



CALIFORNIA PILOTS ASSOCIATION

Congresspersons Lofgren and Khanna, Members of the Press,

Our organization, The California Pilots Association (CalPilots), whose mission is the preservation, promotion and protection of General Aviation airports, along with our chapters, business partners, and members are compelled to respond to your recent hearing and press conference on leaded aviation fuels impacts on the community. There have been many “facts” and concerns expressed that we believe are significantly overstated and intended to foment fear and anger in the community. Our goal in responding to your interest of leaded aviation fuels is not to minimize the issue.

We agree that removal of aviation leaded fuels needs to be done but it must happen in a safe, responsible manner. There are three crucial points here that need to be highlighted: **1) The only avgas currently available at the Santa Clara County airports is unleaded fuel, 2) The majority of operations currently occurring at Reid Hillview Airport already utilize unleaded fuels, and 3) With the recent approval of 100 octane unleaded fuel, it is the County of Santa Clara (as the provider of fuel to the aviation community) who will decide how quickly the airport goes fully lead free.**

As a reminder, it is the aviation community (and particularly the aviation businesses at Reid Hillview Airport) that have driven the move to Unleaded Aviation Fuel (Avgas) at the airport and in the county. They did so to benefit the surrounding community and prove that they can be an environmentally friendly neighbor. Of importance, we are not looking at a single airport or county but at an aviation system that includes over 13,000 airports, many of which are a vital lifeline to the community they serve, and involves billions of dollars in investment and tens of thousands of jobs.

Studies

The studies conducted by the county have thus far failed to provide actual quantifiable data proving the fact that lead from aviation fuel consumption is the source of airborne lead. To the contrary, numerous studies have indicated other sources are responsible for airborne lead. One study by UC Berkeley found that almost 30 percent of the airborne lead in the Bay Area comes from Asia. This is not a new fact - scientists published these findings in 2010, long before the current issue of airborne lead was even discussed.

(<https://vcresearch.berkeley.edu/news/study-shows-third-lead-our-air-comes-asia>)

Additionally, studies conducted by PNAS in London (<https://www.pnas.org/doi/10.1073/pnas.2102791118>) and PLOS in El Paso and Los Angeles (<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0005019>) found that legacy lead contained in local contaminated soils contributed significantly as a source of airborne lead: **“X-ray absorption spectroscopy demonstrates that the source of the majority of the lead in PM in El Paso, and presumably in other US cities, is not current anthropogenic output. Instead, local contaminated soil, a legacy of earlier Pb releases, serves as a long-term reservoir that gradually is leaking particulate lead, much in the form of Pb-humate, to the atmosphere. Given the difficulty and expense of large-scale**

soil remediation or removal, this Pb-humate may establish a practical lower limit for airborne lead levels in many urban settings.”

We also recommend referencing the following article: The Elephant in the Playground - confronting lead-contaminated soils as an important source of lead burdens to urban populations - <https://pubmed.ncbi.nlm.nih.gov/20173294/>. Clearly, lead contamination sources need to be identified and addressed but this must be done so rationally and in a proportional manner. Lead paint (yes, we are aware of the \$300 million lead paint settlement that thus far is mostly untouched) which can leach into the soil and contaminate food sources, pipe solder (50% lead), automobile lead, and agricultural uses of lead arsenate are among the sources that contribute at a far greater level than aviation ever could.

Santa Clara County has referred to airborne lead as an existential threat and continue to point at aviation as a source, however, the California Department of Public Health presents a very different view of sources of lead as shown in Tables 9 and 10 shown below:

cdph.ca.gov

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Table 9. Definitions of Housing-Related Sources of Lead Exposure

