx reduction from this rule adoption is 0.32 tons per day in 2015.
- District Rule 249 – Surface Coating of Plastic Parts and Products was adopted on August 8, 2013, to fulfil the U.S. EPA’s RACT requirements to adopt a control measure that incorporates the Control Technology Guideline (CTG) guidance. Currently, only one permitted minor source in Placer County will be required to meet the requirements of this rule. No additional emission reductions can be quantified for this rule amendment during this triennial review period.

The following three control measures were committed to for further evaluation to determine whether an amendment is needed to meet U.S. EPA’s Reasonably Available Control Technology (RACT) requirements:

- District Rule 216 - Organic Solvent Cleaning Degreasing Operations,
- District Rule 217 - Cutback and Emulsified Asphalt Paving Materials, and
- District Rule 240 – Surface Preparation and Cleanup

According to the “2014 Reasonably Available Control Technology State Implementation Plan Analysis” (RACT SIP Analysis) adopted by the District Governing Board on February 13, 2014, these three control measures were determined to meet RACT requirements upon detailed review. Therefore, there is no further rule amendment for these three control measures during this triennial review period (2012-2014).

Table 4-1 summarizes the status of each rule which was listed to be considered for amendment/adoption in the District’s 2012 Triennial Progress Report⁵.

⁵ PCAPCD 2012 Triennial Progress Report, Table 7-1.

**Table 4-1
Summary of the Rule Commitment Status in the 2012 Triennial Progress Report**

Emission Source Control Categories	Associated District Rule Name	Proposed Action in 2012 Triennial Progress Report	Status	8-hour Ozone SIP Commitment
Incinerator Burning/ Pathological Incineration	Incinerator Burning (Rule 206)	Evaluate for amendment needed to resolve conflicting requirements for human/animal cremation	It was amended on Apr. 11, 2013	
Gasoline Service Stations (Storage Tanks)	Gasoline Transfer into Stationary Storage Containers (Rule 213)	Evaluate for amendment needed to address new standing loss requirements and deficiencies	It was amended on Feb. 21, 2013	
Gasoline Service Stations (Transfer to Vehicle)	Transfer of Gasoline into Vehicle Fuel Tanks (Rule 214)	Amend to address US EPA comments for SIP approval	It was amended on Feb. 21, 2013	
Solvent Cleaning	Organic Solvent Cleaning and Degreasing Operations (Rule 216)	Evaluate for amendments needed to meet FCAA RACT requirements	2014 RACT SIP Analysis determined that the rule is compliant with US EPA requirements. No amendment is needed.	
Fugitive Emissions	Cutback and Emulsified Asphalt Paving Materials (Rule 217)	Evaluate for amendments needed to meet FCAA RACT requirements	2014 RACT SIP Analysis determined that the rule is compliant with US EPA requirements. No amendment is needed.	
Boiler, Biomass	Biomass Boilers (Rule 233)	Evaluate for amendments needed to meet FCAA RACT requirements	It was amended on Jun. 14, 2012	
Adhesives	Adhesives (Rule 235)	Evaluate for amendments needed to meet FCAA RACT requirements	It was amended on Oct. 11, 2012	
Graphic Arts	Graphic Arts Operations (Rule 239)	Evaluate for amendments needed to meet FCAA RACT requirements	It was amended on Oct. 11, 2012	
Surface Preparation & Cleanup Solvents	Surface Preparation and Cleanup (Rule 240)	Evaluate for amendments needed to meet FCAA RACT requirements	2014 RACT SIP Analysis determined that the rule is compliant with US EPA requirements. No amendment is needed.	
Large Water Heaters and Small Boilers	Large Water Heaters (Rule 247)	Regulate NOx emissions for all new large water heaters (75,000 to 1,000,000 Btu/hr)	It was adopted on Oct. 10, 2013	Yes (2015)
Plastic Part Coating	Plastic Parts Coating (Rule 249)	Evaluate for amendments needed to meet FCAA RACT and CCAA BARCT requirements	It was adopted on Aug. 8, 2013	

In addition to the above rule activities, there are several rules which were amended and/or adopted by the District during this triennial review period (2012-2014). Although emission reductions from these rule activities may not be quantified or qualified for the District's triennial evaluation, the list shows the District's efforts to look for opportunities to improve air quality:

- District Rule 241 - Crematories was adopted on April 11, 2013, to regulate crematories where human or animal remains are burned.
- District Regulation 3 - Open Burning, consisting of Rules 301 – 306, and District Rule 102 - Definitions were amended on February 9, 2012, to address U.S. EPA comments and deficiencies identified by District staff in order to avoid a limited approval/disapproval of the SIP revision.

