



## **2021 TRIENNIAL PROGRESS REPORT**

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

**May 2022**

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## LIST OF ABBREVIATIONS

<b>Abbreviation</b>	<b>Meaning</b>
AB	Assembly Bill
ADF	Alternative Diesel Fuel
AQAP	Air Quality Attainment Plan
AQI	Air Quality Index
AQMD	Air Quality Management District
AWE	Area-Weighted Exposure
CAG	Clean Air Grant
CAP	Community Air Protection
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEIDARS	California Emission Inventory Development and Reporting System
CEQA	California Environmental Quality Act
CPI	Consumer Price Index
CTG	Control Techniques Guidelines
District	Placer County Air Pollution Control District
DJIA	Dow Jones Industrial Average
EDCAQMD	EI Dorado County Air Quality Management District
EIC	Emission Inventory Code
EMFAC	California Air Resources Board Emission Factor Model
EPA	Environmental Protection Agency
EPCD	Expected Peak Day Concentration
EV	Electric Vehicle
FY	Fiscal Year
GHG	Greenhouse gas
hrs	Hours
HSC	California Health and Safety Code
LCFS	Low Carbon Fuel Standard
LTAB	Lake Tahoe Air Basin
Moyer Program	Carl Moyer Memorial Program

<b>Abbreviation</b>	<b>Meaning</b>
NOx	Oxides of Nitrogen
PM	Particulate Matter
PM <sub>10</sub>	Particulate Matter 10 micrometers and smaller
ppm	Parts per million
PWE	Population-Weighted Exposure
RACM	Reasonably Available Control Measures
RACT	Reasonably Available Control Technology
RACT SIP	Reasonably Available Control Technology State Implementation Plan
ROG	Reactive Organic Gases
SACOG	Sacramento Area Council of Governments
Sacramento Regional Ozone SIP	Sacramento Regional 8-hour Ozone State Implementation Plan
SB	Senate Bill
SECAT	Sacramento Emergency Clean Air and Transportation Program
SFONA	Sacramento Federal Ozone Nonattainment Area
SIP	State Implementation Plan
SMUD	Sacramento Municipal Utility District
STA	Spare the Air Program
SVAB	Sacramento Valley Air Basin
TAP	Technology Assessment Program
Tool	CARB Pollution Mapping Tool
tpd	Tons per day
tpy	Tons per year
TSA	Technical System Audit
VMT	Vehicle Miles Traveled
VNRM	Voluntary NOx Remediation Measure
VOC	Volatile Organic Compound

## **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 and Safety Code (HSC). The District is a “county” level agency, with the same jurisdictional boundaries as the County of Placer which extends from North Lake Tahoe in the east, through 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 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, CARB established criteria for designating areas as attainment or nonattainment for the state air quality standards. According to the area designations adopted in 1989, the SVAB and MCAB portions of Placer County were designated as nonattainment for the state ozone standard and the entire County was designated as nonattainment for the state particulate matter standard (PM<sub>10</sub>).

The CCAA requires that an air district which has not attained the state air quality standards prepare a plan to attain the 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> and did 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. 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 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. This triennial progress report includes air quality improvements 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 progress goals, along with incorporating new data or projections. This 2021 Triennial Progress Report is prepared to fulfill these requirements for the years 2018-2020.

### **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, as part of the State Implementation Plan (SIP) for ozone. 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 considered by CARB to also fulfill the 1994 requirements of the CCAA. 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.

#### 1997 Triennial Progress Report

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 with CARB conditionally approving the 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, discussed below under the 2000 Triennial Progress Report Section.

#### 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 in assessing the progress since the adoption of the 1997 Triennial Progress Report. Three (3) Reactive Organic Gases (ROG) control measures listed in the 1997 Triennial Progress Report, Polyester Resin Operations, Pleasure Craft Coating, and Internal Combustion Engines, were still pending adoption during this period. Since these control measures were not adopted, there was a deficiency in the 1997 Triennial Progress Report.

#### 2003 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 previously pending in the 2000 Triennial Progress Report were adopted during this period. In addition, the District also adopted one Oxides of Nitrogen (NOx) control measure (Stationary Internal Combustion Engine) to fulfill the District's commitment in the 1994 Ozone SIP.

#### 2009 Triennial Progress Report

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 (9) stationary/area-wide control rules were amended or adopted. Although not all of these rule actions resulted in significant emission reductions, the District achieved about 0.66 tons per day (tpd) emission reductions in ROG from these rule activities.

#### 2012 Triennial Progress Report

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 evaluated and removed due to economic concerns. As a result, the expected emission reductions from these rules for ROG were .245 tons/day. In addition, another eight (8) rules were amended and/or adopted which may not be quantifiable, but demonstrate the District's efforts to look for opportunities to improve air quality.

#### 2015 Triennial Progress Report

On October 8, 2015, the District's Board of Directors approved the 2015 Triennial Progress Report for the district's air quality progress from 2012 to 2014. In this Triennial Progress Report, six (6) existing rules were amended, and two (2) new rules were adopted to fulfill the federal ozone plan commitment. The expected emission reductions resulting from these rules for NOx were .32 tons/day. In addition, another eleven (11) rules were amended and/or adopted which may not be quantifiable, but demonstrate the District's efforts to look for opportunities to improve air quality.

#### 2018 Triennial Progress Report

On October 11, 2018, the District's Board of Directors approved the 2018 Triennial Progress Report for the district's air quality progress from 2015 to 2017. In this Triennial Progress Report, two (2) existing rules were amended, and three (3) rules were evaluated but not considered for amendments or adoption, to fulfill the federal ozone plan commitment. The expected emission reductions resulting from the amended rules for NOx were .02 tons/day. In addition, another two (2) rules were amended which may not be quantifiable 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 2021 Triennial Progress Report**

The 2021 Triennial Progress Report is a requirement of the CCAA to assess the progress made towards attaining the state air quality standards in Placer County for the evaluation period of 2018 - 2020.

The triennial progress report 1) describes the historical trends in ambient air quality levels; 2) provides updates of the emission inventories in Placer County; 3) summarizes the progress of emissions reductions from 2018 to 2020 in Placer County; and 4) concludes with an overview of air quality planning progress.

The historical trends in ambient air quality continue to show an improvement in Placer County. Although air quality indicators show that the progress of attaining the state ozone standards between 2018 and 2020 has been slower compared to the previous triennial review period (2015-2017), air quality trends still show significant overall progress toward attaining the state's ambient ozone standards in Placer County since 2000.

The updated emission inventories indicate that the majority of ROG and NOx emissions in Placer County are from mobile sources. Between 2000 and 2020, emission inventory trends in Placer County show that overall ROG emissions declined from 26.30 tpd to 16.41 tpd, a 38.60% decrease; and that NOx emissions have declined from 33.66 tpd to 12.7 tpd, a 62.28% decrease. These emission reductions have mainly occurred from on-road and off-road mobile sources. Projected emission forecasts to 2030 show a more gradual declining trend. From 2020 to 2030, overall Placer County ROG emissions are expected to continue decreasing another 5.19%, with NOx emissions decreasing another 20.26%.



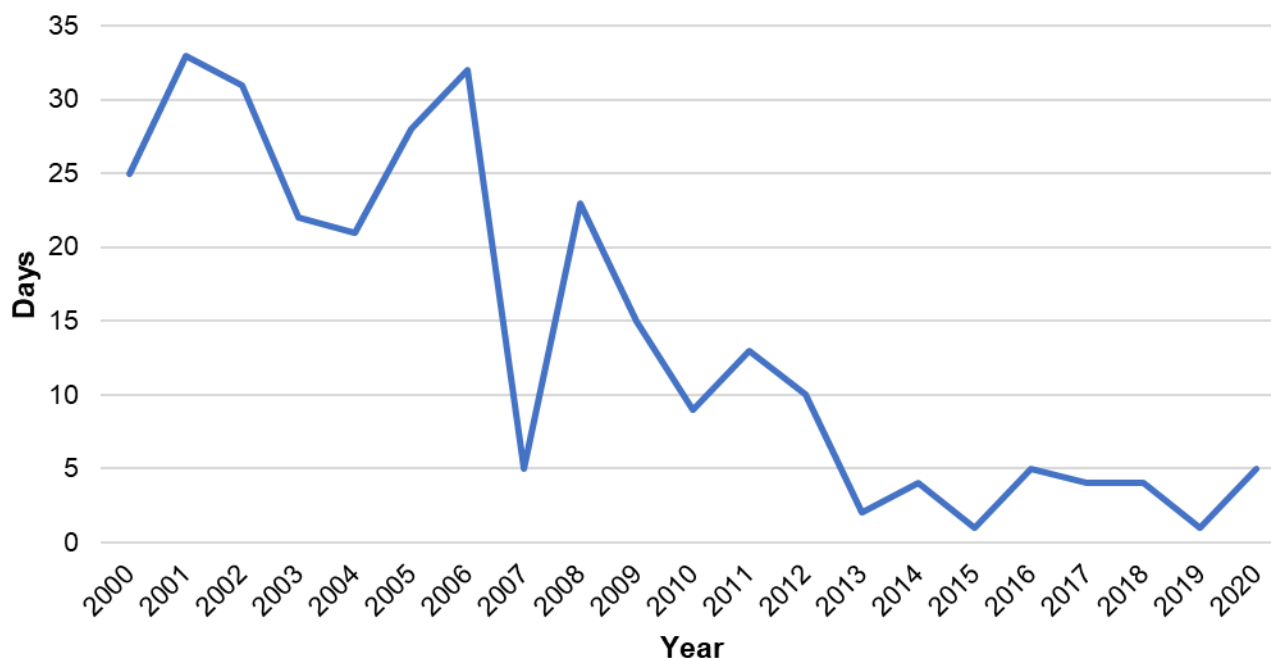
## 2 AIR QUALITY TRENDS

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, 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)). CARB has approved three indicators for use: the Expected Peak Day Concentration (EPDC) indicator, the 1-hour Population-Weighted Exposure (PWE) indicator, and the 1-hour Area-Weighted Exposure (AWE) 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 air quality trends. 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, CARB approved the 8-hour ozone standard of 0.070 ppm. Exceedances occur when the monitored ozone concentrations exceed the standards.

