

**SB686\_MDSierraClub\_fav 24Feb2022.pdf**

Uploaded by: Josh Tulkin

Position: FAV



P.O. Box 278  
Riverdale, MD 20738

**Committee: Education, Health, and Environmental Affairs**

**Testimony on: SB 686 “Study on Environmental Impacts of Lead-Based Fuel Use by Aviation Industry”**

**Position: Support**

**Hearing Date: February 24, 2022**

The Maryland Chapter of the Sierra Club supports SB 686, which would require the Maryland Department of the Environment (MDE) to study the impacts of lead-based fuel consumption on our environment and provide recommendations to mitigate those impacts.

Several General Aviation (GA) airports in Maryland provide aviation services to piston-engine airplanes. These aircraft almost exclusively use 100 Low Lead, commonly referred to as 100LL or “avgas”, to which Tetraethyl Lead is added. The lead additive is then released into the air as a combustion byproduct and over time can lead to soil contamination as well. Jet aircraft, which comprise the vast majority of military and commercial aircraft, use unleaded kerosene-based fuels; operation of these aircraft would not be affected by this study or its recommendations.

Each GA airport services many piston-engine aircraft. For example, Maryland Airport in Charles County averages 60 operations every day, 98% of which are GA, most of those being performed by piston-engine aircraft.<sup>1</sup> Although work has been ongoing for years,<sup>2</sup> there are no current Federal Aviation Authority (FAA) or Environmental Protection Agency (EPA) rules that prevent these aircraft from overflying J.C. Parks Elementary or Matthew Henson Middle Schools. Due to their proximity to the airport (approximately half a mile) and alignment with the runway, the normal operation of these aircraft makes overflight of the school and lead exhaust deposits a daily reality. According to the EPA, “emissions of lead from piston-engine aircraft using leaded avgas comprise approximately half of the national inventory of lead emitted to air.”<sup>3</sup>

The people most negatively impacted are those who live near the airport and attend the neighborhood schools. The MDE should study the environmental impacts of lead-based fuel in the State by the aviation industry. Existing research has shown that avgas can increase the blood lead level in children in close proximity to these airports.<sup>4 5 6</sup>

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<sup>1</sup> “2W5 - Maryland Airport.” *AirNav*, <https://www.airnav.com/airport/2W5>.

<sup>2</sup> United States, Environmental Protection Agency, “Advance Notice of Proposed Rulemaking on Lead Emissions from Piston-Engine Aircraft Using Leaded Aviation Gasoline; Proposed Rule.” April 28, 2010

<sup>3</sup> *Ibid.*

<sup>4</sup> Miranda, Marie Lynn, Rebecca Anthopolos, and Douglas Hastings. 2011. A geospatial analysis of the effects of aviation gasoline on childhood blood lead levels. *Environmental Health Perspectives* 119 (10): 1513–1

<sup>5</sup> Zahran, Sammy, et al. “The effect of leaded aviation gasoline on blood lead in children.” *Journal of the Association of Environmental and Resource Economists* 4.2 (2017): 575-610.

<sup>6</sup> United States, Center for Disease Control, “Health Problems Caused by Lead” 8 December, 2021, [www.cdc.gov/niosh/topics/lead/health.html](http://www.cdc.gov/niosh/topics/lead/health.html)

Founded in 1892, the Sierra Club is America’s oldest and largest grassroots environmental organization. The Maryland Chapter has over 70,000 members and supporters, and the Sierra Club nationwide has over 800,000 members and nearly four million supporters.

This bill will require the MDE to study the environmental impacts of the use of lead-based fuel in the State by the aviation industry and develop recommendations for mitigating the environmental impacts. Some mitigations have already been developed in the form of runway shortening<sup>7</sup>, the use of noise abatement procedures to preclude flight over schools while in session<sup>8</sup>, and the use of ethanol-free gasoline or other fuels currently in development. A recent review by the Transportation Research Board shows that there are reasonable steps the MDE could recommend to mitigate this important issue.<sup>9</sup>

Maryland should not wait for the federal government. The EPA process has taken years with no results. In the time it takes them to reach a resolution, more citizens of Maryland will suffer irreversible harm from lead exposure. For all these reasons, we urge a favorable report for SB 686.

Brandon Smith  
Clean Energy Team  
smithb3@gmail.com

Josh Tulkin  
Chapter Director  
Josh.Tulkin@MDSierra.org

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<sup>7</sup> Neelakshi Hudda, Scott Fruin, John L. Durant Substantial Near-Field Air Quality Improvements at a General Aviation Airport Following a Runway Shortening, *Environmental Science & Technology* (Jan 2022).