- District Rule 502 - New Source Review was amended on August 8, 2013, to address U.S. EPA comments for SIP approval.
- District Rule 604 - Source Test Observation and Report Evaluation was amended on October 10, 2013, to adjust fees and add an annual CPI adjustment.
- District Rule 610 - Air Toxics “Hot Spots” Fees was amended on October 9, 2014, to reflect current charges of CARB and current costs to the District.

4.2 Reductions from Mobile Sources Control Measures

Figure 3-1 shows that mobile sources, including on-road and off-road mobile, contribute about 52% of the total ROG emissions and about 80% of total NO_x emissions in Placer County. Although the District does not have the authority to directly regulate mobile source emissions through the regulatory processes, 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

In the portions of Placer County located within the Sacramento Federal Ozone Nonattainment Area (SFONA), the District works with the other local air districts in developing the air quality management plan, known as the Sacramento Regional 8-hour Ozone State Implementation Plan (Sacramento 8-hr Ozone SIP). Mobile sources have been recognized as the major contributor in the regional NO_x emission inventory. Although the local air districts do not have the authority to regulate mobile sources, reductions can be achieved through market-based incentive programs to promote lower emission technologies for these mobile sources in the Sacramento ozone non-attainment area. These regional incentive programs include the Carl Moyer Memorial Program, and the Sacramento Emergency Clean Air and Transportation (SECAT) Program.

Carl Moyer Memorial Program and the SECAT 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.

Sacramento Metropolitan AQMD administers both the regional Carl Moyer Memorial Program and the SECAT Program on behalf of the entire SFONA. These emission sources and their associated emission reductions occur throughout the SFONA, with the District's portion of these emission reductions not specifically identified. Since 2012 there have been 118 on-road and 213 off-road vehicle applications awarded by the Carl Moyer and SECAT funding in the region, which includes Placer County. The Sacramento Region has received about 12.4 million in funding for the Carl Moyer Memorial Program and 6.6 million for the SECAT Program between 2012 and 2014. These two regional market-based incentive programs have provided an estimated NO_x emission reduction of 0.53 tons per day from those projects initiated since 2012, including on-road heavy-duty vehicles with 0.14 tons per day reduction, and the off-road mobile portion

with 0.39 tons per day reduction. Table 4-2 provides additional details on these emission reductions for these two programs.

**Table 4-2
Estimated Emission Reductions from
Regional SECAT and Carl Moyer Incentive Programs**

Project Categories	Number of Engines				Estimated NO _x Reductions (tons/day)			
	2012	2013	2014	Total	2012	2013	2014	Total
On-Road Heavy-Duty Vehicles ^a	3	31	84	118	0.002	0.06	0.08	0.14
Off-Road Self-Propelled Vehicles ^b	82	76	55	213	0.20	0.13	0.06	0.39
Total	85	107	139	331	0.20	0.19	0.14	0.53

^a On-road vehicle projects occur throughout the Sacramento federal ozone nonattainment region.

^b Off-road vehicle and agricultural water pumping engine projects occur throughout the Sacramento federal ozone nonattainment region.

4.2.2 District's Incentive Programs

Clean Air Grant Program

In 2001, the District established the Clean Air Grant (CAG) Program to make funds available to public and private agencies or individuals for projects that cost-effectively achieve air pollution reductions. The District has two sources of funding available for the CAG Program: the DMV Surcharge Fund and the Air Quality Offsite Mitigation Fund.

DMV Surcharge Fee

The District authorized DMV surcharge was provided for by two Assembly Bills, AB 2766 and AB 923, which allowed for a \$6 surcharge fee on a vehicle registered (DMV surcharge fee) within Placer County. The surcharge revenues are to be 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. Historically, the District has allocated \$4 of the DMV surcharge to its annual local grant program.

Air Quality Offsite Mitigation Funds

The District receives funding from developers within Placer County through the District's Offsite Mitigation Program for mitigation measures that are recommended by the District to offset air quality impacts. This includes the implementing of off-site emission reduction projects, or the payment of in-lieu-of fees into the Offsite Mitigation Fund Program in accordance with the District Board's approved Policy Regarding Land Use Air Quality Mitigation Funds. Land use developers can participate in this Program to offset the project's related air quality impacts when the on-site mitigation is not sufficient.