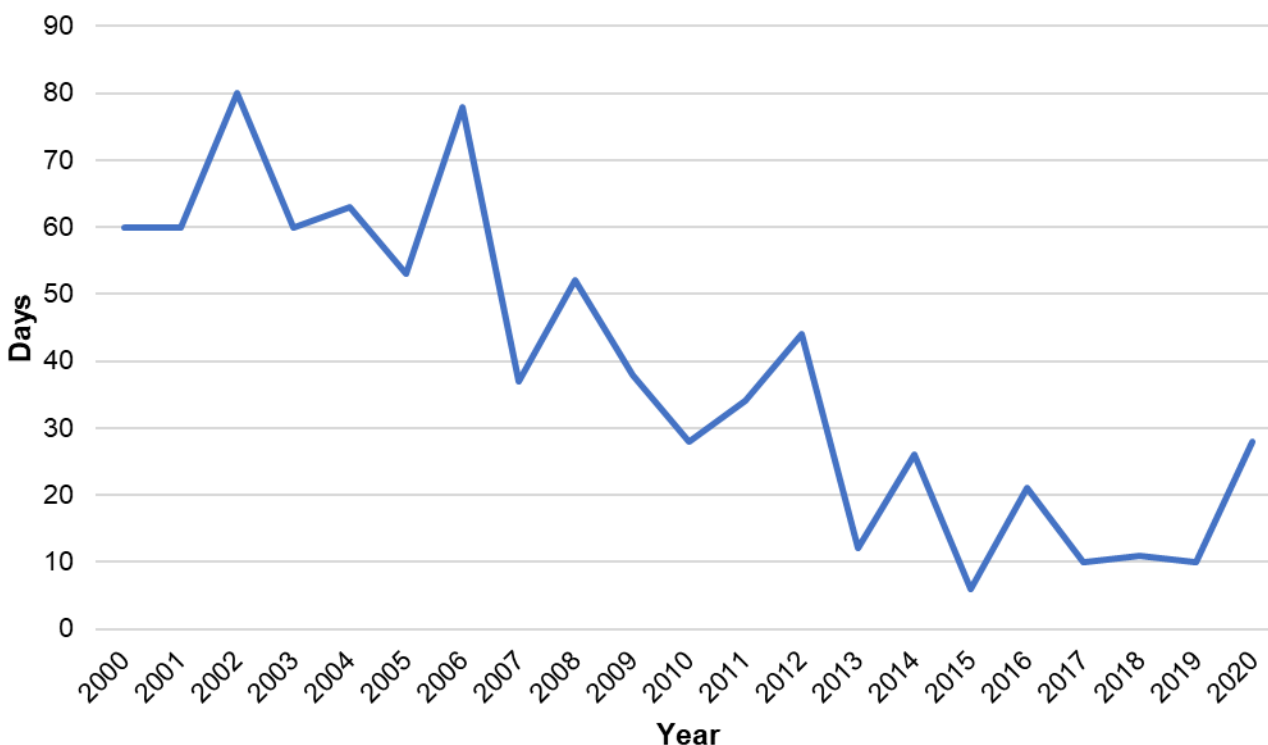
From 2018 to 2020, five ozone monitoring stations operated in Placer County: Auburn, Colfax, Lincoln<sup>1</sup>, Tahoe City, and Roseville. The District operates the Auburn, Colfax, Lincoln, and Tahoe City stations, with CARB maintaining the Roseville station. The Auburn station has the most complete ozone data available from 1974 to present. The Rocklin station operated from 1978 until it closed in 2002.



**Figure 1.** Days over the State 1-hour Ozone Standard (0.09 ppm) in Placer County.

Figure 1 shows a summary of the number of days within Placer County that exceeded the State 1-hour ozone standard (0.09 ppm) since 2000. An exceedance is counted when a station in Placer County on a given day reports a monitored ambient concentration level greater than 0.095 ppm.

<sup>1</sup> No Lincoln data was available in 2018 due to the site relocation.



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

Figure 2 shows a summary of the number of days within Placer County that exceeded the State 8-hour ozone standard (0.070 ppm) since 2000. An exceedance is counted when a station in Placer County on a given day reports monitored hourly ambient concentrations averaged over an 8-hour period greater than 0.071 ppm.

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

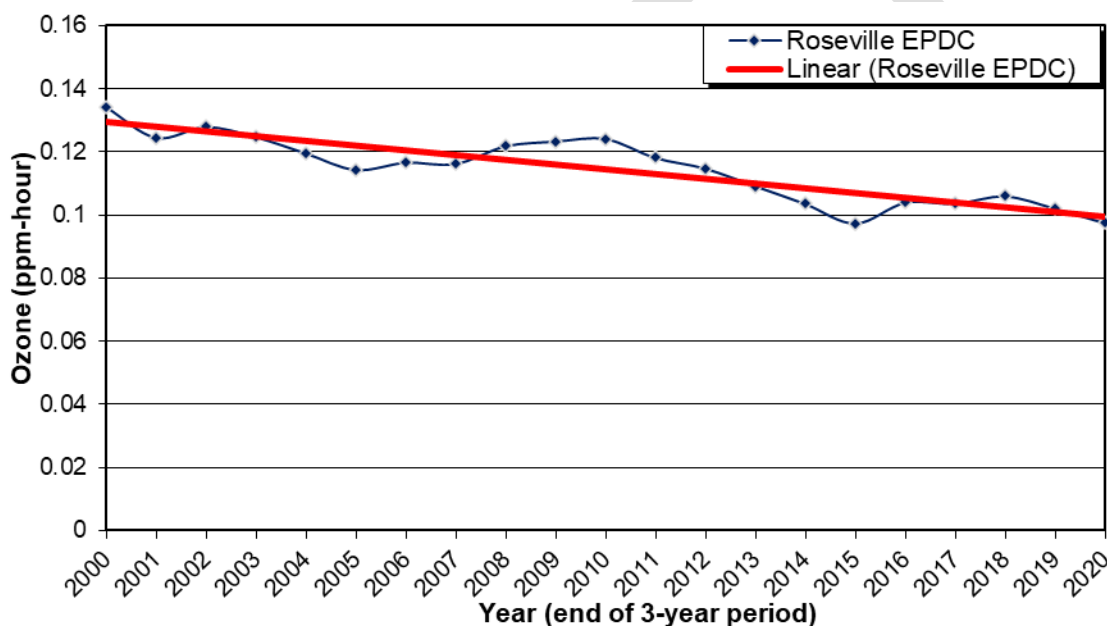
In July 1993, CARB approved three progress-reporting indicators for use in assessing advancement toward attaining the state air quality standards. “An indicator is a way of summarizing measured air quality data so as to represent one aspect of air quality in a specific area. An indicator summarizes and 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.”<sup>2</sup> These indicators 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.

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

### 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.

Figure 3 illustrates the ozone EPDC indicators from 2000 to 2020 at the Roseville monitoring site in Placer County. Roseville is the only monitoring site which has consistent data from 2000 to 2020. There is no current monitoring data from the Rocklin site since it was closed in 2002. Additionally, ozone monitoring at the Tahoe City site only began very recently, in 2013, and data from the Auburn, Colfax, Lincoln, and Tahoe sites was invalidated from 2016-2018 due to the findings from EPA’s Technical System Audit (TSA). Since the EPDC is based on three years of data, there are no recent EPDC data points for these sites.



