

ANTELOPE VALLEY COMMUNITY AIR MONITORING PROPOSAL



SUBMITTED BY:

**THE ANTELOPE VALLEY AIR QUALITY
MANAGEMENT DISTRICT**

**IN PARTNERSHIP WITH THE
ASSOCIATION OF RURAL TOWN COUNCILS**



APRIL 30, 2018

INTRODUCTION

The Antelope Valley Air Quality Management District seeks to participate in the CAPP program to establish the prevalence of ambient PM₁₀ and PM_{2.5} as a potentially significant source of the severe and extensively documented health problems that are extant in the Antelope Valley. For more than a decade, the Antelope Valley has experienced among the highest incidence of emphysema and chronic obstructive pulmonary disease ("COPD") in the country¹, and very high childhood asthma rates occur uniformly throughout the Antelope Valley Community. According to health statistics gathered by the UCLA Center for Health Policy Research, 15.4% of children in the Antelope Valley Community have asthma; this is notably higher than the California average of 14.1% and the Los Angeles County average of 13.1%². Additionally, the incidence of Valley Fever in the Antelope Valley is substantial; nearly 30% of all Valley Fever cases reported in Los Angeles County have occurred in the Antelope Valley, and Los Angeles County is second only to Kern County in the number of Valley Fever cases reported each year³. The incidence rate of Valley Fever in the Antelope Valley Community is substantial, based on preliminary 2017 data, the incidence rate is estimated to be 62 cases per 100,000 in population⁴. Ambient particulate pollution causes respiratory insults that demonstrably exacerbate both COPD^{5,6} and asthma^{7,8,9} and are causally linked to the incidence of Valley Fever¹⁰.

The Antelope Valley Community is predominately rural, but it has a suburban core comprised of the Cities of Lancaster and Palmdale where approximately 60% of the population resides. It is one of a handful of areas in California that has never been properly assessed for compliance with either the National or California Ambient Air Quality Standards ("AAQS") for PM_{2.5}^{11, 12}. It has also not been properly assessed for compliance with the National AAQS for PM₁₀¹³ though it is established that the Antelope Valley Community does not comply with California's AAQS for PM₁₀¹⁴.

The Antelope Valley Community is a "high desert" community that is surrounded by mountains; it is formed by the convergence of the Tehachapi range (running south and west) and the Sierra Pelona/Portal Ridge/San Gabriel ranges (running north and west). This essentially creates a desert "bowl" area that is characterized by high wind speeds which shift direction quickly and unpredictably. As a result, particulate from areas sources located in one portion of the Antelope Valley Community are rapidly transported to, and deposited within, other portions of the community. As discussed in further detail below, high windspeeds (> 20 miles per hour) and inconsistent wind patterns predominate in the Antelope Valley; this results in rapid dust dispersion throughout the Antelope Valley Community irrespective of area source location. In other words, particulate released on the west side of the Valley affects residents on the east side just as particulate released from the east side of the Valley affect residents on the west side. This, coupled with the fact

FIGURE 1. ANTELOPE VALLEY COMMUNITY



----- Antelope Valley Community Boundary

that health burdens from Valley Fever, childhood asthma and COPD occur uniformly throughout the Antelope Valley mean that the District's proposal considers the Antelope Valley Community "as a whole" rather than a patchwork of neighborhoods.

Based on local knowledge, the District believes that the principal particulate sources in the Antelope Valley Community are: 1) The large disturbed areas on the west side where more than 40,000 acres of defunct agricultural operations and utility-scale solar farms are located; 2) The 100,000+ vehicles per day that enter and exit the Antelope Valley Community along the southern boundary via the 14 Freeway (the primary route of access to the Los Angeles area); 3) The agricultural operations on the east side (which include both defunct and active operations); and 4) The numerous rock, gravel, and sand quarries/processing operations along the south side.

The District is applying for CAPP funding to achieve the threefold purpose of assessing PM10 and PM2.5 levels in the Antelope Valley Community, identifying the principal area sources of these particulate, and facilitating public access to particulate data in a manner that permits health-impaired individuals to make informed decisions regarding the extent to which they should participate in outdoor activities. In this regard, the District's CAPP proposal achieves multiple goals established by AB 617, including community air monitoring, data display/communications, and emission assessment.

COMMUNITY DESCRIPTION

The Antelope Valley Community lies entirely within the County of Los Angeles and is bounded by the Tehachapi Range on the northwest, the Sierra Pelona/Portal Ridge/San Gabriel ranges on the south, the Kern County line on the north, and the San Bernardino County line on the east. Antelope Valley Community boundaries are depicted in Figure 1. The Antelope Valley Community meets the definition of "Disadvantaged Community" that is contemplated by AB 617 and it satisfies all the "Disadvantaged Community" criteria set forth in the California Health and Safety Code § 39711:

- The Antelope Valley Community is disproportionately burdened by negative health effects that either result from, or are exacerbated by, ambient particulate pollution. For instance, the Antelope Valley Community has one of the highest Valley Fever incidence rates in California (a condition directly attributable to ambient levels of respirable particulate). Additionally, (and as set forth above) the Antelope Valley Community is disproportionately burdened by COPD and childhood asthma; these COPD and asthma health burdens are demonstratively exacerbated by ambient PM10 and PM2.5 levels.

- The Antelope Valley Community has the highest "housing instability" rate in the County¹⁵; 11.3% of adults in the Antelope Valley Community report not having their own place to live or sleep over the last 5 years (more than twice the County average of 4.8%). The Antelope Valley Community meets the "Disadvantaged Community" criteria pertaining to "low levels of homeownership" and "high rent burden".
- The Antelope Valley Community has among the highest unemployment rates in Los Angeles County; 12.4% of adults are unemployed and looking for work ¹⁶. This is 22% higher than the county average, and only one area within Los Angeles County has a markedly higher rate (South Los Angeles County is at 13.6%). The Antelope Valley Community meets the "Disadvantaged Community" criteria for high unemployment.
- 21.4% of the population of the Antelope Valley Community has a household income that is less than 100% of the Federal Poverty Level ("FPL")¹⁷. This is 16% higher than the County average of 18.4% and 53% higher than the state average of 14%¹⁸. The Antelope Valley Community meets the low income "Disadvantaged Community" criteria.

