THE ATTORNEYS GENERAL OF CALIFORNIA, CONNECTICUT, DISTRICT OF COLUMBIA, MARYLAND, MASSACHUSETTS, MINNESOTA, NEW JERSEY, NEW YORK, OREGON, PENNSYLVANIA, VERMONT, AND WISCONSIN

January 17, 2023

Submitted via Federal eRulemaking Portal and electronic mail

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Administrator
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1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

RE: Comment on Proposed Finding That Lead Emissions From Aircraft Engines That Operate on Leaded Fuel Cause or Contribute to Air Pollution That May Reasonably Be Anticipated To Endanger Public Health and Welfare—Docket ID EPA–HQ–OAR–2022–0389, RIN 2060–AT10, 87 Fed. Reg. 62,753 (Oct. 17, 2022)

Dear Administrator Regan:

The Attorneys General of California,[1] Connecticut, the District of Columbia, Maryland, Massachusetts, Minnesota, New Jersey, New York, Oregon, Pennsylvania, Vermont, and Wisconsin and write in support of the proposed action entitled, "Proposed Finding That Lead Emissions From Aircraft Fuel Cause or Contribute to Air Pollution That May Reasonably Be Anticipated to Endanger Public Health and Welfare," 87 Fed. Reg. 62,753 (Oct. 17, 2022) (Proposed Endangerment Finding).

The Proposed Endangerment Finding declares, pursuant to the Clean Air Act, that emissions from the combustion of leaded aviation gasoline (avgas) in piston-engine planes cause or contribute to lead air pollution that may reasonably endanger the public health and welfare. If finalized, the Proposed Endangerment Finding will require the United States Environmental Protection Agency (EPA) to promulgate long-overdue lead emission standards and regulations for piston-engine planes that are compatible with the agency's final endangerment determination. A final endangerment determination will also require the Federal Aviation Administration (FAA) to establish aircraft fuel standards that are consistent with EPA's aircraft lead emission standards.

Our comments demonstrate that: (1) avgas poses serious public health and environmental justice concerns for states; (2) EPA should act swiftly to finalize the Proposed Endangerment Finding to protect communities in close proximity to general aviation airports from lead air pollution; and (3) EPA should initiate the emission standards rulemaking for lead in piston-engine planes as

[1] The California Attorney General submits these comments pursuant to his independent power and duty to protect the environment and natural resources of the State. *See* Cal. Const. art. V, § 13; Cal. Gov't Code, §§ 12511, 12600-12612; *D'Amico v. Bd. Of Medical Examiners*, 11 Cal. 3d 1, 14-15 (1974).

quickly as possible so that affected communities can benefit from the timely implementation of regulations addressing avgas. The Proposed Endangerment Finding is an overdue and crucial first step toward fulfilling the statutory goal set forth in 42 U.S.C. § 7571 (a)(1) of controlling the emission of harmful air pollutants from aircrafts.

I. BACKGROUND

A. Lead is harmful to human health.

It is well documented that lead pollution damages human health and the environment, so much so that the scientific consensus is there is no safe blood level in children.[2] Decades of research shows that lead exposure is associated with a wide range of adverse health conditions. Short-term and prolonged lead exposure can cause abdominal pain, constipation, irritability, memory loss, fatigue, nausea, and increase the risk of developing hypertension, heart disease, kidney disease, and infertility.[3] Lead toxicity is also capable of damaging nearly every organ system in the human body.[4] These deleterious health effects are exacerbated by lead's ability to persist in the air, water, and soil for long periods of time and move from one environmental medium to another, creating multiple, cumulative exposure pathways.[5]

Babies, children under the age of five, and pregnant people are physiologically more sensitive to lead in the environment. For babies and young children, blood lead levels above two micrograms per deciliter (ug/dL) lead to poor neurocognitive and neurobehavioral effects, such as decreases in IQ, attention deficits, impulsivity and hyperactivity, and a predisposition to depression, anxiety, or high-risk behavior.[6] Pregnant people and unborn children experience adverse effects at lower exposures levels than observed in children and other adults. Evidence shows lead exposure during pregnancy increases the odds of gestational hypertension, eclampsia and preeclampsia, renal insufficiency, spontaneous abortions, stillbirths, and miscarriages.[7] For

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[2] Centers for Disease Control and Prevention, Health Effects of Lead Exposure, https://www.cdc.gov/nceh/lead/prevention/health-effects.htm.

[3] Centers for Disease Control and Prevention, Lead, https://www.cdc.gov/niosh/topics/lead/health.html.

[4] *See* EPA (2013), Integrated Science Assessment for Lead at section 1.6, https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=255721; Agency for Toxic Substances and Disease Registry, What Are Possible Health Effects from Lead Exposure?, https://www.atsdr.cdc.gov/csem/leadtoxicity/physiological_effects.html.

[5] *See* 81 Fed. Reg. 71,906, 71,912-13 (Oct. 18, 2016); 81 Fed. Reg. 22,440, 22,447-48 (April 28, 2010).