**Figure 3.** EPDC ozone trend: Roseville monitoring site.<sup>3</sup>

As can be seen in Figure 3, there was a 27.4% decrease in the EPDC occurring at the Roseville monitoring site from 2000 to 2020. Since the Roseville site was established in 1993, there has been a 29.6% decrease. 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 (PWE) indicator is a statistically derived air quality indicator provided by CARB. The purpose of the PWE indicator is to characterize the potential average outdoor exposure per person to concentrations above the level of the state ozone standard. The 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

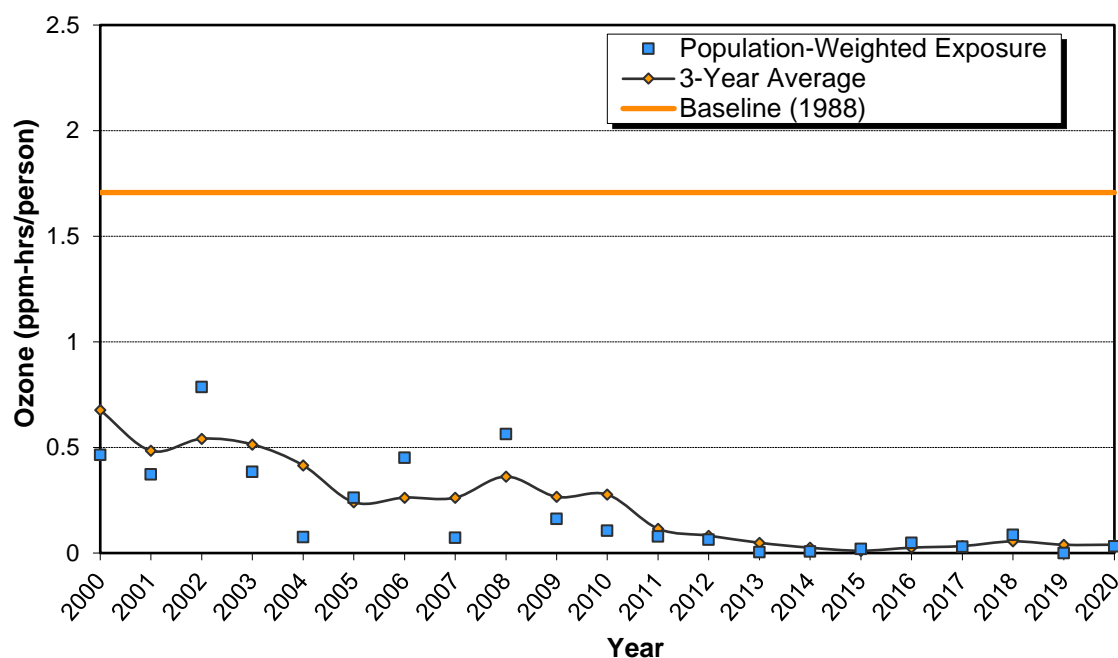
<sup>3</sup> EPDC data source: CARB

ozone concentration of 0.13 ppm for 2 hours represents an exposure of 0.08 ppm-hours above the state ozone standard of 0.09 ppm  $((0.13 \text{ ppm} - 0.09 \text{ ppm}) \times 2 \text{ hours} = 0.08 \text{ ppm-hours})$ .

Table 1 and Figure 4 summarize the population-weighted ozone exposure for the 3-year average base period (1986 - 1988) and the 3-year average end period (2018 - 2020) within Placer County. There has been a 97.7% decrease in the population-weighted ozone exposure between the base period and the 2018-2020 period. Although there is a 19.28% increase in population-weighted ozone exposure when compared with the previous triennial review period, this slight increase could be due to unusually high ozone concentrations caused by wildfire smoke impacts during the summers of 2018 and 2020. Regardless, the population-weighted ozone exposure shown during the 2018-2020 period is still minimal. The results represent a defined downward trend in ozone exposure below the baseline.

**Table 1.** Summary of Population-Weighted Exposure (PWE) in Placer County.

Exposure Indicator	Base Period (1986 - 1988) 3-Year Average	Previous Triennial Period (2015 - 2017)	End Period (2018 - 2020)	Reduction from Base Period (%)	Difference from Previous Triennial Period (%)
Population Weighted Exposure (ppm-hrs/person)	1.707	0.033	0.037	97.69%	19.28%



**Figure 4.** Population-Weighted Exposure (PWE) trends in Placer County. <sup>4</sup>

### 2.2.3. Area-Weighted Exposure Indicator

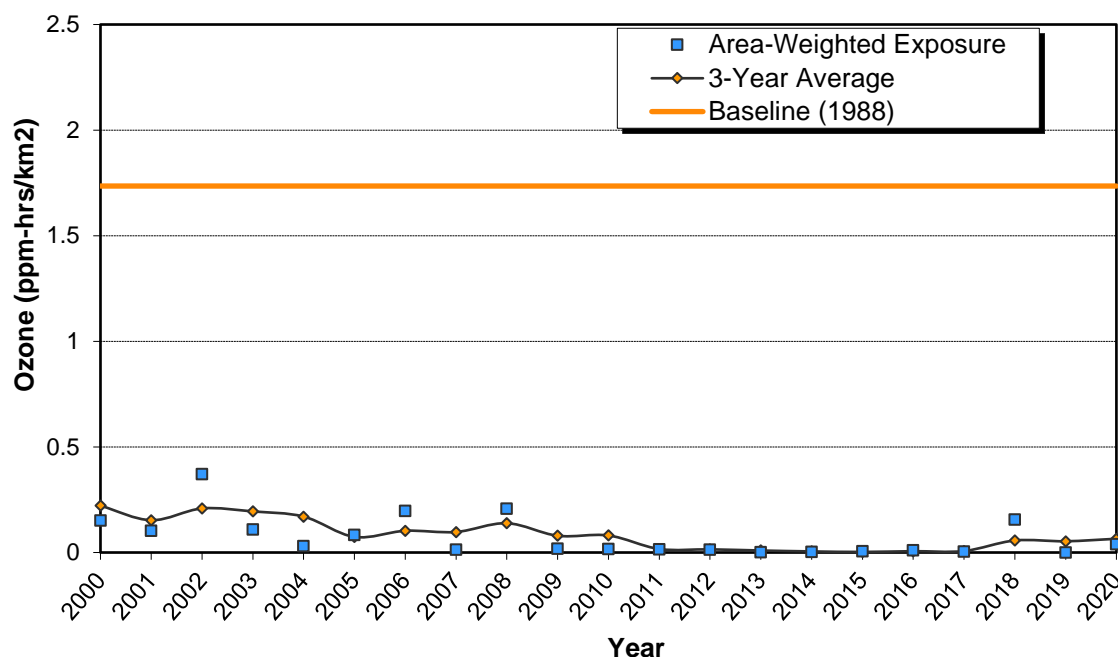
<sup>4</sup> Exposure data source: CARB

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

Table 2 and Figure 5 summarize the area-weighted ozone exposure for the 3-year average base period (1986 - 1988) and the 3-year average end period (2018 - 2020) within Placer County. According to the table, there is a 96.26% decrease in the area-weighted ozone exposure between the base period and the end period. Although there is an 825.45% increase in area-weighted ozone exposure when comparing the previous triennial review period, this increase could be due to unusually high ozone concentrations caused by wildfire smoke impacts during the summers of 2018 and 2020. Regardless, the area-weighted ozone exposure shown in the 2018-2020 period is still minimal. As with the population-weighted ozone indicator, the area-weighted ozone exposure also represents a defined downward trend in ozone exposure below the baseline.

**Table 2.** Summary of Area-Weighted Exposure (AWE) in Placer County.

Exposure Indicator	Base Period (1986 – 1988) 3-Year Average	Previous Triennial Period (2015 – 2017)	End Period (2018 - 2020)	Reduction (%) from Base Period	Difference (%) from Previous Triennial Period
Area Weighted Exposure (ppm-hrs/km <sup>2</sup> )	1.735	0.007	0.065	96.26%	825.45%



**Figure 5.** Area-Weighted Exposure (AWE) trends in Placer County. <sup>5</sup>

<sup>5</sup> Exposure data source: CARB

### **2.3 Summary of the Results of Air Quality Indicators**

The Air Quality Indicators are technical tools used for exposure analysis on local air quality within Placer County. The PWE and AWE 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 EPDC analysis shows the ozone trend at the Roseville monitoring location.

The analysis of the EPDC levels, the Population-Weighted, and Area-Weighted indicators all show a declining trend in ozone exposure concentrations measured within Placer County. This decrease demonstrates progress in improving the current air quality by reducing peak ozone concentrations and ozone exposure.

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### **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 can also be used to assess the progress the region is making toward attaining the California ambient air 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 NOx.

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 such as dry cleaners or gasoline stations, which when grouped together have significant emissions. 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 (VMT), 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. Table 3 and Table 4 provide updated source category estimates of Placer County daily emissions (tons per day) of ROG and NOx for 2000, 2005, 2010, 2015, 2018, 2020, 2025, and 2030. These are the latest updated inventories from CARB, including calculated emissions from past years and the projected emissions for future years. Please note that the projected emissions from 2025 through 2030 are based on the most current 2017 base year emission estimates<sup>6</sup>, along with the expected growth and control factors, so the emission trends can be forecasted.

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<sup>6</sup> The CARB CEPAM Emission Data  
<https://www.arb.ca.gov/app/emsinv/fcemssumcat/fcemssumcat2016.php>