Type of housing related source	Current Regulatory Level	Lower "Actionable" Level
Paint	Deteriorated lead-based paint tested at the state regulatory level of greater than or equal to 1.0 milligram of lead per square centimeter of surface area ($\geq 1.0 \text{ mg/cm}^2$). In addition, full cases were attributed to paint at local regulatory level in Los Angeles at $\geq 0.7 \text{ mg/cm}^2$. (17 CCR Sections 35022, 35033, 35037; Los Angeles County Code Section 11.28.010) Paint was considered a source in situations where paint was below the regulatory level but found to be nuisance that may result in persistent and quantifiable lead exposure (17 CCR Section 35037).	Paint with lead ≥ 600 parts per million (ppm) was used. In 1978, the federal Consumer Product Safety Commission (CPSC) restricted lead in newly manufactured paint to 600 ppm. Additionally, 600 ppm is the level petitioners to the US EPA have been seeking to lower the federal definition of lead-based paint. Since there is incongruence of unit equivalency between ppm and mg/cm^2 , the level chosen for XRF instruments was 0.1 mg/cm^2 , which is the lowest level detectable to the tenths place to be most health protective.
Dust	Lead-contaminated at greater than or equal to 40 micrograms of lead per square foot of surface area ($\geq 40 \text{ } \mu\text{g/ft}^2$) for interior floor surfaces, $\geq 250 \text{ } \mu\text{g/ft}^2$ for interior horizontal surfaces, and $\geq 400 \text{ } \mu\text{g/ft}^2$ for exterior floor and exterior horizontal surfaces. (17 CCR Sections 35035, 35037)	Lead levels $\geq 10 \text{ } \mu\text{g/ft}^2$ for interior floor surfaces, and $\geq 100 \text{ } \mu\text{g/ft}^2$ for interior horizontal surfaces were selected to match changes in federal dust standards that took effect January 6, 2020 but were not in effect at the time of when the cases received services.
Soil	Lead-contaminated at greater than or equal to 400 parts per million ($\geq 400 \text{ ppm}$) in children's play areas. Soil was considered a source in situations where soil was below the regulatory level but found to be a nuisance that may result in persistent and quantifiable lead exposure (17 CCR Section 35037).	Bare soil with $\geq 80 \text{ ppm}$ was used to match California Human Health Screening Levels (CHHSLs) proposed by the California Office of Environmental Health Hazard Assessment. The current CHHSL for lead in soil for residential property is 80 ppm.

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Type of housing related source	Current Regulatory Level	Lower "Actionable" Level
Water	According to the US EPA Federal Lead and Copper Rule, greater than or equal to 0.015 milligrams of lead per liter of water ($\geq 0.015 \text{ mg/L}$) is above the action level. (40 CFR Section 141.80)	Drinking water $\geq 0.005 \text{ mg/L}$ was selected in light of the goal for water to show non-detect levels of lead. Since this level was the laboratory reporting limit, results below this level would not be available from laboratory reports used in the sample of cases selected.

Table 10. Categories and Examples of Non-housing Sources of Lead Exposure

Category	Examples
Cosmetics/ Spiritual Religious Products	Black powder (e.g., kohl, surma, tiro), ceremonial powder, sindoor
Food/Spices/Drink	Dried grasshoppers (chapulines), turmeric, khmeli suneli, lozena, imported candy
Take-home or Occupational	Exposed through either personal or parental work or hobby
Pottery & Utensils	Vintage/hand-made/imported pottery, leaded glassware, water dispenser/urn/samovar, food grinder
Other	Fishing weight, jewelry/charm/amulet, painted object, metal object, lead ammunition, deteriorated vinyl/plastic, game meat/fish (from leaded bullets/sinkers), lead batteries, and lead solder
Traditional Medicine/ Remedies	Azarcon, greta, ayurvedic remedy (e.g., Ghutti, Keasari Balguti), paylooah, traditional Chinese remedies
Retained bullet	
Perinatal exposures	Mother ate food high in lead content during pregnancy, mother took remedy high in lead during pregnancy

As you will note, aviation lead is not even listed in the tables shown. In fact, you need to look down to footnote 'N' to find mention of leaded aviation fuel:

"N": Lead continues to be used in avgas for small-craft airplanes. A list of 183 airports where leaded fuel is recorded as being used in the Federal Aviation Administration's Airport Data and Information Portal (extracted on March 21, 2021) were mapped and a 1 km buffer was drawn.

Environmental lead hazards are pervasive throughout the state of California. CDPH

Taking into account all eleven geospatial risk indicators, 99.2 percent of California's ZIP codes present increased risk for lead exposure. Only 13 California ZIP codes do not have a geospatial risk indicator. See Appendix E for the lists of covered and remaining ZIP codes.

