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DATE: August 21, 2014

TO: SJVUAPCD Governing Board

FROM: Seyed Sadredin, Executive Director/APCO
Project Coordinator: Sheraz Gill

RE: **ITEM NUMBER 9: REVIEW AND APPROVE
ACTIONS TO ADDRESS AIR QUALITY IMPACTS
RESULTING FROM THE EXCEPTIONAL
WEATHER CONDITIONS CAUSED BY THE
RECENT DROUGHT**

RECOMMENDATIONS:

1. Pursue legislative and administrative remedies to obtain legal designation as Exceptional Events under the federal Clean Air Act for weather conditions experienced due to drought.
2. Direct the Executive Director/APCO to submit a formal request including supporting documentation as detailed in this memorandum to the U.S. Environmental Protection Agency (EPA) to reclassify the San Joaquin Valley as a Serious nonattainment area for the 1997 PM2.5 standard.
3. Direct the Executive Director/APCO to develop a new State Implementation Plan for the 1997 PM2.5 standard under the Serious nonattainment classification for the Governing Board's consideration in the spring of 2015.

BACKGROUND:

Until the exceptional weather conditions experienced due to the recent drought, the District was on track to attain the 1997 annual PM2.5 standard before the federally mandated deadline of December 2014. The District's *2008 PM2.5 Plan* satisfied all federal implementation requirements for the 1997 PM2.5 standard at the time of adoption and demonstrated attainment based on projected 2012-2014 PM2.5 levels. All emission reduction commitments under that plan have been fulfilled. Due to the extreme drought, stagnation, strong inversions, and

historically dry conditions experienced over the winter of 2013-2014, the Valley cannot show attainment even if the Valley experienced zero PM_{2.5} pollution for the last three quarters of 2014.

The Clean Air Act includes provisions for excluding uncontrollable “exceptional events” from a region’s attainment determination, but the current EPA framework specifically excludes stagnation and drought conditions. Given the significant air quality impacts in 2013-2014 due to the extreme weather conditions, attainment of the 1997 annual PM_{2.5} standard based on 2012-2014 data is impossible.

Additionally, the D.C. Circuit Court recently ruled that EPA erred by using Clean Air Act subpart 1 instead of subpart 4 in establishing its PM_{2.5} implementation rule, upon which the District’s and other PM_{2.5} plans nationwide had been based. This item describes the recommended path provided under the Clean Air Act subpart 4 for addressing the detrimental air quality impacts associated with the recent extreme weather conditions and extending the Valley’s attainment deadline for the 1997 annual PM_{2.5} standard.

DISCUSSION:

The 1997 annual PM_{2.5} standard was set at 15.0 µg/m³. The design value (DV) for the annual PM_{2.5} standard, which is the official EPA metric used to determine whether an area is in attainment of a standard, is defined as the 3-year average of annual averages over three consecutive years. Each individual annual average is calculated as the average among the four quarterly averages throughout the year. For example, the 2014 design value would be calculated as the average among the annual averages for the years 2012, 2013, and 2014, where the average of each of these individual years is calculated as the average among their respective quarterly averages.

In 2012 the Bakersfield-Planz air monitoring site, which is the current peak PM_{2.5} site in the District, recorded an annual average value of 14.7 µg/m³, below the standard of 15.0 µg/m³. This site, along with the rest of the District’s PM_{2.5} air monitoring sites, was making significant progress towards attaining the 1997 annual PM_{2.5} standard. However, due to the exceptional weather conditions experienced during the winter of 2013-2014, exceedingly high PM_{2.5} concentrations were experienced, causing a 2013 annual average of 22.8 µg/m³ for the Bakersfield-Planz site.