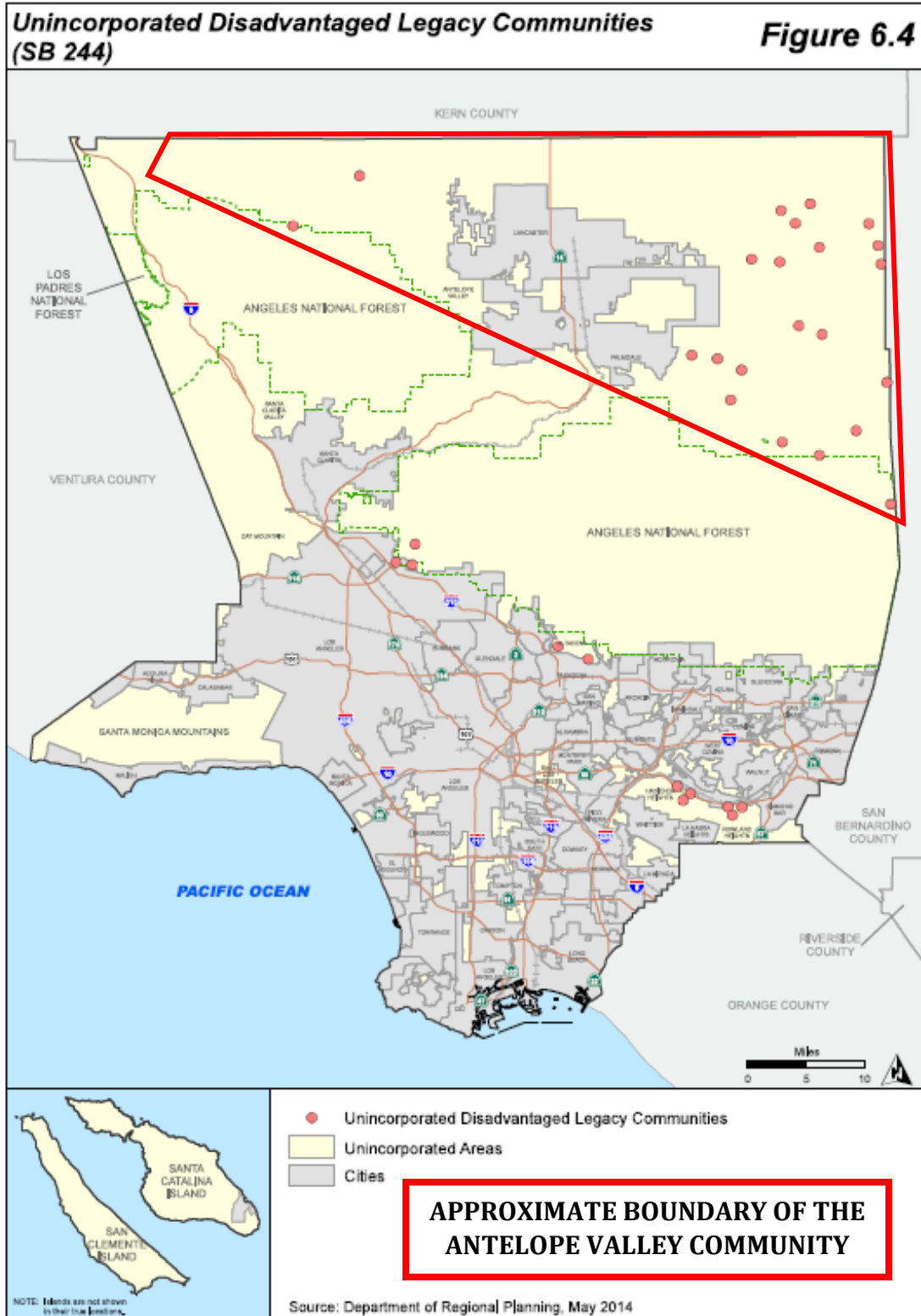
The boundaries of the Antelope Valley Community encompass the residents that have the highest PM10 and PM2.5 exposure burden from anthropogenic and non-anthropogenic area sources. These boundaries were established based on the District's assessment of likely mobile and stationary area source locations, soil erodability indices, land use characteristics, and meteorological data. The District acknowledges that this boundary encompasses a large area, but this is necessary because of the unique characteristics which create health burdens in areas that are not immediately adjacent to area sources of ambient particulate.

DATA SOURCES FOR EXPOSURE BURDEN ASSESSMENT

The data resources relied upon to assess exposure burden within the Antelope Valley Community include CalEnviroScreen, SB 244 Disadvantaged Legacy Community data, ambient monitoring data, meteorological data, health indicator data, soil erodability data, CalTrans traffic data and additional data assembled from a variety of historical records.

Disadvantaged Legacy Communities under SB 244: SB 244 mandates the identification of disadvantaged unincorporated communities (referred to as "legacy Communities") where the lack of public and private investment threatens the health and safety of the residents of these communities and fosters economic, social, and educational inequality. In accordance with SB 244, the County of Los Angeles mapped Disadvantaged Unincorporated Legacy Communities and identified these Legacy Communities in the recently adopted County General Plan. The map is provided in Figure 2 and has been edited slightly to show the approximate boundaries of the Antelope Valley Community. As indicated in Figure 2, the Antelope Valley Community encompasses numerous Disadvantaged Legacy Communities.

FIGURE 2. DISADVANTAGED LEGACY COMMUNITIES IN THE ANTELOPE VALLEY.