From 2012 to 2014, the District has awarded \$3.16 million to emission reduction projects through the CAG program. The overall project lifetime emission reduction for ROG and NOx is about 12.88 tons and 110 tons, which is about 0.01 tons per day and 0.06 tons per day reduction, respectively.

4.3 Reduction from the District's Forest Biomass Program

Placer County has over one-half million acres of forested land, stretching from Auburn to Lake Tahoe, covering parts of three national forests and including 60 percent of Lake Tahoe's West Shore. Years of successful fire suppression activities have left the forests unnaturally dense, with overstocked vegetation and hazardous fuel loads. Our forests are at significant risk for catastrophic wildfire. Numerous major wildfires since the year 2001 have affected more than 106,000 acres of our forested landscape (with almost 40,000 acres in the past three years); including critically important upland watersheds and wildfire habitat.

The condition of Placer County's forests and how they are managed has a very strong effect on air quality. Wildfires are a significant source of air pollution, including fine particulate matter (PM), ozone precursors (NOx and VOCs), and air toxics, which are extremely detrimental to regional air quality and public health. In addition to wildfires, prescribed burning and open pile burning, which are important tools of forest management for reducing fuel loads, are also a significant source of air pollution.

To address the risk of catastrophic wildfire and improve air quality, the District has teamed with Placer County and other public and private stakeholders to implement environmentally, economically, and socially sustainable forest management activities to help restore these forested landscapes to a fire-resilient condition. The Biomass program accomplishments during 2012 and 2014 have included:

1. Continued sponsoring of forest biomass waste for energy projects in Placer County as an alternative to open pile burning. Through the District's CAG program, over \$100,000 has been awarded on projects for the movement of approximately 5,000 bone dry tons of biomass wastes, that resulted in reduction of 1,500 tons of GHG, 200 tons of PM, and 50 tons of ozone precursors.
2. Development of a protocol to quantify greenhouse gas reductions from biomass energy (Biomass to Energy) activities which was approved into the California Air Pollution Control Officer Association (CAPCOA) GHG Reduction Exchange (GHG Rx) program.
3. Implementation of a project under the approved "Biomass to Energy" protocol, and 2,516 tons of GHG offset credits were issued and registered in the CAPCOA GHG Rx program.
4. Development of a protocol to quantify greenhouse gas reductions from biochar production; the protocol is under review by CAPCOA and anticipated to be approved in late 2015.
5. Assessed strategically located and sized biomass energy generation facilities in the Tahoe Basin and on the Foresthill ridge area.
6. Advocated to State Agencies, including CPUC, CARB, CEC, and State AG Office, for a biomass electricity rate that recognizes the full suite of environmental, societal, and economic benefits.

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 the review of development plans for impacts on air quality with work towards 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 substantially significant air pollutant emissions within the County. As a part of our review process, the District makes recommendations for reducing emissions of air pollutants to mitigate potential air quality impacts. These recommendations are then provided to the County, as well as incorporated municipalities within the County, during the planning process.

One of the recognized feasible mitigation measures is the offsite mitigation program which allows an offsite project (e.g., retrofitting vehicles, alternative fuel application, etc.) to be implemented by the applicant, or a payment of fees to the District's Offsite Mitigation Funds, in lieu of on-site reductions. If a developer chooses to implement the mitigation by paying the fee, the fee received is applied towards emission reduction projects through the District's annual CAG program. The recommendation for the use of offsite mitigation measures is based on an approved action taken by the District's Board in April 2001 in the "Policy Regarding Land Use Air Quality Mitigation Funds". It provides an alternative to developers and lead agencies 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 projects.

During the 2012 to 2014 period, the District received \$1,108,384 in mitigation fees paid by land use developers in Placer County. These were managed in concert with the DMV Surcharge fee to provide incentives to emission reduction projects through the annual CAG program. The overall project lifetime emission reductions for NOx were about 38 tons, which is equal to 0.02 tons per day. This reduction is already included in the District CAG program.

4.4.2 District's Fallen 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 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 Recology (formerly 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 needles is located at the Meadow Vista Transfer station during a four (4) month period for disposal. Information regarding the program is primarily through the distribution of "Door Hanger" fliers hung on resident's garbage cans on Recology's routes. Fliers are also distributed to the local schools, along with posting the information on the District's webpage under alternatives to burning.