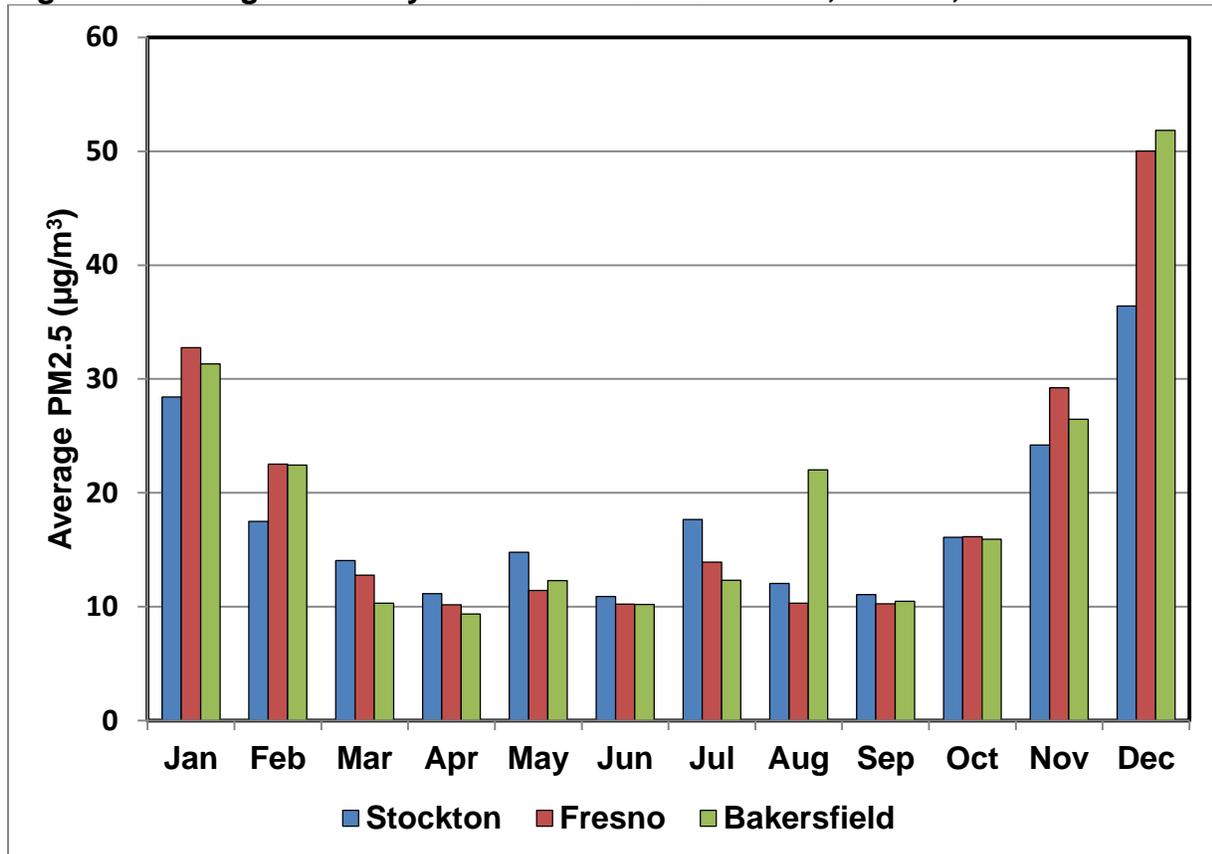
As detailed further below, due to the extreme weather and high values already experienced at this site in the 1st quarter of 2014, the averages for the 2nd, 3rd, and 4th quarters of 2014 would need to be zero for Bakersfield-Planz to reach attainment for the 2012-2014 period. The following discusses the magnitude of the weather conditions experienced during the winter of 2013-14, and its impact on the Valley’s ability to attain the 1997 annual PM_{2.5} standard.

Meteorology during the Winter Season of 2013-2014

This past winter, California Governor Jerry Brown declared a state of emergency due to extreme drought conditions in the state. This emergency declaration was based on record-low precipitation in 2013 and snow pack levels at only 20 percent of the normal amount of snow to provide water for the year. Specifically in the San Joaquin Valley, 2013 represented the driest year since the start of record keeping in 1895. The Valley is currently experiencing an exceptional level of drought not seen in at least 119 years.

Although the Valley has experienced reductions in PM2.5 concentrations over the last 15 years since the pollutant first began to be measured, the winter months of November through February continue to record the peak levels of each year. The following Figure 1 displays the relative comparison between the lower concentrations in March through October, and the higher concentrations experienced during the winter.