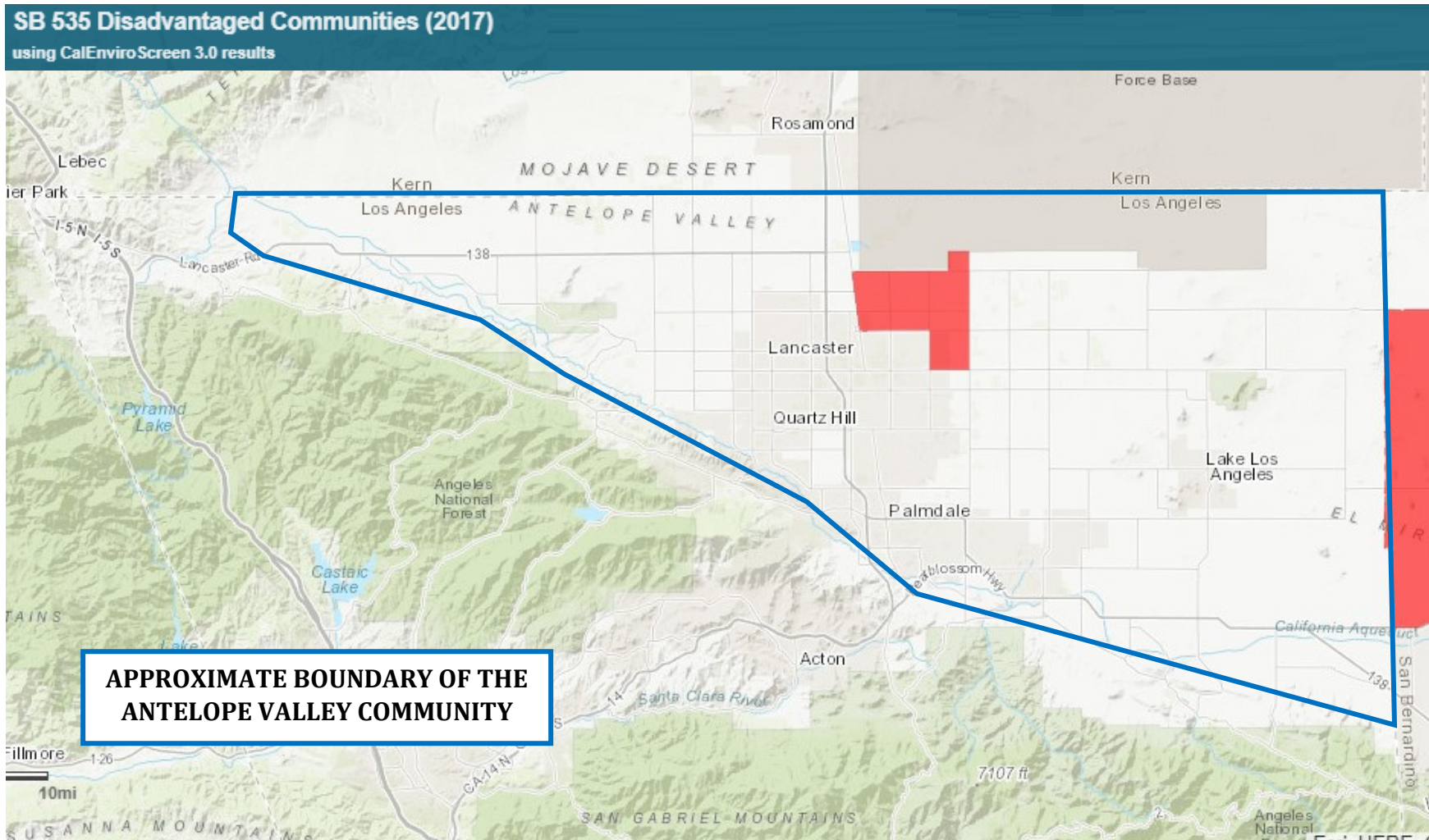
CalEnviroScreen: California state law defines environmental justice to mean “the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations, and policies.” Environmental justice principles are an important part of State’s goal to restore, protect and improve the environment, and to ensure the health of people, the environment and the economy. CalEnviroScreen is a mapping tool developed to identify California communities that are most affected by many sources of pollution, and where people are often especially vulnerable to pollution’s effects. A screenshot of CalEnviroScreen 3.0 results are provided in Figure 3 which has been modified slightly to show the approximate boundaries of the Antelope Valley Community. As indicated in this figure, the heart of the Antelope Valley Community is a disadvantaged area where residents are deemed "especially vulnerable to pollution's effects".

Ambient Monitoring Data: Within the Antelope Valley Community, the AVAQMD maintains and operates one ambient monitoring sampler that collects and reports PM10 and PM2.5 concentrations. The sampler is located within the City of Lancaster and is surrounded by urban development which, to some extent, shields the monitoring station from windblown dust that occurs in the greater Antelope Valley Community outside the urban core. Nonetheless, it is not uncommon for the ambient sampling equipment in Lancaster to detect PM2.5 levels exceeding the 35 µg/m³ Federal 24-hour AAQS. However, there is insufficient data from this monitoring station to evaluate the data in terms of the California PM2.5 AAQS. The fact that the data collected from this monitoring station reveals high ambient particulate levels despite potential shielding provided by surrounding urban development is the primary reason that AVAQMD is proposing a broader PM2.5 and PM 10 monitoring program within the Antelope Valley Community under the CAPP program.

Health Indicator Data: The impetus for the AVAQMD's proposed PM2.5/PM10 monitoring effort under the CAPP is provided by extensive health indicator data supplied by the Los Angeles County Department of Public Health and the UCLA Center for Health Policy Research (both of which are cited herein). Data from these sources reveal that a uniformly high frequency of Valley Fever and childhood asthma occur throughout the Antelope Valley Community. This information (reconciled with wind data and other anecdotal evidence) indicates that ambient dust problems are not constrained to only certain neighborhoods, and it supports the AVAQMD's conclusion that PM2.5 and PM10 monitoring under the CAPP should not be conducted in a fragmented manner in only certain neighborhoods, rather it should be conducted across the Antelope Valley Community *as a whole*.

CalTrans traffic data: Information provided by the California Department of Transportation reveals that the peak daily vehicle trip rate along the southern boundary of the Antelope Valley Community exceeds 110,000; this rate has climbed over the last 10 years¹⁹. The AVAQMD seeks to explore whether this contributes appreciably to PM10 and PM2.5 levels.

FIGURE 3. CALENVIROSCREEN 3.0 DATA FOR THE ANTELOPE VALLEY COMMUNITY.

