San Joaquin Valley Unified Air Pollution Control District

Attainment Determination Request for the Revoked 1-hour Ozone Standard

May 5, 2014

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

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Attachments

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EXECUTIVE SUMMARY

In 2013, for the first time in recorded history, the San Joaquin Valley air basin (Valley) had zero violations of the federal Environmental Protection Agency's (EPA) revoked 1-hour ozone standard. Based on 2011-2013 ozone concentrations, **the San Joaquin Valley Air Pollution Control District (District) requests that EPA formally determine that the Valley has reached attainment of the 1-hour ozone standard.** The Valley will be the first and only region in the nation to attain a standard after being classified as "extreme" nonattainment by EPA. This reaffirms the effectiveness of the investment and commitment by Valley businesses and residents to reduce emissions and improve public health.

Currently, the Valley is subject to Section 185 nonattainment penalties of approximately $30 million dollars per year due to nonattainment of the revoked 1-hour standard. This matter is currently under litigation with certain environmental groups seeking to increase non-attainment penalties charged to Valley businesses. EPA determining that the Valley has attained the 1-hour ozone standard, would remove exposure by Valley businesses to additional penalties and would return full local control to the Valley for decisions regarding the need, the magnitude, and the expenditure of Department of Motor Vehicle (DMV) dollars.

Penalties notwithstanding, the Valley's businesses and residents have already made significant investments over the past couple of decades in cleaner technologies and practices yielding tremendous air quality benefits. Since 1992, the District has developed and implemented numerous attainment plans and has adopted over 500 of the most stringent rules in the nation to obtain the significant emission reductions needed to demonstrate attainment. The California Air Resources Board (ARB) has also adopted and implemented the nation's toughest mobile source regulations. Businesses and residents have also invested beyond what is required to comply with regulations to accelerate the adoption of cleaner technologies and practices through voluntary efforts, including in partnership with the District through its various incentive programs.

This document supports both a **clean data finding** and a **finding that attainment is due to permanent and enforceable emissions reductions**. The **clean data finding** shows that air monitoring data from the relevant three-year period (2011-2013) meets the 1-hour ozone standard. As regularly documented in annual monitoring network plans, and as recently confirmed in a saturation study in Arvin, the Valley's ozone monitoring network meets monitoring requirements. Analysis shows that a 1-hour ozone exceedance at Fresno-Drummond on August 10, 2012 would not have occurred but for an exceptional event of emissions transported from both structural fires and wild fires. Distinct and separate analysis also shows that this August 2010 exceedance would not have occurred but for transboundary ozone, or "transported anthropogenic background" ozone.

The District and ARB have adopted the nation's most stringent regulations, and these regulations achieve significant reductions in ozone precursor emissions. Meteorological analysis shows that 2011-2013 ozone season meteorology was neither unusual nor the cause of attainment. The District also analyzed vehicle miles traveled and state fuel sales, considered indicators of economic activity, and found that that there wasn't a decrease in economic activity. Each of these elements supports a finding that attainment is due to **permanent and enforceable emissions reductions**.

Many air quality challenges remain for the Valley under existing and more stringent upcoming EPA standards. An EPA finding of 1-hour ozone attainment will enable the Valley to better focus its efforts and investments on these upcoming challenges.

I. ATTAINMENT DETERMINATION REQUEST

Ground-level ozone is produced by a photochemical reaction between oxides of nitrogen (NOx) and volatile organic compounds (VOCs) in the presence of sunlight. The Valley's geography and meteorology exacerbate the formation and retention of high levels of ozone, particularly on hot, sunny summer days.

EPA has established several ozone standards over the years to address the health impacts associated with this pollutant. The first ozone standard, established in 1979, was set at 124 parts per billion (ppb) over a 1-hour exposure. The Clean Air Act (CAA) Amendments of 1990 established attainment planning requirements and attainment deadlines for the 1979 1-hour ozone standard, and the District subsequently adopted various 1-hour ozone plans and plan amendments, including the *2004 Extreme Ozone Attainment Demonstration Plan*.

EPA revoked the 1-hour standard effective June 15, 2005, maintaining that the 84 ppb 8-hour ozone standard adopted in 1997 was more health protective. In response, the District and other agencies nationwide shifted their ozone efforts to 8-hour ozone. However, subsequent litigation and regulatory actions have reinstated many of the revoked 1-hour ozone requirements. The District adopted the *2013 Plan for the Revoked 1-Hour Ozone Standard* in September 2013 to address remaining requirements under the 1-hour ozone standard.

In 2013, for the first time in recorded history, the Valley had zero violations of the federal 1-hour ozone standard. Based on 2011-2013 ozone concentrations (specifically, the "expected number of exceedance days"), **the District requests that EPA formally determine that the Valley has reached attainment of the 1-hour ozone standard**. The Valley will be the first and only region in the nation to attain a standard after being classified as "extreme" nonattainment by EPA.

This report provides supporting documentation to request a formal attainment determination for the 1-hour ozone National Ambient Air Quality Standards (NAAQS) for the Valley. According to EPA guidance, an attainment determination by EPA is needed to revoke the CAA §185 penalty fee program obligations.[1] This document meets the requirements for 1-hour ozone attainment findings set forth by EPA in its 1992 Redesignation Guidance[2] as well as its recent finding that the Sacramento Metro Area was no longer required to collect Section 185 fees.[3] Specifically, this document

[1] Page, Stephen D. Guidance on Developing Fee Programs Required by Clean Air Act Section 185 for the 1-hour Ozone NAAQS, OAQPS, U.S. EPA Memorandum, January 5, 2010.
[2] Calcagni, John. *Procedures for Processing Requests to Redesignate Areas to Attainment*. OAQPS, U.S. EPA Memorandum, September 4, 1992.
[3] EPA, Proposed Rule: Approval and Promulgation of Air Quality Implementation Plans; California; Determination of Termination of Section 185 Fees. 76 FR 28696. http://www.gpo.gov/fdsys/pkg/FR-2011-

supports both a **clean data finding** and a **finding that attainment is due to permanent and enforceable emissions reductions**:

Clean data finding:

- **Monitoring data:** Air monitoring data from the relevant three-year period (2011-2013) meets the 1-hour ozone standard via the "expected exceedance days" test.
- **Monitoring network:** As regularly documented in the District's annual monitoring network plans, the Valley's ozone monitoring network meets all applicable monitoring requirements.
- **Saturation study confirms monitoring approach:** A recent saturation study in Arvin shows that the current monitoring site location is appropriate.
- **Exceptional Event:** A 1-hour ozone exceedance at Fresno-Drummond on August 10, 2012 would not have occurred but for an exceptional event of emissions transported from both structural fires and wild fires. As such, this date should be flagged as an exceptional event and not count towards attainment.
- **CAA 179B Transboundary Ozone Demonstration:** Analysis (distinct and separate from the aforementioned exceptional event analysis) also shows that the August 10, 2012 exceedance would not have occurred but for transboundary ozone, or "transported anthropogenic background" ozone. Therefore, even if EPA were to not concur with the August 2012 exceptional event and the clean data finding, 1-hour ozone nonattainment penalties should be revoked per CAA Section 179B.

Permanent and enforceable emissions reductions:

- **Regulations and emissions reductions:** The District and ARB have adopted the nation's most stringent regulations, and these regulations achieve significant ozone precursor emissions reductions.
- **No unusually favorable meteorology:** Meteorological analysis shows that 2011-2013 ozone season meteorology was neither unusual nor the cause of attainment.
- **No decrease in economic activity:** Analyses of vehicle miles traveled and state fuel sales, indicators of economic activity, shows that there wasn't a decrease in economic activity that is responsible for attainment.

05-18/pdf/2011-12063.pdf. Finalized as 77 FR 64036, http://www.gpo.gov/fdsys/pkg/FR-2012-10-18/pdf/2012-25547.pdf.

II. CLEAN DATA FINDING

A. 2011-2013 DATA MEETS THE 1-HOUR OZONE STANDARD

The attainment test for the 1-hour ozone standard is based on the expected number of exceedance days per year, averaged over a three-year period. A site with an average of 1.0 or fewer expected exceedance days per year, as averaged over a three-year period, meets the standard. In other words, if the site has 3 or fewer exceedance days in a three-year period, and the site operated every day, then that site meets the standard; if that site has more than 3 exceedance days in a three-year period, then it does not meet the standard.

The 1-hour ozone standard is 0.12 ppm rounded to the closest one hundredth. Thus, 1-hour ozone concentrations at or greater than 0.125 ppm are above the standard, and 1-hour ozone concentrations at or lower than 0.124 ppm meet the standard. If any hour in a day is above the standard, then that day is an exceedance day. The highest hourly concentration on a given day is recorded as the 1-hour ozone concentration for that day (though all hourly concentrations are kept on record and analyzed as well).

The EPA's Air Quality System (AQS) database serves as the official repository of ambient ozone data collected by the monitoring network.[4]

Table 1 shows the average number of expected exceedance days per year, per monitoring site in the Valley. This data shows that all Valley sites meet the 1-hour ozone standard based on 2011-2013 data.

[4] U.S. Environmental Protection Agency: Technology Transfer Network (TTN), Air Quality System (AQS): *AQS Web Application.* (2013). Available at http://www.epa.gov/ttn/airs/airsaqs/aqsweb/

Table 1 Average Expected Exceedance Days and Attainment Test

Station ID	Station Name	Measured Exceedances			Expected Exceedances[5]			Average Expected Exceedances	Attainment
		2011	2012	2013[6]	2011	2012	2013		
Bakersfield (San Joaquin Valley Air Pollution Control District portion only)									
0007	Edison	0	0	0	0.00	0.00	0.00	0.0	Yes
0008	Maricopa	0	0	0	0.00	0.00	0.00	0.0	Yes
0014	Bakersfield-CA	0	0	0	0.00	0.00	0.00	0.0	Yes
0232	Oildale	0	0	0	0.00	0.00	0.00	0.0	Yes
2012	Bakers-field-Muni	--	0	0	--	0.00	0.00	0.0	Yes
5002	Arvin-Di Giorgio	0	0	0	0.00	0.00	0.00	0.0	Yes
6001	Shafter	0	0	0	0.00	0.00	0.00	0.0	Yes
Fresno									
0007	Drummond	3	0[7]	0	3.02[8]	0.00[8]	0.00	1.0	Yes
0008/ 0011	First/ Garland	0	1	0	0.00	1.00	0.00	0.3	Yes
0242	Sky Park	0	1	0	0.00	1.00	0.00	0.3	Yes
2009	Tranquility	0	0	0	0.00	0.00	0.00	0.0	Yes
4001	Parlier	1	1	0	1.00	1.00	0.00	0.7	Yes
5001	Clovis	2	0	0	2.00	0.00	0.00	0.7	Yes
Hanford—Corcoran									
1004	Hanford	0	0	0	0.00	0.00	0.00	0.0	Yes
Madera									
0004	Madera-Pump	0	0	0	0.00	0.00	0.00	0.0	Yes
2010	Madera-City	0	0	0	0.00	0.00	0.00	0.0	Yes
Merced									
0003	Merced-Coffee	0	0	0	0.00	0.00	0.00	0.0	Yes
Modesto									
0005	Modesto	0	0	0	0.00	0.00	0.00	0.0	Yes
0006	Turlock	0	0	0	0.00	0.00	0.00	0.0	Yes
Stockton									
1002	Stockton	0	0	0	0.00	0.00	0.00	0.0	Yes
3005	Tracy	0	0	0	0.00	0.00	0.00	0.0	Yes
Visalia—Porterville									
2002	Visalia	0	0	0	0.00	0.00	0.00	0.0	Yes
2010	Porterville	0	0	0	0.00	0.00	0.00	0.0	Yes

[5] All values are from http://www.epa.gov/airdata/ad_rep_mon.html unless noted. The 2011 value for Fresno-Drummond is from this analysis.
[6] 2013 data analysis consists of internal preliminary data as of January 27, 2014. Final certified 2013 ozone data will be available on or by May 1, 2014.
[7] Pending EPA concurrence with the August 10, 2012 Exceptional Event, discussed later in this report (Attachment A)
[8] See missing data analysis later in this report

Expected Number of Exceedances and Missing Data Analysis for Fresno-Drummond Air Monitoring Site for the Revoked 1-hour Ozone National Ambient Air Quality Standard

EPA has defined calculation procedures for determining the expected number of exceedances in 40 CFR 50 Appendix H[9] and the 1979 document, "Guideline for the Interpretation of Ozone Air Quality Standards."[10] Simply put, the average number of exceedances for three consecutive years is based on summing the number of exceedances each year and dividing by three. However, this simple equation only works when the air monitoring site (AMS) has 365 valid measurements for the year, one for each day. EPA recognized that agencies do not collect 365 samples per year, due to occasional power outages, maintenance, audits, and other issues. EPA guidance thus clarifies that the attainment test as:

(# of days in the year ÷ # of valid sample days) x (# of exceedances) =

The product of this calculation must be equal to or less than 1.0 days per year when averaged over three consecutive years.

EPA also recognized that many of the non-sampled days would not be over the standard, and agencies should not be unfairly penalized for missing a sampling day when there was no chance of an exceedance. For example, an ozone analyzer could be taken down for multiple days for extensive maintenance to ensure that the analyzer will operate properly throughout the peak ozone season of summer. To accommodate these situations, EPA allows a clean data finding to include meteorological analysis and/or missing data analysis that shows that no exceedances would have occurred during time periods when monitoring data is not available.[11]

Such was the situation for the Fresno-Drummond AMS in 2011. EPA's website (which does not yet account for meteorological and/or missing data analysis) shows that the expected exceedance days for 2011 at the Fresno-Drummond AMS was 3.3[12]. This would suggest that the Fresno-Drummond AMS would remain nonattainment for 2011-2013. However, in 2011, there was a considerable amount of "missing data" at this site due to a change in data handling procedures (as discussed further below) that flagged winter evenings (when ozone levels are near zero) even though the ozone monitor was functioning properly.