**Table 3. Placer County ROG emission inventory.**<sup>7</sup>

ROG Emissions (tons per day) Within Placer County									
	2000	2005	2010	2015	2018	2020	2025	2030	
<b>AREA-WIDE SOURCES</b>	Miscellaneous Processes	0.38	2.94	0.40	0.37	0.23	0.50	0.51	0.52
	Farming Operations	1.12	1.10	1.09	1.08	1.09	1.09	1.10	1.10
	Residential Fuel Combustion	0.53	0.38	0.48	0.47	0.38	0.38	0.38	0.38
	Architectural Coatings And Related Process Solvents	1.01	1.09	1.21	0.94	0.98	1.01	1.10	1.19
	Asphalt Paving / Roofing	0.27	0.32	0.19	0.24	0.30	0.31	0.34	0.36
	Consumer Products	2.07	2.17	2.24	2.33	2.49	2.59	2.73	2.94
	Pesticides/Fertilizers	0.28	0.17	0.11	0.12	0.16	0.13	0.13	0.13
	<b>Total Area-Wide Sources</b>	<b>5.66</b>	<b>8.18</b>	<b>5.71</b>	<b>5.55</b>	<b>5.63</b>	<b>6.01</b>	<b>6.29</b>	<b>6.62</b>
<b>ON-ROAD MOBILE SOURCES</b>	Light Duty Passenger	3.99	2.78	1.88	1.16	0.84	0.71	0.53	0.45
	Light Duty Trucks	2.77	1.92	1.36	1.03	0.84	0.74	0.59	0.49
	Medium Duty Trucks	0.81	0.85	0.69	0.59	0.52	0.47	0.36	0.31
	Heavy Duty Trucks (Gasoline)	0.56	0.42	0.30	0.26	0.22	0.19	0.14	0.12
	Heavy Duty Trucks (Diesel)	0.79	0.96	0.63	0.33	0.25	0.20	0.09	0.08
	Motor Homes	0.04	0.02	0.01	0.01	0.00	0.00	0.00	0.00
	Motorcycles	0.27	0.42	0.46	0.45	0.44	0.42	0.40	0.39
	Buses	0.04	0.04	0.03	0.02	0.01	0.01	0.00	0.00
<b>Total On-Road Mobile Sources</b>	<b>9.28</b>	<b>7.41</b>	<b>5.36</b>	<b>3.85</b>	<b>3.12</b>	<b>2.74</b>	<b>2.12</b>	<b>1.83</b>	
<b>OTHER MOBILE SOURCES</b>	Aircraft	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	Farm Equipment	0.18	0.16	0.14	0.11	0.16	0.14	0.11	0.09
	Fuel Storage And Handling	0.51	0.44	0.28	0.23	0.21	0.20	0.18	0.17
	Off-Road Equipment	3.70	3.45	2.54	1.98	1.84	1.78	1.77	1.82
	Off-Road Equipment (PERP)	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01
	Off-Road Recreational Vehicles	0.20	0.31	0.28	0.21	0.19	0.18	0.15	0.11
	Recreational Boats	2.70	2.52	2.18	1.81	1.59	1.45	1.18	0.97
	Trains	0.36	0.41	0.24	0.13	0.14	0.13	0.14	0.14
<b>Total Other Mobile Sources</b>	<b>7.72</b>	<b>7.33</b>	<b>5.71</b>	<b>4.51</b>	<b>4.16</b>	<b>3.92</b>	<b>3.56</b>	<b>3.34</b>	
<b>STATIONARY SOURCES</b>	Cleaning and Surface Coatings	2.36	2.22	1.62	1.83	2.01	2.08	2.26	2.30
	Fuel Combustion	0.06	0.09	0.13	0.14	0.10	0.10	0.10	0.10
	Industrial Processes	0.86	1.11	0.68	0.78	0.85	0.81	0.86	0.86
	Petroleum Production and Marketing	0.29	0.25	0.52	0.51	0.73	0.62	0.44	0.36
	Waste Disposal	0.07	0.09	0.11	0.12	0.12	0.13	0.13	0.14
	<b>Total Stationary Sources</b>	<b>3.65</b>	<b>3.76</b>	<b>3.07</b>	<b>3.36</b>	<b>3.83</b>	<b>3.74</b>	<b>3.79</b>	<b>3.75</b>
<b>GRAND TOTAL</b>	<b>26.30</b>	<b>26.68</b>	<b>19.84</b>	<b>17.27</b>	<b>16.73</b>	<b>16.41</b>	<b>15.76</b>	<b>15.56</b>	

<sup>7</sup> Data Source: CARB CEPAM Emission Projection Data. Report Type: Grown and Controlled. Season: Summer. Base Year: 2017.



**Table 4. Placer County NOx emission inventory.**<sup>8</sup>

NOx Emissions (tons per day) Within Placer County									
	2000	2005	2010	2015	2018	2020	2025	2030	
<b>AREA-WIDE SOURCES</b>	Miscellaneous Processes	0.15	0.24	0.10	0.10	0.10	0.12	0.12	0.12
	Farming Operations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Residential Fuel Combustion	0.44	0.47	0.53	0.44	0.48	0.49	0.50	0.52
	Architectural Coatings And Related Process Solvents	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Asphalt Paving / Roofing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Pesticides/Fertilizers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total Area-Wide Sources</b>	<b>0.59</b>	<b>0.71</b>	<b>0.63</b>	<b>0.54</b>	<b>0.58</b>	<b>0.61</b>	<b>0.62</b>	<b>0.64</b>
<b>ON-ROAD MOBILE SOURCES</b>	Light Duty Passenger	3.45	2.36	1.38	0.78	0.53	0.42	0.27	0.23
	Light Duty Trucks	3.60	2.28	1.30	0.81	0.56	0.44	0.26	0.18
	Medium Duty Trucks	1.29	1.33	0.85	0.55	0.41	0.33	0.17	0.11
	Heavy Duty Trucks (Gasoline)	0.62	0.48	0.31	0.21	0.18	0.15	0.09	0.06
	Heavy Duty Trucks (Diesel)	10.27	12.43	8.06	5.15	4.36	3.84	2.63	2.36
	Motor Homes	0.10	0.09	0.07	0.05	0.04	0.04	0.03	0.02
	Motorcycles	0.04	0.08	0.09	0.09	0.08	0.08	0.08	0.07
	Buses	0.27	0.36	0.31	0.27	0.21	0.18	0.12	0.09
	<b>Total On-Road Mobile Sources</b>	<b>19.64</b>	<b>19.40</b>	<b>12.37</b>	<b>7.91</b>	<b>6.38</b>	<b>5.47</b>	<b>3.66</b>	<b>3.13</b>
<b>OTHER MOBILE SOURCES</b>	Aircraft	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Farm Equipment	0.67	0.59	0.49	0.41	0.66	0.58	0.44	0.33
	Fuel Storage And Handling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Off-Road Equipment	3.04	4.62	2.09	1.95	1.62	1.43	1.12	1.01
	Off-Road Equipment (PERP)	0.37	0.33	0.28	0.20	0.17	0.14	0.08	0.07
	Off-Road Recreational Vehicles	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Recreational Boats	0.23	0.29	0.28	0.26	0.24	0.24	0.23	0.22
	Trains	7.45	6.22	3.75	2.67	2.95	3.03	3.24	3.49
	<b>Total Other Mobile Sources</b>	<b>11.77</b>	<b>12.06</b>	<b>6.91</b>	<b>5.50</b>	<b>5.66</b>	<b>5.43</b>	<b>5.12</b>	<b>5.13</b>
<b>STATIONARY SOURCES</b>	Cleaning and Surface Coatings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Fuel Combustion	1.45	1.56	1.15	1.10	1.04	1.02	1.03	1.04
	Industrial Processes	0.20	0.28	0.14	0.17	0.17	0.16	0.17	0.17
	Petroleum Production and Marketing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Waste Disposal	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
	<b>Total Stationary Sources</b>	<b>1.65</b>	<b>1.84</b>	<b>1.31</b>	<b>1.28</b>	<b>1.22</b>	<b>1.19</b>	<b>1.21</b>	<b>1.22</b>
<b>GRAND TOTAL</b>	<b>33.66</b>	<b>34.02</b>	<b>21.22</b>	<b>15.23</b>	<b>13.83</b>	<b>12.70</b>	<b>10.61</b>	<b>10.13</b>	

According to Table 3, the stationary source ROG emissions result primarily from cleaning and surface coating activities and other industrial processes, while area-wide emissions result primarily from consumer products, architectural coating and related process solvents, and farming operations. Furthermore, Table 4 shows that the primary stationary source of NOx emissions comes from fuel combustion, while the largest area-wide sources of NOx emissions are residential fuel combustion. The 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 and local districts.

In 2020, the majority of ROG and NOx emissions in Placer County came from mobile sources (on-road and off-road). 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 2017 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 VMT.

<sup>8</sup> Data Source: CARB CEPAM Emission Projection Data. Report Type: Grown and Controlled. Season: Summer. Base Year: 2017.

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 off-road equipment and recreational boats. The major contribution to NO<sub>x</sub> emissions is from heavy-duty diesel trucks, off-road equipment, and trains.

It should be noted that the U.S. EPA and CARB have jurisdiction over mobile sources of air pollutants, while local districts have jurisdiction over stationary sources. Additionally, engine standards for trains and off-road farm equipment are exclusively set by the U.S. EPA. Therefore, the District's rulemaking efforts focus on stationary and area-wide sources of pollutants, such as surface coatings, whereas the District's incentive efforts are focused on the voluntary turnover of mobile sources such as agricultural equipment.

Figure 6 shows pie charts of the ROG and NO<sub>x</sub> emission inventories of the four major source categories. The contribution from these source categories to the total ROG emissions in 2020 is 23% from stationary sources, 36% from area-wide sources, 17% from on-road mobile sources, and 24% from other mobile sources. The contribution to the total NO<sub>x</sub> emissions is 9% from stationary sources, 5% from area-wide sources, 43% from on-road mobile sources, and 43% from other mobile sources. The District is responsible for the regulation of stationary and area-wide emission sources, with CARB having direct authority over mobile sources.