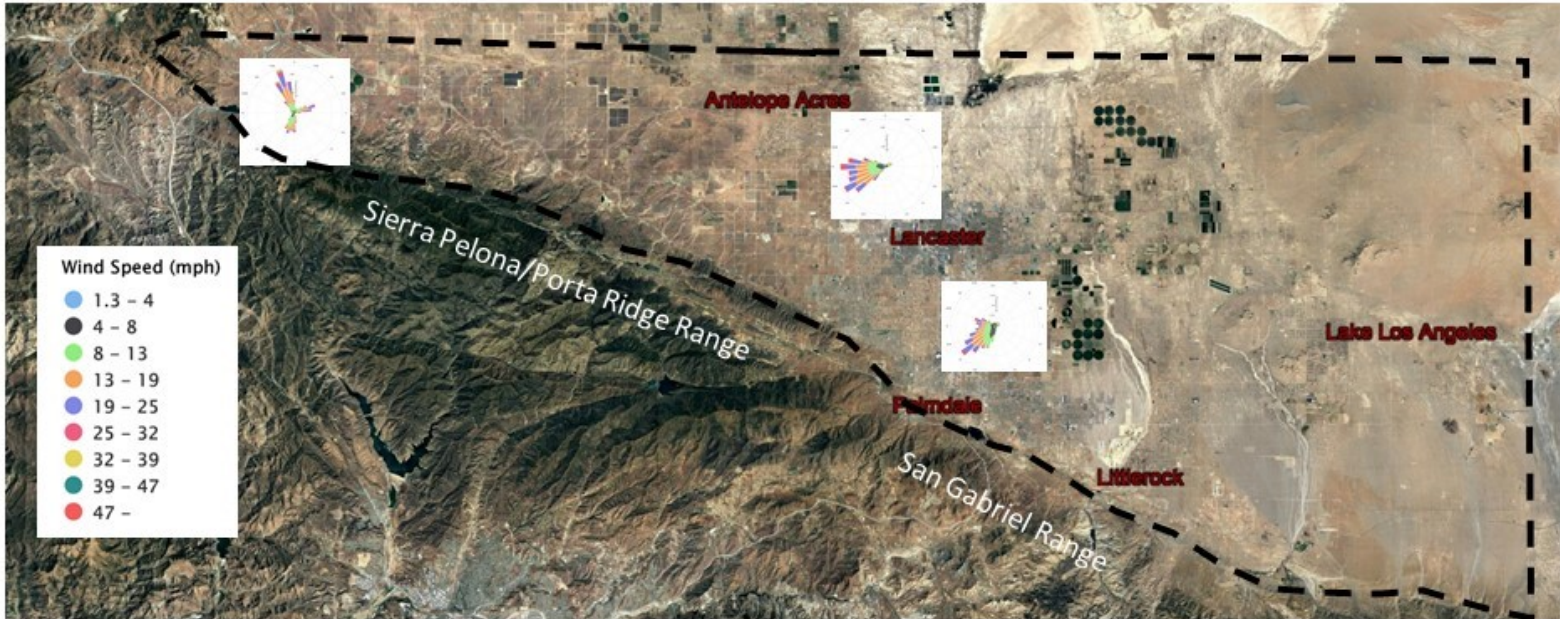


Meteorological Data: Several meteorological stations located within the Antelope Valley Community provide extensive historic wind data. Average windspeed and direction data from these resources for the time period between 2010 and 2018 is provided in a "windrose" format in Figure 2. These data reveal that the Antelope Valley Community experiences nearly constant winds exceeding 15 miles per hour and frequently experience significant (> 25 miles per hour) wind events. In the western portion of the Antelope Valley Community, significant wind events occur from nearly all points of the compass. In the east, high winds from the southwest and northwest predominate, though significant wind events from the east and north east are common. Rapid directional shifts during high wind events also occur in the Antelope Valley Community, as evidenced in the chart included at the bottom of figure 2 which reports windspeed and direction at Fox Airport in April of 2013. This chart shows that 25 mph easterly winds quickly shift to 25 mph westerly winds within just a few hours. Because of the high windspeeds and frenetic directional profiles within the Antelope Valley Community, the AVAQMD suspects that particulate entrained on the west side of the Antelope Valley Community can cause high ambient particulate levels on the east side and vice versa; the AVAQMD seeks to confirm this through implementation of a CAPP monitoring program.

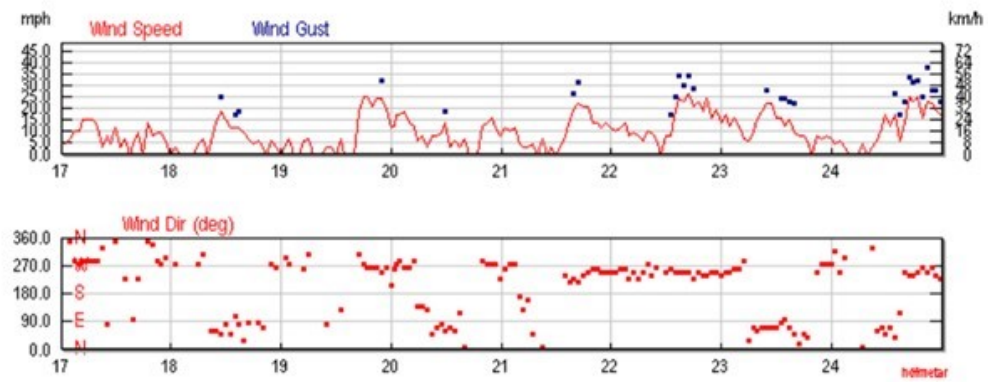
Soil Erodability Data: Wind erodability data for the Antelope Valley that has been compiled by the US Department of Agriculture indicate the areas within the Antelope Valley Community having soils with a high "erodability index" (established based on tons per acre per year). These data (available in map format as depicted in Figure 3) will be used by the AVAQMD to inform locational decisions for placement of PM2.5 and PM10 sampling equipment in the Antelope Valley Community.

Additional Data: Windblown particulate is common in the Antelope Valley Community and has been well documented for nearly a century. A 1970 soil survey of the Antelope Valley conducted by the U.S. Department of Agriculture reports "Soil blowing is a hazard in all parts of the Antelope Valley area"²⁰. A 1990 article in the Los Angeles Times reports that development occurring in the western portion of the Antelope Valley Community continually blanketed the east side with dust for days.²¹ In 1991, the US Department of Agriculture Soils Conservation Service launched a program to stabilize windblown particulate from thousands of acres of land in the Antelope Valley that reduced visibility at Edwards Air Force Base, scoured painted surfaces and landscaping in the area, and caused numerous traffic accidents on area roads²²." A detailed study conducted by the Department of Defense in 1963 reports "The incidence of sand and dust storms is directly related to the occurrence of winds of appreciable velocity". It goes on to report that, over a 10-year period the mean number of days when visibility was less than a mile due to blown dust at Muroc Air Base (now Edwards Air Force Base) was 0.4 per month and that records collected in Palmdale from 1948 to 1953 show an average of 6 dust storms per year²³.