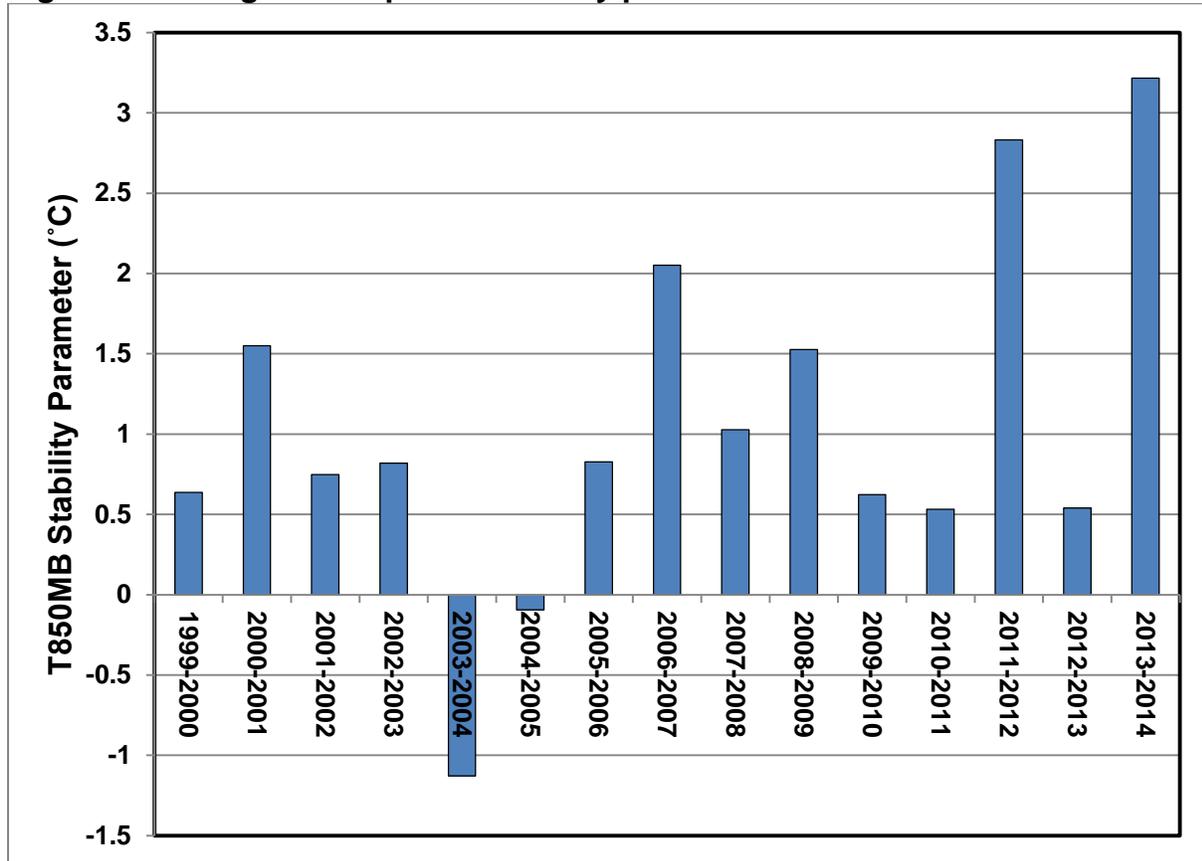
Figure 1: Average PM2.5 by Month in 2013 in Stockton, Fresno, Bakersfield



Stable meteorology during the winter season can increase PM2.5 concentrations to high levels by providing strong temperature inversions and low wind speeds. When this occurs, the PM2.5 concentrations during the winter months of November to February can climb to very high levels. As seen in Figure 2, the winter of 2013-2014 experienced the strongest average atmospheric stability over the last 15 years (period during which

PM2.5 concentrations have been recorded), creating conducive conditions for the formation and retention of high PM2.5 concentrations. This was a result of a persistent, strong high pressure ridge over the eastern Pacific that effectively blocked weather disturbances from entering California, which inhibited dispersion during November, December, and January of this last winter season.

Figure 2: Average Atmospheric Stability per Winter Season



In addition to the historically strong atmospheric stability, the winter of 2013-2014 also experienced record low precipitation totals, with some locations breaking records over 100 years old (see Table 2). These unprecedented dry conditions exacerbated the air quality challenge during the winter of 2013-2014. As a result of the extreme meteorology experienced in the Valley this last winter, PM2.5 concentrations reached peak levels that had not been recorded in over a decade, which in turn has increased the Valley's federal PM2.5 design values, making the journey to attainment of the PM2.5 standards even more difficult.