[6] *See id.*

[7] Centers for Disease Control andPrevention, National Center for Environmental Health, and Agency for Toxic Substances and Disease Registry (2010), Guidelines for the Identification and

a fetus, lead toxicity can impair growth, lower birth and post-natal weight, and delay neurodevelopment and puberty.[8] Due to the acute and chronic toxicity of lead on human health, it is essential that the federal government regulate the use of leaded avgas.

B. Leaded avgas is a significant and preventable source of airborne lead pollution.

Leaded avgas is "the only remaining lead-containing transportation fuel," and its combustion is the single largest contributor of airborne lead emissions in the United States.[9] Piston-engine planes powered by leaded avgas are responsible for nearly three-quarters of lead emissions nationwide.[10] The most recent national emissions data from EPA shows these planes released more than 930,000 pounds of lead into the atmosphere in 2017.[11]

There are now more than 200,000 piston-engine planes operating out of some 19,000 general aviation airports across the country.[12] These general aviation airports are often located near densely populated metropolitan areas, communities impacted by environmental hazards and risks, and sensitive land uses such as homes and schools. According to EPA, lead pollution concentrations in and around airports are higher than in areas without a lead-emitting source.[13]

EPA's emissions modeling analysis identified several general aviation airports across the country that are in danger of exceeding the National Ambient Air Quality Standards (NAAQS) for lead and a handful are expected to surpass federal standards.[14] Exposure to lead pollution from leaded

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Management of Lead Exposure in Pregnant and Lactating Women at 5-12, https://www.cdc.gov/nceh/lead/publications/leadandpregnancy2010.pdf.

[8] Centers for Disease Control and Prevention, Childhood Lead Poisoning Prevention – Pregnant Women, https://www.cdc.gov/nceh/lead/prevention/pregnant.htm.

[9] FAA, Aviation Gasoline, https://www.faa.gov/about/initiatives/avgas; 75 Fed. Reg. 22,440, 22,444 (April 28, 2010).

[10] *See* EPA, 2017 National Emissions Inventory Data, https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data#dataq (using Sector Summaries Data Query information for mobile aircraft lead emissions and national lead emissions for all sectors).

[11] *Id*. (searching Sector Summaries Data Query for national lead emissions from the mobile aircraft sector).

[12] 75 Fed. Reg. 22,440, 22,444 (April 28, 2010); United States Bureau of Transportation Statistics, Active U.S. Air Carrier and General Aviation Fleet by Type of Aircraft, https://www.bts.gov/content/active-us-air-carrier-and-general-aviation-fleet-type-aircraft-number-carriers-0; see also 49 U.S.C. § 47102(8) [defining general aviation airport].

[13] 75 Fed. Reg. 22,440, 22,442 (April 28, 2010).

[14] *See* EPA (2020), Model-extrapolated Estimates of Airborne Lead Concentrations at U.S. Airports, at 59-60, https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100YG52.pdf.

avgas can occur through multiple pathways, including inhalation of ambient airborne lead, dermal adsorption, and incidental ingestion.[15] EPA last estimated there were 16 million people (of whom 3 million are children) across the country who live or attend school within about a half-mile of a general aviation airport.[16] A 2011 study tracking lead exposure from general aviation airports observed that people, especially children, living within a half-mile of an airport are exposed to elevated levels of this neurotoxic pollutant.[17]

The lead exposure risk from avgas peaks within 500 meters (a little more than ¼-mile) of an airport runway. Researchers describe this distance as "the maximum impact area for ground-based lead emissions from piston-engine powered aircraft."[18] One study identified and defined nine sources of lead emissions at general aviation airports and pinpointed three sources: the run-up areas, taxiways, and takeoffs—as the primary contributors of lead emissions from those airports.[19] When these lead-producing activities are located close to each other on airport grounds, lead emissions accumulate and form lead "hot spots," which are "localized, relatively high concentrations of airborne lead relative to background concentrations."[20]

These lead hot spots compromise air quality for the surrounding communities. Of the 16 million people living within a half-mile of a general aviation airport, five million live within this maximum impact area (500 meters of an airport runway) and 363,000 of these people are children five years old and younger.[21]

Much, if not all, of the lead emissions from piston-engine planes could be avoided. In 2014, the FAA launched the Piston Aviation Fuels Initiative (PAFI) to speed up the "deployment of the

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[15] 75 Fed. Reg. 22,440, 22,460 (April 28, 2010).

[16] *Id*.

[17] Miranda, M. et al. (2011), A geospatial analysis of the effects of aviation gasoline on childhood blood lead levels, Environmental Health Perspectives 119:1513-1519, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3230438/; *see also* Zahran S. et al. (2017), The Effect of Leaded Aviation Gasoline on Blood Lead in Children, Journal of the Association of Environmental and Resource Economists. 2:575-610, https://www.journals.uchicago.edu/doi/abs/10.1086/691686.

[18] EPA (2020), National Analysis of the Populations Residing Near or Attending School Near U.S. Airports at 9, https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100YG4A.pdf.