FIGURE 4. ANTELOPE VALLEY COMMUNITY WINDROSE DATA

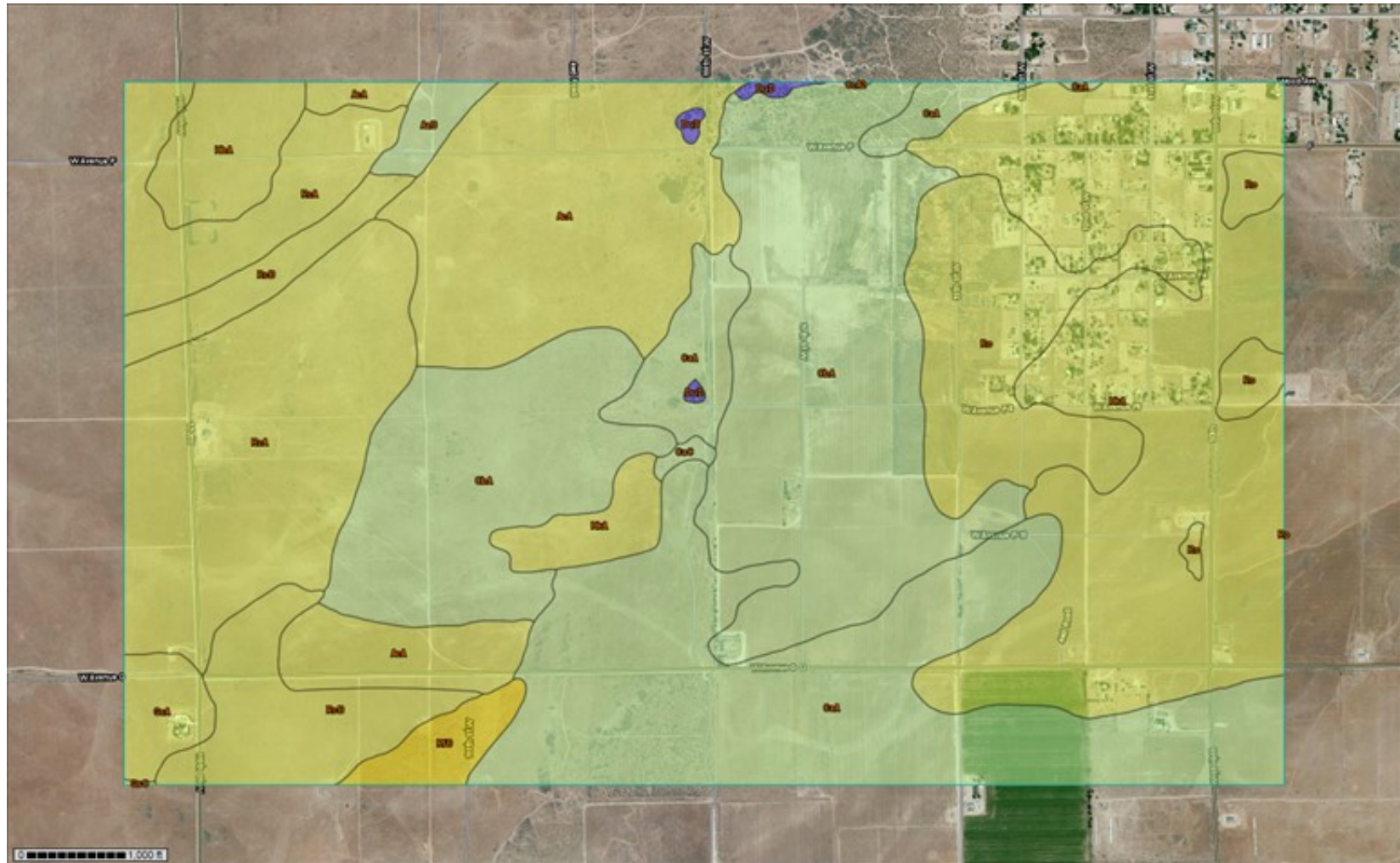


Weather Data from the William J Fox Field Airport for April, 2013



Data taken from www.wunderground.com

FIGURE 5. SOIL ERODABILITY MAP FOR A SMALL AREA WITHIN THE ANTELOPE VALLEY COMMUNITY.



Indication of wind erodibility index (tons/acre/year): 56 (yellow), 86 (light yellow), 134 (light green), 250 (dark blue). Data was obtained from the USDA websoilsurvey database

Recent events reveal that windblown particulate exposure problems continue to exist. In April, 2013 windblown dust reduced visibility to such an extent that it caused nine different traffic collisions on the 14 freeway within the Antelope Valley. Numerous sources of these dust events are well documented; wind blowing from the east over farmland and even construction sites can generate such dust clouds that visibility is limited on neighborhoods to the west, and even cause visibility problems on portions of Air Force Plant 42. Particulate entrained by westerly winds blowing over solar farm developments and construction sites on the west side can completely block the view of the nearby Tehachapi Mountains (shown in the photograph on the cover of this submittal). The AVAQMD seeks to explore the extent to which such dust events create PM2.5 and PM10 exposure burdens within the Antelope Valley Community.

CRITERIA RELIED UPON TO PRIORITIZE COMMUNITIES

The District is proposing only one project for the CAPP program, and it involves a single community (the Antelope Valley Community). Therefore, it is not necessary for the District to prioritize the communities within the region.

CANDIDATE COMMUNITIES WITH EXPOSURE BURDENS.

The District has identified only the Antelope Valley Community as a single community that has high cumulative exposure burdens; the Antelope Valley Community is described above.

PUBLIC OUTREACH APPROACH AND SCHEDULE

The District has already initiated public outreach on this project, and it will continue such activities throughout 2018. The District's outreach approach is founded on 1) Discussions and communications with members of local neighborhood councils who are elected by rural residences within the Antelope Valley Community; 2) Stakeholder meetings with the city officials from Lancaster and Palmdale; 3) Discussions with local dust control groups including the Antelope Valley Resource Conservation District and the Antelope Valley Dust Control Group; 4) Meetings with County health officials and local school districts. These meetings and discussions will be convened for the purpose of pinpointing specific areas within the community where notable particulate-related respiratory insults frequently occur, "mapping" where these areas overlay sensitive receptors within the Antelope Valley Community, identifying the most appropriate sampling locations and equipment, and soliciting recommendations regarding data display and inventory reporting methodologies to ensure that the data is publicly available in a format that is most useful to residents and public officials. The tentative schedule for this outreach effort is summarized in Table 1.

TABLE 1. PUBLIC OUTREACH SCHEDULE FOR THE ANTELOPE VALLEY COMMUNITY CAPP PROGRAM.

MAY	Make a presentation and solicit input at the regularly scheduled meeting of the Association of Rural Town Councils
	Make a presentation and solicit input at the regularly scheduled council meeting convened by the City of Lancaster
	Make a presentation and solicit input at the regularly scheduled council meeting convened by the City of Palmdale
	Convene discussions with officials from the Los Angeles County Health Department regarding neighborhood-based health statistics that pertain to ambient particulate-related health concerns.
JUNE	Convene meetings and discussions with the Antelope Valley Resource Conservation District to gather input and acquire soil erodability maps of the Antelope Valley to pinpoint likely particulate entrainment areas.
	Convene meetings and discussions with the Antelope Valley Dust Control Group to gather input and assess appropriate sampling and data collection methodologies to maximize the scope, extent, and quality of the particulate data that will be collected.
	Convene meetings and discussions with local City, County and District officials to identify appropriate and secure sampling locations within the Antelope Valley Community.
	Meet with the Antelope Acres rural council (in the west Antelope Valley)
	Meet with the Lake Los Angeles rural council (in the east Antelope Valley)
	Meet with the Littlerock rural council (located in the south Antelope Valley) Meet with other community councils that express an interest in participating,
	Provide a progress report and solicit additional input at the regularly scheduled meeting of the Association of Rural Town Councils
	Provide a progress report and solicit additional input at the regularly scheduled council meeting convened by the City of Palmdale
	Provide a progress report and solicit additional input at the regularly scheduled council meeting convened by the City of Palmdale
JULY	Convene a meeting with the Antelope Valley Resource Conservation District and the Antelope Valley Dust Control Group to finalize the proposed sampling program (including methodologies, data quality objectives, and quality assurance planning) and particulate data reporting platforms for public access.
	Convene meetings and discussions with local City, County and District officials to finalize the proposed sampling program and the particulate data reporting platforms that will be provided by AVAQMD for public access.
	Present the proposed sampling program and the particulate data reporting platforms for public access at the regularly scheduled meeting of the Association of Rural Town Councils and solicit final input regarding same.