Specifically, between October 1, 2011 and December 31, 2011, a significant amount of ozone data was not reported to EPA for the Fresno-Drummond AMS (06-019-0007) due

[9] 40 CFR 50 Appendix H. http://www.ecfr.gov/cgi-bin/text-idx?SID=649e6c9a12e70461eaa84f163fad1ccf&node=40:2.0.1.1.1.0.1.19.9&rgn=div9.
[10] http://www.epa.gov/ttn/naaqs/ozone/ozonetech/guide-o3.htm
[11] Section 2.2, Guideline for the Interpretation of Ozone Air Quality Standards (EPA, 1979), http://www.epa.gov/ttn/naaqs/ozone/ozonetech/guide-o3.htm
[12] http://www.epa.gov/airdata/ad_rep_mon.html

to changes in data handling procedures. The Flag Code "DA" (Aberrant Data) was applied to many hours.[13] This flag code invalidates the data for that hour, even though the analyzer was functioning correctly, and therefore the District did not meet data completeness requirements for 2011. Missing data has a direct effect on the attainment test for the revoked federal 1-hour ozone standard since the expected exceedance day calculation inflates the number of observed exceedances to account for days with missing data.

On February 11, 2011, the National Air Data Group OID/OAQPS/OAR/EPA sent an e-mail (Attachment C) informing AQS users that EPA was making a fundamental change to the business rules of the AQS database since the existing rules were creating a bias when averaging low values. Negative values for ozone would no longer be allowed by the AQS database, so any negative hourly value was replaced with the flag code of 'DA.' In other words, the flag is only used when ozone levels are near zero (less than 0.007 or 0.008 ppm). Under the old business rules, these values would have been changed to zero, coded with the '9' flag, and considered valid (not missing). In contrast, the newly applied DA flag invalidates the hourly data and is considered as "missing data" by EPA even though the analyzer is functioning correctly.

This change in data handling procedures affected all District sites starting in late 2011; however, the only site significantly affected by this change was the Fresno-Drummond AMS. All of the flagged hours at this site in the winter of 2011 occurred between the hours of 1700 in the evening to approximately 0800 or 0900 in the morning, when ozone levels are low. After a few months of using the new procedures, the District realized that too much data was being invalidated and quickly implemented further changes to the data handling procedures and analyzer settings to limit the number of negative values. These changes were successful in greatly reducing the number of negative values and consequent data invalidations.

Additionally, on the days where evening hours were flagged as "missing" at the Fresno-Drummond AMS in 2011, the ozone analyzers were regularly capturing the daily peak ozone levels in the afternoon. Since afternoon ozone concentrations are higher than evening hours, and afternoon hours did not exceed the standard, it is reasonable to assume that the Fresno-Drummond AMS did not record any 1-hour ozone exceedances from October 1, 2011 to December 31, 2011, in spite of missing data in the evenings. Based on this, if the missing days affected by the procedure described above are included in the total observations, the total sampling for the year would increase from 296 days to 362 days, increasing the year's sampling coverage percentage from 81% to 99%. With 99% data completeness in 2011, an adjustment to 3.3 exceedances in 2011 would no longer be correct, but would rather be adjusted to 3.02 exceedances, as shown in the previous table.

[13] See AMP 350MX and 350 reports from the U.S. Air Quality Systems (AQS) database (January 22, 2014). See also Attachment D.

Furthermore, meteorological conditions during the months of October, November, and December are not conducive to forming high ozone. Since the meteorological conditions during the late fall to early winter time period do not support the formation of high ozone concentrations, one would not expect 1-hour ozone exceedances to occur during these months. Since none of the Valley currently experiences high ozone values in the 4th quarter, it is not reasonable to adjust exceedance days for a year based on missing data during this quarter.

To provide a historical perspective, the following table shows that the maximum ozone value over the last five years during October to December is 0.111 ppm at sites near the Fresno-Drummond AMS location. The last time Fresno County exceeded the 1-hour ozone standard during the months of October, November, or December was in 2001. Since the Valley's last 4th quarter ozone exceedance was in 2001, and since substantial ozone precursor reductions have occurred since that time, the conclusion that Drummond would not expect to observe an exceedance in the fourth quarter of 2011 is supported by an overwhelming weight of evidence.

Table 2 Monthly Maximum Ozone Measurements (ppm) for Air Monitoring Sites Closest to Fresno-Drummond AMS (October-December)

Site	Month		
Fresno-Drummond	**October**	**November**	**December**
2009	0.078	0.081	0.040
2010	N/A[14]	0.070	0.046
2011	0.102	0.052	0.045
2012	0.101	0.069	0.039
2013*	0.089	0.080	0.052
Fresno-First/Garland	**October**	**November**	**December**
2009	0.081	0.080	0.039
2010	0.088	0.056	0.040
2011	0.095	0.048	0.032
2012	0.111	0.073	0.038
2013*	0.083	0.077	0.050
Parlier	**October**	**November**	**December**
2009	0.079	0.067	0.043
2010	0.095	0.064	0.042
2011	0.089	0.056	0.052
2012	0.102	0.080	0.041
2013*	0.093	0.083	0.056

*Based on preliminary data.

[14] The Fresno-Drummond Air Monitoring Site underwent extensive renovations during October and November of 2010.

With the missing data filled in, there was a total of 362 valid sampling days for 2011. Based on this, the new Expected Exceedance Day calculation for the Fresno-Drummond AMS for 2011 is 3.02 days, as opposed to the previous 3.3 days under EPA calculations. With this new calculation, averaging the 2011 value with the 2012 and 2013 values (both zero) gives 1.0, following the required truncation and rounding requirements (see Table 1).

B. The Valley's Ozone Monitoring Network

The District, ARB, and other agencies monitor ozone concentrations throughout the Valley as regularly detailed in the District's *Annual Air Monitoring Network Plan*. The District completed the most recent network plan in 2013 and submitted to EPA on June 25, 2013.[15] This plan summarizes monitoring requirements for various pollutants and demonstrates how air monitoring in the Valley meets or exceeds all applicable requirements for State and Local Air Monitoring Stations (SLAMS).

The number of ozone monitors required is determined by population and measured ozone concentrations in metropolitan statistical area (MSA), which, in the case of the Valley, is by county.[16] Table 3 shows that the Valley has more than the minimum number of ozone monitors required. Figure 1 shows the location of all Valley air monitoring sites.

Most air monitoring sites represent population exposures and maximum concentrations representative of neighborhood and regional scales. Ozone monitoring networks are designed to monitor areas with high population densities, areas with high pollutant concentrations, areas impacted by major pollutant sources, and areas representative of background concentrations. Among the ozone monitors operating in the Valley, the majority are suitably located to measure representative concentrations in areas of high population density, while the remaining monitors are located in high ozone concentration areas, regions intended to measure air moving into Fresno and Bakersfield, and remote areas to measure background ozone concentrations.

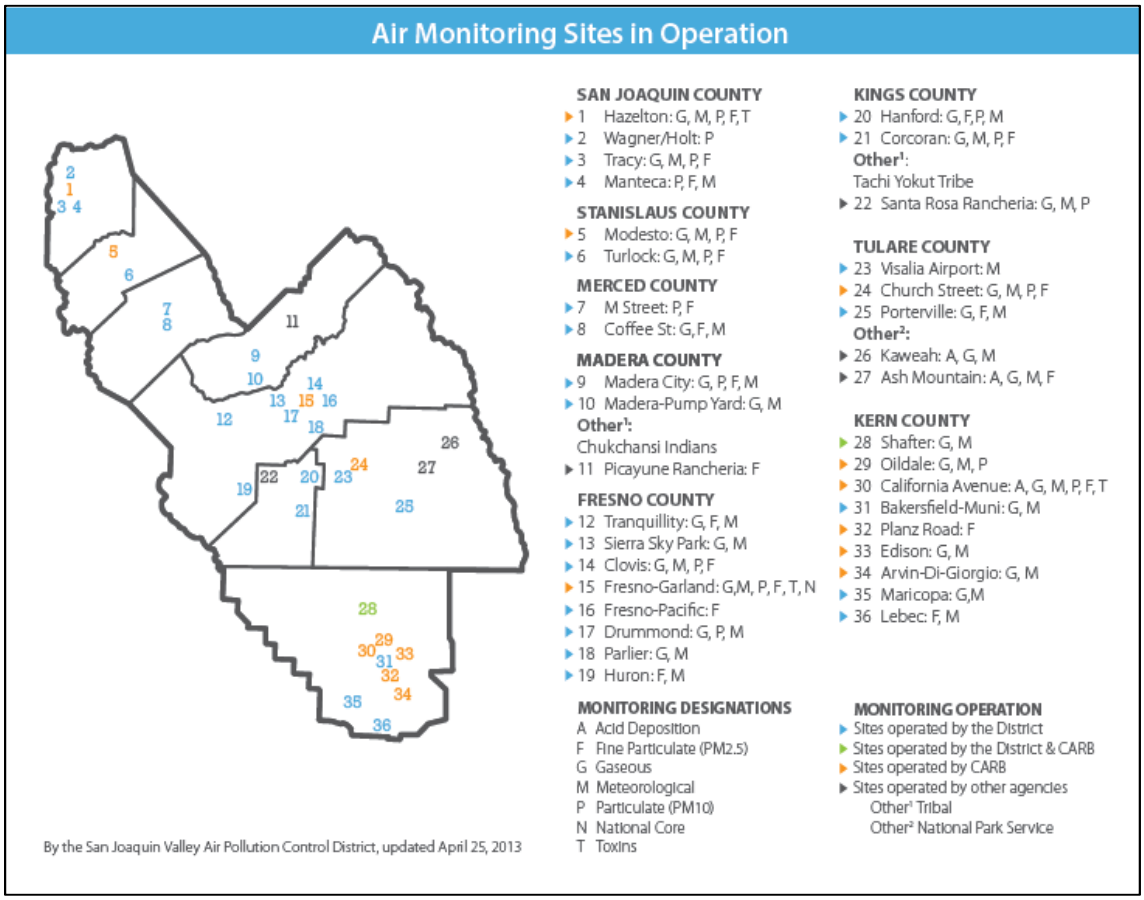
[15] San Joaquin Valley Air Pollution Control District [SJVAPCD]. (2013). *Annual Air Monitoring Network Plan.* Fresno, CA: June 25, 2013 submittal to EPA. Available at http://www.valleyair.org/aqinfo/Docs/2013/AnnualAirMonitoringNetworkPlanandAppendicesAthroughH.pdf
[16] 40 CFR 58 Appendix D, Table D-2. Available at http://www.ecfr.gov/cgi-bin/text-idx?SID=ad681fb521d783d9c2388bbb931138f7&node=40:6.0.1.1.6.7.1.3.37&rgn=div9.

Table 3 Ozone Monitoring Requirements for the Valley

Metropolitan Statistical Area (MSA)	2012 Population	Highest 2012 8-hour Ozone Design Value in MSA (ppb)	≥85% of 2008 8-hour ozone NAAQS (75 ppb)	Number of monitors required	Number of active SLAMS ozone monitor sites
Bakersfield[2]	731,005	93	Yes	2	6
Fresno	945,711	98	Yes	2	5
Hanford–Corcoran	152,419	90	Yes	1	1
Madera	152,074	86	Yes	1	2
Merced	258,736	83	Yes	1	1
Modesto	519,940	88	Yes	2	2
Stockton	695,750	80	Yes	2	2
Visalia–Porterville	450,840	95	Yes	2	2

[1] Air monitors in the Eastern Kern County Air Pollution Control District would count towards the monitors required for the Bakersfield MSA. However, the "Number of active ozone monitors" listed here includes those in the Valley Portion of Kern County only.

Figure 1 Air Monitoring Network in the Valley



C. Evaluation of Monitoring in Arvin

Since 1989, ARB had operated an ozone monitoring station on leased property at the Arvin-Edison Water Storage District (Arvin-Edison). In July 2009, Arvin-Edison informed ARB that the agency was no longer willing to renew the property lease and asked ARB to vacate the site. The District's Executive Director/APCO appeared multiple times before the Arvin-Edison board and requested that ARB be allowed to return the monitoring station to the Bear Mountain site. Ultimately, ARB decided to relocate the station to a new site in the Arvin area, shutting down the Arvin-Bear Mountain site in December 2010 and established a new ozone monitoring station at Di Giorgio Elementary School (19405 Buena Vista Blvd), Arvin, CA.

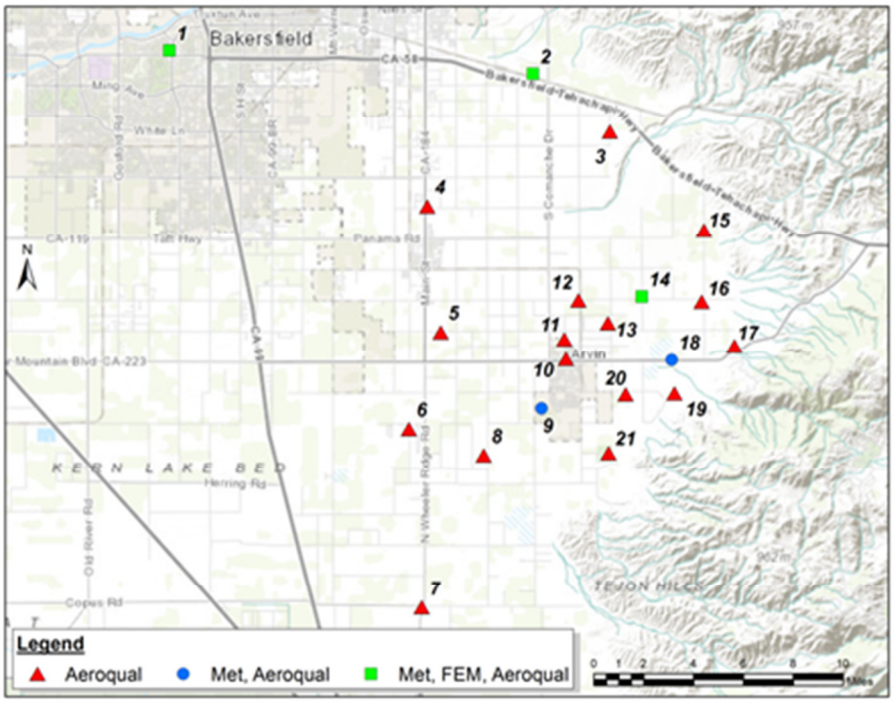
An objective review of available data indicates that the new monitor at the Di Giorgio Elementary School is more representative of Arvin residents' exposure to ozone. However, some individuals have argued that the District should not be allowed to claim attainment with the 1-hour ozone standard without returning the monitor to the old Arvin Bear Mountain location. Additionally, the new monitor measures ozone in close proximity to children at the elementary school, providing for greater public health

protection for this sensitive population. At the urging of these individuals, ARB and EPA have made several unsuccessful attempts to force the private property owners at the old Bear Mountain location to enter into a new lease and allow the return of the monitor.