<sup>8</sup> United States, Federal Aviation Authority, “NOTAM M0065/22”, 18 February, 2022, <https://notams.aim.faa.gov/notamSearch/nsapp.html#/details>

<sup>9</sup> Transportation Research Board, “Options for Reducing Lead Emissions from Piston-Engine Aircraft” U.S. National Academies of Sciences, Engineering, and Medicine, January 2021.

# **Testimony SB686.pdf**

Uploaded by: Carlos Childs

Position: FWA

Hello Chair Pinsky, Vice-Chair Kagan, and Education, Health, and Environment Committee,

My name is Carlos Childs, I am the Charles County Chair of Our Revolution Southern Maryland. I am testifying and am asking for a favorable report with amendments from this committee on SB 686.

While SB 686 is a first and small step toward addressing the harms of using leaded fuel, we cannot forget the medical impact of lead, especially to children.

The bill should expand to require the Maryland Department of Health to study the levels of lead in residents who live, work, or go to school near aviation businesses that use lead-based fuel, test surfaces inside and outside buildings near such aviation businesses for lead particles, and make these findings public and easy to locate. The bill should also create a recommendation plan on reversing, mitigating health problems of people infected with lead poisoning, and how to end the spread of lead contamination. While also keeping the Dec. 1st deadline for the reporting and recommendations to be made public.

Lead poisoning is a 100% preventable disease and can have lasting effects on a person's physical and mental health.

We have a problem here in Charles County with the Maryland Airport which has piston-engine planes departing and landing at its location. The EPA has noted that piston-engine planes are responsible for the majority of lead in the air. The airport is located less than 1-mile from J.C. Parks Elementary and Matthew Henson Middle schools. Read the article attached learn more about the potential harms of lead-based fuels on the schools:

<https://www.marylandmatters.org/2022/02/13/opinion-charles-co-urged-to-take-action-to-avoid-a-potential-lead-poisoning-crisis/>

It is for these reasons I again urge the committee to provide a favorable report with the amendments stated above for SB 686.

**SB686 testimony (1).pdf**

Uploaded by: Ongisa Ichile-Mckenzie

Position: FWA

To: Maryland General Assembly, Senate Education, Health & Environmental Committee  
From: Ongisa Ichile-Mckenzie- Director, Southern Marylanders for Racial Equality  
Re: SB 0686 - Favorable with Amendments  
Hearing Date: February 24, 2022

Dear Committee Members,

I write to you today, not as an activist, but as an affected homeowner, parent and member of the community. The legislation presented before you was a response to our request for Maryland Airport at 3900 Livingston Rd Indian Head, MD to be prevented from polluting our area with lead. My home literally shares a property line with the airport, so planes take off and land nearly in my backyard. The air traffic we received has increased exponentially, as the new private owner has apparently made some deals to route more aircraft to our area. However, the airport serves approximately 100 small piston planes which use avgas, which is a leaded fuel. Cars cannot even legally use leaded fuel! There have been “studies” done by the county that supposedly show that expanding this airport will not negatively impact the environment. The land surrounding the airport had previously been protected land and waterways under a “Watershed Conservation District” zoning code. The county commission overturned that in 2021 and zoned all of our surrounding land, homes, etc to Industrial zoning in order to approve the airport expansion. There were no studies done on how the two public schools, dozens of homes, and three churches are being affected by the lead that falls through the air and gets deposited into the soil and water that we consume. Our neighborhood and schools are 88% African American and mostly low SES, with most children on FARMS in school. It’s not lost on me that they feel our families’ health and safety is disposable. The Charles County Medical Association, Southern Maryland Fair Skies, the Mattawoman Watershed Society and others have joined the fight against this airport and its pollution. SB 686 is a jumping off point to stop the use of avgas at Maryland Airport and others, but it doesn’t go far enough to examine the human toll this is taking on our community. We are asking for a vote of “favorable with the following amendments”:

- 1) Require the Maryland Department of Health to study the levels of lead in residents who live, work, worship, or go to school near aviation businesses that use lead-based fuel;
- 2) Test surfaces and water supply both inside and outside buildings near such aviation businesses for lead particles;
- 3) Make findings public and easy to locate;
- 4) Create a recommendation plan on reversing, mitigating health problems of people infected with lead poisoning, and ending the spread of lead contamination.