THE DISTRICT'S RELATIONSHIP WITH COMMUNITY MEMBERS AND COMMUNITY-BASED ORGANIZATIONS

The District has established meaningful relationships with the neighborhoods and localities that comprise the Antelope Valley Community and with residents and community-based organizations that have striven to address particulate concerns for decades. These groups support the AVAQMD's CAPP Proposal effort and are identified below. Many have agreed to provide letters of support (some of which are included in Attachment A). However, and due to time constraints, some letters are not yet completed. Additional letters received in future shall be provided to the Air Resources Board in a supplemental package.

The Association of Rural Town Councils:

The Association of Rural Town Councils is an affiliation of rural town council groups from the northern portion of unincorporated Los Angeles County that work together to address issues and develop collaborative solutions to matters of concern to the Antelope Valley Community. The Association of Rural Town Councils is partnering with the AVAQMD on the CAPP monitoring program proposal.

The Los Angeles County Department of Public Health

The Los Angeles County Department of Public Health ("DPH") strongly supports the AVAQMD's proposed CAPP effort and provided the fundamental health data and "health indicator" statistics upon which the AVAQMD's proposal is founded. The AVAQMD and the DPH will continue to collaborate on the CAPP effort to ensure a comprehensive, health-based monitoring program is developed.

The City of Lancaster

The City of Lancaster is one of two incorporated Cities within the Antelope Valley Community under the jurisdiction of the AVAQMD. The City of Lancaster has two seats on the AVAQMD Governing Board. Currently the Vice Mayor of Lancaster serves as the Chairman of the AVAQMD Governing Board. The City of Lancaster produces more solar power per capita than any other city in the state. Lancaster also changed its building code to require that new homes include rooftop solar to demonstrate the local governments are making real efforts to address climate change. Lastly, Lancaster is home to the BYD electric truck and bus factory and has committed to have the 75-bus fleet of the Antelope Valley Transit Authority operate all electric buses by the end of 2018.

The City of Palmdale

The City of Palmdale is one of two incorporated Cities within the Antelope Valley Community under the jurisdiction of the AVAQMD. The City of Palmdale has two seats on the AVAQMD Governing Board. Currently a Councilman from Palmdale serves as the Vice Chairman of the AVAQMD Governing Board. Palmdale is home to Kinkisharyo the #1 supplier of low-floor light rail vehicles in North America

The Antelope Valley Resource Conservation District

Resource Conservation Districts began in the 1930's when the problem of soil erosion in the United States became so severe that President Roosevelt introduced the Standard State Conservation District Law to combat the degradation of the country's land resources. Resource Conservation Districts are local government bodies, chartered by the state and organized and operated by local farmers, ranchers and interested citizens. The Antelope Valley Resource Conservation District is managed by 5 non-salaried directors who are land users and familiar with local resource problems.

The Antelope Valley Dustbusters Taskforce

The Antelope Valley Dustbusters Taskforce is a locally-based, multi-agency working group that was organized and convened to formulate dust mitigation strategies. The Taskforce consists of local farmers, representatives from academia, private consulting companies and research institutes, the California Air Resources Board, the Antelope Valley AQMD, the Natural Resources Conservation Service, the Antelope Valley Resource Conservation District, the Desert Mountain Resource Conservation and Development Council, the Southern California Edison Company and many others.

The Partners for Fugitive Dust/ Valley Fever in the A.V.

The Partners for Fugitive Dust/ Valley Fever in the A.V. is an Antelope Valley grassroots organization with a mission to decrease fugitive dust through translation of scientific research to real world application. In addition, fugitive dust work Partners has expended their efforts provide awareness for Valley Fever. In 2017 Partners sponsored the first annual AV Valley Fever Walk to share valuable information and raise funds for valley fever research.

Save Our Rural Town:

Save Our Rural Town is a grassroots organization formed to protect rural communities and preserve the rural form within the County of Los Angeles. Among other things, Save Our Rural Town has collaborated with the AVAQMD, the City of Lancaster, and the County of Los Angeles in the implementation of site specific dust control measures on solar farm development projects within the Antelope Valley Community. Save Our Rural Town members are located throughout the Antelope Valley and beyond.

CONCLUSION

The District looks forward to the opportunity to participate in the CAPP Program and through such efforts, shed more light on ambient particulate levels within the Antelope Valley Community as a necessary first step in addressing broader health concerns in the area.

END NOTES

¹ Emphysema/COPD is a top cause of death in the Antelope Valley portion of Los Angeles County, claiming 58.9 lives per 100,000 which is more than double the county-wide death rate [page 24 of the Los Angeles County "Key Indicators of Health" Report published by the LA County Department of Public Health:

http://publichealth.lacounty.gov/ha/docs/2015LACHS/KeyIndicator/PH-KIH_2017-sec%20UPDATED.pdf]). According to the CDC, this morbidity rate is among the highest in the Country [see <https://www.cdc.gov/copd/data.html>].

² According to health statistics reported by the UCLA Center for Health Policy Research [<http://askchisne.ucla.edu/ask/layouts/ne/dashboard.aspx#/>], the incidence of childhood asthma across all zip codes in the Antelope Valley Community uniformly exceeds 15%, and can be as high as 16.5%. When reconciled with current population data, the overall incidence of childhood asthma in the Antelope Valley Community is 15.4% which is substantially higher than the Los Angeles County Average of 13.1% reported by the UCLA Health Policy Research Center. The Los Angeles County Department of Public Health reports that 72% of children with asthma that live within the Antelope Valley Community regularly miss school

[\[http://publichealth.lacounty.gov/docs/HealthNews/Child_Asthma_2014.pdf\]](http://publichealth.lacounty.gov/docs/HealthNews/Child_Asthma_2014.pdf)

³ The LA County Department of Public Health reports that 591 cases of Valley Fever were occurred in the Antelope Valley Service Planning Area between 2011 and 2015 ["Valley Fever Overview – What we Know and Don't Know" Presentation by the Los Angeles County Department of Public Health to the AVAQMD in 2018]; this is 29% of the 2,032 cases that the LA County Department of Public Health reported in Los Angeles County between 2011 and 2015 (*ibid*). The California Department of Public Health reports Valley Fever incidence statistics by County, and between 2013 and 2015, the number of Valley Fever diagnoses in Los Angeles County was second only to Kern County:

[\[https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/Yearly_SummRptsofSelectedGenCommDisinCA2011-2015.pdf#page=38\]](https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/Yearly_SummRptsofSelectedGenCommDisinCA2011-2015.pdf#page=38)]

⁴ The LA County Department of Public Health estimates 853 Valley Fever cases were diagnosed in 2017 (*ibid*), Assuming 29% were in the Antelope Valley (as noted above), and reconciling this with the 396,357 population of the Antelope Valley portion in LA County [http://publichealth.lacounty.gov/ha/docs/2015LACHS/KeyIndicator/PH-KIH_2017-sec%20UPDATED.pdf] yields an estimated incidence rate of 62 cases per 100,000.