Table 16. Geospatial Indicators of Risk for Childhood Lead Exposure for California ZIP Codes

Criteria ^A	ZIP Codes ^{B,C}	Additional ZIP Codes ^D	Cumulative ZIP Codes ^E	Percent of ZIP Codes Covered ^F
AAP - 25% pre-1960 ^G	888	888	888	51.4%
25% pre-1978 ^H	1,388	500	1,388	80.4%
AAP - 5% BLLs 4.5+ ^I	83	8	1,396	80.9%
2.5% BLLs 4.5+ ^J	207	12	1,408	81.6%
1.7mi current or historic lead emitting facility ^K	854	164	1,572	91.1%
1,000 feet SHN ^L	1,512	127	1,699	98.4%
City with a smelter ^M	232	4	1,703	98.7%
1km airport ^N	328	1	1,704	98.7%
1km railroad ^O	993	8	1,712	99.2%
1,000 feet speedway ^P	84	0	1,712	99.2%
In water district with at least one known leaded user service line or fitting ^Q	175	1	1,713	99.2%
Remaining ^R	--	13	1,726	100.0%
Total	--	1,726	--	--

developed geographic risk indicators and found that 99.2 percent of California's ZIP codes could be defined as being "at risk" for childhood lead exposure, supporting the development of expanded blood lead testing requirements. In addition, mapping the gradation of geographic risk can inform decisions on where to target interventions when resources are scarce.

Interestingly, the California zip codes listing children with high levels of lead do not include any in San Jose and only two in Santa Clara County - one in Santa Clara and one in Milpitas. Neither of these are near an airport.

CHILDHOOD LEAD POISONING PREVENTION BRANCH

Percent of Children with a Blood Lead Level (BLL) of 4.5 mcg/dL or Greater, in Descending Order, by ZIP Code, 2020

ZIP Code	Postal District Name	Number of children under 6 with a BLL of 4.5 µg/dL or greater	Percent of children under 6 with a BLL of 4.5 µg/dL or greater	Total number of children under 6 with a BLL
95821	Sacramento	101	13.87%	728
95608	Carmichael	51	9.64%	529
94536	Fremont	24	4.15%	579
94538	Fremont	23	4.01%	574
90037	Los Angeles	36	3.79%	950
95051	Santa Clara	19	3.61%	527
92021	El Cajon	30	3.08%	975
90042	Los Angeles	12	2.82%	426
93638	Madera	47	2.66%	1,769
90006	Los Angeles	18	2.62%	686
90026	Los Angeles	13	2.50%	520
95670	Rancho Cordova	11	2.44%	450
90002	Los Angeles	21	2.39%	877
95240	Lodi	12	2.39%	502
95823	Sacramento	22	2.38%	923
95035	Milpitas	16	2.38%	672
90011	Los Angeles	43	2.38%	1,809
95076	Watsonville	25	2.36%	1,059
92126	San Diego	11	2.33%	472
95350	Modesto	11	2.24%	492
90018	Los Angeles	12	2.22%	540



90044	Los Angeles	28	2.19%	1,276
91762	Ontario	16	2.12%	755
94110	San Francisco	14	2.11%	663
92410	San Bernardino	16	2.05%	782
92701	Santa Ana	15	1.99%	752
93436	Lompoc	13	1.97%	661
93308	Bakersfield	13	1.96%	663
92243	El Centro	13	1.82%	713
93230	Hanford	11	1.78%	618
92703	Santa Ana	17	1.77%	959
92020	El Cajon	17	1.77%	963
90063	Los Angeles	11	1.75%	627
94601	Oakland	11	1.70%	646
92804	Anaheim	16	1.65%	967
92707	Santa Ana	12	1.59%	757
92105	San Diego	17	1.57%	1,083
94533	Fairfield	12	1.50%	801
90022	Los Angeles	11	1.48%	742
94544	Hayward	13	1.47%	882
93274	Tulare	12	1.33%	899
93727	Fresno	15	1.27%	1,181
95206	Stockton	15	1.26%	1,190
91910	Chula Vista	13	1.25%	1,040
90001	Los Angeles	11	1.21%	911
90255	Huntington Park	11	1.13%	972
93906	Salinas	12	1.11%	1,082
93905	Salinas	14	1.10%	1,274
93307	Bakersfield	18	1.03%	1,752
90003	Los Angeles	12	1.00%	1,203
92113	San Diego	11	1.00%	1,103
93306	Bakersfield	11	1.00%	1,103
93458	Santa Maria	18	0.98%	1,841



Given the information stated above, it would appear that the term “crisis” when referring to airborne lead around Reid Hillview Airport is an overreach. Blood Lead Levels (BLL’s) in many areas of the state are significantly higher than those found in Santa Clara County, which statistically is below the state average.