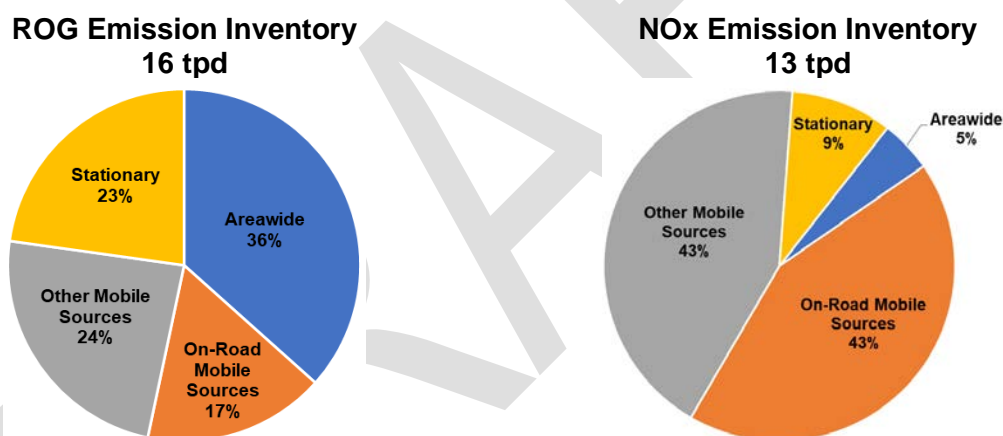


Figure 6. 2020 emission inventories for Placer County.

### 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 VMT could contribute to some of the emission differences in population-related area sources and on-road/off-road mobile sources.

Figure 7 illustrates the growth of the population and daily VMT between 2000 and 2030. According to the data, Placer County's population has increased about 7% from 2015 to 2020. Overall, when comparing the population between 2000 and 2020, Placer County's population has grown about 60%. Based on the growth forecast, the expected population in 2030 would be around 438,000, an expected increase of 10% from 2020 to 2030. The continued population growth contributes to the increases in daily VMT. In 2020, overall VMT in Placer County was estimated at 10.5 million miles per day, about a 41% increase in VMT from 2000 and about a 9% increase from 2015. According to the data forecast, there is an expected increase of 16% from 2020 to 2030. With

Placer County's growth over the last decade, VMT will contribute to emission changes in the future, which will be reflected in the emission inventory trends.

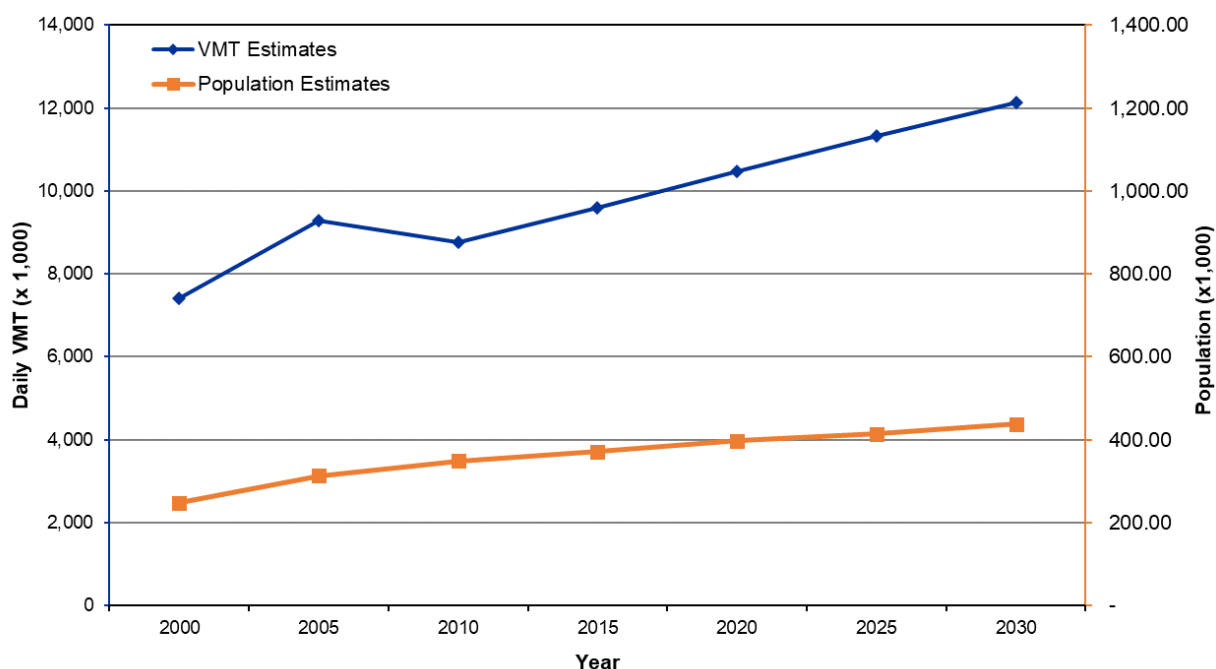


Figure 7. Placer County population and daily VMT.<sup>9</sup>

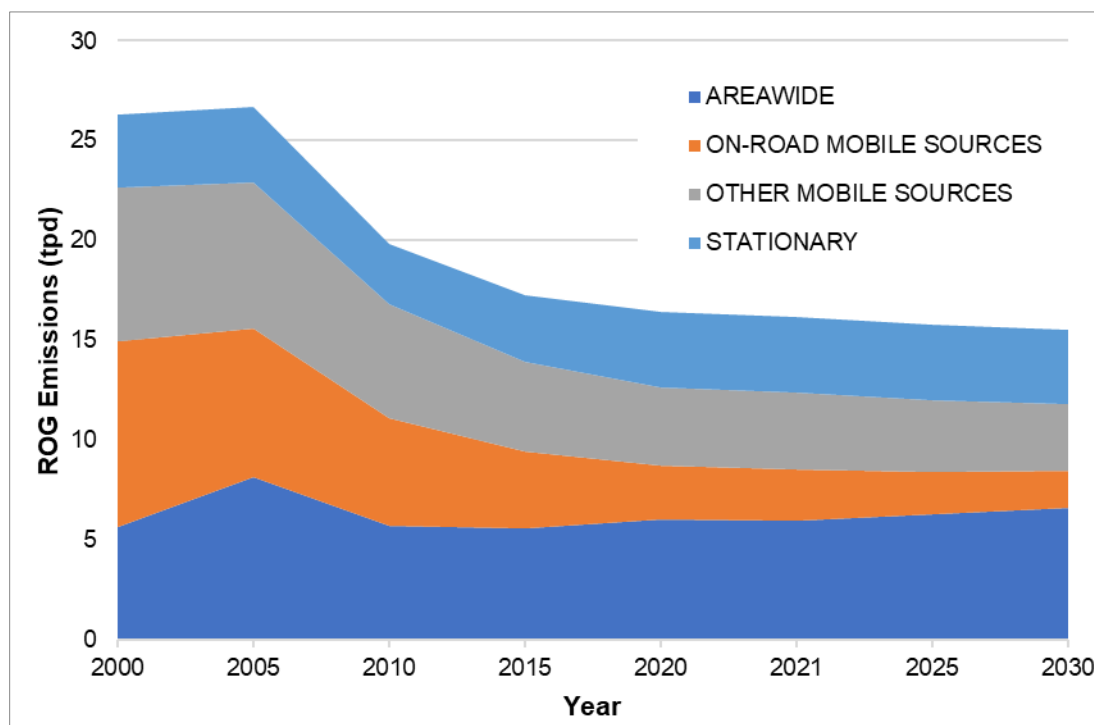
### 3.4 Emission Inventory Trends

Figure 8 and Figure 9 show the declining trend of ROG and NO<sub>x</sub> emissions, respectively, between 2000 and 2030. Between 2000 and 2021, the overall ROG emissions declined 39%, and NO<sub>x</sub> emissions decreased 64%. From 2020 to 2030, overall ROG emissions are expected to continue decreasing 5%, with NO<sub>x</sub> emissions decreasing 20%.

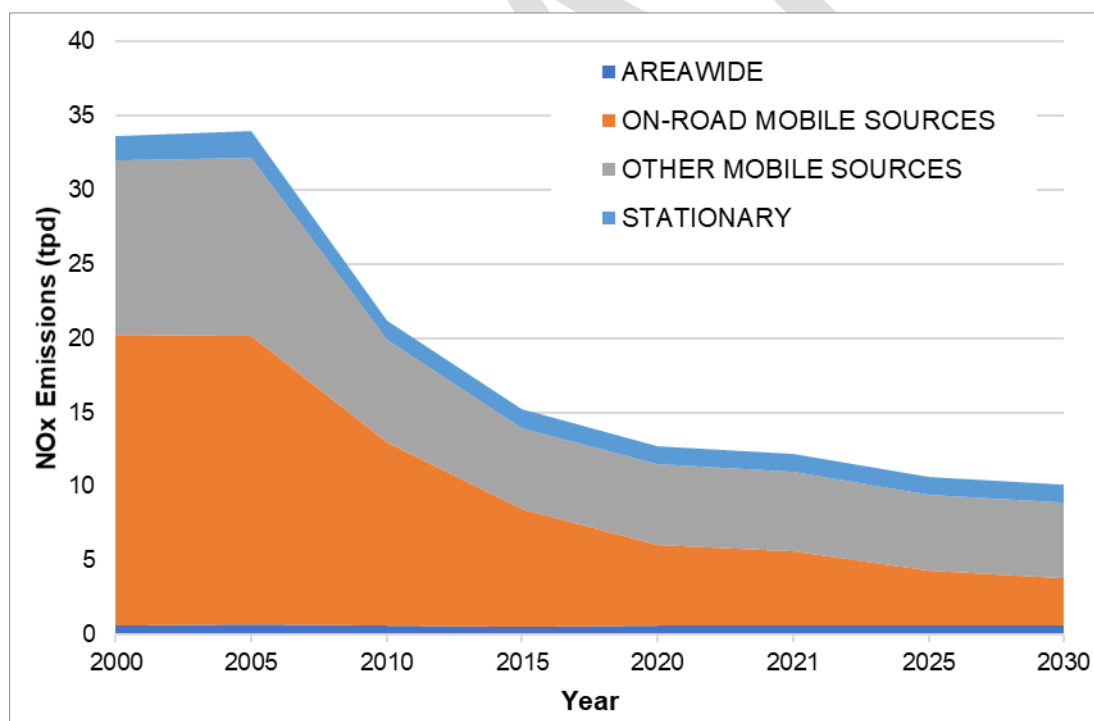
These emission reductions are mostly from the on-road and off-road mobile sources categories, of which CARB has primary regulatory authority. Statewide mobile source regulations such as low emission vehicle programs and reformulated gasoline have been very effective in reducing ROG emissions from mobile sources, despite the significant growth in VMT. 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 NO<sub>x</sub> emissions.