[19] Feinberg, S. et al. (2016), Modeling of lead concentrations and hot spots at general aviation airports, Transportation Research Record: Journal of the Transportation Research Board, No. 2569 at 84-86.

[20] National Academies of Sciences, Engineering, and Medicine (2021), Options for Reducing Lead Emissions from Piston-Engine Aircraft at 41.

[21] *Id*. at 12-13.

most promising unleaded replacements."[22] PAFI has led the FAA to certify various unleaded fuels, including the two most recent fuel replacements for leaded avgas: UL94 (a high-octane fuel alternative manufactured by Swift Fuels) and G100UL (a "drop-in-ready"[23] fuel alternative manufactured by General Aviation Modifications, Inc.). As of September 2022, the G100UL fuel has been approved for use in all "spark ignition piston-engines and every plane powered by those engines."[24] The UL94 fuel has been approved for use in 66 percent of piston-engine planes.[25]

Despite these advancements in fuel technology and FAA certifications, unleaded aviation fuels have not successfully penetrated the market. Less than three percent of general aviation airports in the country sell unleaded alternatives. [26] The underwhelming reception is largely due to the lack of regulatory pressure and incentives to transition the nation's piston-engine fleet to safer, lead-free fuels.[27]

In February 2022, the FAA announced a new initiative—Eliminate Aviation Gasoline Lead Emissions (EAGLE)—between U.S. government stakeholders and the aviation and petroleum industry to "safely eliminate the use of leaded aviation fuel by the end of 2030 without adversely affecting the existing piston-engine fleet."[28] The Proposed Endangerment Finding once finalized will be a critical step toward phasing out the use of leaded avgas and encouraging the adoption of unleaded fuels that will prevent further harm to communities living near general aviation airports.

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[22] FAA, Piston Aviation Fuel Initiative, https://www.faa.gov/sites/faa.gov/files/about/initiatives/avgas/org_info/PAFI_White_Paper.pdf.

[23] The term "drop-in-ready" means piston-engine planes are able to use the G100UL fuel without new mechanical parts or hardware modifications for planes. As a result, the FAA has certified the fuel for use in all piston-engine planes. *See* "About G100UL Avgas" *in* Avfuel, Unleaded Avgas, https://www.avfuel.com/Fuel/Alternative-Fuels/Unleaded-Avgas.

[24] General Aviation Modification, Inc., Press Release: Sept. 1, 2022, https://gami.com/g100ul/PressReleaseG100UL9_1_22.pdf.

[25] Pimentel, Dan, "Swift Fuels Expands UL94 Distribution to Several California Airports," FLYINGMAG (Aug. 3, 2021), https://www.flyingmag.com/swift-expands-california-ul94-distribution/.

[26] Zhang, Sarah, "Leaded Fuel Is a Thing of the Past-Unless You Fly a Private Plane," MOTHER JONES (Jan. 10, 2013), https://www.motherjones.com/politics/2013/01/private-planes-still-use-leaded-gasoline/.

[27] *Ibid*.

[28] FAA, EAGLE Initiative, https://www.faa.gov/unleaded.

C. Avgas Poses Serious Public Health Harms for States.

Lead pollution from avgas is a grave public health concern for every jurisdiction in the country. An analysis of state level data offers insight into communities potentially affected by lead pollution from avgas and the cumulative effect of these lead emissions in each state.

Below are summaries of state level data for states with some of the highest airport-lead emissions. These summaries underscore the importance of the Proposed Endangerment Finding and the need for prompt and effective regulation of leaded avgas.

1. California

The general aviation sector in the State of California produces the most lead emissions of any jurisdiction in the country. The most recent emissions data from EPA shows that piston-engine planes operating from California airports released more than 100,000 pounds of lead in 2017, and at least two airports in the state are on the precipice of exceeding federal air quality standards for lead.[29] California has 452 general aviation airports, which are responsible for 83 percent of the state's lead emissions.[30] There are 111 lead-emitting airports that are in "disadvantaged communities" pursuant to the California Environmental Protection Agency's environmental justice screening tool, CalEnviroScreen.[31]

According to CalEnviroScreen, these airports are located in geographic areas where residents are already exposed to excessive levels of ozone, fine particulate matter, toxic releases, lead from housing, and other pollution sources. Eleven airports are in census tracts that are more polluted than 95 percent of the rest of the state's census tracts, making them among the most polluted areas in the state. Table 1 below displays a subset of these airports and the degree of environmental degradation that communities near these airports are dealing with.

In addition to pollution burden, communities near these airports are also majority non-white, and experience high rates of poverty and other challenges. For example, the Porterville Municipal

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[29] *See* EPA, 2017 National Emissions Inventory Data, https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data#dataq (using Sector Summaries Data Query information for mobile aircraft lead emissions by state).

[30] Santa Clara University and Center for Environmental Health (2017), Unleaded Aviation Fuel: Barriers to Adoption in California, https://cagelfa.com/SCU%20Unleaded_Avgas_Capstone.pdf#:~:text=Unleaded%20Aviation%20Fuel%3A%20Barriers%20to%20Adoption%20in%20California,use%20it%2C%20with%20about%202%2C000%20added%20every%20year4.

