

**DRAFT**

**2018 VENTURA COUNTY  
TRIENNIAL ASSESSMENT  
AND PLAN UPDATE**

**2015 - 2017**



**October 2018**

VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT  
669 COUNTY SQUARE DRIVE, 2ND FLOOR  
VENTURA, CALIFORNIA 93003  
805-645-1400  
[www.vcapcd.org](http://www.vcapcd.org)

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## 1. BACKGROUND AND SUMMARY

In 1988, the California Legislature enacted the California Clean Air Act (CCAA) to attain and maintain the state clean air standards by the earliest practicable date. The CCAA required local air pollution control agencies in areas violating the state ozone, carbon monoxide, sulfur dioxide, or nitrogen dioxide air quality standards to adopt plans to attain those standards by July 1991. On October 8, 1991, the Ventura County Air Pollution Control Board (APCB or Board) adopted the 1991 Ventura County Air Quality Management Plan (AQMP) for the California one-hour ozone standard.

The Ventura County Air Pollution Control Board adopted the 2016 Ventura County Air Quality Management Plan (AQMP) on February 14, 2017. The 2016 AQMP presents a combined local and state clean air strategy based on current Reactive Organic Gases (ROG) and Nitrogen Oxide (NO<sub>x</sub>) emission reduction to bring the Ventura County into attainment of 2008 federal 8-hour ozone standard by 2020, as required by the federal Clean Air Act Amendments of 1990 and applicable U.S. EPA clean air regulations. Ventura County remains in attainment of the state and federal lead, carbon monoxide, sulfur dioxide, nitrogen dioxide, and PM<sub>2.5</sub> standards.

The 2018 Triennial Assessment shows that Ventura County is still making significant progress towards meeting the state ozone standards. Furthermore, the 2018 Triennial Assessment has not identified any deficiencies regarding meeting progress goals towards the state one-hour ozone standard. The “every feasible measure” analysis conducted for the 2018 Triennial Assessment did, however, identify four existing District rules with potential for enhancement and one new control measure to comply with AB-617 Best Available Retrofit Control Technology (BARCT) requirements. These control measure would help Ventura County continue its progress towards attaining the state ozone standards.

## 2. TRIENNIAL ASSESSMENT AND PLAN UPDATE REQUIREMENTS

The CCAA requires that once every three years, beginning in 1994, the state’s air districts are to assess their progress towards attaining the state clean air standards, determine the amount of emission reductions achieved over each three-year period, correct any deficiencies in meeting progress goals, and incorporate new data and projections into their state clean air plans. The assessment period for this plan update is 2015 – 2017.

The California Health and Safety Code (CH&SC) sections [40924](#) and [40925](#) require that triennial assessments include the following:

- Improvement in air quality based upon air quality indicators identified by the ARB (CH&SC section 40924);
- Population-related, industry-related, and vehicle-related emissions growth (CH&SC section 40925);
- Control measures adopted by the District (CH&SC sections 40924 and 40925); and,
- Review of “every feasible measure” (CH&SC Section 40925).

Table 1 provides a summary of all triennial plan requirements and where those requirements are addressed in the 2018 Triennial Assessment.

**Table 1  
CCAA Triennial Assessment Requirements**

| <b>Requirement</b>                            | <b>Submittal</b>  |
|---|---|
| Air Quality Analysis                          | Section 3 & Section 4   |
| Population Trends                             | Section 4   |
| Emission Inventory                            | Section 5<br><a href="#">2016 AQMP</a> – Chapter 2              |
| Vehicle Trips & Vehicle Miles Traveled Trends | Section 5<br><a href="#">2016 AQMP</a> – Chapter 3& Chapter 4,  |
| Control Measures                              | Section 7 & Appendix A<br><a href="#">2016 AQMP</a> – Chapter 3 |
| Control Strategy Cost-Effectiveness           | Section 7.1   |
| Transportation Control Measures               | <a href="#">2016 AQMP</a> – Chapter 3                           |
| Contingency Measures                          | <a href="#">2016 AQMP</a> – Chapter 7                           |
| Every Feasible Measure                        | Section 8 & Appendix A  |
| Expeditious Adoption                          | Section 8   |
| Ozone Transport                               | Section 9   |
| Public Information                            | Section 10  |

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### 3. AIR QUALITY INDICATORS

The California Air Resources Board (ARB) recommends that local districts use three air quality indicators to assess progress in meeting the state ambient one-hour and 8-hour ozone standards: Expected Peak Day Concentration (EPDC), Population-Weighted Exposure, and Area-Weighted Exposure.

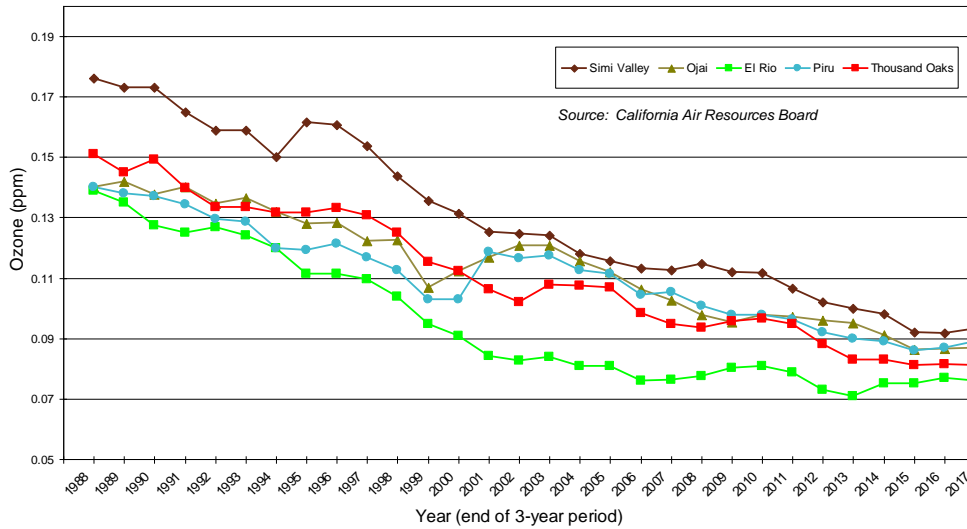
#### Expected Peak Day Concentration

Expected Peak Day Concentration represents the concentration expected to be exceeded at each air monitoring site in the county once per year, on average. It is based on a statistical calculation of daily maximum one-hour and eight-hour ozone data collected at each air quality monitoring site in the county averaged over three-year periods and is presented for the end year of each three-year period. For example, the 2017 EPDC values use 2015 – 2017 monitoring data. The EPDC is useful for tracking air quality progress at individual air quality monitoring locations. Because it uses a robust statistical calculation, it is relatively stable, thereby providing a trend indicator not highly influenced by year-to-year variations in meteorology. It does not, however, reflect the number of people exposed to the ambient ozone levels.

Figure 1 and Figure 2 present the one-hour and eight-hour ozone EPDC trend values for each of the county’s ozone monitoring stations for 1988 – 2017. Peak day ozone concentrations have significantly declined over the period. Peak day ozone levels in the El Rio, Piru, and Thousand Oaks areas are now less than the state’s one-hour ozone standard. Moreover, peak day ozone levels in the El Rio area are now less than the eight-hour ozone standard. Table 2 and Table 3 present the percent reduction in the one-hour and eight-hour EPDC values. Figure 3 and Figure 4 present these reductions graphically.