Additional Supporting Statements and Documentation:

Dr. Zahran, the author of the Reid Hillview Airport Lead Study, stated that transitioning to Unleaded Avgas would mitigate any future lead impact from aviation. Please review the following document by Michael McDonald which responds to these findings: <https://calpilots.org/wp-content/uploads/2022/03/Response-to-EPA-regarding-Lead-Final-20220228-2.pdf>.

Additionally, It should also be noted that no study has been conducted by the California Department of Health Childhood Lead Poisoning Prevention Branch to determine how lead has been ingested in the community. See the 2020 Report: <https://www.cdph.ca.gov/Programs/CCDCPHP/DEODC/CLPPB/CDPH%20Document%20Library/CLPPBReport2020.pdf>)

We also suggest referencing ACRP 02-34 and ACRP 162 (National Academy of Sciences: Transportation Research Board - Airport Cooperative Research Board) for scientific studies on Airport Lead and Airport Lead Studies that will further assist in understanding airport and airborne lead sampling data.

You might also refer to these articles on lead in Oakland and around Reid Hillview Airport in San Jose:

<https://www.sfgate.com/local/article/Lead-contaminating-Bay-Area-neighborhoods-16921146.php> and <https://sanjosespotlight.com/san-jose-airport-lead-levels-are-average-despite-alarm/>

Particulate Matter in Air Pollution - Significant Impact

We want to bring to your attention an issue that we believe is important to the residents of San Jose - the impact air pollution (and especially particulates in the air) are having on our children. For the record, this is not a new subject of interest - the San Jose State Meteorology Department conducted studies beginning in the mid-1970's on the cause of concentrations of air pollution in the South Bay Area. They focused on three reasons for the issue - the topography of the valley, the persistent inversion layer and the prevailing winds. What they found was a significant concentration of air pollution over areas of the southern Santa Clara Valley.

It is important to understand the real and permanent impacts airborne particulates have on IQ and other human functions. One study, the Socioeconomic disparities and sexual dimorphism in neurotoxic effects of ambient fine particles on youth IQ: A longitudinal analysis, is particularly important given the concentrations of particulates found in the areas around Reid Hillview Airport. The links to these studies are below:

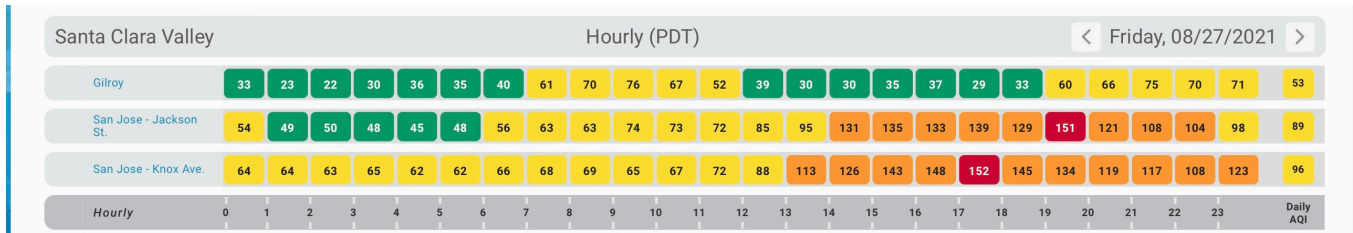
<https://www.calhealthreport.org/2018/01/31/teen-exposure-air-pollution-reduce-iq-levels-long-term/>

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0188731>

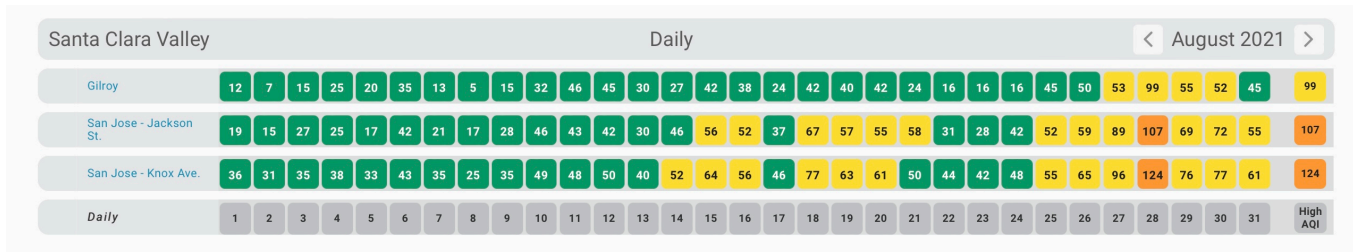
You will note that, based on the particulate levels in the area around Reid Hillview and using the calculations found in the studies, the impacts on our children from air pollution are significantly greater than that which has occurred from lead and many times greater than that of airborne lead.