Table 2: Calendar Year Rainfall Totals for Select California Cities

City	1981-2010 Average (inches)	2013 Total (inches)	Previous Record Low (inches)	Previous Record Year
Modesto	13.11	4.70	5.70	1929
Merced	12.50	3.79	6.00	2007
Fresno	11.50	3.01	3.55	1947
Visalia	10.93	3.47	4.10	1910
Bakersfield	6.47	3.43	1.87	1959
Sacramento	18.52	5.81	6.67	1976
San Francisco	23.65	5.59	9.00	1917
San Jose	14.90	3.80	6.04	1929
Los Angeles	12.82	3.65	4.08	1953
San Diego	10.34	5.57	3.41	1953

Impacticability of Attainment in 2014 due to Extreme Weather

As noted above, extreme weather conditions over the winter of 2013-2014 overwhelmed emissions controls and led to abnormally high PM2.5 levels. Because of this, attainment of the 1997 annual PM2.5 standard based on 2012-2014 data is impossible. Furthermore, reclassification to serious will not initially provide an attainment deadline the Valley can meet, since the serious deadline is based on 2013-2015 data, which is also heavily affected by the high PM2.5 values recorded during the winter period of 2013-2014.

To illustrate the impact of the 2013-2014 winter season’s extreme weather conditions on the Valley’s ability to attain the 1997 annual PM2.5 standard of 15.0 µg/m³, the following analysis shows what average values would need to be recorded in the year 2014 to reach attainment during the 2012-2014 period.

The design value (DV) for the annual PM2.5 standard, which is the official EPA metric used to determine whether an area is in attainment of a standard, is defined as the 3-year average of annual averages over three consecutive years. In more detail, each individual annual average is calculated as the average among the four quarterly averages throughout the year. For example, the 2014 design value would be calculated as the average among the annual averages for the years 2012, 2013, and 2014, where the average of each of these individual years is calculated as the average among their respective quarterly averages.

Table 3 below shows the greatest value the 2014 annual average can be in order to have a design value of 15.0 µg/m³ (which demonstrates attainment) for the three year attainment period of 2012-2014.

Table 3: Maximum Allowable PM2.5 Annual Averages in 2014 to Reach Attainment of Annual Standard in 2012-2014

Site	2012 Measured Actuals	2013 Measured Actuals	2014 Max Allowable for Attainment
Stockton-Hazelton	12.4	17.7	14.9
Manteca	8.1	11.6	25.3
Modesto	11.9	14.3	18.8
Turlock	14.8	15.0	15.2
Merced-M	9.5	13.5	22.0
Merced-Coffee	11.0	13.3	20.7
Madera-City	16.0	17.8	11.2
Clovis	15.4	15.9	13.7
Fresno-Garland	14.1	16.8	14.1
Fresno-Pacific	12.7	15.9	16.4
Tranquility	7.0	8.3	29.7
Corcoran	16.5*	15.6	12.9
Hanford	14.8	18.2	12.0
Visalia-Church	14.8	18.9	11.3
Bakersfield-California	13.0	20.0	12.0
Bakersfield-Planz	14.7	22.8	7.5

*Corcoran had a partial year in 2012 for PM2.5, data in 4th quarter only.

Under the federal regulations, attainment must be demonstrated at the design value monitoring site for the Valley, which is the Bakersfield-Planz monitoring station. Based on the actual air quality readings for the first quarter of 2014, which were severely impacted by the exceptional weather events caused by the extraordinary drought, the only way the Valley can reach attainment is for the last three quarters in 2014 to have zero PM2.5 concentrations. Therefore, actual data already demonstrates that reaching attainment in 2014 is impossible.