The emission reductions are from not burning the leaves and pine needles, which are instead recollected and used to create compost. Based on data from Placer County Facility Services,

administrator of this program, the overall project's emission reduction for ROG is approximately 12.7 tons (.01 tons/day) from 2012 to 2014.

4.4.3 Tahoe Area Woodstove Exchange Program

On November 20, 2013, the Governing Board of the Tahoe Regional Planning Agency (TRPA) approved woodstove retrofit rebate funding for the Lake Tahoe area. TRPA has allocated \$95,000 from its general fund, to be used in existing woodstove incentive programs already established by local agencies, to target the replacement of 126 non-EPA certified woodstoves in the Lake Tahoe area. Non-EPA certified woodstoves are replaced with EPA certified or equivalent woodstoves, which will result in measureable improvement in air quality and significant health benefits to the residents within the Tahoe region.

The District has been offered \$23,750 by TRPA to target the replacement of 31 non-EPA certified woodstoves, based on the proportion of existing residential dwellings within Placer County in the Tahoe region. The District's exchange program was re-launched in the fall of 2014, to provide an incentive of up to \$650 per unit for the residents living within the Placer County portion of the Tahoe region to replace their non-EPA certified woodstoves or open hearth fireplaces. As of now, a total of 10 vouchers have been issued to the applicants for replacement. The District will continue accepting applications and issuing vouchers to qualified applicants in the Lake Tahoe area, with funding to be completely distributed before 2017. The total emission reduction from this woodstove exchange program will be quantified in the next triennial review period (2015~2017).

4.4.4 District's Technology Assessment Program

The Technology Assessment Program (TAP) was established by the District's Board of Directors in FY 2009-2010 to provide financial assistance, in the form of grants, for the development and evaluation of technologies which have the potential to reduce air pollution in Placer County. The program's intent is to provide grant funding for studies and other analysis that would help to assess emissions effects on projects, and to foster projects that may result in emission reductions in future years. The emphasis is on projects that have the potential to reduce criteria pollutants and/or greenhouse gases from stationary sources and transportation. The Program has been made available for projects that have the potential to push the edges of technology to achieve higher efficiency/lower impact results.

During this triennial review period, one grant was awarded to the Placer County Resource Conservation District, who has collaborated with the Foresthill BioEnergy Steering Committee, the Placer County Planning Services Division, and the Sierra Nevada Conservancy (SNC), to propose a Foresthill Biomass Utilization Feasibility Study. The Study will complete an assessment on the possibility of developing multiple biomass-to-energy facilities and the potential economic and community development benefits to the Foresthill area.

4.5 Reduction Summary

Emission reductions from rule amendments, along with reductions from various District programs between 2012 and 2014, are shown in Table 4-3. Between 2012 and 2014, the District achieved a 0.02 tons per day reduction for ROG and a 0.38 tons per day reduction for NOx. In addition, there has been a 0.08 tons per day reduction for ROG and a 0.59 tons per day reduction

for NOx resulting from the regional incentive programs (Carl Moyer Memorial Program, SECAT Program, and Regional “Spare the Air” Program (which is discussed in Section 5)).

**Table 4-3
Emission Reductions
District Control Strategies Implementation between 2012 and 2014**

Categories	Associated Rules/Programs	Emission Reduction	
		ROG (tpd)	NOx (tpd)
District's Rule/Regulation	Rule 247		0.32
District's emission reduction programs	Clean Air Grant (CAG) Program	0.01	0.06
	Fallen Leaves and Pine Needle Drop-off program	0.01	
Total Emissions from District's Rule/Program		0.02	0.38
Regional emission reduction programs	Regional Mobile Source Incentive Programs		0.53
	Regional "Spare the Air" Program	0.08	0.06
Total Emissions from Regional Programs**		0.08	0.59

* The rule was committed in the 2012 Triennial Plan.

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

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5 COMUNITY EDUCATION PROGRAM

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

5.1 Spare the Air Program

The Sacramento Region's Spare the Air (STA) Program is a voluntary, summertime effort aimed at reducing air pollution (specifically, ground-level ozone). The District contributes financially and assists in the implementation of the STA driving curtailment program, which marked its 20th year of operation since it was created in 1995. This program is a cooperative effort by the El Dorado County AQMD, Placer County APCD, Sacramento Metropolitan AQMD, and Yolo-Solano AQMD for the Sacramento Region. To maintain statewide program consistency, this program is coordinated with the Spare the Air Programs in the San Francisco Bay Area and the San Joaquin Valley.