In order to provide context to the air pollution discussion and dispel the myth of this being an "environmental justice" issue, we want to provide the following sample data from the BAAQMD and IQAir websites to assist in visualizing the issue.

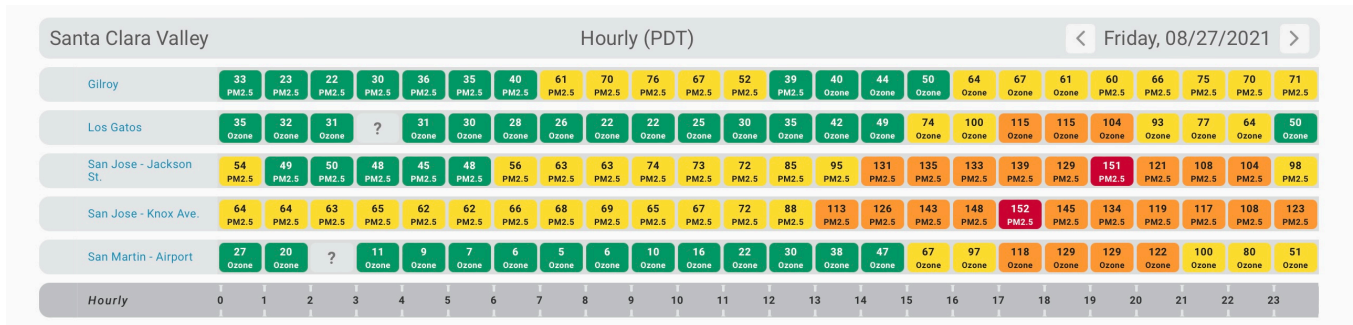
Graphic 1 is a representation of the Air Quality Index for the month of August, 2021:



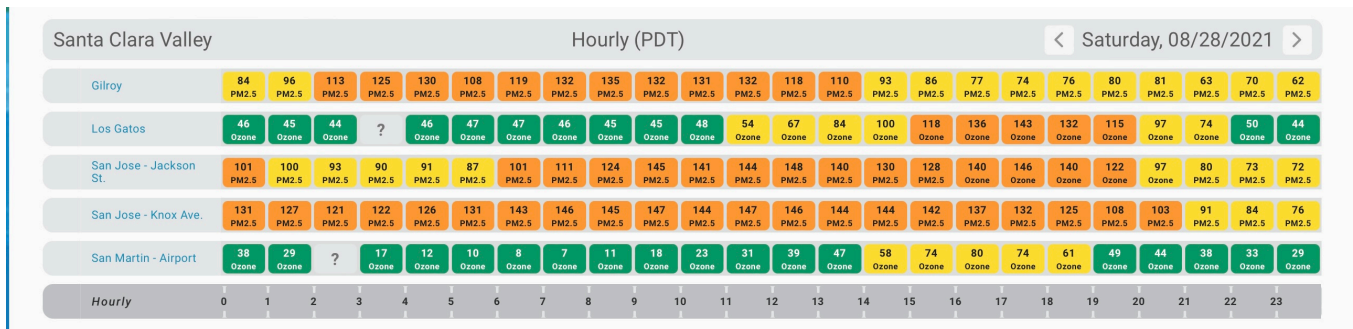
Graphic 2 is an hourly chart of the Air Quality Index for August 27, 2021:



Graphic 3 is the hourly AQI for August 27, 2021 with the prevailing pollutant shown. Note that the two San Jose sites showed excessive particulate levels.