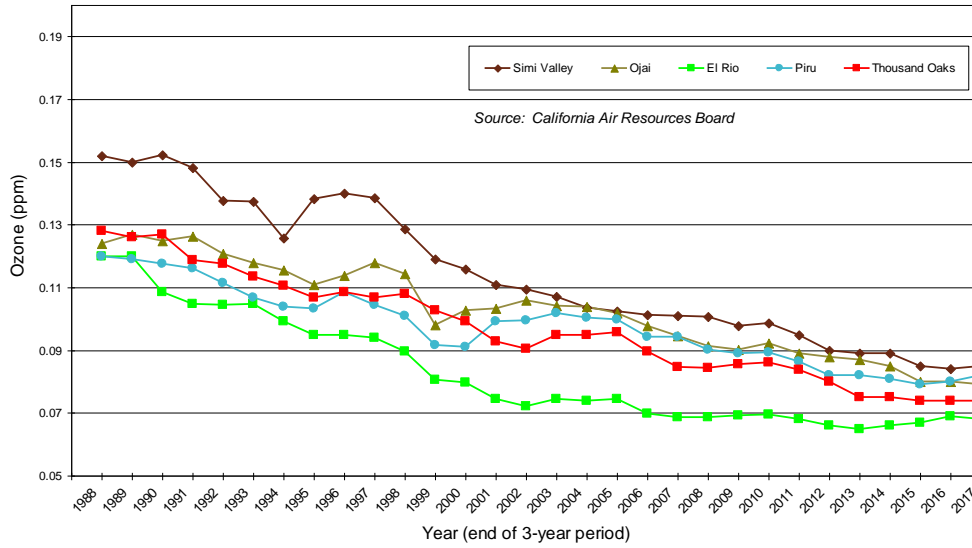
The one-hour EPDC reductions range from a low of 36 percent in Piru to a high of 47 percent in Simi Valley. The average one-hour EPDC reduction was 42.8 percent. The eight-hour EPDC reductions range from a low of 32 percent in Piru to 44 percent in Semi Valley, with the average slightly over 39.5 percent. These averages are an improvement from the corresponding one and eight-hour EPDC average reductions in the 2014 Triennial Assessment of 41.4 and 36.8 percent, respectively.

**Figure 1**  
**Expected Peak Day Concentration Trends for Ozone (1-hour)**



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**Figure 2**  
**Expected Peak Day Concentration Trends for Ozone (8-hour)**



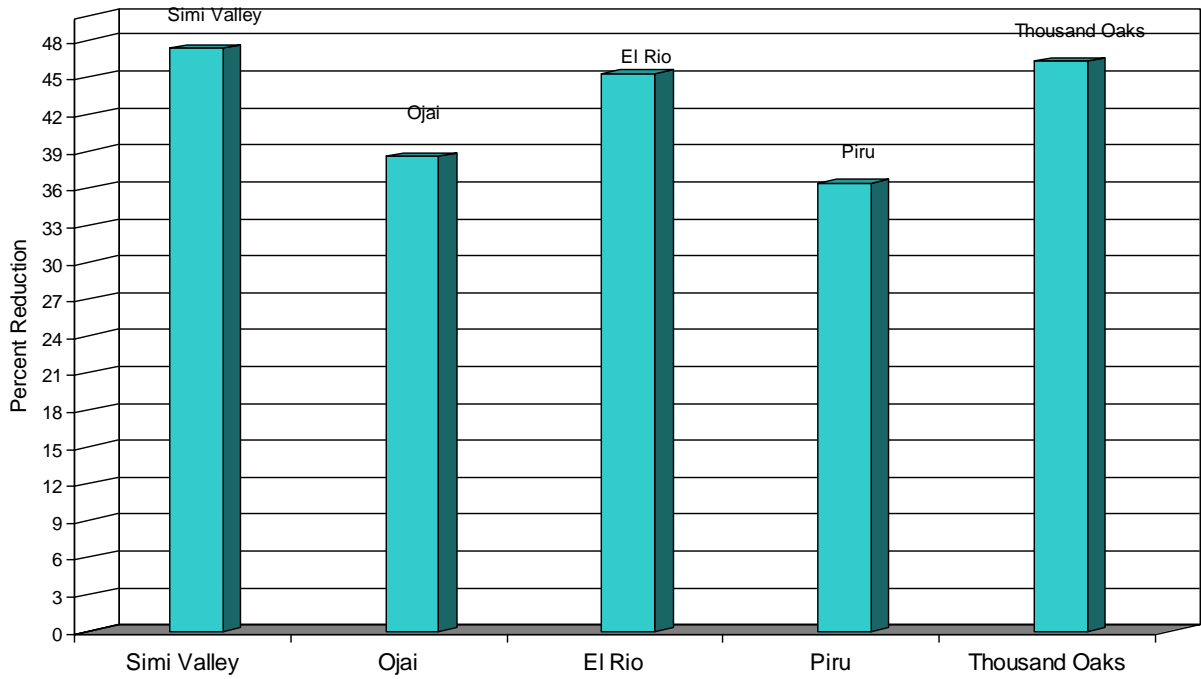
**Table 2**  
**Percent Reductions in Expected Peak Day**  
**1-hour Ozone Concentrations: 1988 – 2017**

| Monitoring Site | 1986 - 1988* | 2015 - 2017* | Percent Reduction from 1988 - 2017 |
|-----------------|--------------|--------------|------------------------------------|
| Simi Valley     | 0.177        | 0.093        | 47.4                               |
| Ojai            | 0.140        | 0.086        | 38.6                               |
| El Rio          | 0.139        | 0.076        | 45.3                               |
| Piru            | 0.140        | 0.089        | 36.4                               |
| Thousand Oaks   | 0.151        | 0.081        | 46.3                               |

\* Expected peak day concentration for ozone, in parts per million (ppm).  
 Source: Air Resources Board (May 2018)

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**Figure 3**  
**Percent Reductions in Expected Peak Day**  
**1-hour Ozone Concentrations: 1988 – 2017**



**Table 3**  
**Percent Reductions in Expected Peak Day**  
**8-hour Ozone Concentrations: 1988 – 2017**

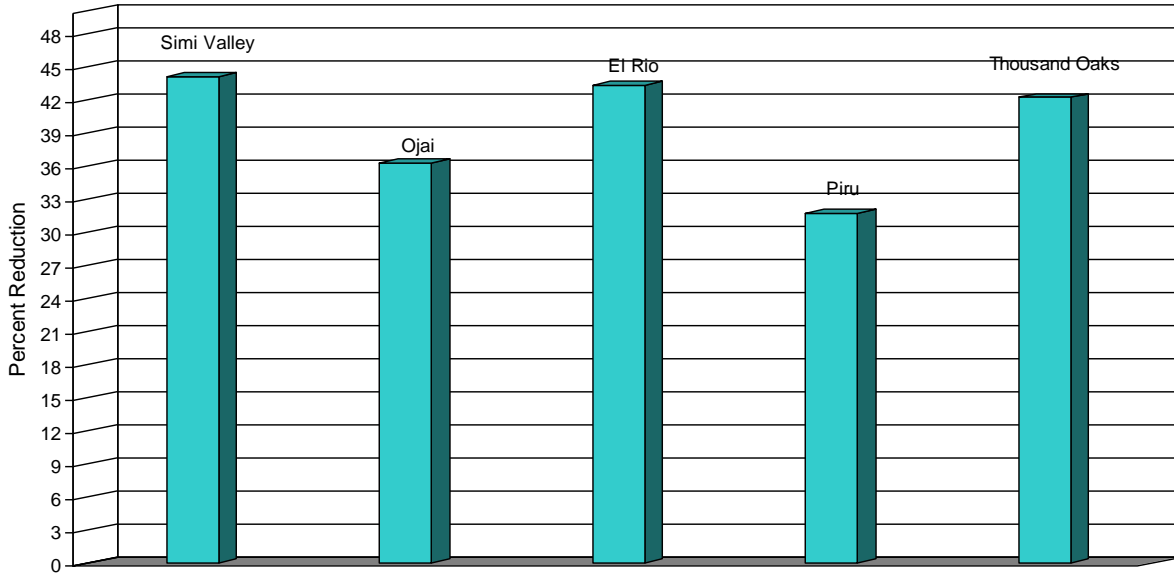
| Monitoring Site | 1986 - 1988* | 2015 - 2017* | Percent Reduction from 1988 - 2017 |
|-----------------|--------------|--------------|------------------------------------|
| Simi Valley     | 0.152        | 0.085        | 44.1                               |
| Ojai            | 0.124        | 0.079        | 36.3                               |
| El Rio          | 0.120        | 0.068        | 43.3                               |
| Piru            | 0.120        | 0.082        | 31.7                               |
| Thousand Oaks   | 0.128        | 0.074        | 42.2                               |

\* Expected peak day concentration for ozone, in parts per million (ppm)  
 Source: Air Resources Board (May 2015)

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**Figure 4**  
**Percent Reductions in Expected Peak Day**  
**8-hour Ozone Concentrations: 1988 – 2017**



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Population-Weighted Exposure

The population-weighted exposure indicator consolidates ozone monitoring data from all air monitoring sites within the county into a single composite exposure value. This composite value characterizes the potential average annual outdoor exposure per person in Ventura County to concentrations above the level of the state ozone standards. The exposure value therefore represents the number of hours multiplied by the ozone concentration over the California standard that the average person experiences, expressed in ppm-hours per person. For example, a measured concentration of 0.13 ppm for two hours represents an exposure of 0.08 ppm hours [(0.13 ppm – 0.09 ppm) x 2 hours] above the state ozone standard of 0.09 ppm.