Table 4: Scenario for Bakersfield-Planz to Reach Attainment in 2012-2014

Site	2012	2013	2014					2012-14 DV
			Q1 (actual)	Q2	Q3	Q4	Avg	
Bakersfield-Planz	14.7	22.8	29.7	0	0	0	7.4	14.9

Legislative Efforts Regarding Recent Exceptional Weather Conditions

The extraordinary drought conditions which have not been seen in at least 119 years have led to weather conditions leading to excess air pollution concentrations. Your Board has concluded that these extraordinary weather conditions constitute exceptional events and should not skew the Valley’s attainment demonstration for PM2.5. Pursuant to your Board’s direction, a delegation of Board members and other Valley stakeholders traveled to Washington D.C. and advocated this position to the U.S. EPA and congressional representatives.

Under current EPA policy the weather conditions that the Valley experienced this past winter are not eligible to be declared “exceptional events” since stagnation and lack of precipitation are not considered eligible events. This past spring members of the District Governing Board and staff met with high level EPA staff to discuss the possibility to declare the weather conditions experienced by the Valley this past winter as an exceptional event. EPA indicated that while short duration stagnation and lack of precipitation weren’t considered exceptional, the prolonged duration of the drought experienced in California may be eligible. At the request of your Board’s delegation, Valley Congressional representatives sent a letter to the EPA Administrator to request that EPA’s Exceptional Events Policy be revised to include drought conditions like those faced in the Valley as exceptional events (Attachment). Alternatively, the Congressional representatives were to pursue legislative changes to better clarify the treatment of prolonged drought conditions as potential Exceptional Events under the Clean Air Act.

Subsequently, two pieces of legislation relative to EPA’s exceptional events policy, S.2526 (Flake)/H.R.4957 (Olson, McCarthy and 22 additional members of Congress), Commonsense Legislative Exceptional Events Reform (CLEER) Act of 2014 were introduced. As initially drafted, the bills dealt primarily with streamlining EPA’s exceptional events approval and appeal process, but the District was able to convince the authors to include language that clarified that the prolonged and extraordinary drought and related weather conditions faced by the Valley this past winter should be considered Exceptional Events. Although this legislation has the potential to aid the District in meeting the federal PM2.5 standards, it is not anticipated that these efforts will be successful before the regulatory attainment deadline of 2014.

Recent Litigation and the Path for Reclassification

EPA had been implementing its PM2.5 standards under the general provisions of CAA subpart 1. However, the Natural Resources Defense Council (NRDC), Sierra Club, the American Lung Association, and Medical Advocates for Healthy Air, represented by Earthjustice, brought a legal challenge against EPA (*NRDC v. EPA*) for not implementing the PM2.5 standard under the PM10-specific subpart 4. In January 2013, the D.C. Circuit Court agreed with these groups and required EPA to now implement the PM2.5 standards under CAA subpart 4.

While the District continues to believe that the Valley should not be penalized for high PM2.5 values recorded as a result of exceptional weather conditions, as explained earlier, reaching a reasonable legislative or administrative remedy before the attainment deadline of 2014 is impossible and more time is needed. The above cited court ruling now provides a legal opportunity through subpart 4 for the District to seek additional time for attainment and avoid a finding of failure to attain it would have received in 2015 under subpart 1.

Unlike subpart 1, subpart 4 requires nonattainment areas to be classified as either “moderate” or “serious.” An area’s classification determines the attainment deadline

and other planning requirements. Accordingly, on June 2, 2014, EPA classified all areas as moderate for the 1997 PM_{2.5} standard, but not retroactively. For approved plans like the Valley's 2008 PM_{2.5} Plan, the existing attainment date of 2014 stands, even though the moderate area attainment year would have been 2011 if subpart 4 had been used all along, not starting in 2013. Under Section 188(b) of subpart 4, the District can now request reclassification to Serious, which would set the attainment deadline to 2015, based on a three year average of 2013-2015 data. To do so, the District must demonstrate that attainment by the 2014 deadline under the current Moderate classification is impracticable. As demonstrated earlier, based on actual readings to date, it is impossible for the Valley to attain the standard in 2014, even if the last three quarters of 2014 record zero PM_{2.5} concentrations.

New 2015 Plan for the 1997 PM_{2.5} Standard

Reclassification to Serious initially provides just one year more than the current attainment deadline. With the extreme winter of 2013-2014 still factored into the new attainment deadline, this initial reclassification request would not by itself provide an attainment deadline the Valley can meet.