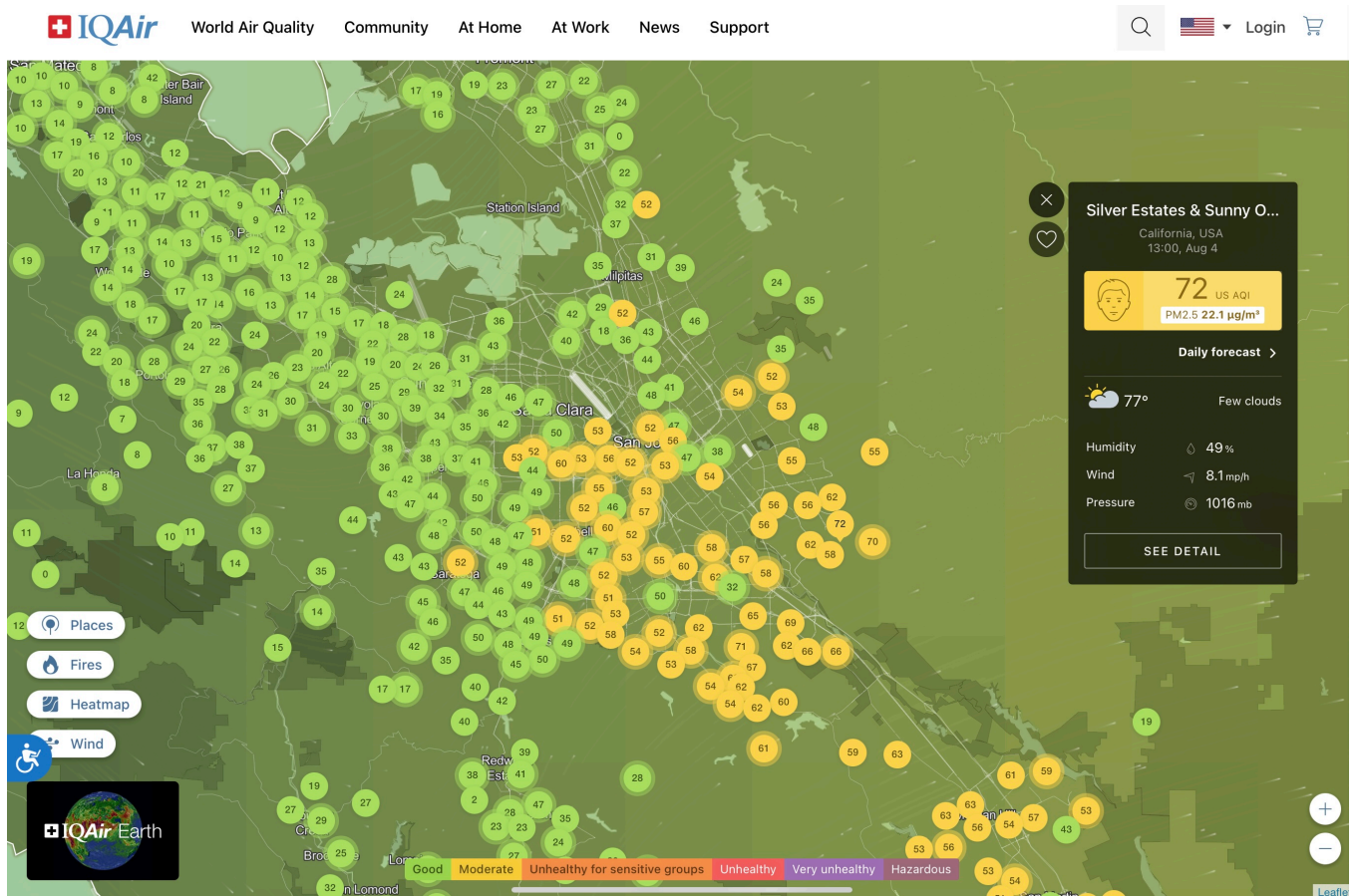
Graphic 4 is for August 28, 2021 and again demonstrates that particulate levels in the San Jose sites are the primary pollutant.