In May 2013, the District contracted with Sonoma Technologies Inc. (STI) to conduct an ozone saturation study in the Arvin area. The purpose of this study was to measure the relative differences in ozone concentrations in Kern County with a focus on the Arvin area.

STI and their project partners (Providence Engineering and Environmental Group and Winegar Air Sciences) installed and operated a network of 23 temporary, small-scale ozone monitors (Aeroqual Series 500 ozone sensors) at 21 sites (see Figure 2) to collect ozone readings by the minute for approximately six weeks during the 2013 summer ozone season, beginning in mid-August until the end of September. The majority of the monitoring locations for this special study were clustered in and around the community of Arvin with a scattering of samplers farther from the community to examine ozone in the surrounding area. Three samplers were collocated at official federal equivalent method (FEM) monitoring sites (including Di Giorgio) to continually ensure and verify accuracy of the samplers. Surface wind measurements were made at five sites: three permanent wind measurement locations at the ARB air monitoring stations (Bakersfield California Street, Edison, and Di Giorgio), and two temporary locations established for this study at Bear Mountain and at a site in the City of Arvin.

Figure 2 Saturation Study Monitor Locations



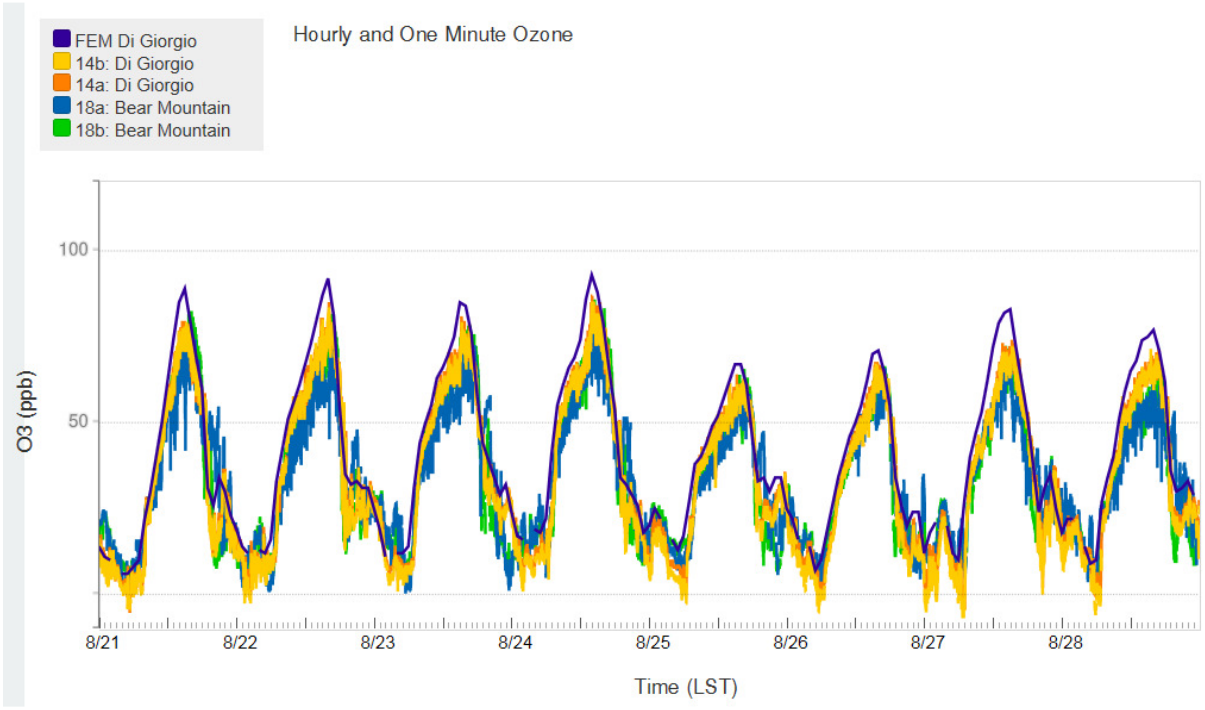
The District contacted the Arvin-Edison Water District requesting authorization for placement of one of the temporary monitors precisely at the same location as the former regulatory site; however, this request was denied. To represent the former regulatory monitoring location at Bear Mountain Road, two locations were selected 0.4 km east of the old regulatory site, with one sensor near the roadway and a second north of the roadway (see Figure 3). Other sites were established to capture ozone concentrations (1) to the west, where the sites would often be upwind of Arvin; (2) in Arvin, where most people in the area live; and (3) in and around the Bear Mountain and Di Giorgio sites.

Figure 3 Bear Mountain Road Monitoring Sites

A close-up view of the area around the old Bear Mountain regulatory monitoring site. Site 18a is about 440 m from the old Bear Mountain site. Site 18b is recessed from the road by about 300 m. Site 18c is the meteorological tower and is about 20 m from Site 18a.

All one-minute sensor data were transmitted in real time to STI's office and posted to a password-protected website for daily data review (see Figure 4). STI assured the quality of the data by reviewing time-series plots of ozone concentrations and sensor quality assurance metadata. Ozone concentrations (1-hr and 8-hr) were then calculated from the quality-controlled 1-minute data. Using the collocation measurements, STI calibrated the data to be "FEM-like." Overall, data recovery rates were excellent at all sites. The ozone samplers functioned admirably during the study period and recorded hundreds of hours of ozone measurements that were effectively identical to measurements at the official monitoring sites.

Figure 4 Saturation Study Data Screenshot



Key Findings

With the successful completion of the saturation study, STI provided the District with a report that includes a number of findings and extensive supporting analysis (see Attachment D). Some of the key findings include:

1. The Di Giorgio monitoring site is highly representative of worst-case high ozone concentrations in the Arvin area around the old Bear Mountain monitor, and, in fact, generally measured higher concentrations than the Bear Mountain sites.
   - On average, peak 1-hr ozone concentrations ranged from 3% - 15% higher at Di Giorgio as compared to Bear Mountain concentrations.
   - Bear Mountain sites experienced fewer days exceeding the 8-hr ozone standard than the Di Giorgio. Concentrations exceeded the 8-hr standard six times at Bear Mountain; whereas, concentrations exceeded the 8-hr standard at Di Giorgio 11 times.

2. The Di Giorgio monitoring site is highly representative of ozone concentrations measured in the City of Arvin. They are well-correlated and of essentially the same magnitude.
   - Relationships for high concentrations of ozone between the Arvin temporary monitors and official station monitors (Bakersfield-California, Arvin-Di Giorgio,

Edison) were evaluated, with the strongest correlation occurring between the City of Arvin and the Di Giorgio monitoring station with an R^2 of 0.79.

3. Accurate equations were developed for predicting the City of Arvin's peak 1-hr and 8-hr ozone equations utilizing measurements from the air monitoring and meteorological network sites.
   - Predicted 1-hr and 8-hr ozone concentrations from the resulting equations versus the observed ozone were strongly correlated with an R2 of about 0.92.

4. Accurate equations were developed for predicting Bear Mountain's peak 1-hr and 8-hr ozone concentrations utilizing measurements from the air monitoring and meteorological network sites.
   - Predicted 1-hr and 8-hr ozone concentrations from the resulting equations versus the observed ozone were strongly correlated with an R2 of about 0.90.

5. Strong gradients in peak 1-hr and 8-hr ozone concentrations are present within and around Arvin. Peak 1-hr ozone concentrations at each site on a given day can vary by as much as 30 ppb. This suggests complex local wind flow patterns in and around the saturation study area.

6. The Arvin Saturation Study helped establish a clearer understanding of the diurnal patterns of ozone throughout the day in the Arvin area.

7. The temporary, small-scale sensors used for the Arvin Saturation Study were sufficiently accurate and precise to measure peak ozone concentrations and assess differences in ozone concentrations in and around Arvin.

D. EXCEPTIONAL EVENT – FRESNO-DRUMMOND (AUGUST 10, 2012)

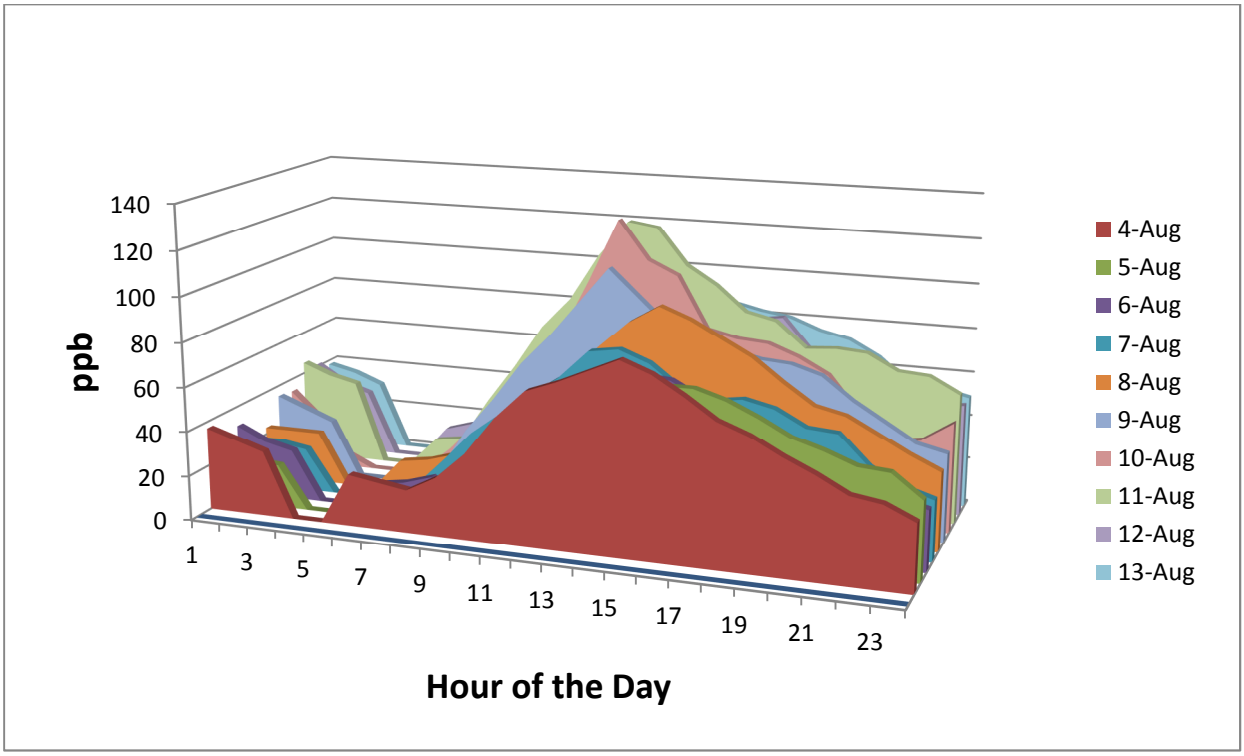
On August 10, 2012, the Fresno-Drummond AMS exceeded the 1-hour ozone NAAQS with a value of 127 ppb. A few days prior to this exceedance, an industrial accident fire at the Richmond Chevron oil refinery (located in the Bay Air Quality Management District) sent emissions into the northern San Joaquin Valley, which were transported by the predominant wind flow into the central San Joaquin Valley, affecting the ozone readings at the Fresno-Drummond AMS. Concurrently, a number of wildfires burning in northern California and within the District's boundary also contributed to the ozone forming potential in the Valley.

According to 40 CFR 50.14 and 50.1(j)(k), emissions from the refinery fire and wildfires fall under the definition of an exceptional event. As detailed in Attachment A of this document, the District demonstrates that this 1-hour ozone exceedance was caused by the combination of these "exceptional events," and would not have occurred but for the contribution of these excess emissions. The high ozone value recorded at the Fresno-Drummond AMS on August 10, 2012 was directly linked to the refinery fire and wildfire

events through a variety of meteorological analyses, including back trajectory analysis, wind flow analysis, satellite retrievals, and analysis of air mass movements.

The exceptional event document also demonstrates that the ozone value experienced on August 10, 2012 at the Fresno-Drummond AMS was in excess of normal historical fluctuations, which is validated through comparisons of historical data and a variety of statistical evaluations. Statistical regression modeling shows what the ozone concentration would have been in the absence of emissions from the exceptional events. This analysis concluded that the peak 1-hour ozone level at the Fresno-Drummond AMS on August 10, 2012 would have been well below the NAAQS of 124 ppb. Figure 5 below shows the abnormal ozone diurnal profiles recorded around the timeframe of the August 10, 2012 event, indicating a much steeper increase of ozone earlier in the day compared to the surrounding days, suggesting influence of emissions from exceptional sources.