Despite the high PM_{2.5} concentrations that were recorded in the 1st quarter of 2014, there is a possibility that the remainder of the year could record quarterly averages closer to the expected norm. Based on this conservative assumption, an annual PM_{2.5} average value for each site can be calculated for the entire year of 2014 by projecting 2nd, 3rd, and 4th quarter averages under more normal conditions. The maximum annual PM_{2.5} average in 2015 needed to bring each site into attainment during the 2013-2015 period can then subsequently be calculated. These results are shown below in Table 5.

Table 5: Maximum Allowable PM2.5 Annual Averages Needed in 2015 to Reach Attainment of Annual Standard in 2013-2015

Site	2013 Measured Actuals	2014 Estimated	2015 Max Allowable for Attainment
Stockton-Hazelton	17.7	14.4	12.9
Manteca	11.6	10.1	23.3
Modesto	14.3	12.6	18.1
Turlock	15.0	14.4	15.6
Merced-M	13.5	11.1	20.4
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Fresno-Pacific	15.9	14.2	14.9
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Corcoran	15.6	14.2	15.2
Hanford	18.2	17.1	9.7
Visalia-Church	18.9	17.1	9.0
Bakersfield-California	20.0	17.6	7.4
Bakersfield-Planz	22.8	18.9	3.3

Because both 2013 and 2014 were influenced by the severe weather of this last winter season, the 2015 averages would have to be improbably low in the southern portion of the District. The sites of Hanford, Visalia-Church, and Bakersfield-California would all have to have a 2015 annual average under $10 \mu\text{g}/\text{m}^3$, while Bakersfield-Planz would need to average $3.3 \mu\text{g}/\text{m}^3$ for the entire year. The historical data noted above demonstrates that the Valley is not likely to achieve these annual averages for 2015. Based on this improbability, the Valley cannot reach attainment of the annual average portion of the 1997 PM2.5 standard during the 2013-2015 period, but will rather reach attainment at a later year beyond 2015. This demonstrates the long reaching ramifications that one season of unusually high values can have on a region's ability to reach attainment.

This first extension to 2015 is important because it gives the Valley time to set a new attainment deadline by adopting a new PM2.5 plan by spring of 2015, before an EPA finding of failure to attain. Under Section 188(e) of subpart 4, the District is allowed an additional 5 years to reach attainment if necessary. This new plan would need to include a new attainment demonstration, with modeling and other supporting technical analysis. This new attainment plan would also have to show that all commitments in the previous implementation plan were met, and that the most stringent measures are in place. The District could adopt this new attainment plan in the spring of 2015, so EPA can approve the plan and the new attainment date (up to 2020, based on 2018-2020 data) before the initial serious attainment deadline has passed.

August 21, 2014

The winter of 2013-2014 also adds difficulty to the planning process for the *2015 Plan for the 1997 PM_{2.5} Standard*, which the District intends to present to your Board in spring of 2015. The annual average PM_{2.5} concentration for 2013 and 2014 will drive the need for additional control measures for this plan, and it will likely be extremely difficult to identify sufficient additional emissions reductions as a result. This current PM_{2.5} attainment difficulty is a stark contrast against EPA's optimism in 2012 that most areas would have no problem meeting the more stringent new annual PM_{2.5} standard of 12.0 µg/m³ by 2020, and that attaining this lower standard by 2020 would cost the entire nation just \$69 million¹.

FISCAL IMPACT:

The development of the new plan will result in extensive added workload. No staffing increase is recommended to accommodate this increased workload.

Attachment: Congressional Drought-Related Exceptional Event Letter, June 10, 2014 (2 pages)

¹ EPA's Regulatory Impact Analysis for the Proposed Revisions to the NAAQS for Particulate Matter. June 2012. See page ES-13 and 7-12. http://www.epa.gov/ttn/ecas/regdata/RIAs/PMRIACombinedFile_Bookmarked.pdf

San Joaquin Valley Unified Air Pollution Control District
Meeting of the Governing Board
August 21, 2014

**REVIEW AND APPROVE ACTIONS TO ADDRESS AIR QUALITY IMPACTS
RESULTING FROM THE EXCEPTIONAL WEATHER CONDITIONS CAUSED
BY THE RECENT DROUGHT**

Attachment:

Congressional Drought-Related Exceptional Event Letter, June 10, 2014
(2 PAGES)

Congress of the United States
Washington, DC 20515

June 10, 2014

The Honorable Gina McCarthy
Administrator
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

Dear Administrator McCarthy:

We are writing to request emergency consideration and issuance of a clarification by the Environmental Protection Agency (EPA) to the interpretation of the “exceptional events” provision of the Clean Air Act (42 USC § 7619) to include the current drought in California.