[31] CalEnviroScreen is a tool created by the Office of Environmental Health Hazard Assessment that uses environmental, health, and socioeconomic information to score and rank every census tract in the state. A census tract with a high score is one that experiences a much higher pollution burden than a census tract with a low score.

and Bakersfield Municipal airports rank in the 99th and 97th percentile for unemployment respectively, and more than 70 percent of children attending an elementary school a mile away from the Compton-Woodley airport are eligible for free or reduced-price lunch.

Table 1: California Airports Located in Overburdened Communities

Airports	National Inventory Emissions Data (2017)	CalEnviroScreen (CES) 4.0 Data			
	Lead Emissions (in pounds)	CES Percentile Score	Lead PercentileScore+	Pollution Burden Percentile Score	Population Characteristic Percentile Score
Compton-Woodley Airport (Los Angeles County)	366	92.08	98.68	80.9	91.70 *(84.79% Latino)*
Oakland International Airport (Alameda County)	413	97.18*	96.87	92.21	94.16 *(54% Latino; 35% African American)*
Stockton Metropolitan Airport (San Joaquin County)	295	99.17*	71.82	98.94	89.49 *(59% Latino; 11% African American)*
Bakersfield Municipal Airport (Kern County)	237	99.53*	65.99	96.53	98.31 *(75% Latino; 15% African American)*
Hawthorne Municipal Airport (Los Angeles County)	463	94.43	88.32	98.31	73.61 *(63% Latino; 18% African American)*
Porterville Municipal Airport (Tulare County)	236	95.83*	58.22	94.31	87.08 *(54% Latino)*

+ Referring to children's lead risk from housing
* Census tract with a CES 4.0 percentile in the 95-100% range (highest score)

The damaging effects of leaded avgas pollution are not limited to overburdened communities. The Reid-Hillview Airport, a county airport ten miles southeast of San Jose International, ranks ninth in the state for airport-lead emissions but has recorded lead concentration levels that exceed federal air quality standards for lead.[32] Children growing up near this airport are exposed to uncharacteristically high levels of lead emissions from avgas.[33]

[32] EPA (2020), Model-extrapolated Estimates of Airborne Lead Concentrations at U.S. Airports at 59-60, https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100YG52.pdf. The Reid-Hillview Airport is in a census tract that has a relatively low pollution burden.

[33] Children living and attending school near the Montgomery-Gibbs Airport in San Diego are similarly at risk of elevated blood lead levels despite living in a part of the state with a relatively low pollution exposure/burden. The Montgomery-Gibbs Airport is the third largest lead-emitting airport in the state, and piston-engine planes operating out of the airport produce 1.5 times more annual lead emissions than Reid-Hillview.

A recent study commissioned by Santa Clara County revealed a statistical link between children's blood lead levels and proximity to the Reid-Hillview Airport, residential angle (upwind or downwind) to the airport, and piston-engine aircraft traffic volume.[34] The study found that blood lead levels were significantly higher for children living closer to Reid-Hillview instead of farther away, living downwind from the airport instead of upwind, and attending school near the airport instead of farther away.[35] Indeed, "[u[nder periods of high piston-engine aircraft traffic, children proximate to Reid-Hillview Airport experience an increase in [blood lead levels] [in] excess of what the children of Flint experienced during the [Flint water crisis]."[36]

Researchers also observed that children's blood lead levels "increase[d] significantly" as piston-engine airplane traffic increased and noted a significant decline in blood lead levels during the pandemic when air traffic dropped off.[37] Thus, no matter where these avgas-polluting airports are located in California, they are an immediate and ongoing public health harm to communities.

2. New Jersey

In the State of New Jersey, airports that service piston-engine planes produce large amounts of lead emissions. According to EPA's emissions data for 2017, New Jersey ranks 28th in the nation for total lead emissions generated from the aircraft sector, and six of the state's general aviation airports produced more than 2,000 pounds of the state's total airport-lead emissions in 2017.[38] According to 2020 United States Census data, these six lead-emitting airports are adjacent to overburdened communities.[39]

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[34] Mountain Data Group (2021), Leaded Aviation Gasoline Exposure Risk at Reid-Hillview Airport in Santa Clara County, California, https://news.sccgov.org/sites/g/files/exjcpb956/files/documents/RHV-Airborne-Lead-Study-Report.pdf.

[35] *Id*. at 32 (Table 2), 82-83.

[36] Id. at xviii.

[37] *Id*. at 83-84.

[38] EPA, 2017 National Emissions Inventory Data, https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data#dataq (using Sector Summaries Data Query information for mobile aircraft lead emissions and national lead emissions for all sectors and Point Source Data).

[39] This information was obtained using EPA's National Emissions Inventory 2017 data for mobile aircraft emissions in New Jersey. *See id.*; *see also* New Jersey Department of Environmental Protection, EJ Mapping, Assessment and Protection Tool, https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=34e507ead25b4aa5a5051dbb85e55055.