Sincerely,



Ongisa Ichile-Mckenzie

**AOPA testimony MD S 686.pdf**

Uploaded by: Sean Collins

Position: UNF





421 Aviation Way  
Frederick, MD 21701

T. 202-737-7950  
F. 202-273-7951

[www.aopa.org](http://www.aopa.org)

February 23, 2022

Senate Education, Health &  
Environmental Affairs Committee  
2 West  
Miller Senate Office Building  
Annapolis, Maryland 21404

**TRANSMITTED BY ELECTRONIC SUBMISSION**

**Re: Maryland S.686 - An Act concerning a Study on Environmental Impacts of Lead-based fuel use by the aviation industry.**

Chairman Senator Pinsky and members of the Education, Health, and Environmental Affairs Committee,

The Aircraft Owners & Pilots Association is the world's largest aviation organization representing over 300,000 aircraft owners and pilots across the country, including 5,387 members in the state of Maryland. **AOPA supports the smart and safe transition to unleaded fuel and is leading the industry collaboration with the federal government to remove lead from aviation gasoline. Because this initiative will yield favorable results for all stakeholders in the foreseeable future, we OPPOSE the need for a state-funded study on the environmental impacts of lead-based fuel use by the aviation industry at this time.**

The general aviation industry includes more than 200,000 aircraft operating out of 5,000 public-use airports across the United States. The industry supports more than 1 million direct jobs and generates \$250 Billion in annual economic activity across the United States. Maryland is home to 2,195 aircraft spread across 35 public-use airports. According to the Maryland Aviation Administration study on Economic Impact of Public Use Airports In Maryland, the industry supports 9,929 jobs while generating \$867 Million in annual economic activity that produces \$131 Million in state and local tax revenue.

Removing lead from aviation fuels is the most pressing issue facing general aviation today.

Leaders representing major general aviation associations, petroleum industry stakeholders, and the U.S. government jointly announced on February 23 an ambitious initiative called EAGLE (*Eliminate Aviation Gasoline Lead Emissions*) to transition to lead-free aviation fuels for all piston-engine aircraft by the end of 2030.

EAGLE comprises a public-private partnership to expand and accelerate government and industry actions and investments and establish the policies and activities to permit aircraft to operate lead-free without compromising safety or economic health.

These industry leaders are asking state and local governments, general aviation associations, airports, fuel suppliers and distributors, and others to join in, "making EAGLE soar."

The EAGLE initiative calls for ensuring that aviation fuels available today remain in place until an unleaded solution is developed and deployed to our nation's airports. The industry's goal is FAA authorization for unleaded avgas that can replace 100LL for all aircraft in the GA fleet, with a transition that can be done effectively and efficiently, with no negative impact on safety. Several promising solutions are currently being evaluated.

### **WHY IS THERE LEAD IN AVIATION FUEL?**

The majority of general aviation aircraft were designed to operate with fuel formulated to prevent engine detonation - a dangerous condition that can result in a sudden engine failure due to damage it can cause. For decades, a lead-based additive has been the solution to get the high octane needed to prevent detonation. Finding a suitable substitute that doesn't contain lead has been challenging, but there has been progress in recent years. Even though aviation gasoline represents only one-third of 1 percent of all gasoline sales in the United States, the aviation industry is fully behind a smart and safe transition to an unleaded future.

### **CAN ALL AIRCRAFT USE UNLEADED FUEL?**

Unleaded fuels are currently available, but only low-compression aircraft engines can burn this fuel. However, 75 percent of the total avgas consumption is by aircraft requiring 100-octane fuel. So far, the only fully approved way to achieve 100 octane is with a lead-based additive.

AOPA and the entire general aviation industry are fully aware that there is no safe amount of lead and, while this is a very complex matter involving issues of safety, performance, practicality, economics, chemistry, and logistics, we are committed to the safe and efficient fleetwide transition to an unleaded fuel as quickly as possible.

**We, therefore, ask the Senate Education, Health & Environmental Affairs Committee to recognize these initiatives and not invest in additional studies to determine what the general aviation industry already knows and is working diligently to correct.**

We invite you to visit [www.aopa.org/100UL](http://www.aopa.org/100UL) or contact me with any questions by phone at (301) 695-2090 or at [sean.collins@aopa.org](mailto:sean.collins@aopa.org).