It should be noted that population-weighted exposure represents the average potential exposure in Ventura County, and not health impacts on individuals. The term “potential” is used, because daily activity affects an individual’s exposure. For example, being indoors during peak ozone concentrations will minimize a person’s exposure to outdoor ozone concentrations.

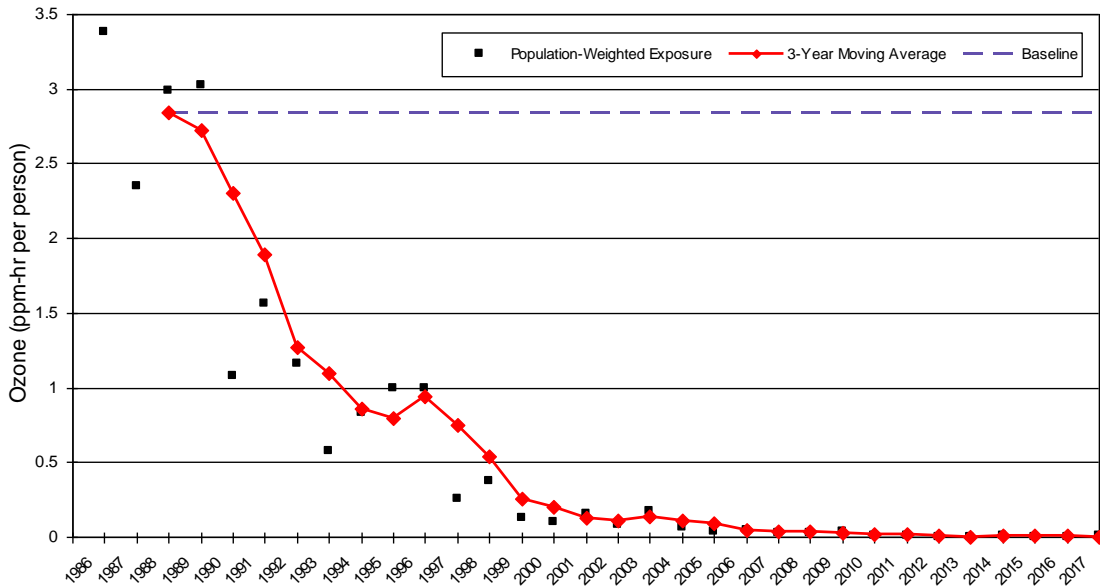
Table 4 and Figure 5 present a summary of the 1-hour ozone population-weighted exposure values calculated by ARB for the 3-year average base period (1986-1988) and the 3-year average end period (2015-2017) for Ventura County. The population-weighted exposure indicator shows a 99.9% decrease from the baseline period (1986-1988). This result shows that remarkable progress has been made in reducing the human population exposure to ozone in Ventura County.

**Table 4**  
**Percent Reduction in 1-hour Ozone Population-Weighted Exposure Indicator: 1988 – 2017**

| Exposure Indicator               | Population Weighted (ppm-hrs/person) |
|----------------------------------|--------------------------------------|
| Base Period (1986-1988) 3-Yr Avg | 2.843                                |
| End Period (2015-2017) 3-Yr Avg  | 0.0027                               |
| Difference (Base – End)          | 2.8403                               |
| Documented Progress              | -99.9%                               |

Source: California Air Resources Board (CARB, 2015)

**Figure 5**  
**Population-Weighted Exposure 1-hour Ozone Trend: 1988 – 2017**



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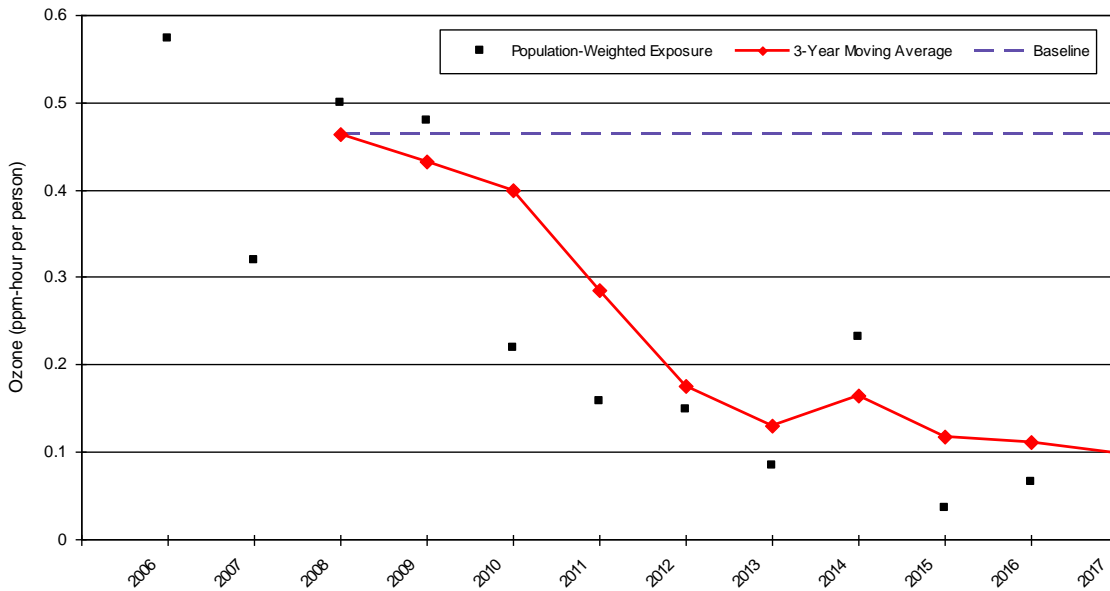
Table 5 and Figure 6 present a summary of the 8-hour ozone population-weighted exposure values calculated by ARB for the 3-year average base period (2006-2008) and the 3-year average end period (2015-2017) for Ventura County. The population-weighted exposure 8-hour indicator shows a 78.6% decrease from the baseline period (2006-2008).

**Table 5**  
**Percent Reduction in 8-hour Ozone Population-Weighted Exposure Indicator:**  
**2008 – 2017**

| Exposure Indicator               | Population Weighted (ppm-hrs/person) |
|----------------------------------|--------------------------------------|
| Base Period (2006-2008) 3-Yr Avg | 0.464                                |
| End Period (2015-2017) 3-Yr Avg  | 0.099                                |
| Difference (Base – End)          | 0.365                                |
| Documented Progress              | -78.6%                               |

Source: California Air Resources Board (2017)

**Figure 6**  
**Population-Weighted Exposure 8-hour Ozone Trend: 2008 – 2017**



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Area-Weighted Exposure

The area-weighted exposure indicator characterizes the potential average annual outdoor exposure per unit area. It represents a composite of exposure around each monitoring site weighted to emphasize equally the exposure throughout Ventura County. It is calculated in a similar fashion to population-weighted exposure, except the census tract ozone concentration is multiplied by the square kilometers in the census tract. Exposures are then summed and divided by the total square kilometers in the county.

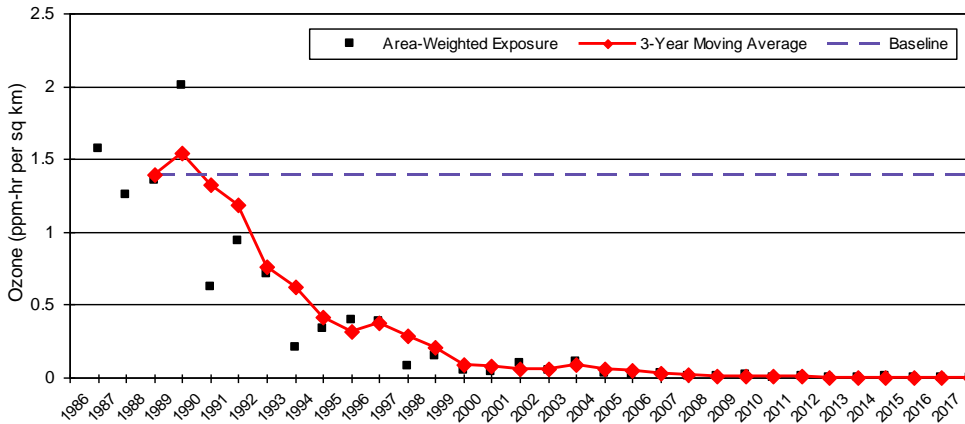
Table 6 and Figure 7 present a summary of the 1-hour ozone area-weighted exposure values calculated by ARB for the 3-year average base period (1986-1988) and the 3-year average end period (2015-2017) for Ventura County. The 8-hour area-weighted exposure indicator shows a 99.9% decrease from the baseline period (1986-1988). This result also shows that remarkable progress has been made in reducing ozone levels in Ventura County.