For example, Teterboro Airport, which generated over 552 pounds of lead emissions in 2017, is located in a densely populated area and is surrounded by overburdened communities. Newark Airport, which is also located in a densely populated area, generated approximately 300 pounds of lead emissions in 2017. In addition to exposure to lead air emissions from piston-engine planes at general aviation airports, Newark residents have some of the highest lead paint exposure in the country, with exposure levels exceeding the 95th percentile.[40] Furthermore, residents who live near the airport and who are exposed to both lead air emissions from piston-engine planes and lead paint are disproportionately people of color.

3. New York

Airport operations, especially leaded avgas, is the primary source of air-based lead emissions in the State of New York. Every year, airport operations result in 13,279 pounds of lead emissions in New York, which accounts for over 80 percent of all lead emitted into the air in the state. According to EPA's 2017 National Emissions Inventory, New York has 590 airports with leaded avgas emissions. Out of the 590 airports, 253 (43 percent) are lead-emitting airports that are in potential environmental justice areas, according to the New York State Department of Environmental Conservation's environmental justice screening tool.[41]

Roughly, 295,742 New Yorkers live within close proximity (1.5 miles) of these top 18 airports, including 10,372 children age 5 and under. At least half of the top 18 airports (9 of 18) are located in communities with at least one indicator of vulnerability, according to EJScreen, EPA's environmental justice mapping and screening tool.

[40] EPA, EJScreen, https://ejscreen.epa.gov/mapper/.

[41] Potential Environmental Justice Areas are defined by the New York State Department of Environmental Conservation as U.S. Census block groups of 250 to 500 households each that, in the Census, had populations that met or exceeded at least one of the following statistical thresholds: 1) At least 52.42 percent of the population in an urban area reported themselves to be members of minority groups; or 2) At least 26.28 percent of the population in a rural area reported themselves to be members of minority groups; or 3) At least 22.82 percent of the population in an urban or rural area had household incomes below the federal poverty level. *See* https://www.dec.ny.gov/public/911.html.

Table 2: Top 18 airports for lead emissions and relevant demographic information – 1.5 mile buffer.

Airport Name	City	Lead Emissions (LBs/yr)	Lead Emissions (% of total)	Lead Paint %	Linguistic Isolation %	Low-income %	People of Color %	Under age 5 %
Statewide				**54%**	**8%**	**29%**	**38.4%**	**5%**
Republic	Farmingdale	1021	8%	80%	4%	14%	27%	9%
Orange County	Montgomery	659	5%	31%	0%	15%	33%	6%
Westchester County	White Plains	555	4%	41%	1%	7%	23%	1%
Long Island Mac Arthur	Islip	554	4%	14%	4%	8%	22%	8%
Dutchess County	Wappingers Falls	419	3%	30%	4%	17%	34%	5%
Wurtsboro-Sullivan County	Wurtsboro	388	3%	38%	0%	27%	25%	2%
Brookhaven	Shirley	333	3%	22%	0%	16%	31%	3%
Buffalo Airfield	Buffalo	305	2%	15%	2%	18%	4%	3%
Akron	Akron	279	2%	51%	0%	36%	6%	3%
The Francis S Gabreski	Westhampton	275	2%	24%	5%	21%	27%	2%
Sky Acres	Millbrook	266	2%	25%	1%	15%	23%	9%
Buffalo-Niagara Intl.	Buffalo	262	2%	57%	1%	28%	18%	3%
Dansville Muni	Dansville	262	2%	60%	0%	36%	4%	5%
Schenectady County	Schenectady	254	2%	20%	1%	21%	13%	7%
Greater Rochester Intl.	Rochester	252	2%	39%	1%	16%	26%	4%
Buffalo-Lancaster	Lancaster	249	2%	31%	0%	10%	4%	3%
Genesee County	Batavia	214	2%	11%	0%	27%	3%	3%
Saratoga County	Saratoga Springs	208	2%	6%	0%	8%	5%	4%

**The boxes in red font indicate percentages that are higher than the county equivalent for each airport.*

Lead air emissions from airport operations can also contribute to and/or exacerbate existing childhood lead exposures in surrounding communities. For example, housing within 1.5 miles of several of the 18 highest emitting airport runways, including Republic and Buffalo-Niagara International airports, are more likely to be contaminated with leaded paint – a major source of childhood exposure to lead – than other locations in the counties in which they are located. Based on the most recent data, in the zip codes where the top 18 lead-emitting airports are located, health agencies documented 88 children below the age of 6 with elevated blood levels (above CDC blood lead reference level of 5 ug/dL).[42]

[42] In 2012, the Centers for Disease Control and Prevention (CDC) introduced a blood lead "reference value" to identify children with higher levels of lead in their blood compared to most children. This level is based on the 97.5th percentile of the blood lead values among U.S. children ages 1-5 years from the National Health and Nutrition Examination Survey (NHANES) cycles. Children with blood lead levels at or above the blood lead reference value represent those at the top 2.5 percent with the highest blood lead levels. In 2012, the blood lead reference

While lead air emissions represent a risk to the health of children in all communities surrounding airports using leaded aviation fuels, some children are at a disproportionate risk of harm. Six of the top 18 airports, including Suffolk County's Republic Airport – the largest single emitter of aviation fuel-related lead air emissions in the state – have a greater percentage of young children living with 1.5 miles than other areas of the counties in which they are located. Of particular concern, nearly 6,000 elementary school children are enrolled in a school located within 1.5 miles of one of the top 18 lead-emitting airports in New York. Ten of the top 18 airports (more than half) have at least one elementary school within a 1.5 mile distance from the airport runway(s).