ROG and NO<sub>x</sub> emissions for areawide sources and ROG emissions for stationary sources 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 architectural coatings, surface cleaning solvents, consumer products, and fuel combustion. Despite Placer County's incredible population growth in the last 20 years, NO<sub>x</sub> emissions for stationary sources have decreased.

<sup>9</sup> VMT data source: CARB's Emission Factor model (EMFAC): <https://arb.ca.gov/emfac/emissions-inventory/>. Model version used was EMFAC2017 v1.0.3, and the Summer season was selected. Population data source for 2000-2010: US Census Bureau datasets: <https://www.census.gov/data/datasets.html> Population data source for 2015-2030: Department of Finance Total Population Estimates and Projections: <https://dof.ca.gov/forecasting/Demographics/>



**Figure 8.** Placer County ROG emission inventory trends (base year: 2017).



**Figure 9.** Placer County NOx emission inventory trends (base year: 2017).

The District has focused on rulemaking for stationary and area sources. Several District rules (discussed in the following chapter) have been amended between 2018 and 2020 to control and limit emissions from industrial processes. The existing control efforts from the District’s regulations will continue providing ROG and NOx emission reductions in Placer County in the following years.

### 3.5 Facility Emission Reporting

The local air districts are responsible for calculating and reporting emissions of criteria pollutants from each facility based on its annual operation and throughput data. Emissions from each facility, including small and large facilities, are reported by source-related emission inventory codes (EIC) and are integrated into the emission inventory categories. In general, emissions from all facilities are updated every three years; however, facilities that emit over 10 tons per year (tpy) of any criteria pollutant are required to report their emissions annually. The reported data includes the general facility information and the related emissions. All facilities reported by local air districts are stored in CARB's California Emission Inventory Development and Reporting System (CEIDARS) database. Facility emissions can be reviewed from the CEIDARS online search engine at: <https://www.arb.ca.gov/app/emsinv/facinfo/facinfo.php>.

When Senate Bill (SB) 32 was signed in 2016, its companion bill, Assembly Bill (AB) 197, was also signed by the governor. AB 197 requires CARB to provide the public broader and more user-friendly access to data about climate-changing gases and air quality. To achieve this requirement, CARB enhanced its emission inventory database and created a *Pollution Mapping Tool* (Tool) website for the public to access all emission data, including greenhouse gases (GHG), criteria pollutants, and toxic air contaminants, from facilities when their reported GHG emissions are greater than 10,000 metric tons per year. The Tool provides an interactive platform where users can select facilities by name, location, or industrial sector to obtain the reported emissions and site location on the map. With the Tool, the public is able to locate, view, and analyze emissions of GHG, criteria pollutants, and toxic air contaminants from large industrial facilities in California. Currently, there are six (6) large facilities located within Placer County. CARB's Tool can be accessed at: [https://www.arb.ca.gov/ei/tools/pollution\\_map/pollution\\_map.htm](https://www.arb.ca.gov/ei/tools/pollution_map/pollution_map.htm).

## 4 IMPLEMENTATION OF EMISSION REDUCTIONS IN PLACER COUNTY

The California Clean Air Act (CCAA) under Section 40924 of the HSC requires that each triennial progress plan 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 2018 to 2020.

### 4.1 Reduction from Stationary and Area Source Control Measures

The District has committed to evaluate all 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. Six control measures were committed for evaluation in the 2018 Triennial Progress Report. During this triennial period, the District completed a thorough rule evaluation to determine if the District's existing rules fulfill the Reasonably Available Control Technology (RACT) requirements for ozone precursors, required by the federal 2015 8-hour Ozone Standard Implementation Rule. The RACT report was adopted by the Board on June 11, 2020 and submitted to U.S EPA by CARB on July 31, 2020. Table 5 summarizes the status of each rule which was listed to be considered for amendment/adoption in the District's 2018 Triennial Progress Report<sup>10</sup>.

**Table 5.** Summary of the Rule commitment status in the 2018 Triennial Progress Report.

District Rule Name	Proposed Action in 2018 Triennial Progress Report	Status
Metal Container Coating (Rule 223)	Evaluation of amendment needed to update the VOC exempt compound definition	The RACT report determined that the rule meets U.S.EPA Control Techniques Guidelines (CTG) and is consistent with regional air district rules.
Semiconductor Operations (Rule 244)	Evaluation of amendment needed to update the VOC exempt compound definition	The RACT report determined that the rule meets U.S.EPA CTG and is consistent with regional air district rules.
Surface Coating of Metal Parts and Products (Rule 245)	Evaluation of regional consistency and emission reduction requirement for next regional ozone SIP preparation	The RACT report determined that the rule meets U.S.EPA CTG and is consistent with regional air district rules.
Natural Gas-Fired Water Heaters (Rule 246)	Evaluation of regional consistency and emission reduction requirement for next regional ozone SIP preparation	The RACT report determined that the rule meets U.S.EPA CTG and is consistent with regional air district rules.
Natural Gas-Fired Water Heaters, Small Boilers and Process Heaters (Rule 247)	Evaluation of regional consistency and emission reduction requirement for next regional ozone SIP preparation	The RACT report determined that the rule meets U.S.EPA CTG and is consistent with regional air district rules.
Landfill Gas (Proposed Rule)	Rule adoption to meet the federal and state's requirement regarding solid waste landfills regulation	To be evaluated between 2021-2023.

<sup>10</sup> District 2018 Triennial Progress Report, Table 7-1.

No control measures were amended during this triennial review period (2018-2020); however, several rules were amended by the District during this triennial review period which do not have quantifiable emission reductions. Although emission reductions from these activities are not quantitative, the actions show the District's efforts to look for opportunities to improve air quality.

- District Rule 102, Definitions, Section 228, Exempt Compounds, was amended on June 11, 2020. This amendment updated the District's definition of exempt volatile organic compounds (VOCs) to match that of the US EPA.
- District Rule 301, Nonagricultural Burning Smoke Management (amended August 9, 2018), Rule 302, Agricultural Waste Burning Smoke Management (amended August 9, 2018), and Rule 305, Residential Allowable Burning (amended October 11, 2018) were amended in 2018 to restrict cannabis waste disposal by means of open burning.
- District Rule 503, Emission Statement, was amended on October 8, 2020. The amendment was to respond to the US EPA comments that the rule did not fully satisfy Section 182(a)(3)(B) of the Federal Clean Air Act.
- District Rule 601, Permit Fees, was amended on April 12, 2018 to increase most permit fees and to restructure how some fees are calculated. General permit fees had not been increased since 1998 with the exception of annual Consumer Price Index (CPI) adjustments. Rule 601 was amended again on August 8, 2020 to delay the implementation of the final two annual permit fee increases of 8% (Fiscal Year (FY) 20-21) and 7% (FY 21-22) by one year. This was done to provide relief to Placer County businesses due to the financial hardship caused by the COVID-19 pandemic.

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

Figure 6 shows that mobile sources, including on-road and off-road, contribute about 41% of the total ROG emissions and about 86% of total NO<sub>x</sub> 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 of reducing mobile source emissions.

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

In the portions of Placer County located within the SFONA, the District works with the other local air districts on the development and implementation of the air quality management plan, known as the Sacramento Regional 8-hour Ozone State Implementation Plan (Sacramento Regional Ozone SIP). Mobile sources are recognized as the major contributor in the regional NO<sub>x</sub> 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 in the SFONA. These regional incentive programs include the Sacramento Emergency Clean Air and Transportation (SECAT) Program.

#### SECAT Program

The SECAT Program is a partnership between the Sacramento Metropolitan Air Quality Management District (AQMD) and the Sacramento Area Council of Governments (SACOG) whose goal is to reduce harmful emissions from on-road heavy-duty vehicles operating in the Sacramento region.

During this triennial period (2018-2020), the Sacramento Metropolitan AQMD administered 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. The Sacramento Region has received about \$7.3 million for the SECAT Program between 2018 and 2020. Within this triennial period, there have been 103

on-road and off-road vehicle applications awarded by the SECAT funding in the region, which includes Placer County. This regional market-based incentive program has provided an estimated NOx emission reduction of 12.17 tpy from those projects' lifetime between 2018 and 2020. Actual emission reductions may be greater; however, after 2018 the program began to allow electric vehicles to be purchased without a scrap requirement. These new purchase projects support California's transformation toward zero-emission technologies, but do not create SIP-creditable emission reductions. Table 6 provides additional details on the emission reductions for this program.