**Table 6**  
**Percent Reduction in 1-hour Ozone Area-Weighted Exposure Indicator:**  
**1988 – 2017**

| Exposure Indicator               | Area-Weighted (ppm-hrs/sq km) |
|----------------------------------|-------------------------------|
| Base Period (1986-1988) 3-Yr Avg | 1.394                         |
| End Period (2015-2017) 3-Yr Avg  | 0.0012                        |
| Difference (Base – End)          | 1.393                         |
| Documented Progress              | -99.9%                        |

Source: California Air Resources Board (2015)

**Figure 7**  
**Area-Weighted Exposure 1-hour Ozone Trend: 1988 – 2017**



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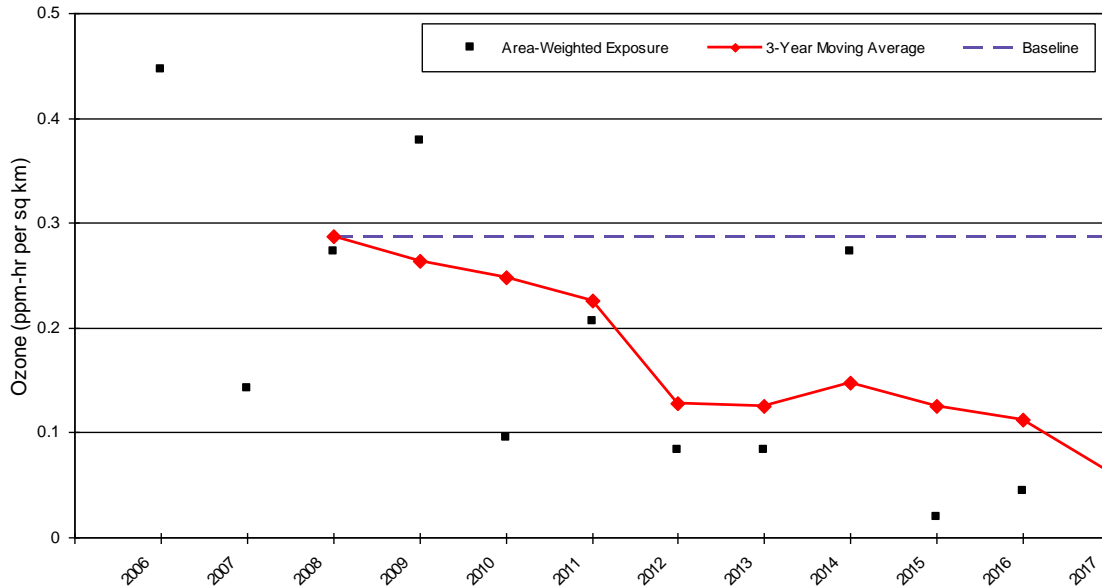
Table 7 and Figure 8 present a summary of the 8-hour ozone area-weighted exposure values calculated by ARB for the 3-year average base period (2006-2008) and the 3-year average end period (2015-2017) for Ventura County. The area-weighted exposure indicator shows a 56.1% decrease from the baseline period (2006-2008).

**Table 7**  
**Percent Reduction in 8-hour Ozone Area-Weighted Exposure Indicator:**  
**2008 – 2017**

| Exposure Indicator               | Area-Weighted (ppm-hrs/sq km) |
|----------------------------------|-------------------------------|
| Base Period (2006-2008) 3-Yr Avg | 0.287                         |
| End Period (2015-2017) 3-Yr Avg  | 0.0633                        |
| Difference (Base – End)          | 0.126                         |
| Documented Progress              | -56.1%                        |

Source: California Air Resources Board (2015)

**Figure 8**  
**Area-Weighted Exposure 8-hour Ozone Trend: 2008 – 2017**

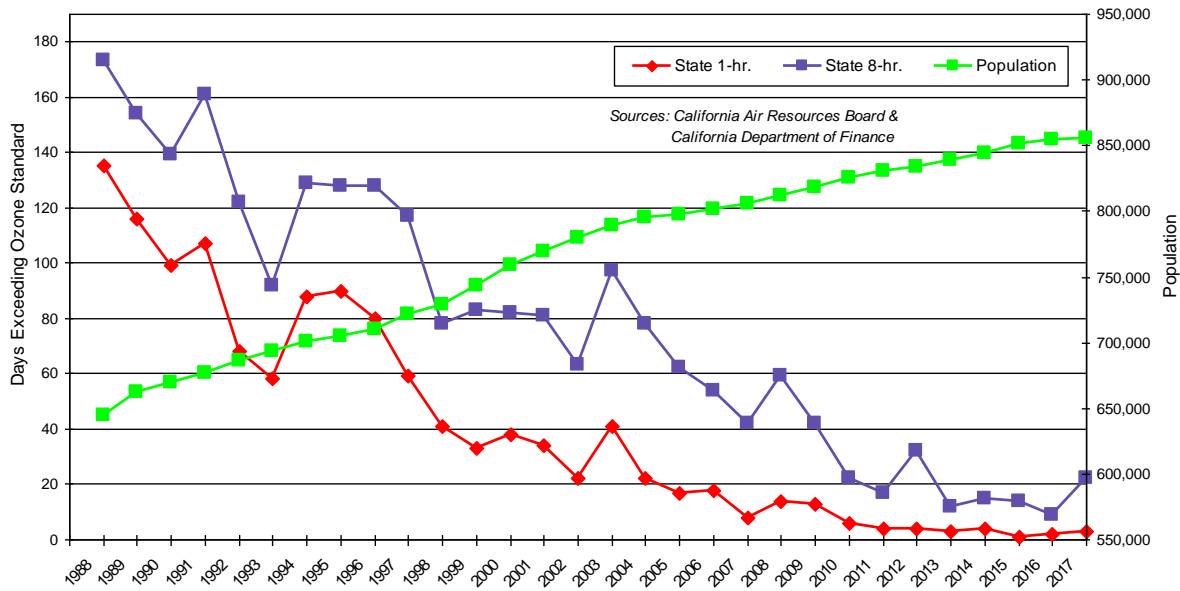


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**4. OZONE AND POPULATION TRENDS**

Figure 9 shows that ambient ozone concentrations in Ventura County have improved dramatically since 1988. In 1988, Ventura County had 135 days and 173 days over the state one-hour and eight-hour ozone standard, respectively. However, in 2017 there were only 3 days over the state one-hour standard and only 22 days over the state eight-hour standard. These improvements have occurred despite an almost 33 percent increase in Ventura County’s population since 1988. The 2017 number of exceedances were more than what the Ventura County experienced in the years 2015 & 2016. This was related to the more frequent and longer lasting periods of atmospheric high-pressure systems aloft.

**Figure 9**  
**1-hour and 8-hour Ozone and Population Trends: 1988 – 2017**



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**5. EMISSION INVENTORY AND MOTOR VEHICLE TRENDS**

This section presents reactive organic gases (ROG) and nitrogen oxide (NOx) emission inventory (onshore Ventura County and within three miles of the coastline) and motor vehicle trends for Ventura County for years 2000 – 2035. Emission forecasts reflect the anticipated effects of socioeconomic changes and implementation of local, state, and federal control measures during the forecast years.

