American Lung Association.

June 14, 2024

Richard Moore, Co-Chair
Peggy Shepard, Co-Chair
White House Environmental Justice Advisory Council

Re: EPA-HQ-OEJECR-2024-0147

Dear Co-Chairs Moore and Shepard:

Communities across the U.S. experience extreme heat, floods and other disasters each year due to climate change. The American Lung Association appreciates the opportunity to provide comment related to the Executive Order on *Revitalizing Our Nation's Commitment to Environmental Justice for All*. Below we share practical solutions, particularly focused on reducing the health harms of urban heat islands, to mitigate the inequitable impacts of climate change and improve the health of people across America.

The American Lung Association is the oldest voluntary public health association in the United States, representing the more than 34 million individuals living with lung disease. The Lung Association is the leading organization working to save lives by improving lung health and preventing lung disease through research, education and advocacy. Air pollution and the changing climate pose a threat to the health of all people in the nation, but some individuals are at elevated risk. Children, seniors, individuals who are pregnant, people who work and play outside, people of color, and people living with lower incomes are also more likely to suffer health harms and are often exposed to air pollution at a higher rate.

Black, Indigenous, and People of Color are more likely to be living in areas most impacted by extreme heat and poor air quality[1]. The Lung Association's 2024 "State of the Air" report found that nearly 70 million people of color and 16 million people with incomes meeting the federal poverty definition live in counties that received a failing grade for ozone and/or particle pollution.[2] Inequities in exposure to unhealthy air are due in large part to a history of discriminatory practice that consists of systematic denial of services such as mortgages, insurance loans, and other financial services to residents of certain areas based on their race or ethnicity and other means of limited political power within these communities. This history of disinvestment and redlining is linked to increased vulnerability of communities of color and those living under the federal poverty line to urban heat and ground-level ozone.[3]

From the direct impact of the temperature and weather changes to the special burdens these changes place on the most vulnerable communities, climate change seriously threatens the nation's wellness—especially lung health. One such category of impacts is seen in urban communities facing dangerous heat. On average, 66% of the surface area in U.S. cities consists of roads, parking lots and roofs. Cities also tend to lack natural landscapes like forests of trees, grassy areas and bodies of water. Because of this, urban areas become "heat islands," trapping heat and causing 1-7°F higher temperatures during the day, and 2-5°F higher temperatures at night than in the country.

Additionally, the inability of these structures to absorb rainwater means that the run-off goes directly into the sewer system, which if overwhelmed, can overflow into lakes and rivers and contaminate the water with harmful pollutants. Drinking contaminated water can cause many adverse health effects including gastrointestinal pain, reproductive problems, neurological problems and even lung disease.

Dark surfaces, like roads, parking lots and roofs, do not reflect the sun. Instead, they absorb sunlight, which increases the surrounding air temperature. As a result, the buildings next to these dark surfaces use more energy for air-conditioning and contribute to overall urban hot spots and increased ground-level ozone.

Ground-level ozone pollution, also known as smog, forms when other pollutants react in the presence of heat and sunlight; more heat often means more ozone. This pollutant causes swelling and irritation of the lungs. Immediate irritation can cause wheezing and coughing and shortness of breath. With repeated exposure, ozone can permanently damage lung cells. For those dealing with a chronic lung disease like asthma or COPD, heat and smog may trigger an asthma attack, severe COPD symptoms or lead to a lung infection.

Smart Surfaces is the term used to encompass a suite of technologies that can help reduce heat in cities. These include reflective (cool) roofs and pavements, green roofs, trees, solar photovoltaics (PV), greenspaces and rain gardens. Incorporating light-colored porous roads, parking lots and driveways can improve drainage and reflect sunlight instead of absorbing it, thereby reducing heat. Adding solar panels to roofs not only provides shade and discourages heat absorption, but it also can convert sunlight into electricity. Designed to mitigate urban heat, enhance air quality and improve health, the addition of these transformative urban features can make cities more resilient and vibrant. In addition, increased green spaces in urban areas are correlated with a reduction in air pollution and less mortality and morbidity from respiratory diseases. [4] Besides being able to cool cities by 5°F, Smart Surfaces can also reduce flooding and provide economic benefits to cities.[5] One easy and effective way to reduce ground-level ozone is to incorporate trees, green roofs and green spaces in urban settings to reduce temperatures and improve health.

These practical measures can help protect health and improve environmental justice in the face of a changing climate. The nation has a unique opportunity to address the inequitable impacts of climate change and improve public health through investments in infrastructure that reduces urban heat and increased green space. We appreciate the opportunity to highlight these opportunities for the WHEJAC.

Sincerely,

Harold Wimmer

Harold Wimmer
President & CEO
American Lung Association

[1] Jantarasami, L.C., et al. (2018). *Ch. 15: Tribes and Indigenous peoples*. In: *Impacts, risks, and adaptation in the United States: Fourth national climate assessment, volume II*. U.S. Global Change Research Program, Washington, DC, USA, p. 582.

[2] American Lung Association. State of the Air, April 2024 https://www.lung.org/sota

[3] Bev Wilson (2020) Urban Heat Management and the Legacy of Redlining, Journal of the American Planning Association, 86:4, 443-457, https://doi.org/10.1080/01944363.2020.1759127

[4] Jaafari, S., Shabani, A.A., Moeinaddini, M. et al. Applying landscape metrics and structural equation modeling to predict the effect of urban green space on air pollution and respiratory mortality in Tehran. Environ Monit Assess 192, 412 (2020). https://doi.org/10.1007/s10661-020-08377-0

[5] Mueller, N., Rojas-Rueda, D., Khreis, H., Cirach, M., Andrés, D., Ballester, J., Bartoll, X., Daher, C., Deluca, A., Echave, C., Milà, C., Márquez, S., Palou, J., Pérez, K., Tonne, C., Stevenson, M., Rueda, S., & Nieuwenhuijsen, M. (2020). Changing the urban design of Cities for Health: The superblock model. Environment International, 134, 105132. https://doi.org/10.1016/j.envint.2019.105132