⁵ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3958649/>.

⁶ The Federal Environmental Protection Agency reports "Epidemiological panel studies exploring the potential relationship between daily particle pollution levels and respiratory effects in people with COPD reported increased symptomatic response, increased use of evening medication (winter time), and small decrements in spirometric lung function in the days immediately following elevated particle pollution (PM10 and PM2.5) levels"

[\[https://www.epa.gov/particle-pollution-and-your-patients-health/health-effects-pm-patients-lung-disease#copd\]](https://www.epa.gov/particle-pollution-and-your-patients-health/health-effects-pm-patients-lung-disease#copd)]

⁷ <https://ehp.niehs.nih.gov/wp-content/uploads/124/12/EHP92.alt.pdf> .

⁸ The Federal Environmental Protection Agency reports "In general, epidemiologic data provide substantial evidence for the association between particle pollution exposure and adverse effects in individuals with allergies and asthma, as assessed by frequency and severity of respiratory symptoms, pulmonary function changes, medication use, and ambient particle pollution levels. There is evidence that both the development of asthma and its exacerbation can be associated with particle pollution exposure" [<https://www.epa.gov/particle-pollution-and-your-patients-health/health-effects-pm-patients-lung-disease#copd>]

⁹ Page 7 of the California Air Resources Board titled "Assessment of California's Statewide Air Monitoring Network for the Children's Environmental Health Protection Act (SB 25)" found here: <https://www.arb.ca.gov/ch/programs/sb25/adequacyreport.pdf> . Notably, this report concludes that ambient PM10 and PM2.5 levels can be adequately predicted in areas that do not have monitors by using data from the closest established monitoring station, and it also concludes that little variations are found in "Community-to-Community" comparisons of ambient particulate levels. However, these conclusions are only applicable to the urban areas that were considered in the studies reported therein; they do not apply to areas like the Antelope Valley that experience frequent and significant dust storm episodes resulting from high wind events that entrain particulate released from area sources that are a thousand acres or more in size and which only have a single monitoring station located in the middle of a city.

¹⁰ Coccidioidomycosis (Valley fever) is an infectious disease acquired by inhalation of soil-dwelling *Coccidioides* fungus spores [https://wwwnc.cdc.gov/eid/article/21/11/15-0129_article]; these spores are common in the Antelope Valley.

¹¹ PM2.5 area designations for the National AAQS are mapped here: https://www.arb.ca.gov/desig/adm/2015/fed_pm25.pdf

¹² PM2.5 area designations for the California AAQS are mapped here: https://www.arb.ca.gov/desig/adm/2015/state_pm25.pdf

¹³ PM10 area designations for the National AAQS are mapped here: https://www.arb.ca.gov/desig/adm/2015/fed_pm10.pdf

¹⁴ PM10 area designations for the California AAQS are mapped here: https://www.arb.ca.gov/desig/adm/2015/state_pm10.pdf

¹⁵ Page 8 of Los Angeles County Department of Public Health "Key Indicators of Health" Study [http://publichealth.lacounty.gov/ha/docs/2015LACHS/KeyIndicator/PH-KIH_2017-sec%20UPDATED.pdf]

¹⁶ Ibid

17 Ibid

18 See <https://www.kff.org/other/state-indicator/population-above-and-below-100-fpl/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>

19 See Caltrans trip count data provided here: <http://www.dot.ca.gov/trafficops/census/>

20 Page 110 of the report found here:

https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/california/antelopevalleyCA1970/antelopevalleyCA1970.pdf]

21 http://articles.latimes.com/1990-08-24/local/me-1242_1_antelope-valley-residents

22 Results reported on Page 113 of the 1993 Proceedings from the "Wildland Shrub and Arid Land Restoration Symposium" convened in Las Vegas, Nevada October 19-21.

23 <http://www.dtic.mil/dtic/tr/fulltext/u2/417036.pdf>

ATTACHMENT A

LETTERS OF SUPPORT FOR THE AVAQMD'S CAPP PROPOSAL

Association of Rural Town Councils
C/O Three Points-Liebre Mountain Town Council
P.O. Box 76
Lake Hughes, CA 93532
661.724.2043
ourartc@gmail.com

25 April 2018

Mr. Bret Banks, Executive Director
Antelope Valley Air Quality Management District
43301 Division Street Suite 206
Lancaster CA 93535

Dear Mr. Banks,

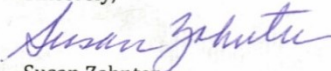
Subject: The Association of Rural Town Council's Partnership with the Antelope Valley
Air Quality Management District to Implement a PM10 and PM2.5 Monitoring
Program within the Antelope Valley Community

Reference: California Air Resources Board's AB617 Grant Program

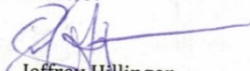
The Association of Rural Town Councils is pleased to partner with the Antelope Valley Air Quality Management District in pursuing a grant opportunity under AB 617 to develop and implement a PM10 and PM2.5 monitoring program within the Antelope Valley Community. The Association of Rural Town Councils (ARTC) has long been concerned by the extremely high incidence of childhood asthma and chronic obstructive pulmonary disease (COPD) among Antelope Valley residents, and we note with growing alarm the steep increase in Valley Fever diagnoses that has occurred over the last two years within in the Antelope Valley Community. The latter is directly related to the presence of respirable particulate in the air, and the former health outcomes are certainly exacerbated (and perhaps even caused) by the same. This, coupled with the fact that the Antelope Valley has not been shown to comply with all state and federal ambient air quality standards for particulate, has led the ARTC to partner with the AVAQMD to explore a PM2.5 and PM10 monitoring program. The ARTC seeks to investigate and document the extent to which high PM2.5 and PM10 concentrations occur within the Antelope Valley Community as a necessary "first step" in addressing broader health concerns in the area.

The ARTC appreciates the opportunities provided by AB 617, and we look forward to collaborating with the AVAQMD in pursuit of such opportunities.