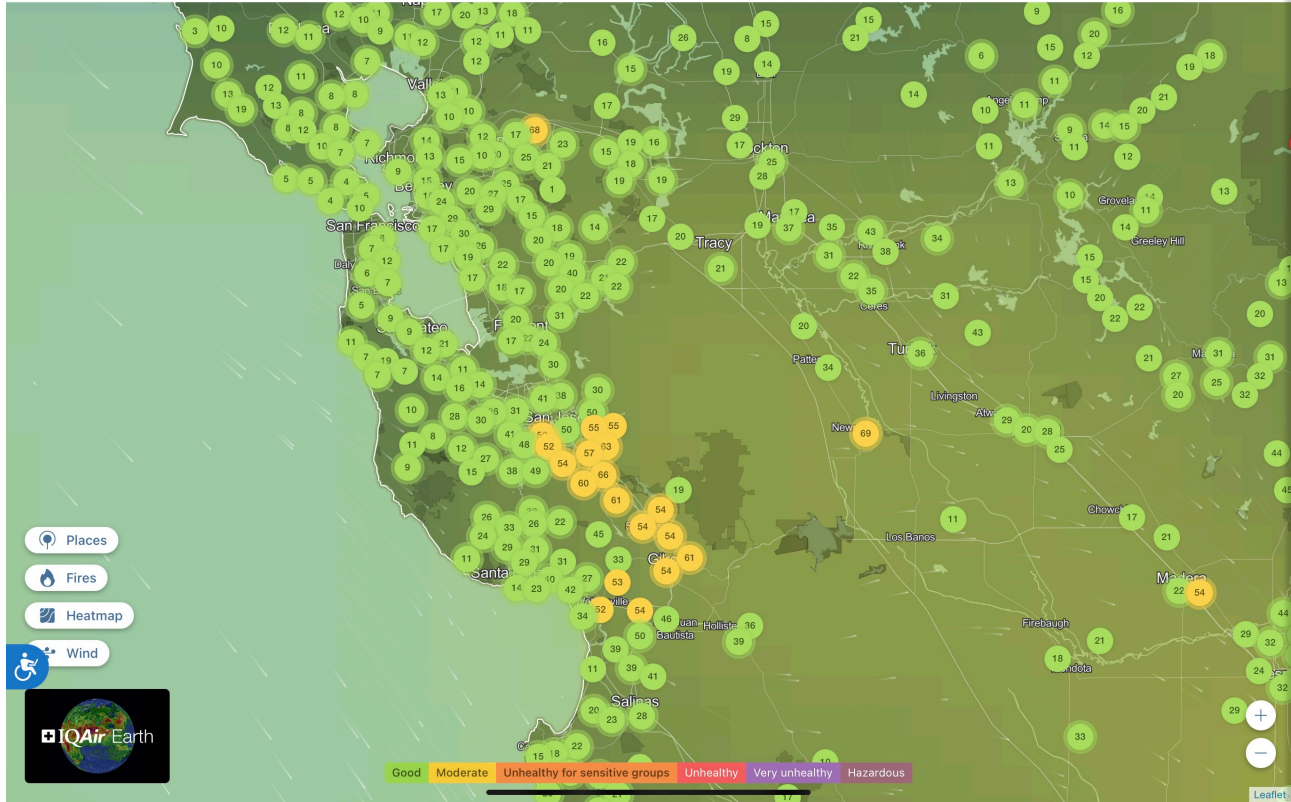


Graphic 5 shows a broad view of the Bay Area and demonstrates the concentration of air pollution around southern Santa Clara Valley.

The box in the graphic indicates two values of importance when considering the level of pollution, AQI (the Air Quality Index) and PM2.5 (the particulate level in the air). In this instance, the AQI of 72 indicates a “Moderate” level of pollution but the PM2.5 of 22.1 indicates a higher level of particulate matter in the air that is well above “Spare the Air” levels and could impact health.

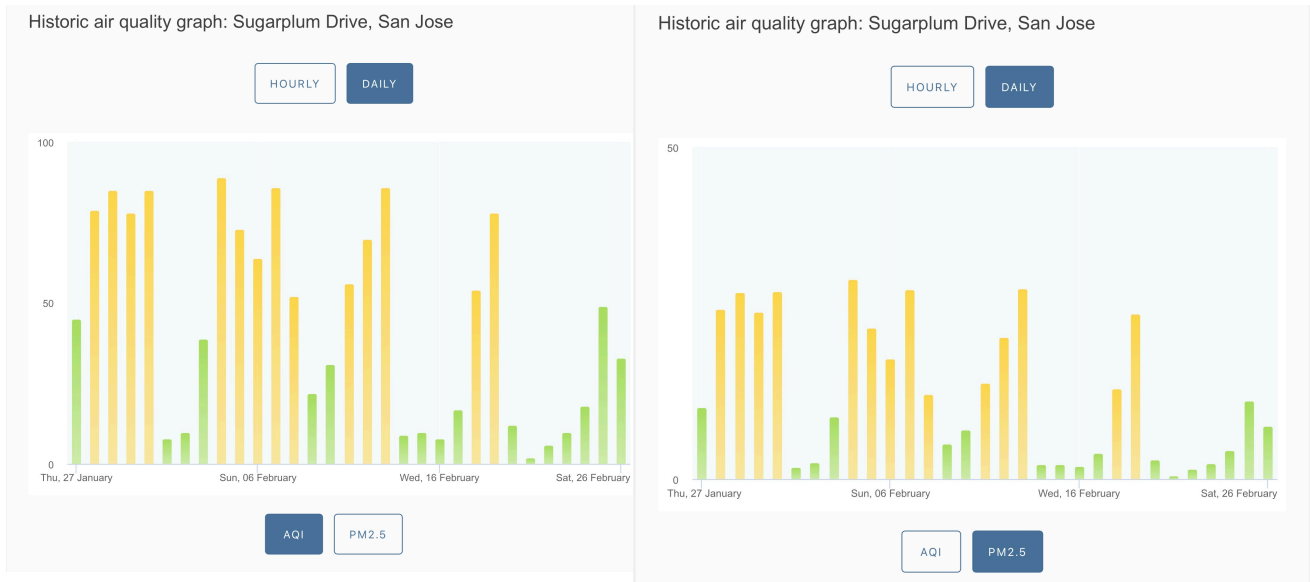
This graphic clearly demonstrates the three factors funnel air pollution into the southern Santa Clara Valley.