Figure 5 Fresno-Drummond AMS Diurnal Ozone Profiles from August 4 through August 13, 2012



This analysis shows that the 127 ppb 1-hour ozone reading at the Fresno-Drummond AMS on August 10, 2012 would have been at or below the 124 ppb standard but for the influence of exceptional events; therefore, this value should not be included in attainment test calculations. The District made the exceptional event documentation available for public review and comment during the period of December 18, 2013

through January 17, 2014. The District received only one comment, which was supportive and in agreement with the analysis.

E. Influence of Transboundary Anthropogenic Background (TAB) Ozone on Attainment of the Ozone Standard

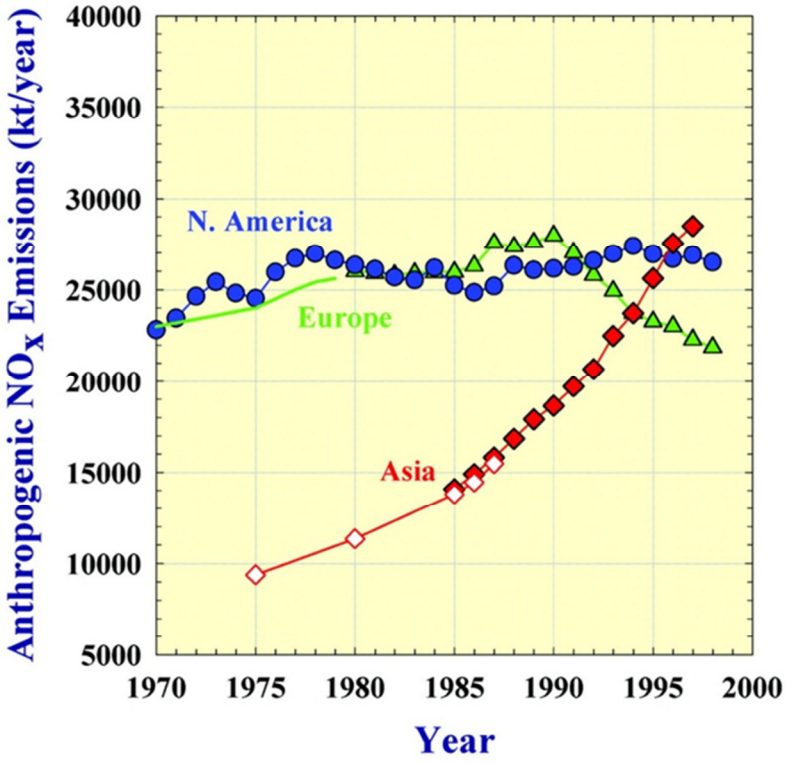
District compliance with ozone standards is affected not only by local emissions (natural and anthropogenic), but also by inflow of emissions from surrounding air districts and from beyond US borders. Although ozone precursors emitted by sources in the San Joaquin Valley and California sources have steadily declined over the past three decades, ozone generated by international anthropogenic sources (including emissions from Asia and South Asia in particular) are flowing into California and the SJVAB at an increasing rate, negatively impacting SJVAB ozone concentrations.

Several different terms and definitions are used to describe the impact of foreign air pollutant emissions on United States ozone readings. For this document, the ozone and ozone precursor contribution from foreign sources is referred to as "transboundary anthropogenic ozone" (TAO), highlighting the fact that is the result of man-made emissions that have crossed national boundaries to impact ground level ozone concentrations. The inflow of TAO thereby affects the District's ability to achieve and maintain compliance with the 1-hour and 8-hour ozone standards. The trend of increasing inflow of TAO from foreign sources to California is well documented and is making it more difficult for the District to maintain compliance with the 1-hour and 8-hour zone standards. Control measures instituted by the US and the European Union have resulted in a downward trend in their contribution to background ozone levels in the Northern Hemisphere. In contrast, a rapid increase in Asian emissions from energy production has resulted in a corresponding growth in TAO and ozone precursors to North America (see Figures 6a and 6b).

The effect of rising rates of TAO from Asia is particularly concerning in light of EPA's increasingly stringent air quality standards, which are nearing naturally-occurring background concentrations. That said, TAO is an issue even under existing standards, especially the 1-hour ozone standard.

Attachment B presents scientific evidence of the increasing influence of international emissions on San Joaquin Valley ozone concentrations, particularly on the August 10, 2012 exceedance day at Fresno-Drummond in addition to other scientific evidence of TAO emissions entering the Valley.

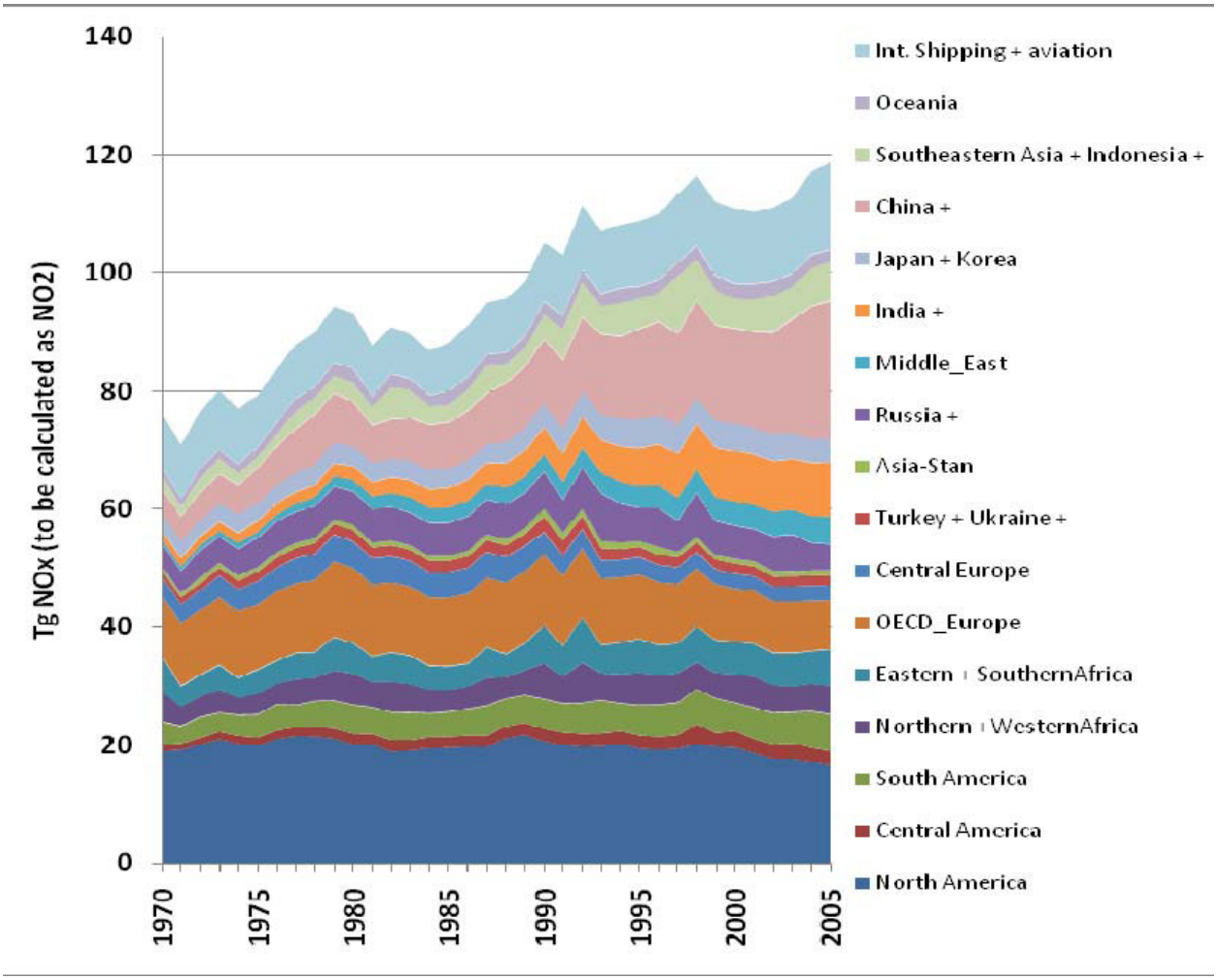
Figure 6a Trends in Continental NOx Emissions, 1970-2000



Source: Akimoto, 2003, p. 1718.

Under CAA § 179B, a region that shows they would have attained an air quality standard by the applicable attainment date, but for emissions emanating from outside the United States, shall not be subject to the sanctions penalties ordinarily associated with missing an attainment deadline. This does not excuse local agencies from their duties to reduce emissions from sources under their regulatory authority; but the goal is to ensure that Valley residents and businesses are not penalized for pollution emanating from outside the United States. Therefore, even if EPA were to not concur with the August 10, 2012 exceptional event and the 2011-2013 clean data finding, 1-hour ozone nonattainment penalties should be discontinued per CAA Section 179B.

Figure 6b International Trends in NOx Growth: 1970-2005



Source: Emission Database for Global Atmospheric Research (EDGAR) v4.1. http://edgar.jrc.ec.europa.eu/results_v41.php

III. ATTAINMENT IS DUE TO PERMANENT AND ENFORCEABLE EMISSIONS REDUCTIONS

A. ENFORCEABLE REGULATIONS HAVE ACHIEVED SIGNIFICANT PERMANENT EMISSIONS REDUCTIONS

Since 1992, the District has adopted over 500 of the most stringent rules in the nation to obtain the significant emission reductions needed to demonstrate attainment. Table 4 shows the latest iteration of the adopted rules, including EPA approval dates. The ARB has also adopted and implemented the nation's toughest mobile source regulations. Correspondingly, the Valley's businesses and residents have made significant investments over the past couple of decades in cleaner technologies and practices. Through these investments, emissions of ozone precursors have been greatly reduced (see Figure 7). Emissions will continue to be reduced under the District's current and upcoming 8-hour ozone and PM2.5 plans.

Table 4 Adopted District Regulations Achieving Permanent and Enforceable Emission Reductions

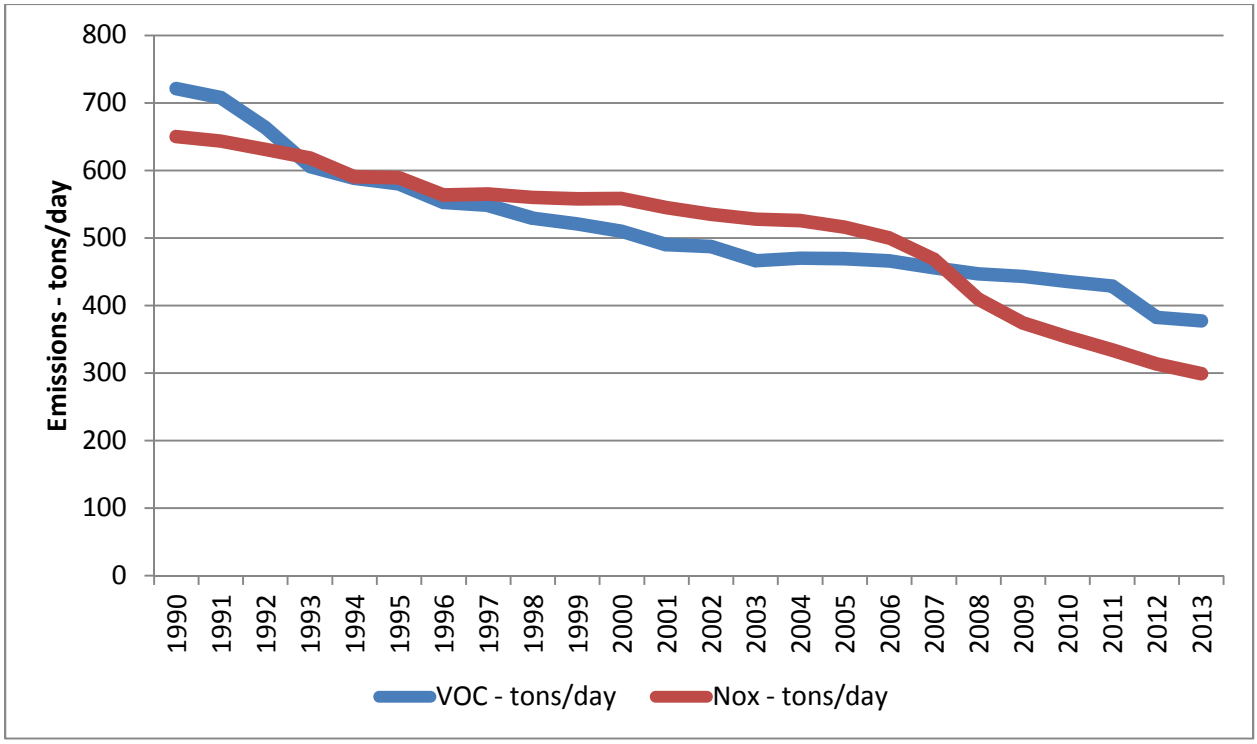
Adopted District Regulatory Control Measures	Date Adopted/ Amended	EPA Approval Date	FR citation	FR Link
Rule 4103 Open Burning	04/15/10	01/04/12	77 FR 214-217	http://www.gpo.gov/fdsys/pkg/FR-2012-01-04/pdf/2011-33660.pdf
Rule 4106 Prescribed Burning and Hazard Reduction Burning	06/21/01	02/27/02	67 FR 8894-8897	http://www.gpo.gov/fdsys/pkg/FR-2002-02-27/pdf/02-4526.pdf
Rule 4306 Boilers, Steam Generators, and Process Heaters-Phase 3	10/16/08	01/13/10	75 FR 1715-1716	http://www.gpo.gov/fdsys/pkg/FR-2010-01-13/pdf/2010-352.pdf
Rule 4307 Boilers, Steam Generators, and Process Heaters-2.0 MMBtu/hr to 5.0 MMBtu/hr	10/16/08	01/13/10	75 FR 1715-1716	http://www.gpo.gov/fdsys/pkg/FR-2010-01-13/pdf/2010-352.pdf
Rule 4308 Boilers, Steam Generators, and Process Heaters-0.075 MMBtu/hr to less than 2.0 MMBtu/hr	12/17/09	01/31/11	76 FR 5276-5277	http://www.gpo.gov/fdsys/pkg/FR-2011-01-31/pdf/2011-1927.pdf
Rule 4309 Dryers, Dehydrators, and Ovens	12/15/05	05/30/07	72 FR 29886-29889	http://www.gpo.gov/fdsys/pkg/FR-2007-05-30/pdf/E7-10236.pdf
Rule 4311 Flares	06/18/09	11/03/11	76 FR 68106-68107	http://www.gpo.gov/fdsys/pkg/FR-2011-11-03/pdf/2011-28391.pdf