The air districts of the region coordinate the STA program, which provides notifications to the public on the daily air quality forecast and advisories. Residents can subscribe to the "Air Alert" program to receive emails or text messages with regional air quality forecasts.

Highlights of the program effort include:

- A website (www.SpareTheAir.com) with daily regional air quality forecasting, ozone concentration maps, historical air quality data, pollutant health effects, transportation tips to drive less, and other ways to reduce pollution.
- Over 3,100 business, community groups and schools are the STA partners which receive free Air Alert notifications, consisting of an email or text message when the daily air quality forecast reaches certain unhealthy Air Quality Index (AQI) levels.
- Radio spots promoting general awareness and specific action alerts on STA days.
- STA alerts are broadcast during Sacramento weather forecasts and printed on the weather page of the Sacramento Bee.
- Scooter, the Spare the Air Mascot, attended several community events in Placer County communities.
- Development of educational programs, brochures, and other printed materials distributed to the public, schools, and business community.

Annual evaluations have been conducted since 1995 to assess the effectiveness of the STA program for the residents in the Sacramento nonattainment area. Levels of awareness, driving behaviors, health issues, and estimated emission reductions have been measured and tracked.

The specific evaluation objectives were to:

- Measure general awareness and awareness of the specific episodic request not to drive on STA days among drivers in the Sacramento Nonattainment Area.
- Measure the effectiveness of the STA program in terms of reduced driving among drivers who were aware of the program and purposefully reduced the number of trips they made due to air quality reasons.
- Estimate emission reductions from the trips reduced during Spare The Air episodes.

- Compare awareness of the STA campaign and driving reduction among the individual air quality districts in the Sacramento Nonattainment Area.
- Measure the percentage of drivers who habitually drive less during the summer season in order to improve air quality, and estimate the emission reductions from this group of seasonal reducers.
- Track awareness and behavioral changes over time.

Over the last three years, the survey results show that the level of public awareness for the STA program is at 47% in 2012 and at 32% in 2013 and 2014. The survey estimates the emission reduction attributed directly to the STA program during the 2012-2014 period as follows⁶:

- 2012 - .00 tons/day
- 2013 - .02 tons/day
- 2014 - .12 tons/day

5.2 Additional Public Outreach Efforts

The District has continued the following public outreach efforts, including:

- Participation in Earth Day Events and other public events
- 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>

⁶ According to the survey results, the 2012 STA program did not demonstrate emission reductions in the Sacramento Nonattainment Area. The STA annual survey results can be downloaded from the webpage: <http://www.sparetheair.com/survey.cfm>.

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 more recently 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 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, a portion of 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 Plan⁷. In that plan an extensive all feasible measures analysis was conducted with a list of control measure commitments developed for each air district in the SFONA to reduce air pollutant emissions. The second requirement was implemented through the amendment of District Rule 502 - New Source Review, which was approved by the District’s Board on December 9, 2004. This rule amendment modified the offset thresholds for ROG and NOx to 10 tons per year, the same thresholds adopted by the San Joaquin Unified APCD, to achieve no net increase in emissions within the District. The later amendment of Rule 502 on August 8, 2013, was to address EPA’s comments for the SIP approval.

⁷ The 2009 Sacramento Regional Nonattainment Area 8-Hour Ozone Attainment and Reasonable Further Progress Plan which was prepared for 1997 federal 8-hour ozone standard (0.08 ppm) was approved by the Placer County Air Pollution Control District’s Board on February 19, 2009.

7 EVALUATION OF FUTURE EMISSION REDUCTIONS

HSC Section 40914 requires an air district with a nonattainment designation to achieve a reduction in district-wide ozone precursor emissions of 5% or more per year 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 NOx emission reductions between 2012 and 2014 in Placer County is about 2% and 3% per year, respectively. This overall averaged emission reduction is less than the mandatory 5% annual emission reduction required by the CCAA. The District is obligated to review and analyze all control measures/reduction programs which are feasible to reduce ozone precursor emissions in Placer County.

