

A!ert

dvrpc

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Alert is a monthly update on transportation and air quality planning activities in the Delaware Valley.



Health and Air Quality

Greater Philadelphia Region Listed in Top 25 Worst Regions in the Nation for Poor Air Quality

The Philadelphia-Reading-Camden PA-NJ-DE-MD metropolitan region¹ has been ranked in the top 25 most polluted regions for ground-level ozone and annual fine particles (PM_{2.5}) by the American Lung Association (ALA) in their State of the Air report released in April 2021. The region was ranked as the 17th worst region in the nation for long-term (annual average) PM_{2.5} and 21st for ozone pollution. The ALA used quality-assured data for the period 2017 to 2019 to develop the 2021 report card on ozone and particle pollution for the nation's cities and counties.

The report also ranks individual counties based on the number of days that air quality reaches unhealthy levels (Code Orange and above) on the Air Quality Index. In the DVRPC region, Chester and Delaware Counties, received a grade of "D" for ozone pollution, while the remaining five counties that were graded received failing grades for ozone pollution. Burlington County does not have an air quality monitor and was not graded in this report.

Despite being ranked the 17th worst metro region in the nation for annual particle pollution, all of the counties in the DVRPC region that were graded, received passing grades for PM_{2.5} pollution, with Gloucester, Mercer, Montgomery, and Philadelphia counties receiving A's for particle pollution, with no days violating the daily PM_{2.5} standards in those counties over the report period.

The ALA used the PM_{2.5} daily standard of 35mg/m³, adopted in September 2006; the PM_{2.5} annual standard of 12mg/m³, adopted in September 2012; and the ozone standard of 70 parts per billion, adopted in October 2015, to determine the unhealthy ranges for particle pollution and ozone.

While the 25 cities listed in the ALA State of the Air report remain largely the same from report year to report year, the ALA acknowledges that the nation has made great strides in improving air quality and reducing harmful air pollution. The report credits the Clean Air Act's science-based regulations with drastically improving the nation's air quality since 1970 but advocates for stronger action to improve the air in regions that still do not meet the federal health-based air quality standards.

Climate change and fossil fuel extraction and consumption continue to drive air pollution concerns for the ALA. Higher temperatures provides more energy to drive the chemical reactions that convert air pollutants into ground-level



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www.epa.gov
and search "environmental justice"

ozone and the three-year period in this report was in the top six hottest years on record. The ALA attributes the ongoing air pollution issues in the southwest U.S. with increased oil and gas extraction while the northeast continues to struggle with air pollution that is transported by industry and power plant sources in the midwest.

To view the entire 2021 State of the Air report, including grading methodology and statistical analysis, please visit the American Lung Association at: www.stateoftheair.org

¹ The Philadelphia-Reading-Camden PA-NJ-DE-MD metropolitan region includes Philadelphia, Bucks, Chester, Delaware, Montgomery, and Berks Counties in PA; Camden, Burlington, Gloucester, Cape May, Cumberland, and Salem Counties in NJ; New Castle and Kent Counties in Delaware; and Cecil County in Maryland.

Research Shows that People of Color are Exposed to More Air Pollution from All Sources

A body of research shows that people of color are disproportionately exposed to air pollution in the United States. A recent study published in the journal *Science Advances*, claims that this exposure is driven by nearly all pollution sources rather than just a few categories.

The research team, led by the University of Illinois Urbana-Champaign, used an air quality model to analyze U.S. Environmental Protection Agency data on fine particle pollution (PM_{2.5}) for more than 5,000 emission source types from the 2014 National Emissions Inventory, including industry, agriculture, coal electric utilities, light- and heavy-duty gasoline vehicles, diesel vehicles, off-road vehicles and equipment, construction, residential sources, road dust and other miscellaneous small emissions sources. The researchers then combined the spatial air pollution patterns predicted in their air quality model with residential population counts from the U.S. Census Bureau to identify differences in exposure by race-ethnicity and income.

According to lead researcher Chris Tessum, professor of civil and environmental engineering at the University of Illinois: "Our study contributes to an already extensive body of evidence with the new finding that there is no single air pollution source, or a small number of sources, that account for this disparity. Instead, the disparity is caused by almost all of the sources."

The key findings of the research show that for the 2014 U.S. total population, average PM_{2.5} exposures from the majority of source types are higher than average for people of color and lower than average for white people. The study reports that white people are exposed to below average concentrations from emissions source types that, when combined, cause 60% of their total exposure. Conversely, people of color experience greater-than-average exposures from source types that, when combined, cause 75% of their total exposure. This disparity exists at the national, state, and city level and for people within all income levels.

"We find that nearly all emission sectors cause disproportionate exposures for people of color on average," said co-author Julian Marshall, a professor of civil and environmental engineering at the University of Washington. "The inequities we report are a result of systemic racism: Over time, people of color and pollution have been pushed together, not just in a few cases but for nearly all types of emissions."

"We were struck by how these systemic disparities exist for people of color not only in certain neighborhoods but at every spatial scale in the U.S.," said co-author Joshua Apte, a professor of civil and environmental engineering at the University of California, Berkeley. "The problem exists within urban and rural areas, many distinct U.S. regions, and for people living within almost all American cities."

This research underscores the need to not only improve ambient air quality across the country but to also address local sources of pollution that disproportionately impact communities of color and results in poorer respiratory health outcomes in these communities.

For more information on the University of Illinois research, please visit: <https://news.illinois.edu/view/6367/1762198828>.



DVRPC, 8th Floor
190 N. Independence Mall West
Philadelphia, PA 19106-1520
Phone: 215.592.1800 | Fax: 215.592.9125 | Web: www.dvrpc.org