Graphic 6 shows an even wider view of the air pollution levels around the region. It should be noted that there are three large airports - San Francisco International, Oakland International, and San Jose International - and dozens of General Aviation airports (including Reid Hillview) contained within this graphic. Note that none of those areas show pollution levels anywhere near those of southern Santa Clara County, thus indicating that airports are not the source of high local particulate levels.

Graphic 7 shows the monthly AQI and particulate readings for the past month found just east of Lake Cunningham Park.



Graphic 8 shows the monthly AQI and particulate readings for the past month found just north of Silver Creek High School in San Jose.



Is this problem significant? Is it more significant that airborne lead? We believe so, but please don't take our word for it. Here are two documents that you should review before you come to any conclusions:

<https://www.iqair.com/us/lp/blog/new-parents/can-clean-air-increase-child-iq?>

<https://www.iqair.com/us/usa/california/san-jose>

The second one contains some important information on just how significant our particulate problem is in the South Bay Area. Here are some highlights:

In 2019, San Jose air quality averaged an overall US AQI rating of "good" and additionally met the more stringent World Health Organization (WHO) target for annual PM2.5 exposure of <math><10 \mu\text{g}/\text{m}^3</math>, with an average of

Past years have not been as clean. In 2018, San Jose AQI was 52 ("moderate") exceeding both US Environmental Protection Agency (EPA) standards and the WHO annual target for PM2.5 by 1

According to the State of the Air Report by the American Lung Association, San Jose (including the San Francisco and Oakland area) ranked 3rd for worst 24-hour particle pollution out of 216 U.S. metropolitan areas and 5th for worst annual particle pollution out of 204 U.S. metropolitan areas.

Currently, motor vehicles account for roughly 30% of San Jose's [fine particulate matter \(PM2.5\)](#).

Outside of daily emission sources, San Jose's environment can be problematic in dispersing air pollution. The city's location on the southern shore of the San Francisco Bay means that the local climate is often affected by marine inversions, a weather event describing cool surface-level ocean air trapped by warmer air above. Marine inversions can cause air pollution to accumulate and linger in the lower atmosphere until weather conditions change. The mountains surrounding the city can also have a similar effect, additionally exacerbating marine inversions.

Spare the Air alerts correlate with the US air quality index (AQI) system and are usually dictated by high levels of PM2.5 or ozone pollution. When the San Jose AQI exceeds 100, "unhealthy for sensitive groups," an alert is published. This correlates with either a PM2.5 concentration over 35.4 µg/m³ or an ozone concentration over 70 ppb. **(Note: While "Spare the Air" alerts may not be issued by BAAQMD for the entire area, specific areas and monitoring sites located around the the county may meet or exceed the levels required for the issuance of such alerts.)**

In San Jose, Spare the Air alerts for PM2.5 pollution typically occur in the winter or during wildfire season. In 2019, for example, November was the most polluted month in San Jose as a result of the Kincade Fire that burned in Sonoma County, which caused a Spare the Air alert to be issued as AQI levels reached 150 and higher, "unhealthy." 2020 saw the highest frequency of Spare the Air alerts in the Bay Area as a result of a record-breaking wildfire season, which caused 51 alerts by October alone.

Our organization welcomes your comments and questions. Thank you for taking the time to view our opinions.

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