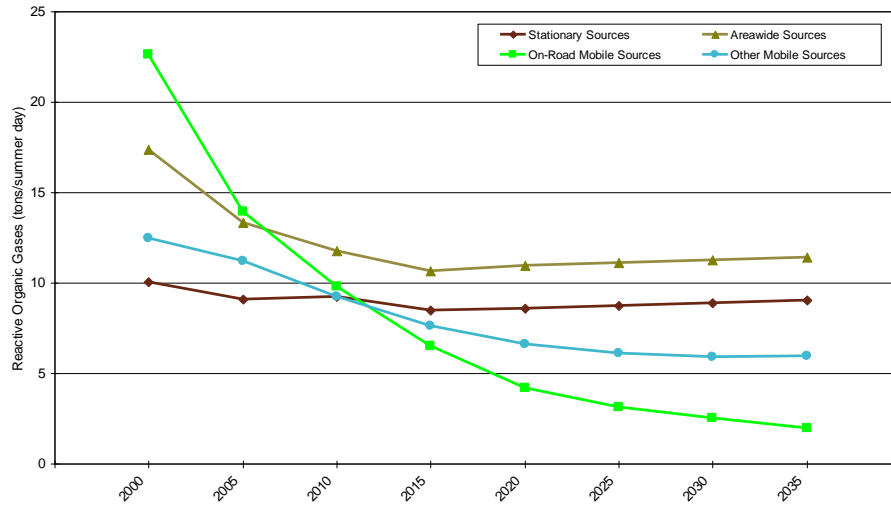
Overall, ROG and NOx emissions are still declining countywide, as they have for many years, continuing Ventura County’s progress towards meeting the state and federal ozone standards. These declines in ozone precursor emissions are occurring despite growing population and motor vehicle usage.

Figures 10 and 11 show past and expected future countywide ROG and NOx emission trends, respectively, from the four major emission categories in Ventura County: stationary sources, areawide sources, on-road mobile sources, and other mobile sources. ROG and NOx emissions from all four categories have declined since 2000 with mobile sources, both on-road and other, showing the greatest ROG and NOx declines, largely due to California’s comprehensive motor vehicle emissions regulations. Moreover, ROG and NOx emissions from both mobile source categories are expected to continue declining out to 2035, but with ROG emissions from the “other mobile source” category starting to level off around 2030. Figure 12 shows that the

decline in on-road motor vehicle emissions has and will continue to occur despite an increase in both vehicle trips and vehicle miles traveled (VMT) in the county.

ROG emissions from stationary and areawide sources have declined between 2000 and 2015 and are expected to begin increasing at a low rate starting in about 2015. This is a consequence of ROG emission increases associated with population and economic growth gradually overtaking further ROG reductions from current and anticipated ROG control strategies.

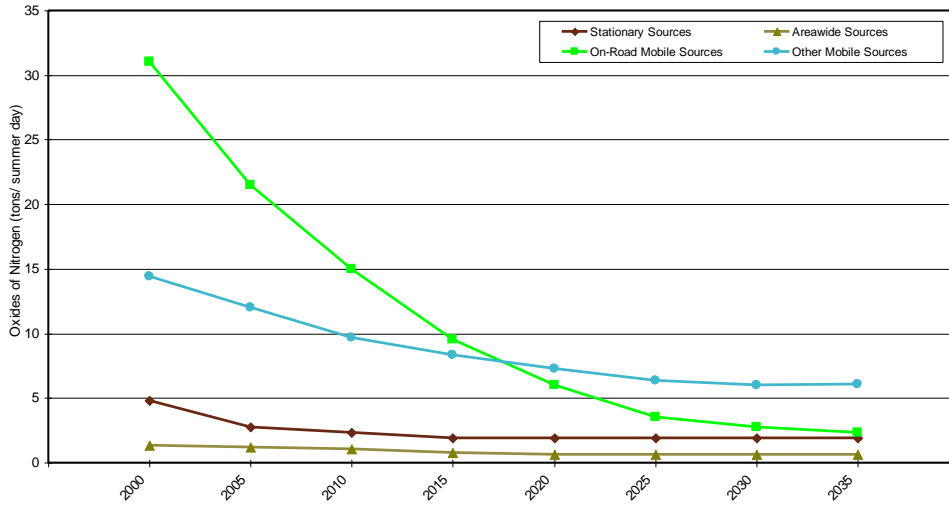
**Figure 10**  
**ROG Emission Trends by Source Category: 2000 – 2035**



Source: CEPAM: 2016 SIP - Standard Emission Tool  
<https://www.arb.ca.gov/app/emsinv/fcemssumcat/fcemssumcat2016.php>

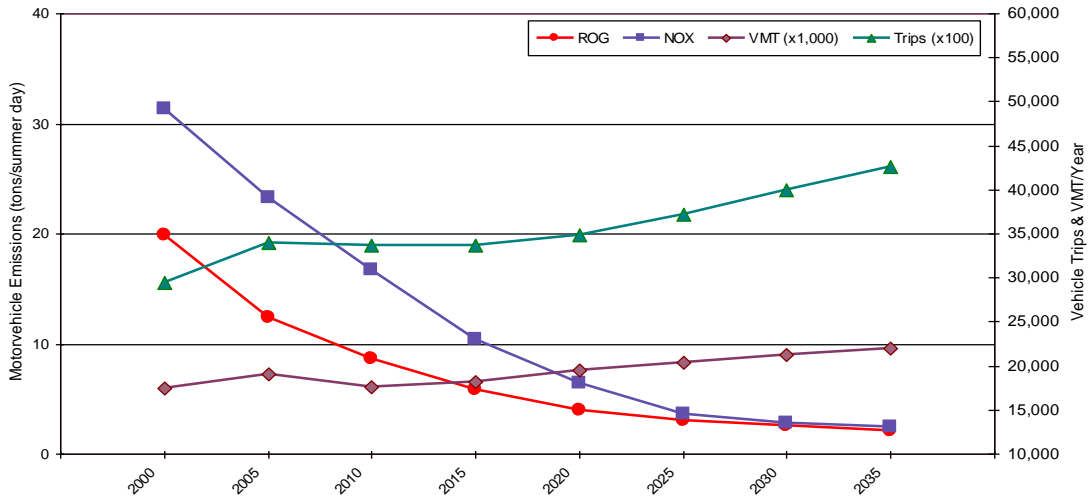
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**Figure 11**  
**NOx Emission Trends by Source Category: 2000 – 2035**



Source: CEPAM: 2016 SIP - Standard Emission Tool  
<https://www.arb.ca.gov/app/emsinv/fcemssumcat/fcemssumcat2016.php>

**Figure 12**  
**Motor Vehicle Emissions, Vehicle Trips, & Vehicle Miles Traveled: 2000 – 2035**

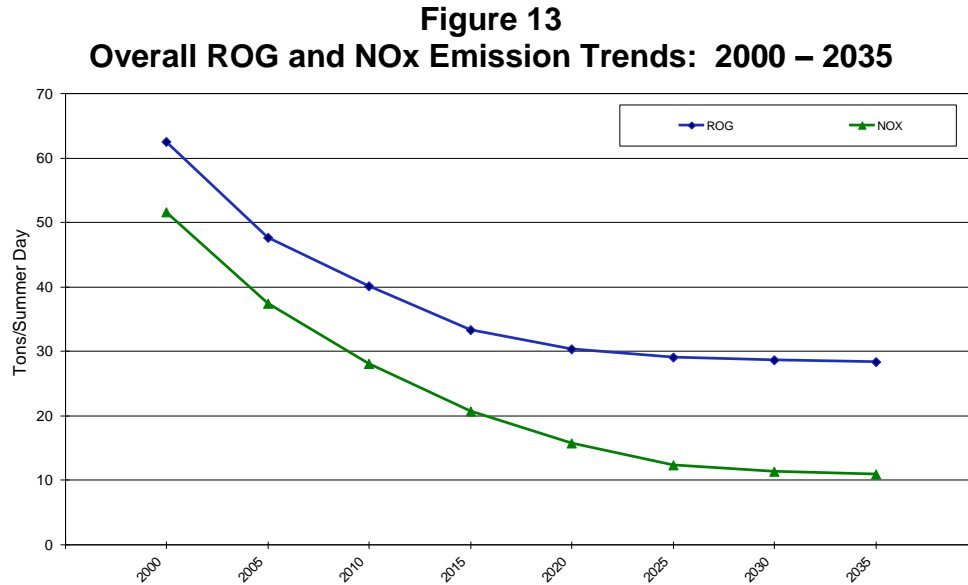


Source: California Air Resources Board's EMFAC2014 Web Database  
<https://www.arb.ca.gov/emfac/2014/>

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Figure 13 shows the overall decline in ROG and NOx emissions in Ventura County from 2000 to 2035. During this time period, ROG emissions are expected to decline by 54.5 percent and NOx by 78.8 percent.



Source: CEPAM: 2016 SIP - Standard Emission Tool (onshore Ventura County only)  
<https://www.arb.ca.gov/app/emsinv/fcemssumcat/fcemssumcat2016.php>

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## 6. OVERALL AIR QUALITY PROGRESS

The air quality indicators presented in Section 3, together with the ambient ozone concentration declines presented in Section 4 and the emission trends in Section 5, show that Ventura County has made exceptional progress towards attaining the state one-hour and eight-hour ozone standards. This improvement should continue as new local, state, and federal control strategies and programs presented in the [2016 AQMP](#) will be implemented.

