Perelman SCHOOL OF MEDICINE UNIVERSITY of PENNSYLVANIA | CEET CENTER OF EXCELLENCE IN ENVIRONMENTAL TOXICOLOGY

Marilyn V. Howarth, MD, FACOEM

Director, Community Engagement Core (CEC)
Center of Excellence in Environmental Toxicology

September 9, 2025

Lee Zeldin
Administrator,
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, DC 20460

Re: Comments on EPA's proposed rule to 'Repeal the 2009 Endangerment Finding and the greenhouse gas vehicle emission standards under Section 202(a) of the Clean Air Act' (Docket ID No. EPA-HQ-OAR-2025-0194)

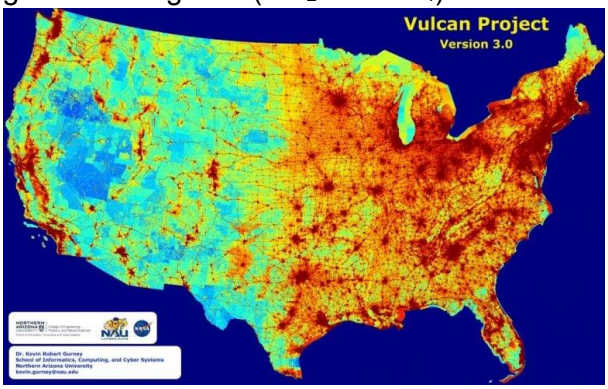
Dear Administrator Zeldin:

My name is Dr. Marilyn Howarth. I am an Occupational and Environmental Medicine physician. I have expertise in environmental exposure assessment and air pollution in particular. I work at the Center of Excellence in Environmental Toxicology (CEET) at the Perelman School of Medicine of the University of Pennsylvania. My comments today are my own, and not those of the University of Pennsylvania or our funder the NIEHS.

I am writing to describe the deleterious health implications for millions of Americans should the 2009 Endangerment Finding and the greenhouse gas emission standards for vehicles under Section 202(a) of the Clean Air Act be rescinded. The 2009 EPA finding that the buildup of gases in the atmosphere that trap heat endangers public health and welfare was based on overwhelming scientific evidence. Every day, people in rural and urban areas deal with extreme heat. Extreme heat from greenhouse gas emissions leads to wildfires, tornadoes, flash floods, road washouts, or falling trees leading to death or major traumatic injury, and disruption of property, livelihoods and well being. The repeated combined effects of this level of disruption are becoming more apparent; causing a level of public endangerment not previously seen with this frequency and intensity due to the extreme weather that results. Our medical infrastructure is ill-equipped to manage these changes and is frequently overwhelmed by local events endangering the lives of people requiring care for heart attacks and strokes and other routine yet serious conditions (Ebi, 2021). In fact, 50 million Americans live over one hour from a hospital equipped to handle major traumatic injury. The expected outcome for these people who experience delays in medical care due to traumatic injury is not good (GoodRx). The sources contributing to extreme weather are many, but the evidence that greenhouse gases are important contributors is irrefutable.

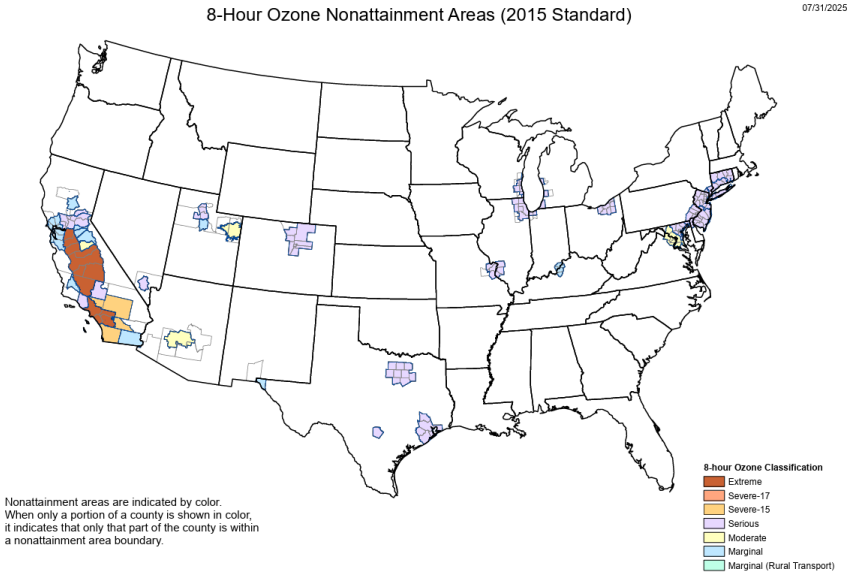
In the Northeast region, we experience more frequent and longer heatwaves. Nighttime temperatures are increasing with more nights exceeding 90 degrees interfering with body cooling and exacerbating hypertension, heart disease and other chronic medical conditions. More than 1300 deaths per year in the US are due to extreme heat according to the EPA's website. Winter temperatures are also warming which leads to more frost-free days which changes the ecological profile of allergens and pests. Combined with the increased rainfall this increases pollen concentration and causes earlier and longer pollen seasons in the Northeast. Spring arrived 20 days early in the last couple of years in Pennsylvania according to the National Phenology Network as reported by the US Department of Health and Human Services. Longer pollen seasons increase allergy exacerbations and in some cases asthma exacerbations, a condition that kills more than 3500 Americans each year.