Adopted District Regulatory Control Measures	Date Adopted/ Amended	EPA Approval Date	FR citation	FR Link
Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr	10/16/08	03/25/11	76 FR 16696-16697	http://www.gpo.gov/fdsys/pkg/FR-2011-03-25/pdf/2011-7090.pdf
Rule 4352 Solid Fuel Fired Boilers, Steam Generators and Process Heaters	12/15/11	11/06/12	77 FR 66548-66554	http://www.gpo.gov/fdsys/pkg/FR-2012-11-06/pdf/2012-26779.pdf
Rule 4354 Glass Melting Furnaces	05/19/11	01/31/13	78 FR 6740-6741	http://www.gpo.gov/fdsys/pkg/FR-2013-01-31/pdf/2013-02015.pdf
Rule 4565 Biosolids, Animal Manure, and Poultry Litter Operations	03/15/07	01/17/12	77 FR 2228-2233	http://www.gpo.gov/fdsys/pkg/FR-2012-01-17/pdf/2012-582.pdf
Rule 4566 Organic Material Composting Operations	08/18/11	11/29/12	77 FR 71129-71131	http://www.gpo.gov/fdsys/pkg/FR-2012-11-29/pdf/2012-28827.pdf
Rule 4570 Confined Animal Facilities	10/21/10	01/17/12	77 FR 2228-2233	http://www.gpo.gov/fdsys/pkg/FR-2012-01-17/pdf/2012-582.pdf
Rule 4601 Architectural Coatings	12/17/09	11/08/11	76 FR 69135-69136	http://www.gpo.gov/fdsys/pkg/FR-2011-11-08/pdf/2011-28788.pdf
Rule 4603 Surface Coating of Metal Parts and Products, Plastic Parts and Products, and Pleasure Crafts	09/17/09	11/01/11	76 FR 67369-67370	http://www.gpo.gov/fdsys/pkg/FR-2011-11-01/pdf/2011-28251.pdf
Rule 4604 Can and Coil Coating Operations	09/20/07	01/19/10	75 FR 2796-2800	http://www.gpo.gov/fdsys/pkg/FR-2010-01-19/pdf/2010-747.pdf
Rule 4605 Aerospace Assembly and Component Coating Operations	06/16/11	11/16/11	76 FR 70886-70887	http://www.gpo.gov/fdsys/pkg/FR-2011-11-16/pdf/2011-29466.pdf
Rule 4606 Wood Products and Flat Wood Paneling Products Coating Operations	10/16/08	10/15/09	74 FR 52894-52895	http://www.gpo.gov/fdsys/pkg/FR-2009-10-15/pdf/E9-24687.pdf
Rule 4607 Graphic Arts and Paper, Film, Foil, and Fabric Coatings	12/18/08	10/15/09	74 FR 52894-52895	http://www.gpo.gov/fdsys/pkg/FR-2009-10-15/pdf/E9-24687.pdf
Rule 4612 Motor Vehicle and Mobile Equipment Coating Operations	10/21/10	02/13/12	77 FR 7536-7537	http://www.gpo.gov/fdsys/pkg/FR-2012-02-13/pdf/2012-3172.pdf
Rule 4621 Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants	12/20/07	10/30/09	74 FR 56120-56121	http://www.gpo.gov/fdsys/pkg/FR-2009-10-30/pdf/E9-26178.pdf
Rule 4622 Gasoline Transfer into Motor Vehicle Fuel Tanks	12/20/07	10/30/09	74 FR 56120-56121	http://www.gpo.gov/fdsys/pkg/FR-2009-10-30/pdf/E9-26178.pdf

Adopted District Regulatory Control Measures	Date Adopted/ Amended	EPA Approval Date	FR citation	FR Link
Rule 4624 Transfer of Organic Liquid	12/20/07	10/15/09	74 FR 52894-52895	http://www.gpo.gov/fdsys/pkg/FR-2009-10-15/pdf/E9-24687.pdf
Rule 4653 Adhesives and Sealants	09/16/10	02/13/12	77 FR 7536-7537	http://www.gpo.gov/fdsys/pkg/FR-2012-02-13/pdf/2012-3172.pdf
Rule 4661 Organic Solvents	09/20/07	05/05/10	75 FR 24406-24408	http://www.gpo.gov/fdsys/pkg/FR-2010-05-05/pdf/2010-10402.pdf
Rule 4662 Organic Solvent Degreasing Operations	09/20/07	07/30/09	74 FR 37948-37949	http://www.gpo.gov/fdsys/pkg/FR-2009-07-30/pdf/E9-18001.pdf
Rule 4663 Organic Solvent Cleaning, Storage, and Disposal	09/20/07	07/30/09	74 FR 37948-37949	http://www.gpo.gov/fdsys/pkg/FR-2009-07-30/pdf/E9-18001.pdf
Rule 4682 Polystyrene, Polyethylene, and Polypropylene Products Manufacturing	12/15/11	09/20/12	77 FR 58312-58313	http://www.gpo.gov/fdsys/pkg/FR-2012-09-20/pdf/2012-21218.pdf
Rule 4684 Polyester Resin Operations	08/18/11	02/06/12	77 FR 5709-5710	http://www.gpo.gov/fdsys/pkg/FR-2012-02-06/pdf/2012-2599.pdf
Rule 4692 Commercial Charbroiling	09/17/09	11/03/11	76 FR 68103-68106	http://www.gpo.gov/fdsys/pkg/FR-2011-11-03/pdf/2011-28388.pdf
Rule 4694 Wine Fermentation and Storage Tanks	12/15/05	11/29/12	77 FR 71109-71111	http://www.gpo.gov/fdsys/pkg/FR-2012-11-29/pdf/2012-28826.pdf
Rule 4695 Brandy Aging and Wine Aging Operations	09/17/09	08/04/11	76 FR 47076-47077	http://www.gpo.gov/fdsys/pkg/FR-2011-08-04/pdf/2011-19384.pdf
Rule 4702 Internal Combustion Engines	01/18/07	01/10/08	73 FR 1819-1822	http://www.gpo.gov/fdsys/pkg/FR-2008-01-10/pdf/E8-171.pdf
Rule 4703 Stationary Gas Turbines	09/20/07	10/21/09	74 FR 53888-53889	http://www.gpo.gov/fdsys/pkg/FR-2009-10-21/pdf/E9-25173.pdf
Rule 4902 Residential Water Heaters	03/19/09	05/05/10	75 FR 24408-24409	http://www.gpo.gov/fdsys/pkg/FR-2010-05-05/pdf/2010-10404.pdf
Rule 4905 Natural Gas-Fired, Fan-Type Residential Central Furnaces	10/20/05	05/30/07	72 FR 29886-29889	http://www.gpo.gov/fdsys/pkg/FR-2007-05-30/pdf/E7-10236.pdf
Rule 9310 School Bus Fleets	09/21/06	03/08/10	75 FR 10420-10438	http://www.gpo.gov/fdsys/pkg/FR-2010-03-08/pdf/2010-4752.pdf
Rule 9410 Employer-Based Trip Reduction	12/17/09	*pending*		

Adopted District Regulatory Control Measures	Date Adopted/ Amended	EPA Approval Date	FR citation	FR Link
Rule 9510 Indirect Source Review (ISR)	12/15/05	05/09/11	76 FR 26609-26615	http://www.gpo.gov/fdsys/pkg/FR-2011-05-09/pdf/2011-11133.pdf
Rule 9610 State Implementation Plan Credit for Emission Reductions Generated Through Incentive Programs	06/20/13	*pending*		

Figure 7 Valley Summer NOx and VOC Emissions, 1990-2013



B. Attainment is Not Due to Unusually Favorable Meteorology

Ozone formation is strongly driven by high temperatures. The analysis in this section shows that average high temperatures over 2011-2013 were consistent or slightly higher than averages over the 1950-2013 time period. As such, 2011-2013 did not have lower ozone forming potential than other years.

This section shows that peak temperature days at Stockton, Fresno, and Bakersfield are evenly distributed throughout the May-October ozone season across 1999-2013. Furthermore, even when average high temperatures increased, the 1-hour ozone concentrations have decreased. These results demonstrate that the Valley's

improvement in ozone concentrations is not due to unusually favorable meteorology, and that the ozone forming potential during the 2011-2013 period was at least equal to or stronger than longer term averages

Average High Temperatures, 1950-2013

Figures 8-10 illustrate that 2011-2013 maximum daily temperatures at the Stockton Airport, Fresno Yosemite International (FYI) Airport, and the Bakersfield Meadows (BM) Airport averaged over all days during the May-October ozone season are very close to the 64-year average (1950-2013). The average maximum daily temperatures in Stockton and Fresno have slightly increased over time, while average maximum daily temperatures in Bakersfield has been fairly consistent over the 1950-2013 time period (Table 5). Thus, this provides evidence that the 2011-2013 period was not unusually conducive to lower ozone concentrations.

Figures 11-13 illustrate the temporal distribution of high temperatures days (days greater than or equal to 95^0F) for the months of May through October of each year from 1999 through 2013 for the Stockton, FYI, and BM airports. As can be observed, the high temperature days during the 2011-2013 period were distributed throughout the ozone season similar to ozone seasons in the previous years of 1999-2010. During the 2011-2013 period, if the high temperature days all occurred in the month of May, followed by much cooler temperatures in June through October, it could be argued that even though the number of high temperature days were average during the 2011-2013 period, the fact that they happened early in the ozone season could have contributed to the lower ozone forming potential. However, since the distribution analysis shows that this was not the case, it can be concluded that the chances for ozone to form through the 2011-2013 seasons were similar to the seasons in past years.

Table 5 Summary of Average High Temperature and Range of High Temperatures

	64-year (1950-2013)		2011-2013	
	Average high temperature	**Range of high temperatures**	**Average high temperature**	**Range of high temperatures**
Stockton	87.2^0F	84^0F to 90^0F	**85.9^0F**	84^0F to 87^0F
Fresno	90.0^0F	86^0F to 93^0F	**90.8^0F**	89^0F to 92^0F
Bakersfield	90.3^0F	86^0F to 93^0F	**90.1^0F**	89^0F to 91^0F

Figure 8 Maximum Daily Temperature – Stockton Airport, Averaged May-October (1950-2013)

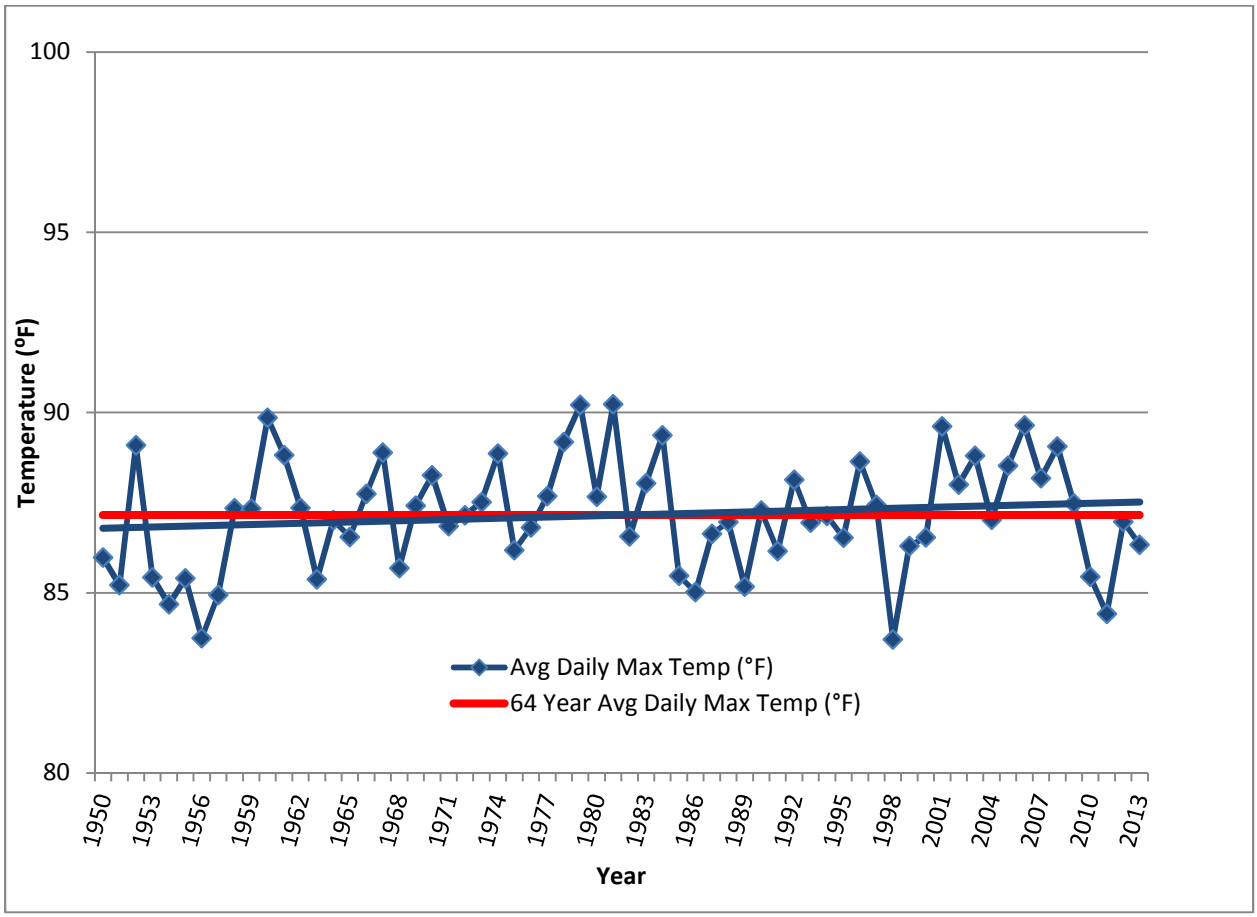


Figure 9 Maximum Daily Temperature – Fresno Yosemite International Airport, Averaged May-October (1950-2013)