## 7. AQMP CONTROL MEASURE AND RULEMAKING UPDATE

This section summarizes the District’s rulemaking activity for District rules developed to reduce ROG and NOx emissions during the 2015 – 2017 triennial assessment period. These rules implement emission control measures in the District’s clean air plans for the federal and state ozone standards. This section does not include other rulemaking activities, such as rules for other air pollutants, administrative rule changes, rule language cleanups and fix-ups, and air permitting rules. Information regarding the District’s current rulemaking activities is available on the District’s [Rule Development](#) website.

### 7.1. Control Strategy Cost-Effectiveness

The CCAA requires that an emissions control strategy for the state one-hour ozone standard be cost-effective, when viewed in its entirety. Furthermore, the cost-effectiveness of individual

control measures must be determined and presented in rank order. The 1991 AQMP, prepared for the state one-hour ozone standard, included cost-effectiveness estimates for each proposed control measure. Only those control measures determined to be cost-effective and technologically feasible for Ventura County were included in that plan. Such has been the case for every Ventura County AQMP before or since, including the [2016 AQMP](#), Ventura County’s most recent clean air plan. The proposed rule revisions included in this Triennial Assessment were based on multi-factor evaluations that included estimates of cost-effectiveness. Likewise, District staff will not recommend any rule for adoption unless it is shown to be cost-effective, technologically feasible, and appropriate for Ventura County.

**7.2. District ROG and NOx Rules Adopted or Revised 2015 – 2017**

Table 8 presents those District ROG and NOx rules adopted or revised during the 2015 - 2017 triennial assessment period along with their respective maximum emission reductions and the year in which those reductions are expected to occur.

**Table 8  
ROG and NOx Rules Adopted or Revised 2015 – 2017**

| Rule Number                           | Rule Name                                      | Date Adopted/ Amended | Year Fully Implemented | Year Max Emission Reduction | Pollutant | Emission Reduction (tons/year) |
|---------------------------------------|--|-----------------------|------------------------|-----------------------------|-----------|--------------------------------|
| 74.33                                 | Liquefied Petroleum Gas Transfer or Dispensing | 01/13/2015            | 2017                   | 2017                        | ROG       | 104                            |
| 74.34                                 | NOx Reductions from Miscellaneous Sources      | 12/13/2016            | 2018                   | 2018                        | NOx       | 40                             |
| <b>Total NOx Emission Reductions:</b> |  |                       |                        |                             |           | <b>40</b>                      |
| <b>Total ROG Emission Reductions:</b> |  |                       |                        |                             |           | <b>104</b>                     |

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**7.3. Status of Rules Scheduled for Adoption or Revision 2015 – 2017**

Table 9 presents the status of all four ROG and NOx control rules scheduled for adoption or revision during the 2015 - 2017 triennial assessment period to meet the “every feasible measure” requirements of the CCAA. Of the four rules in Table 9, the District’s governing board has adopted two: Rule [74.33](#), *Liquefied Petroleum Gas Transfer or Dispensing* and Rule 74.34, *NOx Reductions from Miscellaneous Sources*.

Newly adopted Rule 74.33 was based in part on South Coast AQMD Rule 1177, *Liquefied Petroleum Gas Transfer and Dispensing*. The rule limits the ROG emissions associated with the transfer or dispensing of liquefied petroleum gas (LPG). This rule applies to the transfer of LPG to or from any cargo tank, any stationary or portable storage tank, or any cylinder. This rule requires the installation of vapor recovery systems on LPG bulk loading facilities, and the installation of low emission fixed liquid level gauges and connectors on LPG tanks.

Newly adopted Rule 74.34 was based in part on South Coast AQMD Rule 1147, NOx Reductions from Miscellaneous Sources. The rule limits the NOx emissions and CO emissions from combustion sources such as dryers, furnaces, heaters, incinerators, kilns, ovens, and duct burners where the size of the unit is 5 million BTU per hour total rated heat input or greater. This rule establishes NOx and CO emission limits for these sources based on the potential retrofit with low-NOx burner systems.

**Table 9  
Status of District Rules Scheduled for Adoption or Revision 2015 – 2017**

| Rule Number           | Rule Name                                      | Affected Source Type   | Status/Comments   |
|-----------------------|--|--|---|
| 74.32                 | Compostable Material Handling Operations       | Composting, digesting and chip-and-grind operations                    | <i>New rule not yet adopted – adoption date TBD*.</i><br>New rule to meet CCAA “every feasible measure” requirements. |
| <a href="#">74.33</a> | Liquefied Petroleum Gas Transfer or Dispensing | Liquefied petroleum gas transfer or dispensing facilities              | <i>Adopted 1/13/2015.</i><br>New Rule to meet CCAA “every feasible measure” requirements.                             |
| 74.34                 | NOx Reductions from Miscellaneous Sources      | Dryers, furnaces, heaters, incinerators, kilns, ovens or duct burners. | <i>Adopted 12-31-2016.</i><br>New rule to meet CCAA “every feasible measure” requirements.                            |

\* To be determined

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**8. EVERY FEASIBLE MEASURE**

CH&SC Section [40914](#) requires that clean air plans for attaining the California one-hour ozone standard reduce emissions of ROG and NOx by a minimum of five percent per year, averaged over each consecutive three-year period. The 1991 Ventura County AQMP did not meet that emission reduction target. However, it was able to satisfy the alternative requirement of including “every feasible measure (also known as “all feasible measures”) and an expeditious adoption schedule,” as allowed by CH&SC Section [40914\(b\)\(2\)](#). On August 13, 1992, the ARB approved the 1991 AQMP based on this “every feasible measure” determination of progress.

District staff has conducted “every feasible measure” assessments for all the District’s triennial assessments. For this triennial assessment, District staff reviewed ROG and NOx rules adopted by the South Coast AQMD, the San Joaquin Valley APCD, the Bay Area AQMD, the Monterey Bay Unified APCD, Sacramento Metropolitan AQMD, and the Santa Barbara County APCD, with an emphasis on those adopted since the last “every feasible measure” assessment completed in 2015. Table 10 only includes those rules in the District’s last “every feasible measure” assessment that are still to be fully considered for adoption in Ventura County. It also includes the rules that are required to be amended and proposed to meet Best Available Retrofit Control Technology (BARCT) requirements, per Assembly Bill (AB) 617.

Appendix A presents a summary of the “every feasible measure” analysis conducted for this Triennial Assessment.

The District commits to rulemaking for the rules in Table 10, during which District staff will further evaluate the feasibility (including a cost-effectiveness assessment) of each for Ventura County. Emission reductions will be estimated for those rules determined to be feasible prior to rule adoption. District staff believes that Ventura County APCD rules implement “every feasible measure” for all other emission source categories under its jurisdiction.

It should be noted that several control measures that were in previous AQMPs or Triennial Assessments were not retained in the [2016 AQMP](#) for either the federal eight-hour ozone standard or the state one-hour ozone standard, and therefore are not addressed in this Triennial Assessment.