**Table 6.** *Estimated emission reductions from the regional SECAT Program.*

<b>Year</b>	<b>Number of Engines</b>	<b>Estimated NOx (tpy) Reductions</b>
<b>2018</b>	37	11.7
<b>2019</b>	32	0.47
<b>2020</b>	34	0
<b>TOTAL</b>	<b>103</b>	<b>12.17</b>

#### Plug In America

Plug In America is a non-profit, supporter-driven advocacy group which promotes vehicles powered by clean, affordable, and domestic electricity to improve air quality and reduce GHGs. As part of their mission, Plug In America created the PlugStar Electric Vehicle (EV) customer engagement platform which provides online tools and resources where car buyers can learn, compare and experience EVs, shop equipment and services, and connect with trained and certified PlugStar dealers to make choosing an EV easy. In San Diego and Sacramento, Plug In America found that trained sales staff sell 3.7 times more EVs than untrained staff, even when both receive a monetary incentive for EV sales.

In the Sacramento area, Plug In America deployed the PlugStar platform in 2018, which was funded by the Sacramento Municipal Utility District (SMUD). The District joined the program in 2019 and began funding incentives in 2020. Throughout 2020, the District helped subsidize 21 EVs for Placer County residents through Plug In America.

While emission reductions cannot be quantified by these sales because they don't require the purchaser to scrap an older vehicle, these subsidized EVs are expected to reduce both ROG and NOx emissions as they displace gasoline and diesel vehicles.

#### **4.2.2 District's Incentive 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 three major sources of funding available for the CAG Program: the Carl Moyer Memorial Program, the DMV Surcharge Fee, and the Air Quality Offsite Mitigation Fund.

From 2018 to 2020, the District has awarded \$6.13 million to emission reduction projects through the CAG program. The overall project lifetime emission reductions for ROG and NOx are about 1.76 tpy and 17.17 tpy, respectively.



**Table 7.** *Estimated emission reductions from the Placer County CAG Program.*

<b>Year</b>	<b>Number of Engines</b>	<b>Estimated NOx (tpy) Reductions</b>
<b>2018</b>	12	5.47
<b>2019</b>	16	5.80
<b>2020</b>	16	5.90
<b>TOTAL</b>	<b>44</b>	<b>17.17</b>

#### Carl Moyer Memorial Program

The Carl Moyer Memorial Program (Moyer Program) is a state-funded program codified in HSC Section 44275 et seq. to provide incentives for the replacement of agricultural pumps and off-road and on-road heavy-duty diesel equipment.

In 2017, CARB revised the Moyer Program guidelines to significantly increase the level of cost-effectiveness and to include new eligible project types such as advanced technologies and alternative fueling infrastructures. In addition, the State legislature adopted AB 1274, which almost doubled the amount of funds that the State collects and allocates to the program's participating air districts. The revised Moyer Guidelines and increased funding made it advantageous for the District to begin administering the Moyer Program in-house starting in 2018. From 2018 through 2020, about \$1.77 million in funding has been received for projects in the District.

#### DMV Surcharge Fee

AB 923 authorized the District to obtain a \$2 surcharge fee on vehicles registered 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 1988 CCAA. The District has allocated these funds to its annual CAG Program. These funds are allocated and managed by the District's Moyer Program to help achieve emission reduction goals for Placer County. From 2018 through 2020, about \$2 million of AB 923 funds has been allocated for projects through the CAG Program.

#### Community Air Protection Program

The Community Air Protection (CAP) Program is intended to identify communities in the State that are disproportionately impacted by emissions. AB 134 appropriated \$250 million in statewide funding to CARB (to be distributed to local air districts) to implement emission reduction projects under CAPP, consistent with the goals of AB 617 (Chapter 136, Statutes of 2017). The District first began administering the CAP Program in 2018 and has received annual allocations from CARB to continue the program since. Throughout the Triennial period, the District's CAP Program funded thirteen (13) projects, investing a total of over \$1.9 million into low-income communities in Placer County.

#### Voluntary NOx Remediation Measure (VNRM) Fund

The Voluntary NOx Remediation Measure (VNRM) Fund was created by CARB after a 2017 Court of Appeal opinion concluded that CARB had failed to adequately analyze potential NOx impacts that may have been caused by the increased use of biodiesel driven by the Low Carbon Fuel Standard (LCFS). The VNRM Fund was to be administered through local air districts and would address the adverse NOx impacts associated with the use of biodiesel by funding emission reduction projects.

The District received \$668,610 in VNRM funds in 2018, which was used to fund six (6) emission reduction projects.

#### Air Quality Offsite Mitigation Fund

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 implementation 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 a project's related air quality impacts when the on-site mitigation is not sufficient.

Since the District began administering its own Moyer Program in 2018, the District's Board of Directors approved an amendment of the Policy Regarding Land Use Air Quality Mitigation Funds on August 9, 2018 to direct staff on how to distribute mitigation funds from land use projects. Accordingly, District staff have implemented air quality offsite mitigation funds independent of the District's Moyer Program and have maintained full discretion on project selection and recommended funding amounts for mitigation funds. In the future, projects selected for air quality offsite mitigation funds will be submitted to the District's Board of Directors for approval.

From 2018 to 2020, the District has awarded \$324,000 to emission reduction projects through the Air Quality Offsite Mitigation Fund.

The projects funded by the above incentive programs are included in the CAG summary presented in Table 7.

#### **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 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 close to 130,000 acres of our forested landscape, 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. Wildfire smoke is a significant source of air pollution, including fine particulate matter (PM), ozone precursors (NO<sub>x</sub> and VOCs), air toxics, and GHGs. It is extremely detrimental to regional air quality and public health. In addition to wildfire smoke, smoke from 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 is teaming 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 following Biomass Program activities took place from 2018 to 2021:

1. Continued sponsorship of forest fuels hazard reduction, biomass waste for energy, and prescribed burning smoke management projects in Placer County as an alternative to open pile burning and wildfire. Specifically through the District's CAG program, in late 2018 the District committed to provide supporting funds of up to \$300,000 to enable use of excess non-merchantable biomass for renewable energy from hazardous fuels reduction work in the French Meadows area of the Tahoe National Forest. French Meadows is at critical risk for catastrophic wildfire. Funds are from mitigation requirements of an upcoming Bickford Ranch housing development. They will assist with the use of almost 20,000 tons of woody biomass for energy, with a significant projected emission reduction

of almost 70 tons of PM and 80 tons of ozone precursors (20 tons of NOx and 60 tons of VOC), resulting from avoided pile burning and wildfire reduction.

2. Working towards obtaining approval/adoption of two GHG offset protocols from Climate Action Reserve Climate Forward Program that we have developed to quantify GHG (and associated criteria and toxic air pollutants) reductions from: (1) forest fuel treatment of thinning and defensible space clearing to minimize the size and severity of wildfires; and (2) biochar produced from waste forest biomass residues as an alternative to open pile burning.
3. Continuing to conduct a field study with United States Forest Service Rocky Mountain Research Station to quantify emission factors of black carbon, major carbon species, and PM2.5 from the burning of open piled forest biomass residue.
4. Providing technical support to local biomass energy projects including a woody biomass boiler at a ski resort, pyrolyzer/bio-oil generator using urban wood wastes at a landfill, and biomass gasifier/gas turbine at a wastewater treatment plant.
5. Actively participating and coordinating with Federal, State, and local government organizations (including California Natural Resources Agency, California Forestry and Fire Protection, US Forest Service, Placer County Water Agency, and Sierra Nevada Conservancy) to assist with successful Placer County forest restoration efforts.
6. Continuing to advocate to State Agencies for a biomass electricity rate that recognizes the full suite of environmental, societal, and economic benefits. This includes the Public Utilities Commission's microgrid and bioenergy market adjusting tariff, Resource Agency's SB 100, Energy Commission's Electric Program Investment Charge grant program, and CARB's Working Lands Scoping Plan updates.

#### **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 the review process, the District makes recommendations for reducing emissions of air pollutants to mitigate potential air quality impacts. These recommendations are then provided to lead agency 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. This mitigation recommendation is based on the District's Board of Directors' approved 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 a project. If a developer chooses to participate in this program, the mitigation fees received are applied toward emission reduction projects.

During the 2018 to 2020 period, the District received \$445,814 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. Emission reductions attributed to projects funded by mitigation fees are already included in the District's CAG program review section.

#### **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 District, Placer County Facility Services - Solid Waste Division, and Recology (formerly Auburn Placer Disposal Service) jointly sponsored a leaves and pine needles drop off at the Meadow Vista Transfer Station. A debris box for the disposal of leaves and pine needles is located at the Meadow Vista Transfer station during a four (4) month period each year. Information regarding the program is distributed primarily through a "Door Hanger" flyer hung on residents' garbage cans on Recology's routes. Flyers are also distributed to the local schools, along with the posting of information on the District's webpage under "Alternatives to Burning".

The emission reductions are achieved by collecting leaves and pine needles to create compost, instead of burning them. Based on data from the Placer County Facility Services, the overall project's emission reduction for ROG and PM is approximately 13.7 tons (.01 tons/day) and 18.6 (.02 tons/day), respectively, from 2018 to 2020.

#### **4.4.3 Wood Stove Exchange Program**

In FY 2016-17, SB 1613 appropriated \$5 million to CARB for the implementation of a statewide wood stove changeout program with the goal of reducing pollution from woodsmoke to improve air quality and reduce exposure to localized toxic air contaminants and criteria air pollutants. In FY 2018-19, another \$3 million was appropriated for the continuation of the program. From these funds, the District was allocated \$125,000 to implement a wood stove changeout program in Placer County.

Consistent with the state funding guidelines, the District's program provided a financial incentive to residents for replacing their non-EPA certified wood burning appliances with a new EPA-certified wood or pellet stove or insert, or an electric, natural gas or propane heating device. Eligible applicants could receive an incentive of \$500 or \$600, and up to \$2500 if they met low-income eligibility requirements.