California Governor Jerry Brown declared a State of Emergency on January 17, 2014, due to extreme drought conditions in the state, and the U.S. Department of Agriculture has designated every county in California as drought disaster areas. These declarations are based on record-low precipitation in the 2013 water year and the northern California snowpack being at only 20 percent of average for that time of year. Specifically in the San Joaquin Valley, 2013 represented the driest year since the start of record keeping in 1895 and these drought conditions are continuing into 2014. In other words, the Valley is experiencing a level of drought not seen in at least 119 years.

A direct result of the ongoing drought and the associated weather conditions is that the Central Valley will not be able to demonstrate attainment for the 1997 PM2.5 Standard until at least 2016 as a direct result of drought-related air quality exceedences in November and December of 2013. This is particularly troubling because the San Joaquin Valley Air Pollution Control District (APCD) has informed us that except for these drought-related exceedences, the Central Valley was on track to demonstrate attainment by the end of 2014. Thus, our constituents will be required to acquire more emission offsets, driving up infrastructure and other project costs, or potentially face the loss of Federal transportation funds for critical highway projects in the Valley, as a direct result of these unforeseen and uncontrollable drought-related air quality impacts.

Let us be clear – we support efforts to clean up the air in the Central Valley. It is important to note the most recent APCD annual report shows that good quality air days for the 1997 PM2.5 Standard have steadily increased since 2002, PM2.5 concentrations have significantly dropped since 2002, and days over this standard are also down from a high in 2005. This is because of the efforts of our families, farmers, and businesses to clean up the air we breathe. Furthermore, APCD officials inform us that the Central Valley must still work toward compliance with two newer PM2.5 standards, and the California Air Resources Board has promulgated or is proposing regulations that mandate the replacement of old, pollution-emitting heavy and light duty vehicles and equipment with newer, cleaner models. Therefore, should EPA declare the ongoing drought an exceptional event, our constituents still face an extremely demanding regulatory environment that will challenge the regions ability to meet its compliance requirements.

We believe it would be wrong to penalize our constituents by failing to declare the ongoing drought in California an exceptional event under the Clean Air Act because Mother Nature has not blessed our state with rain or snow. We also believe penalizing them for this reason is contrary to the intent of the Clean Air Act, which specifically allows the exclusion of exceptional events when determining National Ambient Air Quality Standards attainment.

While we understand that the “exceptional events” provision of the Clean Air Act does not exclude data obtained from one single meteorological event involving stagnation or lack of precipitation, we believe the current drought emergency in California represents a multitude of events over a significant duration that would qualify under most interpretations as exceptional. Therefore, we urge you to consider a broader interpretation of the Clean Air Act exceptional events provisions that would help residents of the California Central Valley and across our state reach attainment of the 1997 PM2.5 air quality standards.

Thank you for your attention to this important matter. We look forward to your response and working with you to ensure our communities are not unfairly penalized and additionally impacted due to the current record-breaking drought in our state.

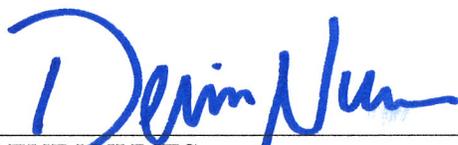
Sincerely,



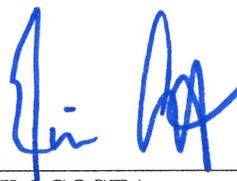
KEVIN McCARTHY
House Majority Whip



DAVID VALADAO
Member of Congress



DEVIN NUNES
Member of Congress



JIM COSTA
Member of Congress



JEFF DENHAM
Member of Congress



JERRY McNERNEY
Member of Congress

CC: Ms. Janet McCabe
Assistant Administrator for Air and Radiation
U.S. Environmental Protection Agency