**Table 10  
ROG and NOx Rules Potentially Feasible for Ventura County**

| Rule Number           | Rule Name  | Control Measure Description   | Rule-making Schedule |
|-----------------------|--|---|----------------------|
| <a href="#">71.3</a>  | Transfer of ROC Liquids  | Revise rule to comply with AB-617 BARCT requirement based on San Joaquin Valley APCD Rule 4624  | 12/2022*             |
| <a href="#">74.2</a>  | Architectural Coatings   | Revise rule to reduce ROG emissions from architectural coatings by limiting the allowable ROG content of previously unregulated colorants used to tint coatings; establishing ROG limits for certain new coating categories; and reducing the allowable ROG content for several existing coating categories similar to South Coast AQMD Rule <a href="#">1113</a> . | TBD                  |
| <a href="#">74.10</a> | Components at Crude Oil and Natural Gas Production and Processing Facilities | Revise rule to comply with AB-617 BARCT requirement based on San Joaquin Valley APCD Rule 4409  | 6/2023               |
| <a href="#">74.15</a> | Boilers, Steam Generators and Process Heaters                                | Revise rule to comply with AB-617 BARCT requirement based on San Joaquin Valley APCD Rule 4306.   | 6/2021               |
| <a href="#">74.20</a> | Adhesive and Sealants  | Revise rule to set new ROG emission limits for adhesives and sealants similar to those adopted in South Coast AQMD Rule 1168, excluding those emission limits that require a future technology assessment.  | 10/2018              |
| <a href="#">74.22</a> | Natural Gas Fan-Type Central Furnaces  | Revise rule to limit NOx from natural gas fan-type central furnaces to levels consistent with South Coast AQMD Rule <a href="#">1111</a> .  | TBD                  |
| <a href="#">74.23</a> | Stationary Gas Turbines  | Revise rule to comply with AB-617 BARCT requirement based on San Joaquin Valley APCD Rule 4703.   | 1/2020               |
| 74.32                 | Compostable Material Handling Operations                                     | Adopt a new rule to limit VOC emissions from compostable handling operations consistent with South Coast AQMD Rules <a href="#">1133.1</a> and <a href="#">1133.3</a> and state requirements.   | TBD                  |
| TBD                   | Flaring or Flare Minimization  | Adopt a new rule to control gas flaring at oil and gas facilities similar to Bay Area AQMD Rule <a href="#">12-12</a> and/or South Coast AQMD Rule <a href="#">1118</a> / or San Joaquin Valley APCD Rule 4311 .  | 12/2023              |

\* To be determined

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## 9. OZONE TRANSPORT

The CCAA directs ARB to assess the contribution of ozone and ozone precursors in upwind basins or regions on ozone concentrations that violate the state ozone standard in downwind basins or regions. The movement of ozone and ozone precursors between basins or regions is termed ozone transport. The CCAA also directs ARB to establish mitigation requirements for upwind districts commensurate with their contributions to the air quality problems in downwind basins or regions.

Over the last decade, ARB has published several transport reports that include assessments of transport relationships between air basins and regions in California. Along with these assessments, the reports have included mitigation requirements for ensuring that upwind areas do their part to limit the effects of transport on their downwind neighbors. These two important components are available on the following ARB websites: [Transport Assessments](#) and [Transport](#)

Mitigation. ARB completed its most recent transport assessment, [\*Ozone Transport Mitigation in California\*](#), in 2004.

ARB transport assessments indicate that Ventura County, as part of the South Central Coast Air Basin, impacts ozone levels in the South Coast Air Basin. This means that Ventura County must comply with ARB's transport mitigation requirements. The District complies with these requirements through its rules and permitting programs, including adoption of "every feasible measure," and application of BARCT to existing sources of ozone precursors. The county's greatly improved air quality over the last 26 years provides direct evidence that Ventura County has mitigated, and is continuing to mitigate, ozone transport between Ventura County and the South Coast Air Basin.

## **10. PUBLIC INFORMATION**

The District has sustained its public outreach by technological and personal interactions which include the VCAPCD website, Skylines publications, media interviews, school events, public events, and providing hand-out materials. From January to August of 2018, the VCAPCD website had over 60,000 views which includes over 16,500 new users. The website provides an array of options, such as daily air quality forecast, payment options, rules and regulations, downloads and contacts just to name a few. Maintaining and updating the website is conducted as needed by our in-house website team.

### **Publication**

Skylines is the APCD's newsletter published every quarter and distributed electronically to our subscribers. Currently we have 89 subscribers and its made available at our site lobby and on our web-site. Our newsletter contains information on Air Pollution Control Board meetings, public outreach events, information regarding legislative changes and changes in solving air pollution in our community.

### **Outreach Events**

The District's most valuable outreach resource has been its own staff by making public appearances and interactions with the public. As of 2018 District staff has attended Earth Day at Thousand Oaks High School, Professional Women's Night at UCSB, our APCO and air quality specialist had radio interviews, attendance at several job fairs, and participation was obtained for the U.S. EPA's Air Quality Flag Program for schools.

### **Advertising Materials**

At every event the District staff attends, material with the Air Pollution Control District name is provided to members of the public and students. We keep stock of advertising materials such as pens, pencils, coasters, almanacs, rulers, activity book, and folders.

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APPENDIX A  
“EVERY FEASIBLE MEASURE” ANALYSIS

## Summary of Analysis

### A.1. Rule [71.3](#), *Transfer of ROC Liquid*

Rule 73.1 was last amended on June 16, 1992. It applies to equipment used to transfer reactive organic compound (ROC) liquids with a Modified Reid Vapor Pressure (MRVP) greater than or equal to 0.5 psia. The provisions of this rule do not apply to the transfer of gasoline or the transfer of ROC liquids via pipeline. The rule requires use of a submerged fill pipe or bottom-loading system for all transfer of ROC into any ROC liquid delivery vessel. In addition, for facilities that have transferred in excess of 20,000 gallons per day for ROC liquid with MRVP of 1.5 psia or higher or 150,000 gallons per year of ROC liquid with MRVP of 0.5 psia or higher, the rule requires a vapor recovery system with a vapor return or condensation system or a vapor disposal system with 90% destruction efficiency.

South Coast Air Quality Management District (SCAQMD) Rule 462 (amended 4/6/2012) and SJVAPCD Rule 4624 (amended 12/20/2007) apply to similar equipment as Rule 71.3. (Note: Since Rule 71.3 does not apply to the transfer of gasoline, the provisions of SCAQMD Rule 462 that apply to gasoline storage and transfer are covered under District Rule 70). However, the throughput, destruction efficiency, and vapor pressure thresholds for vapor recovery requirements in these rules are different from the Ventura County rule. Rule 71.3 requires a destruction efficiency of 90 percent whereas SCAQMD and SJVAPCD rules require 95 percent destruction efficiency. Although the destruction efficiency requirements are different, they are designed to capture sources where controls are cost effective. Rules 462 and 4624 require vapor recovery and/or disposal at facilities transferring between 4,000 and 20,000 gallons per day. Rule 71.3 requires vapor recovery for any source that has ever exceeded 20,000 gallons per day or 150,000 gallons per year. Additionally, Rule 71.3 exempts liquids with MRVP below 0.5 psia, while Rules 462 and 4624 exempt liquids with true vapor pressure less than 1.5 psia. Further evaluation may be necessary to determine whether Rule 71.3 meets the BARCT requirements.

### A.2, Rule [74.2](#), *Architectural Coatings*

Rule 74.2 applies to any person who supplies, sells, offers for sale, or manufactures, blends, or repackages any architectural coating for use within the District, as well as any person who applies or solicits the application of any architectural coating within the District. The rule limits the ROG content of architectural coatings that may be sold and/or applied in the District based on the type of coating. Limits are expressed as “VOC Regulatory” thinned to the manufacturer’s maximum recommendation, excluding colorant added to the tint bases.

Rule 74.2 was last revised on January 12, 2010 as a result of an earlier “every feasible measure” analysis. The revisions integrated the ARB Suggested Control Measure for architectural



coatings adopted on February 1, 2008. South Coast AQMD amended Rule [1113](#), *Architectural Coatings*, on June 3, 2011. The amendments to Rule 1113 established limits on the ROG content of colorants used to tint coatings at the point of sale and certain new coating categories and reduced the allowable ROG content for several existing coating categories.

Since Ventura County is adjacent to the South Coast AQMD, the District has often successfully adopted South Coast AQMD limits on industrial and consumer products. Manufacturers and distributors already handle compliant products, so expanding distribution to an area adjacent to South Coast AQMD jurisdiction is relatively simple and cost-effective.

The staff report for the June 2011 amendments to Rule 1113 shows the ROG limit reductions of 0.4 tons per day for the specified coating types at an average cost-effectiveness of \$7,172 per ton reduced. However, the cost-effectiveness for the individual coating types ranges from \$0 per ton ROG reduced to \$12,952 per ton ROG reduced. Therefore, a detailed cost-effectiveness evaluation must be performed prior to adopting individual coating ROG content reductions in Ventura County.

The June 2011 amendments to Rule 1113 also imposed new limits on the ROG content of colorants used in architectural coatings at the point of sale. The staff report shows these limits generate an emissions reduction of 2.8 tons ROG per day at a cost-effectiveness of \$7,990 per ton of ROG reduced. This includes an incremental cost increase of \$1.80 per gallon of colorant. However, the staff report states colorant manufacturers expect low-VOC colorants to become less expensive than conventional colorants due to the reduction in the amount of glycols used and the reduced volatility in petroleum-based raw materials.