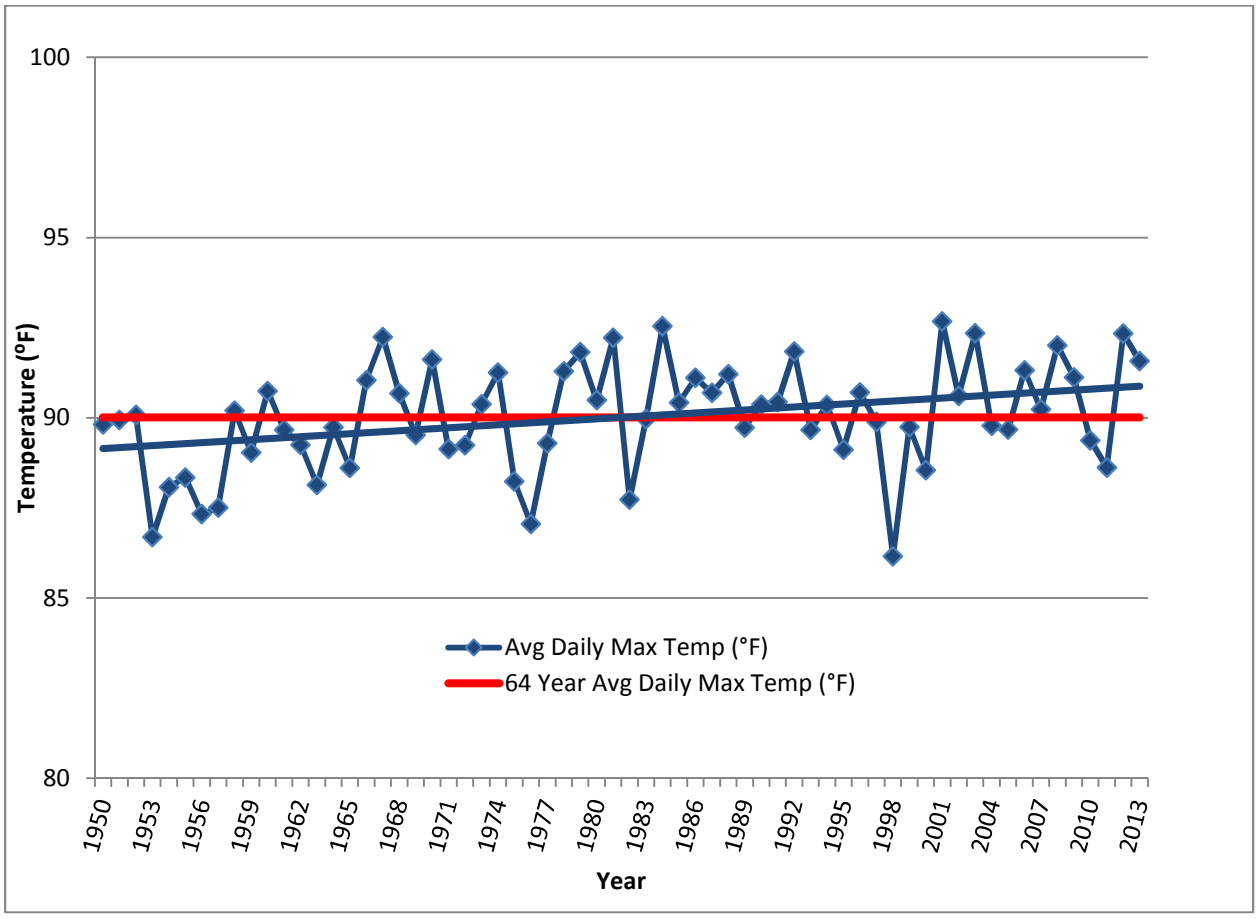
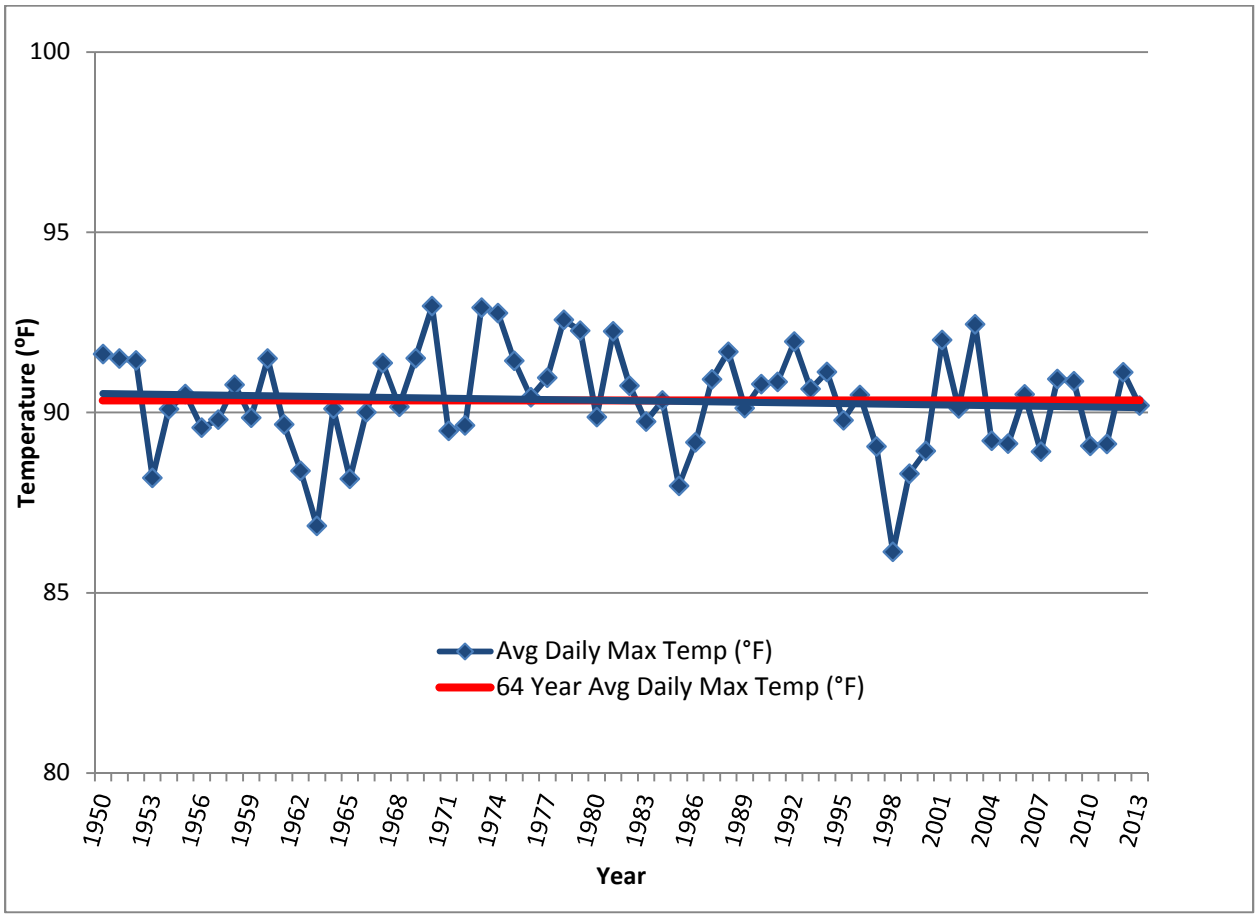


Figure 10 Maximum Daily Temperature – Bakersfield Meadows Airport, Averaged May-October (1950-2013)



Distribution of High Temperature Days

Figure 11 Stockton Airport Maximum Daily Temperatures (^{0}F), May - October (1999-2013)

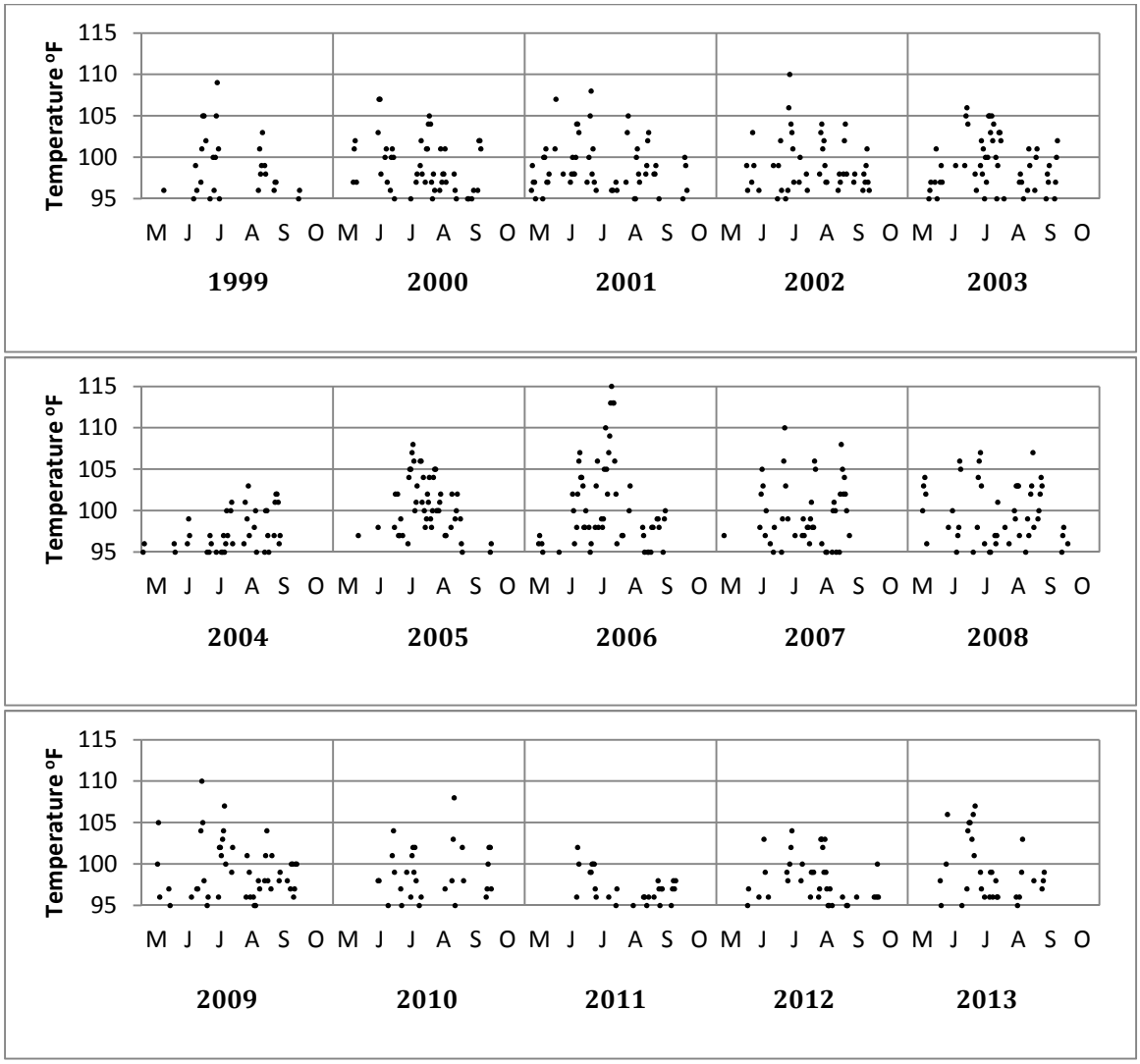


Figure 12 Fresno Yosemite International Airport Maximum Daily Temperatures (^{0}F), May-October (1999-2013)