Sincerely,



Sean M. Collins, AOPA  
Eastern Regional Manager

**SB 686 LOI.docx.pdf**

Uploaded by: Tyler Abbott

Position: INFO



# Maryland

## Department of the Environment

Larry Hogan, Governor  
Boyd K. Rutherford, Lt. Governor  
Ben Grumbles, Secretary  
Horacio Tablada, Deputy Secretary

February 24, 2022

The Honorable Paul G. Pinsky, Chair  
Education, Health, and Environmental Affairs Committee  
Miller Senate Office Building, Suite 2W  
Annapolis, Maryland 21401

**Re: Senate Bill 686- Department of the Environment - Study on Environmental Impacts of Lead-Based Fuel Use by Aviation Industry**

Dear Chair Pinsky and Members of the Committee:

The Maryland Department of the Environment (MDE or the Department) has reviewed SB 686, entitled *Department of the Environment - Study on Environmental Impacts of Lead-Based Fuel Use by Aviation Industry*, and would like to provide information on the bill.

By December 1, 2022, this bill would require MDE to study the environmental impacts of the use of lead-based fuel in the state by the aviation industry and develop recommendations for mitigating those impacts, including whether to prohibit the use of lead-based fuel by the aviation industry.

The Department would have to develop air monitoring and modeling protocols as well as environmental media sampling and analysis plans. It is unclear from the bill text as to how many airports are to be studied and what is the target environmental media and exposure routes. Given the lack of specificity, the Department is assuming any study would need to include all 33 public-use airports located throughout Maryland.

Currently, it is not possible to directly measure the emissions from airplanes; therefore, estimates would have to be made using approved methodologies, such as model inputs. Ambient air concentrations could also be measured at airports nearest to the "maximum impact area," an assigned area at the end of the runway where pilots are required to conduct safety checks with engines running just prior to takeoff. Modeling results could then be compared to the monitored values and adjustments could be made to the modeling inputs if necessary. In order for this study to provide a full picture, it would have to be conducted over at least a year to ensure that all possible operating scenarios and seasonal variabilities in atmospheric conditions are fully captured. To assess environmental impacts, MDE would need to compare lead levels in the air, water, and soil to applicable risk-based standards.

In addition to the scientific constraints, these exercises are extremely resource and financially intensive and would not be possible to complete within the 5 month timeframe given in the bill. Additionally, the Department only employs one toxicologist, which is not sufficient to conduct a public health risk assessment to determine if the use of leaded-aviation fuel increases lead exposure to the public. During past investigations conducted at several commercial Maryland airports, data collected has not identified soil or groundwater lead levels of concern for residential exposure scenarios and vulnerable populations. Some airports investigated, include but are not limited to: Salisbury Airport, Martin State Airport and Freeway Airport, as well as multiple federal facilities with aviation capabilities.

In regard to the recommendations required under this bill, MDE would be required to develop recommendations for mitigating the environmental impacts associated with the use of lead-based fuel by the aviation industry, including prohibiting the use of lead-based fuel by the aviation industry. However, the Department does not have the legal authority to ban the use of leaded aviation fuel. The Clean Air Act (CAA) requires the U.S. Environmental Protection Agency (EPA) to determine the extent to which emissions from aircrafts affect air quality and the technological feasibility of controlling such emissions, and mandates that the U.S. Federal Aviation Administration (FAA) adopt regulations to ensure compliance with all standards prescribed by EPA. In addition, the CAA prohibits states and local communities from setting their own emission standards. Therefore, MDE would be unable to make such a recommendation.

Finally, this bill appears to duplicate efforts already undertaken by EPA and new, recently announced federal initiatives. EPA previously required some states to conduct a lead monitoring study at 15 airports that had estimated lead emissions between 0.5 and 1.0 ton per year in an effort to better understand how these emissions affect the air at and near airports. Airports for this monitoring study were selected based on factors such as the level of piston-engine aircraft activity and the predominant use of one runway due to wind patterns. Airports in Maryland were below the estimated lead levels and were not selected for the study. EPA announced on January 12, 2022 that it is planning another evaluation as to whether emissions of lead from piston-engine aircraft cause or contribute to air pollution that endangers public health or welfare. On a separate front, the FAA, together with government and industry stakeholders, is in the early stages of developing a multi-layered transition strategy to reduce and ultimately eliminate lead from aviation fuel.

Thank you for your consideration. We will continue to monitor SB 686, entitled *Department of the Environment - Study on Environmental Impacts of Lead-Based Fuel Use by Aviation Industry*, during the committee's deliberations, and I am available to answer any questions you may have. Please feel free to contact me at 410-260-6301 or [tyler.abbott@maryland.gov](mailto:tyler.abbott@maryland.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Tyler Abbott", with a long horizontal line extending to the left.

Tyler Abbott

cc: The Honorable Arthur Ellis  
George "Tad" Aburn, Director, Air and Radiation Administration