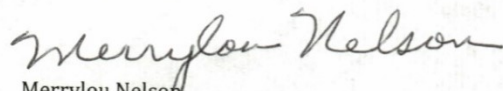
Sincerely,



Susan Zahnter
Director



Jeffrey Hillinger
Assistant Director



Merrylou Nelson
Secretary



Antelope Valley Resource
Conservation District

Claudette Beck, President
Jeff Orest, Vice President
Tammy Lucas, Secretary/Treasurer
Keith Deagon, Director
Jenna Roper, Director
Debra Gillis, Executive Director

Promote conservation and restoration of natural resources by
providing plant materials, educational programs, and expertise in conservation.

April 25, 2018

Bret Banks
The Antelope Valley Air Quality Management District
43301 Division Street Suite 206
Lancaster CA 93535

Subject: The Antelope Valley Resource Conservation District's Partnership with the Antelope Valley Air Quality Management District to Implement a Community Air Partner Program (AB617).

Dear Mr. Banks:

The Antelope Valley Resource Conservation District (AVRCD) is pleased to partner with the Antelope Valley Air Quality Management District in pursuing a grant opportunity under AB 617 to develop and implement a PM10 and PM2.5 monitoring program within the Antelope Valley Community. The AVRCD's mission is to promote conservation and restoration of natural resources for our area by providing plant materials, educational programs, and expertise in conservation. AVRCD has become concerned by the extremely high incidence of childhood asthma and chronic obstructive pulmonary disease ("COPD") among Antelope Valley residents, along increase in Valley Fever diagnoses that has occurred in the Antelope Valley Region.

The AVRCD has been active in researching and developing various mitigation strategies to control wind-blown fugitive dust in the Antelope Valley. A better understanding of fugitive dust, the specific regional areas of concern along with various control strategies should result in approaches reverse the high incidence of lung disease in the Antelope Valley.

The AVRCD is excited to support and partner with the AVAQMD to explore a PM2.5 and PM10 monitoring program. The AVRCD seeks to explore the extent to which high PM2.5 and PM10 concentrations occur within the Antelope Valley Community as a necessary "first step" in addressing broader health concerns in the area.

The AVRCD appreciates the opportunities provided by AB 617, and we look forward to collaborating with the AVAQMD in pursuit of such opportunities.

Sincerely,

Claudette Beck
President of the Board of Directors

44811 N. Date Avenue, Suite G, Lancaster, CA 93534
661-305-3405, 661-752-8246 fax
www.avrcd.org

April 25, 2018

Bret Banks

The Antelope Valley Air Quality Management District
43301 Division Street Suite 206
Lancaster CA 93535

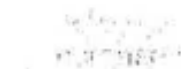
Subject: The Partners for Fugitive Dust/Valley Fever with the Antelope Valley Air Quality Management District to Implement a Community Air Partner Program (AB617).

Dear Mr. Banks:

The Partners for Fugitive Dust/Valley Fever (PFDVF) is pleased to partner with the Antelope Valley Air Quality Management District in pursuing a grant opportunity under AB 617 to develop and implement a PM10 and PM2.5 monitoring program within the Antelope Valley Community. PFDVF has become concerned by the extremely high incidence of childhood asthma and chronic obstructive pulmonary disease ("COPD") among Antelope Valley residents, along increase in Valley Fever diagnoses that has occurred in the Antelope Valley Region.

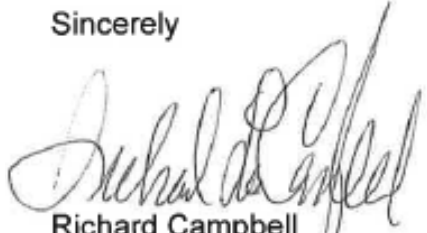
The PFDVF has been active promoting awareness of Valley Fever throughout the High Desert Region. PFDVF Walk for Valley Fever was established to raise awareness of the disease and fund medical research. The Antelope Valley has been identified as having one of the highest incidences of Valley Fever in all of California. The Valley Fever spores are commonly associated with disturbed soil, fugitive dust and high wind areas. A better understanding of fugitive dust, the specific regional areas of concern along with various control strategies should result reduce cases of Valley fever in the Antelope Valley.

The PFDVF is excited to support and partner with the AVAQMD to explore a PM2.5 and PM10 monitoring program. The PFDVF seeks to explore the extent to which high PM2.5 and PM10 concentrations occur within the Antelope Valley Community as a necessary "first step" in addressing broader health concerns in the area.



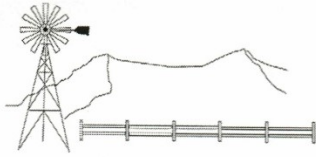
The PFDVF appreciates the opportunities provided by AB 617, and we look forward to collaborating with the AVAQMD in pursuit of such opportunities.

Sincerely



Richard Campbell
Partners for Fugitive Dust/Valley Fever





SAVE OUR RURAL TOWN

Brett Banks
Air Pollution Control Officer
The Antelope Valley Air Quality Management District
43301 Division Street Suite 206
Lancaster CA 93535

April 27, 2018

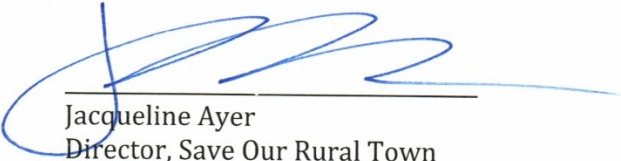
Subject: Save Our Rural Town's Collaboration with the Antelope Valley Air Quality Management District to Implement a Particulate Monitoring Program within The Antelope Valley Community

Reference: California Air Resources Board's AB617 Grant Program

Dear Mr. Banks;

Save Our Rural Town ("SORT") is thrilled to collaborate with the Antelope Valley Air Quality Management District ("AVAQMD") in its pursuit of a grant to develop a PM10 and PM2.5 monitoring program within the Antelope Valley. As you know, SORT has members that live throughout the Antelope Valley, and SORT actively participates in discretionary project reviews conducted by Federal, County, and Local agencies to ensure that projects within the Antelope Valley are appropriately conditioned with adequate emission controls. SORT also seeks to establish the compliance status of the Antelope Valley with regard to State and Federal Ambient Air Quality Standards, and toward this end, continues to collaborate with State, County, and Local agencies. SORT supports the AVAQMD's proposed effort under the AB 617 Grant Program, and we stand ready to provide the technical and community outreach support that the AVAQMD requires in pursuit of this effort.

Sincerely



Jacqueline Ayer
Director, Save Our Rural Town

SAVE OUR RURAL TOWN

saveourruraltown.org

P.O. Box 757, Acton, CA 93510