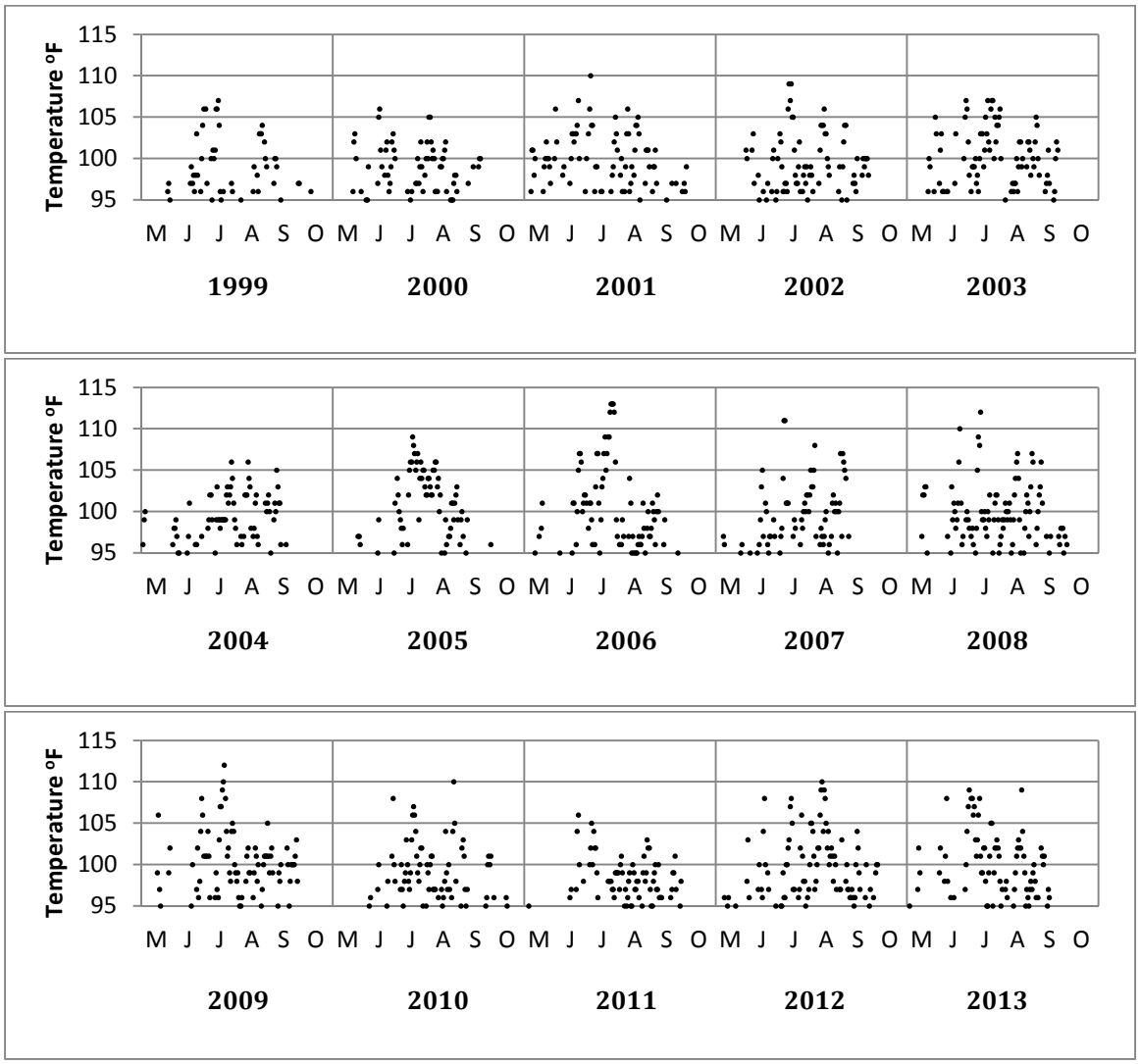


Figure 13 Bakersfield Meadows Airport Maximum Daily Temperatures (^{0}F), May-October (1999-2013)

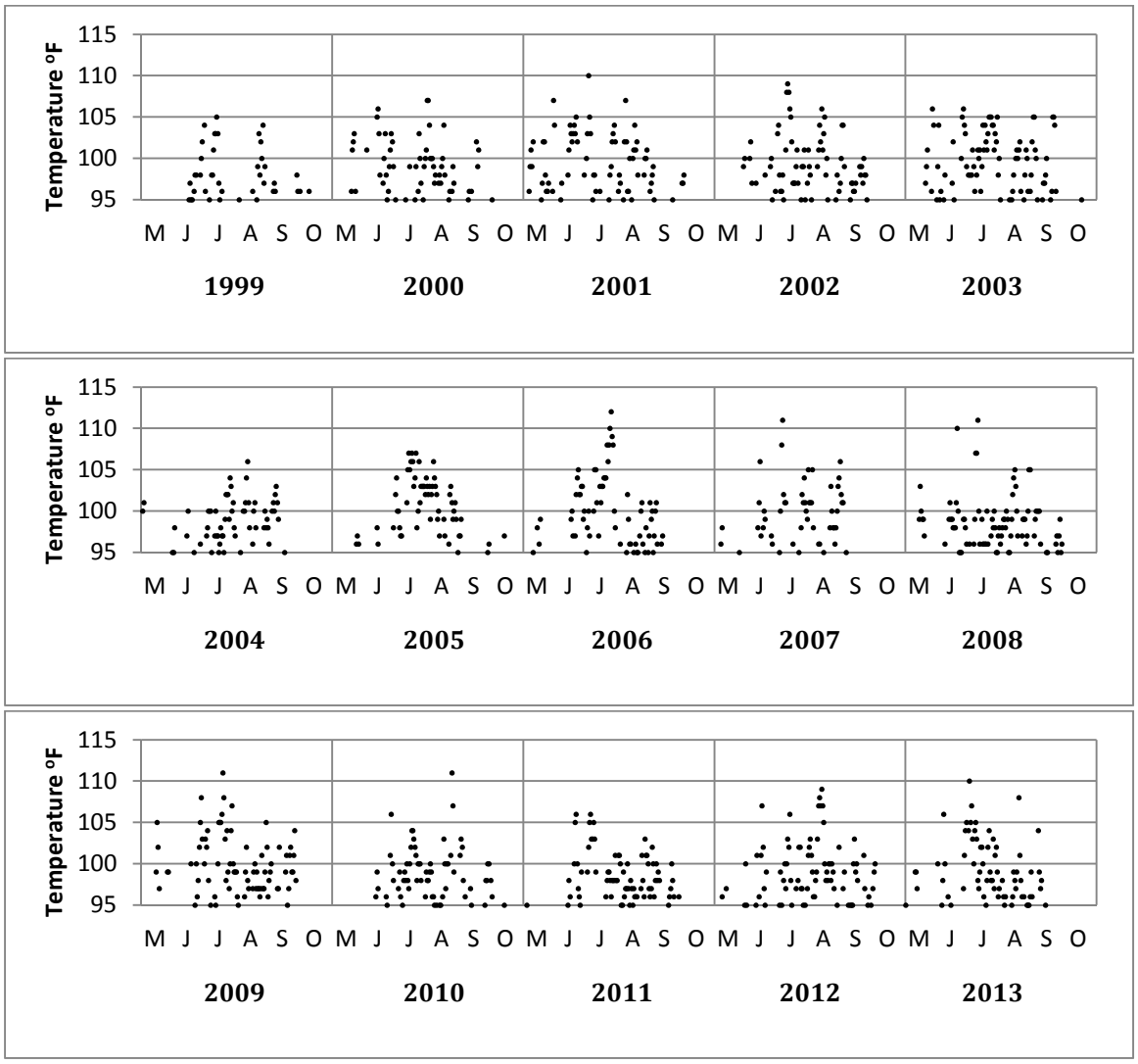


Table 6 Average Number of High Temperature (≥95^{0}F) days per year

	1999-2013	2011-2013
Stockton	44	33
Fresno	78	84
Bakersfield	71	77

Comparing High Temperature Days to 1-hour Ozone Exceedance Days

Figures 14 through 16 compare the annual number of maximum temperature days greater than or equal to 95^{0}F at the Stockton Airport, FYI Airport, and the BM Airport with the annual number of days exceeding the 1-hour ozone standard Valley-wide and locally for 1999 to 2013.

As expected, the number of Valley-wide and local exceedances of the 1-hour ozone standard in Stockton have either decreased or stayed at or near zero through the period, relating well with the decrease in the 15-year trend line for high temperature days. Alternatively, the analysis for Fresno and Bakersfield illustrates that even though the potential for 1-hour ozone formation has increased, due to more high temperature days, the measured 1-hour ozone concentrations have declined. This divergence of the trends between high temperature days and 1-hour ozone exceedances demonstrates the effectiveness of the emissions reductions achieved in the Valley through the District's control program.

Figure 14 Number of Days ≥ 95^{0}F at Stockton Airport (May-October) and Days Exceeding the 1-hour Ozone NAAQS (1999-2013)

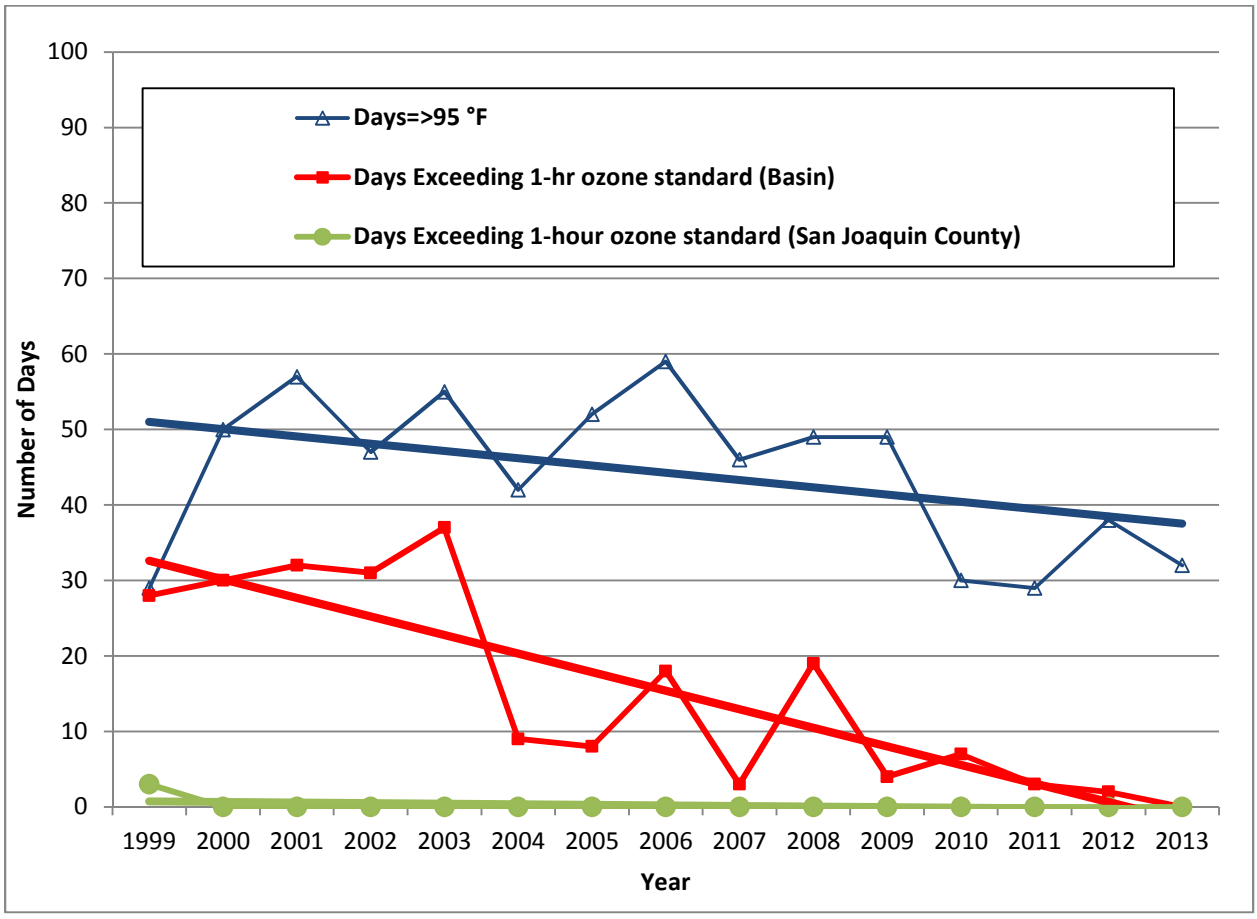


Figure 15 Number of Days ≥95^{0}F at Fresno Yosemite International Airport (May-October) and Days Exceeding the 1-hour Ozone NAAQS (1999-2013)