7.1 Commitments for the Next Triennial Review Period

All Feasible Measures

The District is committed to reviewing all feasible measures, in conjunction with CARB and other air districts within the SFONA, to obtain future emissions reductions. On February 13, 2014, the District's Board adopted the 2014 Reasonably Available Control Technology State Implementation Plan (RACT SIP) analysis which evaluated all feasible control measures. It was prepared in response to requests from U.S. EPA to periodically demonstrate that the District's State Implementation Plan (SIP) rules fulfill the Reasonably Available Control Technology (RACT) requirements for volatile organic compounds (VOC) and nitrogen oxides (NOx). RACT requires that District rules cover both: (1) source categories for which there is RACT guidance and for which there are affected sources that operate in the District, and (2) major sources in the District. The analysis involved a comparison of all RACT guidance documents with existing District rules and sources that operate in the District.

In addition to the RACT SIP analysis, the District is working with the other local air districts within the Sacramento Nonattainment area to develop the ozone attainment demonstration plan for the federal 8-hour ozone standard which was revised by the U.S. EPA to a level of 0.075 parts per million (ppm) in 2008. The plan development includes the analysis for reasonably available control measures (RACM) to review and identify potential control measures which would assist the region in reducing ozone precursor emissions and attaining the federal 8-hour ozone standards at the target year. Additional control measures may be committed by the District for the future amendment/adoption when the regional SIP for the 2008 8-hour ozone standard is developed. The detailed District's 2008 SIP commitment will be included and reviewed in the next triennial progress report.

Table 7-1 contains a list of the control measures which could be considered to be amended or adopted during the next triennial review period (2015-2017). The actual emission reductions cannot be estimated for those identified control measures at this time. A more thorough evaluation will be conducted during the rule development process and will be summarized in the next triennial progress report.

**Table 7-1
List of Rules Proposed to be Considered for Amendment/Adoption through 2017**

District Rule Name	Proposed Action	Proposed Schedule of Amendment/Adoption
Stationary Gas Turbines (Rule 250)	Evaluate for amendment needed to address RACT requirement for the SIP approval	Possible amendment between 2015 and 2017
Incinerator Burning (Rule 206)	Evaluation for amendment needed to address EPA comments for the SIP approval	Possible amendment between 2015 and 2017
Metal Container Coating (Rule 223)	Evaluation for amendment needed to update the VOC exempt compound definition	Possible amendment between 2015 and 2017
Semiconductor Operations (Rule 244)	Evaluation for amendment needed to update the VOC exempt compound definition	Possible amendment between 2015 and 2017
Natural Gas-Fired Water Heaters (Rule 246)	Evaluation for amendment needed to address EPA concerns for the SIP approval	Possible amendment between 2015 and 2017
Natural Gas-Fired Water Heaters, Small Boilers and Process Heaters (Rule 247)	Evaluation for amendment needed to address EPA concerns for the SIP approval	Possible amendment between 2015 and 2017
Aerospace Coating Operations	Evaluation for adopting a new rule to address the EPA CTG emission control requirements for aerospace coating operations	Possible adoption between 2015 and 2017

Mobile Source Incentive Programs

For the next triennial period through 2017, the District will continue participating in regional mobile source incentive programs to promote the emission reductions from on-road and off-road mobile sources. In addition the District also will continue implementing the District’s annual CAG program by using the DMV surcharge fee and the offsite mitigation fee to provide incentives for cost-effective emission reduction projects in Placer County.

7.2 Additional Emission Reduction Program

In addition to the committed feasible measure evaluations and the mobile source incentive programs, the District will continue to implement the forest biomass program in the next triennial review period. Under the program, the District is conducting/sponsoring several projects, including the development of protocols to quantify the GHG offset credits for forest fuel treatment thinning and hazard reduction; the black carbon reductions from avoided open pile burning; and the feasibility research of small scale distributed woody forest biomass systems. Although the District’s forest biomass program is primarily focused on GHG emission reduction, the implementation of projects will result in criteria pollutant reduction as a co-benefit of the program in the future. The performances of these projects will be reviewed in the next triennial progress report.

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 represents that overall exposure to residents from ozone continues to decrease in Placer County.

Emission inventory information shows a significant overall reduction of ozone precursor emissions in the 2012 through 2014 time period. The District has conducted an “all feasible measures” analysis and committed to amending existing rules and adopt new rules to further reduce ozone precursor emissions. Table 7-1 shows the proposed list of rules to be considered for amendment or adoption for the next triennial review period (2015-2017). Incentive programs such as the Carl Moyer Program and the District’s Offsite Mitigation Program continue to assist in reducing additional NO_x emissions from mobile sources. The District believes that this triennial progress report demonstrates progress in the effort set forth in the control plan towards attaining the state ozone standards in accordance with the CCAA requirements.

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