Table 3: Top 18 Airports, Schools and Students within 1.5 miles (2019-2020)

Airport	Number of Schools	Number of Elementary	Number of Elementary Students
Republic	2	1	595
Orange County	1	1	550
Westchester County	0	0	0
Long Island Mac Arthur	1	1	495
Dutchess County	3	3	1087
Wurtsboro-Sullivan County	0	0	0
Brookhaven	0	0	0
Buffalo Airfield	2	2	982
Akron	3	1	561
The Francis S Gabreski	0	0	0
Sky Acres	0	0	0
Buffalo Niagara Intl	2	1	498
Dansville Muni	3	2	649
Schenectady County	1	1	239
Greater Rochester Inter	2	1	314
Buffalo-Lancaster	0	0	0
Genesee County	1	0	0
Saratoga County	0	0	0
Total	21	14	5970

Of these elementary schools, according to New York State Education Department data, six had at least one metric of vulnerability (people of color, English not first language, percent of disabilities, percent receiving free/reduced lunch, and homelessness) greater than the equivalent

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value for children corresponding to the 97.5 percentile was established to be 5 micrograms per deciliter (µg/dL) based NHANES data from 2007-2010. Prior to this current update, blood lead levels below 5 µg/dL may, or may not, have been reported to parents. The new lower blood lead reference value of 3.5 µg/dL means that more children could be identified as having lead exposure allowing parents, doctors, public health officials, and communities to act earlier to reduce the child's future exposure to lead. The value of 3.5 µg/dL was derived from NHANES data from the 2015-2016 and 2017-2018 cycles. National Center for Environmental Health, Division of Environmental Health Science and Practice (2022), Blood Lead Reference Value, https://www.cdc.gov/nceh/lead/data/blood-lead-reference-value.htm.

county's metrics. For example, Republic Airport, the highest lead emitting airport in the state, is located in Farmingdale, New York. There is one elementary school within 1.5 miles of the airport runways, Saltzman East Memorial Elementary, and 595 children attend that school. Saltzman East Memorial Elementary's student body is composed of 66 percent children of color, 10 percent of whom are English language learners, 51 percent receive free or reduced school lunch, 5 percent are homeless, and 13 percent have a disability.

4. Pennsylvania

The Commonwealth of Pennsylvania produces a substantial amount of lead emissions due to the vast number of airports servicing piston-engine planes. According to EPA's emissions data, Pennsylvania has 51 general aviation airports operating piston-engine planes that are located within one mile of a community with at least 1,000 people. Five of these airports were responsible for nearly 2,000 pounds of the state's airport-lead emissions in 2017. The population living near half of these airports consists people of color who are under the age of five and more than 50 percent of the population is considered low-income.[43] As one example, the Northeast Philadelphia Airport, which generated over 387 pounds of lead emissions in 2017, is located in a densely populated urban area that is 70 percent low-income and 78 percent non-white.

Many Pennsylvania's general aviation airports are also located remarkably close to residential communities and schools. In Chester County, the Brandywine Regional Airport is Pennsylvania's sixth highest leader in lead emissions at 329 pounds, and is located a mere 1,289 feet from a residential neighborhood, 1,353 feet from a preschool and 1,919 feet from Fernhill Lake water reservoir, which serves as a habitat for various plants and animals. The Coatesville-Chester County Airport, which is also in Chester County, is within one mile of at least three elementary schools and 71 percent of the surrounding population consisting of children under the age of five.

Elsewhere, in Lancaster County, the Lancaster Airport is the state's fourth highest lead-emitting airport and it is within one mile of three schools and several residential communities. According to a 2022 report published by the American Lung Association, Lancaster County residents experience a high number of unhealthy air days. Further, the lead pollution from avgas will adversely affect nearly 90,000 residents with various health conditions related to air pollution, including pulmonary or respiratory illness like asthma or chronic obstructive pulmonary disease.[44]

[43] This information was obtained using EPA's EJScreen mapping tool together with EPA's most recent National Emissions Inventory data report for mobile aircraft emissions in Pennsylvania.

[44] American Lung Association, State of the Air (2022), https://www.lung.org/research/sota/city-rankings/states/pennsylvania/Lancaster.