The EPA proposed interpretation of the Clean Air Act that should only include air pollutants that cause harm through local or regional exposure is extremely narrow and not consistent with multiple court findings. Even if we analyze the Northeast region through the lens of this narrow interpretation, we find that several of the greenhouse gases (CO_2 and CH_4) concentrate in this region. The co-emitted EPA criteria air pollutants, particulates, NOx, SO_2 and ozone, which secondarily forms in the atmosphere, endanger human health. This map uses data from NASA and EPA to show the full picture of CO_2 emissions across the US (Gurney, 2020). The red areas show the most concentrated areas of CO_2 emission and reveal that certain regions, like the Northeast for example, are more affected. The study shows that the Transportation sector accounts for 29% of the CO_2 emissions in the Northeast. The extreme weather impacts derived from green house gas emissions cause harm. Reductions to CO_2 in the transportation sector would be meaningful to public health. The risk calculations presented for rescinding the Endangerment Finding and the ensuing transportation regulations do not consider the backdrop of co-pollutant exposure making the regulation divorced from the reality experienced by Americans. This approach knowingly endangers people's health where numerous air pollution sources are present which is not consistent with EPA's mission to protect human health and the environment.



The most immediate impact to the health of Americans would be the rescinding of the vehicle emission regulations that have been put in place since the establishment of the Endangerment Finding. The Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles: Final Rule was expected to reduce particulate matter by 8,700 tons/year, nitrogen oxides by 36,000 tons/year and volatile organic compounds by 150,000 tons/year. Each of these pollutants are known to cause serious health effects individually and in combination. Abandonment of these emissions standards will reduce compliance with the National Ambient Air Quality Standards (NAAQS).

Although the EPA NAAQS are informed by health data, NAAQS are not set to be completely protective of human health. For this reason, being out of compliance (non-attainment) with NAAQS is very concerning from a health perspective. Ozone is formed when nitrogen oxides and volatile organic compounds found in the atmosphere combine in the presence of sunlight. Parts of the Northeast including the Philadelphia region have never been in compliance with federal Ozone standards and their level of non-compliance is currently designated 'Serious' as noted on EPA's 8-Hour Ozone Nonattainment Area map shown here.Ozone is an irritant to mucous membranes worsening the symptoms of **allergy, asthma and chronic obstructive pulmonary disease**. Reductions in vehicle exhaust are essential to bring several areas of the country into compliance with ozone NAAQS, regulations which preceeded and were not at all predicated on the Endangerment Finding.



https://www3.epa.gov/airquality/greenbook/mapnpoll.html

PM2.5 has significant health impacts.They cause **cardiovascular disease** and accelerate its progression, cause **asthma** and exacerbate existing asthma and **chronic obstructive pulmonary disease**, cause **dementia, miscarriage,** and **pre-mature birth** which is associated with additional health outcomes. Infants are particularly vulnerable to these exposures since their

lungs are not fully developed until two years of age. Children would be particularly susceptible. Although the latest standard for PM 2.5 of 9 ug/m^3 will certainly save lives and reduce health impacts, the science shows that it still allows significant numbers of cancers, heart attacks and asthma. In fact, studies reviewed in the EPA's Integrated Science Assessment on PM2.5 found that there is a linear, no threshold relationship with shorterm health effects and mortality at PM 2.5 levels of 5 ug/m^3. Let there be no question, the standard is not strict enough to protect human health. The Philadelphia region was one of the last areas in the US to come into compliance with the 2012 PM2.5 NAAQS. It will not likely be in compliance with the latest standard of 9 ug/m^3 because of its heavy regional influence from transportation. The I-95 corridor is a major thoroughfare for goods movement on the east coast. By maintaining The Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, the Philadelphia region might get closer to achieving the current PM2.5 and ozone standards.

The EPA has been criticized for its inadequate consideration of cumulative impacts analysis in its rule-making. Pennsylvania is a prime example of the harms due to rule-making that does not consider the multiple contributors that negatively act on human health. I urge EPA to faithfully execute its mission of protecting human health and the environment by maintaining the Endangerment Finding and the regulations that have relied on it.

Sincerely,

Marilyn V. Howarth, MD, FACOEM
Director, Community Engagement Core
Center of Excellence in Environmental Toxicology
Perelman School of Medicine

References

Gurney, K. R., Liang, J., Patarasuk, R., Song, Y., Huang, J., & Roest, G. (2020). The Vulcan version 3.0 high-resolution fossil fuel CO_2 emissions for the United States. *Journal of Geophysical Research: Atmospheres*, 125, e2020JD032974. **https://doi.org/10.1029/2020JD032974**

Jacob, D. J. and Varon, D. J. and Cusworth, D. H., et al. (2022) Quantifying methane emissions from the global scale down to point sources using satellite observations of atmospheric methane. *Atmos. Chem. Phys.:*ACP 22 (14)9617-9646. https://acp.copernicus.org/articles/22/9617/2022/

Final Rule: Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium Duty Vehicles https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-multi-pollutant-emissions-standards-model

Ebi KL, Vanos J, Baldwin JW, Bell JE, Hondula DM, Errett NA, Hayes K, Reid CE, Saha S, Spector J, Berry P. Extreme Weather and Climate Change: Population Health and Health System Implications. Annu Rev Public Health. 2021 Apr 1;42:293-315. doi: 10.1146/annurev-publhealth-012420-105026. Epub 2021 Jan 6. PMID: 33406378; PMCID: PMC9013542.

Mapping Healthcare Deserts: GoodRx. https://www.goodrx.com/healthcare-access/research/updated-healthcare-deserts?srsltid=AfmBOorwdr6s2KhVvbRlmhzbtMTs-bdFcsDiEsEu6flUXfkgX4JG0vCz

US DHHS USNPN Spring Leaf Index: https://www.usanpn.org/data/maps/spring

EPA Heat-Related Deaths: https://www.epa.gov/climate-indicators/climate-change-indicators-heat-related-deaths

Supplement to the 2019 Integrated Science Assessment for Particulate Matter; EPA/600/R-21/198 September 2021. www.epa.gov/isa