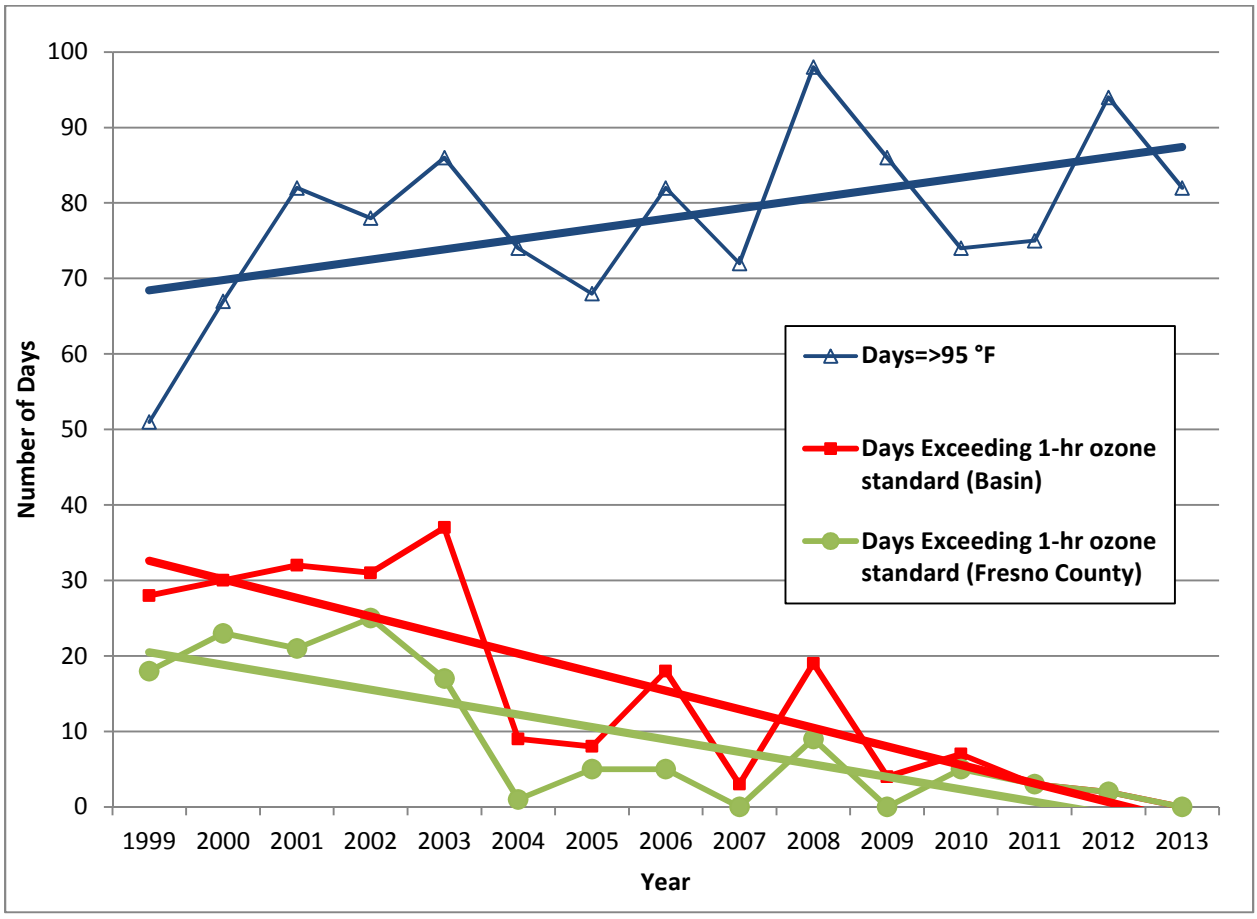
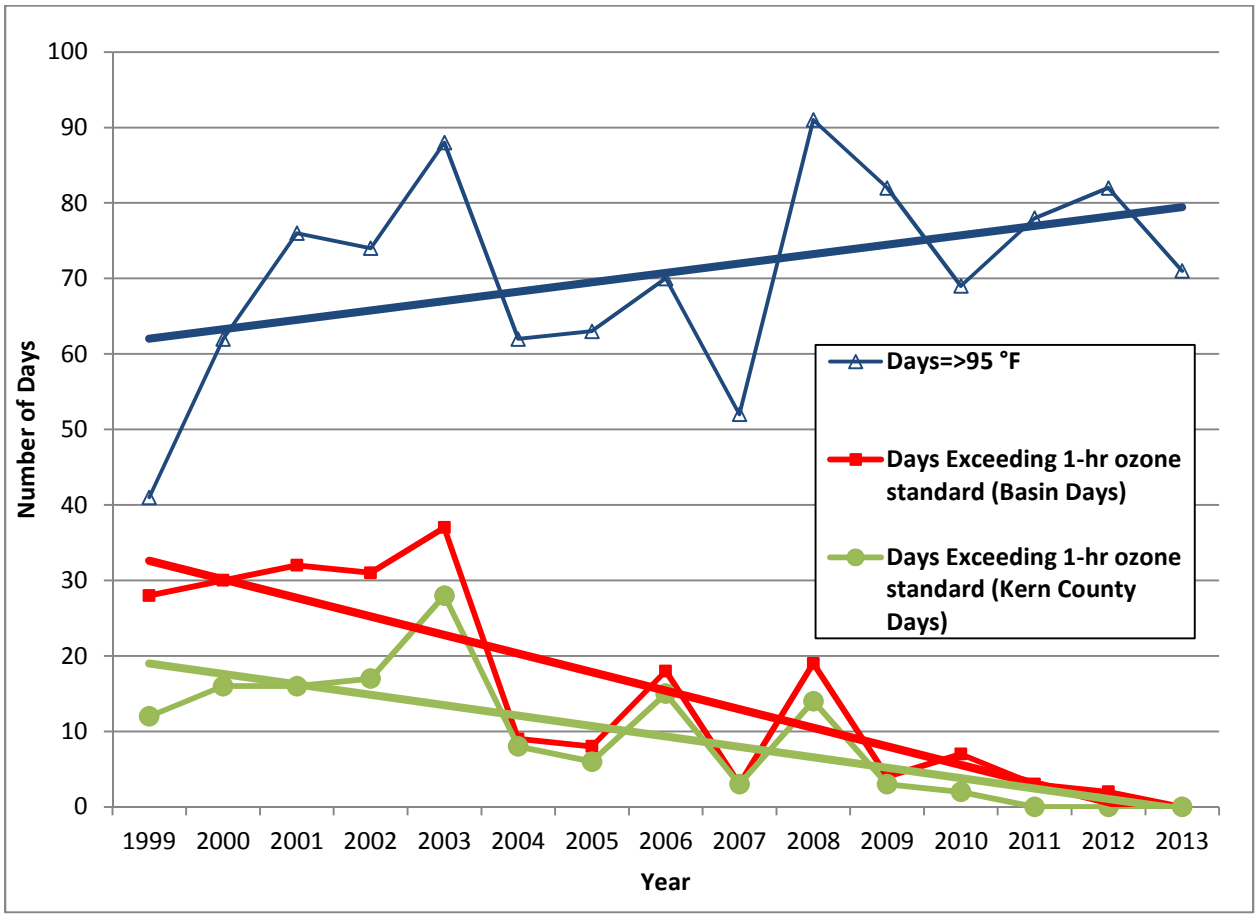


Figure 16 Number of Days ≥95^{0}F at Bakersfield Meadows Airport (May-October) and Days Exceeding the 1-hour Ozone NAAQS (1999-2013)

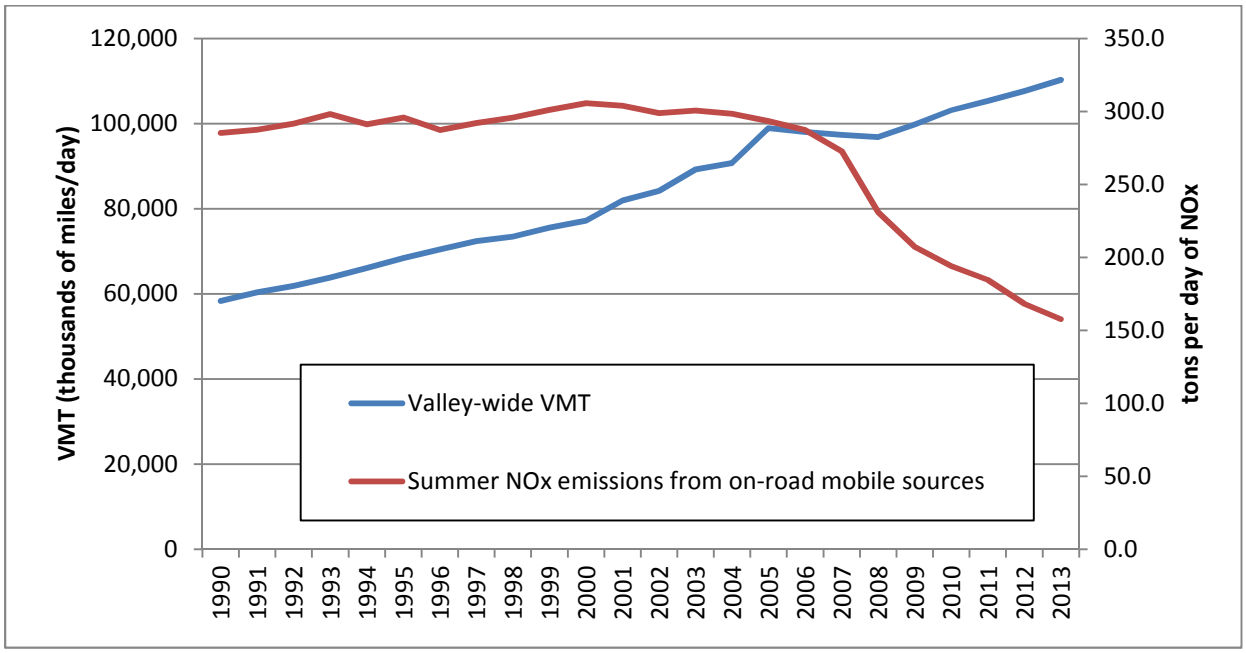


C. Attainment is Not Due to Temporary Emissions Reductions

Since the Valley's ozone precursor emissions are dominated by mobile sources, and since mobile sources are a key component of economic activity in California, vehicle miles traveled (VMT) and fuel sales were analyzed as indicators of economic activity.[17] This analysis shows that the improvement in air quality leading to 1-hour ozone attainment in the Valley is not due to a temporary economic downturn.

The Valley's total VMT has greatly increased since 1990[18], with only a slight and temporary decrease over the recession in 2007-2009, as displayed in the figure below; NOx emissions from on-road mobile sources were fairly consistent from 1990 through 2005 despite VMT growth, and then emissions decrease significantly despite continued VMT growth. This decline of motor vehicle emissions over this time period is attributable to ARB vehicular regulations and related fleet turn over, with newer vehicles having lower evaporative and tailpipe emissions, as well as greater fuel economy.

Figure 17 Valley-wide VMT and On-Road Mobile NOx Emissions (1990-2013)



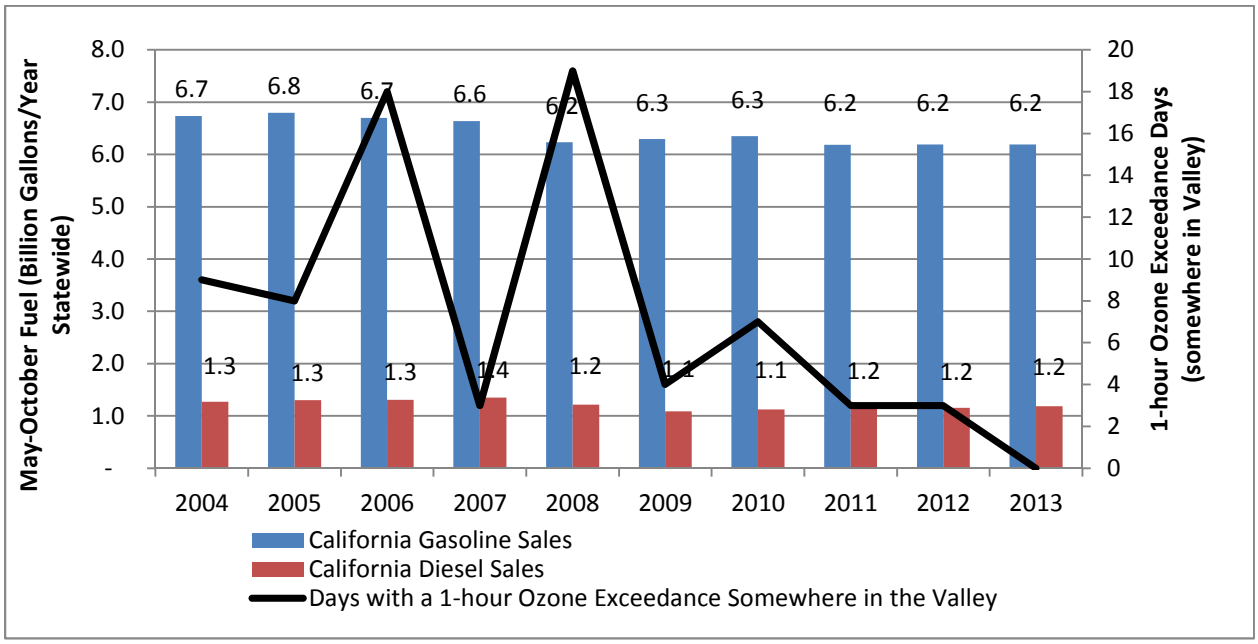
[17] These were also the economic indicators used in analysis of Sacramento Metropolitan AQMD's 1-hour ozone attainment request. See EPA's proposed approval of their request at 76 FR 28696. http://www.gpo.gov/fdsys/pkg/FR-2011-05-18/pdf/2011-12063.pdf.

[18] Data available at ARB's CEPAM: 2009 Almanac –Population and Vehicle Trends Tool. http://www.arb.ca.gov/app/emsinv/trends/ems_trends.php

Analysis of California[19] gasoline and diesel sales over the quarters covering the ozone season (May-October) shows some variation from year to year, including slight decreases[20] (as did the analysis for 2000-2009 for Sacramento). Figure 18 shows these variations as well as the number of days when a 1-hour ozone exceedance was recorded in the Valley. California fuel sales over 2011-2013 were very similar to fuel sales in 2008-2009, yet 2008-2009 had more 1-hour ozone exceedance days.

Based on this motor vehicle analysis, it is reasonable to conclude that the Valley's ozone improvement is not attributable to a temporary economic downturn.

Figure 8 State-Wide Fuel Sales (May-October) and Valley 1-hour Ozone Exceedance Days



[19] Valley-specific fuel sale data not available. In addition, fuel can be purchased in one region and used in another. Sacramento's 2010 analysis, approved by EPA, also analyzed state-wide fuel sales.
[20] Data available from California State Board of Equalization, Fuel Taxes Statistics & Reports, http://www.boe.ca.gov/sptaxprog/reports/Diesel_10_Year_Report.pdf and http://www.boe.ca.gov/sptaxprog/reports/MVF_10_Year_Report.pdf

IV. CONCLUSION

In 2013, for the first time in recorded history, the San Joaquin Valley had zero violations of the federal 1-hour ozone standard. Based on 2011-2013 ozone concentrations, the District requests that EPA formally determine that the Valley has reached attainment of the 1-hour ozone standard.

This document meets the requirements for 1-hour ozone attainment findings. Specifically, this document supports a clean data finding by showing that the number of expected exceedance days in the 2011-2013 time period meets the 1-hour ozone standard; that the Valley's ozone monitoring network meets monitoring requirements; and that an exceedance at the Fresno-Drummond AMS in August 2012 was the result of both exceptional events and transboundary ozone.

This document also supports a finding that the clean data is due to permanent and enforceable emissions reductions by showing that the District has numerous EPA-approved regulations in place; that these regulations and Valley investments have yielded significant emissions reductions; and that the Valley's recent ozone improvement is not due to favorable meteorology or an economic downturn.

Many air quality challenges remain for the Valley under existing and upcoming EPA standards, accordingly air pollutant emissions will continue to be reduced in the Valley. An EPA finding of 1-hour ozone attainment will enable the Valley to better focus its efforts and investments on these upcoming challenges while removing exposure by Valley businesses to potential additional penalties and returning full local control to the Valley for decisions regarding the need, the magnitude, and the expenditure of DMV dollars.