The District entered into an implementation agreement with the El Dorado County Air Quality Management District (EDCAQMD) to implement the program for Placer County residents. Under the agreement, EDCAQMD was responsible for application processing, working with applicants, and advertising/reporting as required by CARB. District staff provided basic assistance to the program including conducting wood stove inspections, identifying funding and outreach platforms, and connecting local wood stove retailers with EDCAQMD.

Successful implementation of the program has resulted in the expenditure of all of Placer County's portion of these funds. From 2018 to 2020, 30 changeouts have been completed, 15 of which benefitted low-income households or communities. The replacements resulted in an annual reduction of 69.16 metric tons of CO<sub>2</sub>e, 1.71 tons of PM, and 2.98 tons of ozone precursors (0.08 tons of NO<sub>x</sub> and 2.90 tons of ROG).

#### **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 analyses 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 GHGs 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.

TAP remains an active District program; however, there were no grants awarded during this triennial review period (2018-2020).

#### 4.5 Reduction Summary

Emission reductions from rule amendments, along with reductions from various District programs between 2018 and 2020, are shown in Table 8. District programs achieved a combined ROG and NOx reduction of .01 tpd. Additionally, 0.09 tpd of ROG and NOx were reduced from regional incentive programs.

**Table 8.** Summary of emission reductions from District control strategies between 2018 and 2020 (tpd).

	Program	Emission Reductions	
		ROG (tpd)	NOx (tpd)
Regional Emission Reduction Programs	Regional Mobile Source Incentives	<i>Not calculated</i>	0.01
	Spare the Air	0.00	0.00
<b>Total Emission Reductions from Regional Programs</b>		<b>0.00</b>	<b>0.01</b>
District Emission Reduction Programs	CAG	0.00	0.05
	Fallen Leaves and Pine Needle Drop-off	0.02	<i>Not calculated</i>
	Woodstove Exchange	0.00	0.00
<b>Total Emission Reductions from District Programs<sup>11</sup></b>		<b>0.02</b>	<b>0.05</b>

<sup>11</sup> Emission reductions occur throughout the SFONA

## 5 COMMUNITY EDUCATION PROGRAM

As a required element under the District's 1991 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 26<sup>th</sup> year of operation in 2021 since it was created in 1995. This program is a cooperative effort by the EDCAQMD, Placer County Air Pollution Control District, Sacramento Metropolitan AQMD, and Yolo-Solano AQMD for the Sacramento Region. To maintain statewide program consistency, this program is coordinated with the STA 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](http://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 3,700 businesses, community groups and schools which are STA partners and 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 broadcast during Sacramento weather forecasts and printed on the weather page of the Sacramento Bee.
- Scooter, the STA Mascot, attendance at community events in Placer County.
- Development of educational programs, brochures, and other printed materials distributed to the public, schools, and business community.

Annual evaluations have been conducted since 1995 up until 2019 to assess the effectiveness of the STA program for 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 STA 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.

Since 2018, the survey results show that the level of public awareness for the STA program was at 35% in 2018 and 22% in 2019. There was no survey data published for 2020. The survey estimates the tons of ozone precursors reduced per day as a direct result of the STA program during the 2018-2020 period as follows<sup>12</sup>:

- 2018: 0.058 tons/day
- 2019: 0.015 tons/day
- 2020: no data

## 5.2 Health Advisories

The District publishes health advisories, in collaboration with the Placer County Public Health Division, when air quality is exceptionally poor. Most frequently, this is due to nearby wildfires which release high amounts of PM2.5 and a menagerie of other chemicals and gases, including NOx. This sudden increase in NOx can contribute to the formation of ground-level ozone downwind. To help mitigate the public health impacts of increased PM2.5 and ozone, health advisories provide information on how residents can help protect themselves, such as limiting outdoor activity and reducing unnecessary driving. They also include a list of symptoms to look for and remind readers to contact a health professional if they experience serious symptoms. Finally, the advisories provide further resources for readers to stay abreast of changing air quality conditions.

## 5.3 Additional Public Outreach Efforts

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

- Participation in Earth Day and other public events
- Response to public inquires and continued news media coverage
- Development of the District's website ([www.placerair.org](http://www.placerair.org)) to enhance public service
- Development of informational brochures, newsletters and fact sheets

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<sup>12</sup> 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 required 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 which impact downwind districts with their transported air pollution, implement control measures that are at least as stringent as the downwind district. 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 the District 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<sup>13</sup>. 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 an 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 tpy – the same thresholds adopted by the San Joaquin Unified Air Pollution Control District – 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.

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<sup>13</sup> 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 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 and Table 4, the overall average rate of total ROG and NO<sub>x</sub> emission reductions between 2018 and 2020 in Placer County is about 1.05% and 3.06% 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 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 June 11, 2020, the District's Board adopted the 2020 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 SIP rules fulfill the Reasonably Available Control Technology (RACT) requirements for VOC and NO<sub>x</sub>. RACT review 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 and found that the District's existing rules sufficiently met the RACT requirements, with the exception of Rule 216, Organic Solvents. The District will review Rule 216 for possible amendment within the next Triennial Period, as summarized in Table 9.

In addition to the RACT SIP analysis, the District works with the other local air districts within the Sacramento Nonattainment area to develop an Ozone SIP for the federal 8-hour ozone standard which was revised by the U.S. EPA to a level of 0.070ppm in 2015. Part of the Ozone SIP for the 2015 standard is to conduct an analysis for the 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 2015 ozone standard. Currently, the SFONA is classified as "Serious" with an attainment deadline of 2027. The latest preliminary modeling analysis indicates that the SFONA would need a longer time to attain the 2015 standard. Therefore, the air districts in the SFONA are working on the request to reclassify the area from "Serious" to "Severe-15" and may extend the attainment deadline to 2033. Based on this, the SFONA air districts, in consultation with CARB and U.S. EPA Region IX, will determine the appropriate attainment deadline for the SFONA to attain the 2015 standard. The RACM will be prepared to identify if any feasible control measures should be committed by the SFONA air districts. Any future Ozone SIP commitment will be evaluated in the next triennial period (2021-2023).

Table 9 contains a list of the control measures which could be amended or adopted during the next triennial review period (2021-2023). 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 9.** List of Rules to be considered for amendment or adoption through 2023.

<b>District Rule Name</b>	<b>Proposed Action</b>	<b>Proposed Schedule of Amendment/Adoption</b>
Organic Solvent Cleaning and Degreasing Operations (Rule 216)	Revision to remove Section 104.5 exemption to be compliance with the CTG requirements	Possible amendment between 2021 and 2023
Architectural Coatings (Rule 218)	Revision to include the CARB 2019 Architectural Coatings Suggested Control Measure	Possible amendment between 2021 and 2023
Natural Gas-Fired Water Heaters (Rule 246)	Revision to consider U.S. EPA recommendations concerning current rule	Possible amendment between 2021 and 2023
Natural Gas-Fired Water Heaters, Small Boilers and Process Heaters (Rule 247)	Revision to consider non-critical U.S. EPA recommendations concerning the current rule	Possible amendment between 2021 and 2023

## 7.2 Mobile Source Incentive Programs

For the next triennial review period through 2023, the District will continue to administer the CAG Program to promote emission reductions from on-road and off-road mobile sources in Placer County. In addition, the District will continue implementing the District’s Land Use Air Quality Mitigation Funds policy, which utilizes mitigation fees from land use developments to provide incentives for cost-effective emission reduction projects in Placer County.

## 7.3 Wood Stove Exchange Program

Although the CARB funds have been fully expended, the District has identified other sources of funding to continue to implement the wood stove incentive program in partnership with EDCAQMD. With funding from the U.S. EPA Targeted Airshed Grant, the Tahoe Regional Planning Agency, and District funds, the program will continue for the next five years and plans to fund 831 replacements, although this number could be lower if we have a higher than anticipated percentage of low-income applicants that qualify for the enhanced incentive. The emission reductions will be reported in the next triennial review period.

## 7.4 Additional Emission Reduction Program

In addition to the committed all feasible measure evaluations and the mobile source incentive programs, the District will continue its forest biomass program in the next triennial review period. The District will continue supporting local bioenergy projects to utilize local biomass for microgrids power supply, biomass boilers for local heating sources, and biomass pyrolyzer for biofuel and biochar production. In addition, the District will complete our experimental research quantifying black carbon emissions from open pile burning, provide technical support for evaluation and development of small scale distributed woody forest biomass systems, and continue advocacy for State and Federal policy that advances sustainable forest fuels reduction and waste biomass alternatives. Our forest and biomass projects result in both criteria pollutant and GHG reductions. Furthermore, the District will continue implementing its existing land use program, fallen leaves and pine needles drop-off program, woodstove exchange program, and the TAP program. The performances of these emission reduction programs 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 overall reductions of peak ambient ozone and county-wide exposure to unhealthy concentrations since 2000, which 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 2018 through 2020 time period. 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 9 shows the proposed list of rules to be considered for amendment or adoption for the next triennial review period (2021-2023). Incentive programs such as the CAG Program and the District’s Land Use Air Quality Mitigation Funds policy will continue to assist in reducing additional ozone precursor emissions from mobile sources in Placer County. The District verifies that this triennial progress report demonstrates progress on the efforts set forth in the control plan, towards attaining the state ozone standards in accordance with the CCAA requirements.

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