5. Wisconsin

The State of Wisconsin has 90 general aviation airports,[45] and roughly 80 percent of Wisconsin's lead air emissions come from the general aviation sector.[46] These emissions disparately impact people of color, children under the age of five, and linguistically isolated populations. Based on data gathered from EPA's 2017 National Emissions Inventory and EJScreen, nine out of Wisconsin's top 15 lead-emitting airports are in communities at or above the 50th percentile for people of color. Five of the highest-emitting airports are located in linguistically isolated communities, and ten are in communities that are at or above the 50th percentile for population under age five.

As one example, Sheboygan County Memorial Airport in northeast Wisconsin is the third highest lead-emitting general aviation airport in the state, with 313 pounds of lead emissions based on EPA's most recent emissions data. The surrounding community is already contending with lead emissions from various sources. It is ranked second in 2021 for the most lead emissions generated by stationary sources in the state and falls in the 77th percentile for lead paint exposure. [47, 48]

Lawrence J. Timmerman Airport in Milwaukee, similar to Sheboygan County Memorial Airport, is in an area with high lead emission from stationary sources.[49] It is in a community with high lead paint exposure (66th percentile) and large populations of linguistically isolated (72nd percentile) and low-income people (84th percentile), people of color (93rd percentile), and children under the age of five (74th percentile).

Finally, Dane County Regional Airport and Morey Field, both in Dane County, accounted for 229 and 213 pounds of lead emissions in 2017, respectively. Both airports are in areas of the county where an uncharacteristically high proportion of residents are non-white, household

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[45] State of Wisconsin Department of Transportation, Airport Information, https://wisconsindot.gov/pages/travel/air/airport-info/default.aspx.

[46] *See* EPA, 2017 National Emissions Inventory Data, https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data#dataq.

[47] State of Wisconsin Department of Natural Resources, Historical Air Emissions Information, https://dnr.wisconsin.gov/topic/AirEmissions/Historical.html (2012-2021 Lead emissions by county).

[48] *See* EPA, 2017 National Emissions Inventory Data, https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data#dataq (Point Source Data); EPA, EJScreen, https://ejscreen.epa.gov/mapper/.

[49] State of Wisconsin Department of Natural Resources, Historical Air Emissions Information, https://dnr.wisconsin.gov/topic/AirEmissions/Historical.html (2012-2021 Lead emissions by county).

predominantly speak a language other than English, and/or low-income populations.[50] Children living or attending school near Dane County Regional Airport are uniquely impacted by lead emissions in the area. The surrounding community is in the 86th percentile for population under the age of five.[51] In light of the above information, lead emissions from Wisconsin's general aviation sector present a substantial public health threat in Wisconsin, most notably the state's children.

II. EPA Must Adhere to its Timeline for Finalizing the Proposed Endangerment Finding to Swiftly Address the Serious Public Health Environmental Justice Harms Posed by Avgas.

Given the myriad public health and environmental justice harms associated with lead exposure from avgas, EPA must not delay the publication of a final, affirmative endangerment determination. The agency has already committed to releasing a final endangerment determination in 2023. Specifically, in January 2022, after decades of advocacy by non-governmental organizations,[52] EPA announced that it would evaluate whether avgas meets the criteria for making an endangerment determination and "issue a proposal for public review and comment in 2022 and take final action in 2023."[53] EPA must follow through on this public commitment in order to head off potential health and environmental harms to communities in proximity to lead-polluting airports.

According to the FAA, emissions from leaded avgas will dramatically increase in the coming years, reaching 1.5 million pounds in annual emissions by 2025.[54] These emissions will

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[50] *See* EPA, 2017 National Emissions Inventory Data, https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data#dataq (Point Source Data); EPA, EJScreen, https://ejscreen.epa.gov/mapper/.

[51] *See* EPA, Alaska Community Action on Toxics et al. Petition for Rulemaking Regarding Lead Emissions from Aircraft that Operate on Leaded Fuel, https://www.epa.gov/system/files/documents/2022-01/aviation-leaded-avgas-petition-exhibits-final-2021-10-12.pdf.

[52] In 2006, 2014, and 2021, a coalition non-governmental organizations (NGOs) and community groups submitted petitions for rulemaking to address lead emissions from avgas. EPA denied the 2006 and 2014 petitions because the agency lacked sufficient factual information (i.e., robust air monitoring data, emissions modeling, and demographic data) to assess whether leaded avgas emissions meet the endangerment criteria under section 231 (a)(2)(A) of the Clean Air Act. EPA responded to the 2021 petition in a January 2022 stating the agency's intention to issue a proposed finding in 2022.

[53] EPA (2022), EPA to Evaluate Whether Lead Emissions from Piston-Engine Aircraft Endanger Human Health and Welfare, https://www.epa.gov/newsreleases/epa-evaluate-whether-lead-emissions-piston-engine-aircraft-endanger-human-health-and.

