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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.[1] Although work has been ongoing for years,[2] 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."[3]

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.[4] [5] [6]

[1] "2W5 - Maryland Airport." *AirNav*, https://www.airnav.com/airport/2W5.
[2] 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
[3] Ibid.
[4] 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
[5] 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.
[6] United States, Center for Disease Control, "Health Problems Caused by Lead" 8 December, 2021, www.cdc.gov/niosh/topics/lead/health.html

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[7], the use of noise abatement procedures to preclude flight over schools while in session[8], 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.[9]

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.

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[7] 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).
[8] United States, Federal Aviation Authority, "NOTAM M0065/22", 18 February, 2022, https://notams.aim.faa.gov/notamSearch/nsapp.html#/details
[9] Transportation Research Board, "Options for Reducing Lead Emissions from Piston-Engine Aircraft" U.S. National Academies of Sciences, Engineering, and Medicine, January 2021.