Architectural coating use in Ventura County is only a fraction of the consumption in the South Coast AQMD. Preliminary calculations based on population ratio indicate possible ROG emission reductions of 0.4 tons per day from the reduced ROG limits in specified coating types and colorants. District staff are working with CARB staff to develop a statewide suggested Control Measure that will serve as a model rule to establish BARCT.

### **A.3, Rule [74.10](#), *Components at Crude Oil and Natural Gas Production and Processing Facilities***

This rule applies to fugitive components at crude oil and gas production facilities, pipeline transfer stations, and natural gas processing facilities. Rule 74.10 was last reviewed on March 10, 1998. The rule establishes thresholds for leak classification, requires the facility operator to identify all the leaking components, perform leak measurement according to EPA method, and repair the leaks within the specific timeframe. There are also additional requirements such as operating and inspection requirements, operator management plan, repair requirements, and record keeping. Rule 74.10 employs a two-pronged approach to leak emission reductions. First, sources are required to employ a Leak, Detection and Repair (LDAR) Program to find and

fix leaking components. Second, the rule allows District inspectors to issue Notices of Violations when leaks exceeding certain thresholds are detected by PID detectors. The ability of District inspectors to issue NOVs for leaks found dramatically increases rule compliance and provides an incentive for sources to undertake a diligent LDAR program to avoid potential violations. All the requirements specified in this rule are similar to the fugitive components leak requirements and measurements specified in California Air Resources Board (CARB)'s regulation for Greenhouse Gas (GHG) emission standards for Crude Oil and Natural Gas facilities. District staff will be evaluating if Rule 74.10 complies with the mandate to implement BARCT.

#### **A.4, Rule [74.15](#), *Boiler, Steam Generators and Process Heaters***

Rule 74.15 applies to boilers, steam generators and process heaters with input capacity of 5 million Btu/hr or greater used in all industrial, institutional and commercial operations except water heaters and utility electric power generating units and any auxiliary boiler. Rule 74.15 prohibits NO<sub>x</sub> and CO emissions in excess of 40 ppm and 400 ppm, respectively, from all subject sources except those meeting a low use exemption. Rule 74.15 was last revised on November 8, 1994.

South Coast Air Quality Management District (SCAQMD) Rule 1146 (amended November 1, 2013) and San Joaquin Valley APCD (SJVAPCD) Rule 4320 (amended 10/16/2008) apply to sources similar to those subject to Rule 74.15. Both Rule 1146 and Rule 4320 include tables of NO<sub>x</sub> limits for different categories of combustion sources. The NO<sub>x</sub> emission limits range from 5 ppm for larger units to 25 ppm NO<sub>x</sub> for units fired on landfill gas.

Rule 74.15 will be evaluated to determine if the more stringent NO<sub>x</sub> limit requirements most likely similar to the ones specified in SJVAPCD, will be cost effective in Ventura County.

#### **A.5, Rule [74.20](#), *Adhesives and Sealants***

Rule 74.20 applies to any person who supplies, sells, offers for sale, or manufactures any adhesives, sealants, or adhesive primers. The rule limits the ROG content for specific product categories of adhesives, sealants, and adhesive primers.

Rule 74.20 was last revised on September 11, 2012 as a result of an earlier “every feasible measure” analysis. Those revisions only focused on reducing the ROG emissions from the use of cleaning solvents used for substrate surface preparation and adhesive spray application equipment. This proposed control measure is based on recent amendments to South Coast AQMD Rule 1168, Adhesives and Sealants, which focused on lowering the ROG content limits of certain categories of adhesives, sealants, and adhesive primers. The South Coast AQMD performed a cost analysis for their October 2017 amendments to Rule 1168 by comparing the

cost of complying adhesives with their non-complying counterparts. The cost differential was used to estimate reformulation costs, which are assumed to be passed on to the customer. The cost-effectiveness for product reformulations ranged from \$800 to \$7,400 per tons of ROG reduced.

There are currently no adhesive manufacturers in Ventura County. Since almost all of these adhesive products are currently being sold in county retail stores, the actual cost increase to local residents from this proposed control measure is negligible. The estimated ROG emission reductions from this control measure are approximately 15 tons ROG per year. Over 99 percent of these emission reductions are from unpermitted area sources. District staff has recommended revisions to Rule 74.20 to implement many of the category limits in SCAQMD Rule 1168 for October 2018 Board approval.

#### **A.6, Rule [74.22](#), *Natural Gas Fan-Type Central Furnaces***

Rule 74.22, which limits NO<sub>x</sub> emissions from fan-type central furnaces rated at less than 175,000 BTU per hour heat input, was adopted in 1993. The proposed rule revision would be based on South Coast AQMD Rule 1111, which was revised in 2009 to reduce the NO<sub>x</sub> emissions from these units from 40 to 14 nanograms per joule. This is a technology-forcing control measure and VCAPCD does not intend to adopt this revision until all NO<sub>x</sub> limits in SCAQMD Rule 1111 are achieved in practice. This control measure affects new or replacement units through a sales prohibition and certification requirements. Due to the long lifespan of this equipment, the low emission units will not achieve saturation of in-use sources until 2045 or later. The estimated NO<sub>x</sub> emission reductions are 0.25 tons NO<sub>x</sub> per day, and the estimated cost-effectiveness ranges from \$8,600 to \$19,000 per ton of NO<sub>x</sub> reduced.

#### **A.7, Rule [74.23](#), *Stationary Gas Turbines***

Rule 74.23 reduces NO<sub>x</sub> emissions from stationary turbines with rated output greater than 0.3 MW fueled with gaseous or liquid fuels. Rule 74.23 was last revised on January 8, 2002. The BACT for this type of equipment is determined to be SCR for NO<sub>x</sub> control and Oxidation Catalyst for ROC and CO control. Almost all the permitted gas turbines in the District are equipped with SCR and Oxidation Catalyst except one turbine which is exempt due to the cost effectiveness analysis. Although, all existing units subject to Rule 74.23 are controlled at BACT levels (equipped with SCR with ammonia injection and Oxidation Catalyst) and any new sources would be required to install BACT emission controls, Rule 74.23 will likely be amended to incorporate the more stringent NO<sub>x</sub> limit requirements (most likely similar to the ones specified in SJVAPCD Rule 4703).

#### **A.8, Rule [74.32](#), *Composting and Organic Material Conversion Operations***

This is a proposed new rule that would reduce ROG emissions from composting and organic material conversion operations. This control measure is based on similar requirements from South Coast AQMD Rule 1133.1 (Chipping and Grinding Activities) and Rule 1133.3 (Emission Reductions from Greenwaste Composting Operations) or San Joaquin Valley APCD Rule 4566 (Organic Material Composting Operations).

South Coast AQMD Rule 1133.1 was revised July 8, 2011, to establish Best Management Practices for chipping and grinding of greenwaste to produce materials other than compost, and to better manage stockpile operations. These best practices are consistent with greenwaste processing requirements established by California Code of Regulations (Title 14). Although SCAQMD Rule 1133.1 regulated 70 sources, emission reductions were not quantified for this rule revisions.

South Coast AQMD Rule 1133.3 was adopted as a new rule on July 8, 2011, to establish Best Management Practices for greenwaste composing operations that involves greenwaste, wood waste, manure, or food waste. The estimated ROG emission reductions for a similar rule in Ventura County are 0.045 tons per day, and the cost-effectiveness was estimated at \$1,340 per ton of ROG reduced. Greenwaste composting is an increasing source of VOC emissions in the county which would be subject to this new rule. However, the District does not currently require air permits for these operations, and none of these operations are in the District's emission inventory system. This new rule would be adopted only if subsequent analysis demonstrates it to be a cost-effective control measure.

#### **A.9, Rule XX.X, *Flares***

This is a new proposed rule that would reduce ROG, NO<sub>x</sub>, and SO<sub>x</sub> emissions from operation of flares. This rule will require the open flares (air-assisted, steam-assisted, or non-assisted) in which the flare gas pressure is less than 0.5 psig to meet the provisions requirement of 40 CFR 60.18. There will be specified VOC & NO<sub>x</sub> limits for the ground-level enclosed flares. This rule will require the facility operator to prepare and submit a flare minimization plan to the District for approval. There will be also some monitoring, recordkeeping, flaring event reporting, annual monitoring reporting, and testing requirements. This rule will exempt the flares operated in municipal solid waste landfills. This control will measure most likely be based on similar requirements in SJVAPCD Rule 4311 Flares, adopted on June 18, 2009.