[54] 75 Fed. Reg. 22,440, 22,456 (April 28, 2010).

adversely affect communities with environmental justice concerns. In a survey of the nation's top 100 lead-emitting airports, 36 general aviation airports are located within one mile of a community that meets the federal definition of an environmental justice community based on racial composition.[55] Ten airports are within one mile of an environmental justice community based on its economic status and seven airports fall into both categories.[56] A study that examined the relationship between lead pollution from avgas and children's blood lead levels observed that high blood lead levels were associated with residing in low-income or segregated communities.[57]

Residents of color in low-income and/or segregated communities are particularly susceptible to harmful effects from lead exposure because they are already exposed to other sources of lead pollution exposure. For instance, a recent study concluded that racial identity, specifically identification as African American or Black, is the second strongest predictor for elevated blood lead levels.[58] This research discerned that African American and Black children "are exposed to more [lead] and present with the highest average blood lead levels" owing to "the greater frequency and intensity of environmental [lead] exposure for young Black children."[59] EPA's 2020 analysis of populations residing or attending school near airports shows that low-income and non-white racial and ethnic groups are overrepresented in the neighborhoods closest to lead-emitting airports.[60] Delaying a final endangerment determination for lead avgas beyond 2023 will prolong these alarming public health and environmental injustices.

III. EPA Must Announce and Commit to a Timeframe for Promulgating Lead Emissions Standards for Piston-Engine Planes Pursuant to Section 231 of the Clean Air Act.

To protect communities from avgas-lead pollution and boost the commercial availability of unleaded aviation fuels upon finalizing the Proposed Endangerment Finding, EPA must

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[55] *See* Earthjustice (2021), The Top 100 Lead Polluting Airports, https://earthjustice.org/sites/default/files/files/top100leadpollutingairports_2021-08-23.pdf.

[56] *Id*.

[57] Miranda, M. et al. (2011), A geospatial analysis of the effects of aviation gasoline on childhood blood lead levels, Environmental Health Perspectives 119:1513-1519 at 1515, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3230438/.

[58] Yeter D. et al. (2020), Disparity in Risk Factor Severity for Early Childhood Blood Lead among Predominantly African-American Black Children: The 1999 to 2010 US NHANES, International Journal of Environmental Research and Public Health 17(5) at 19, https://doi.org/10.3390/ijerph17051552.

[59] *Id*. at 14, 20.

[60] EPA (2020), National Analysis of the Populations Residing Near or attending School Near U.S. Airports at 13-15.

immediately initiate a rulemaking to set lead emission standards for piston-engine planes. A final, affirmative endangerment determination by itself does not regulate lead emissions from piston-engine planes. EPA has acknowledged as much in the Proposed Endangerment Finding stating: "[t]he proposed findings in this action, if finalized, would not themselves apply new requirements."[61] However, an affirmative endangerment determination does set in motion a series of mandatory agency actions to impose and enforce new standards and regulations that will curb, if not eliminate, lead emissions from piston-engine aircrafts.

The Clean Air Act commands EPA, in consultation with the FAA, to promulgate lead emission standards consistent with an endangerment determination. 42 U.S.C. § 7571(a)(2). EPA has already indicated it will initiate a notice and comment rulemaking to set lead emission standards for piston-engine planes when it issues a final endangerment determination.[62] However, those standards will not be self-executing. Once EPA has adopted lead emission standards for piston-engine planes, the FAA must then prescribe regulations to implement these emission standards. 42 U.S.C. § 7572(a). At that point, the FAA must also adopt aircraft fuel standards for piston-engine planes and promulgate regulations to enforce those standards. 49 U.S.C. § 44714. The aircraft fuel standards the FAA adopts must "control or eliminate" lead emissions consistent with EPA's endangerment determination for avgas. *Id*.

Thus, substantive regulations addressing leaded avgas—how it will be regulated and when such regulations will take effect—will rest on the analysis and findings reached in EPA's emission standards rulemaking. Because the rulemaking is so critical to the effective regulation of leaded avgas, EPA should provide certainty to affected communities and market actors that the agency intends to quickly follow through on its legal obligations following publication of a final endangerment determination.

Accordingly, EPA should commit to acting swiftly to adopt lead emission standards for piston-engine planes by announcing an aggressive timeframe for initiating a rulemaking, much as the agency did in January 2022 when it announced a timeframe for evaluating whether leaded avgas warrants an endangerment finding. Without a timely emission standards rulemaking for leaded avgas, the Proposed Endangerment Finding and final endangerment determination will fail to fulfill EPA's mission and obligation to protect public health and welfare.

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The undersigned states welcome this important step EPA is taking to bring about much-needed changes to aircraft lead emission and fuel standards. We strongly support the Proposed Endangerment Finding, which is consistent with the precepts of the Clean Air Act and EPA's ongoing work to reduce lead exposure and address disparities, and look forward to EPA issuing a final, affirmative endangerment determination this year. We also strongly urge the EPA to

[61] 87 Fed. Reg. 62,753, 62,754 (Oct. 17, 2022).

[62] *Id*. at 62,773-74.

establish a timeframe to initiate the emission standards rulemaking for leaded avgas as soon as possible so that affected communities may benefit from the timely implementation of regulations addressing leaded avgas.

Sincerely,

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