

Lung Association Needs to Take a Deep Breath of Reality

Summary: The American Lung Association has released its annual “State of the Air” report for 2018. As expected, the organization criticizes our nation’s air quality in general and continues to smear Pittsburgh in particular. It blames climate change as a reason for increased levels of air pollution nationwide and calls for a continued fight against climate change and greater enforcement of the Clean Air Act. Against this backdrop, it ranks regions around the country in terms of particle pollution (soot) and rates the Pittsburgh region as eighth worst in the country.

The U.S. Environmental Protection Agency (EPA) places air quality monitors in locations around the country and reports the monitor readings on its website. Using the EPA data and the EPA’s “critical values” of air pollutants, the Lung Association produces and publishes its regional rankings and warnings.

The Pittsburgh region, as designated by the Lung Association, is comprised of 12 counties in three states: Jefferson in Ohio; Brooke and Hancock in West Virginia and Allegheny, Armstrong, Beaver, Butler, Fayette, Indiana, Lawrence, Washington and Westmoreland in Southwest Pennsylvania.

Within these 12 counties there are a total of 19 monitors providing 29 readings for particle pollution (PM_{2.5}). This shorthand designation refers to particulate matter that is less than 2.5 micrometers in diameter and is typically the result of combustion of organic compounds. Some monitoring locations produce several readings including Steubenville, Jefferson County, and Greensburg, Westmoreland County, with three readings at each monitor. In Allegheny County the Lawrenceville and Liberty Borough monitors each provide two readings. As do monitors in Beaver County (Beaver Falls), Washington County (Washington City and Hillman State Park) and Brooke County (Weirton). Some counties have multiple monitors reading for PM_{2.5} (Allegheny, Washington, Jefferson and Brooke) while some counties (Butler, Fayette, Indiana and Lawrence counties) have no monitors.

The EPA has set the critical level for PM_{2.5} at 12.0 micrograms per cubic meter of air (annual mean of a monitor’s readings averaged over three years) for primary standards.

This level is selected as necessary to protect the health of “sensitive” populations such as asthmatics, children and the elderly. For secondary standards, which provides protection against decreased visibility and damage to animals, crops, vegetation and buildings, the critical level is set at 15.0 micrograms per cubic meter of air.

Keep in mind that critical levels have changed dramatically over the years since the Clean Air Act was implemented in 1971. For PM_{2.5} the original level, set in 1971, was 75.0 micrograms per cubic meter of air calculated on an annual geometric mean as the primary standard—the secondary standard was set at 60.0. The critical level was lowered to 15.0 in 1997 and calculated as an annual mean averaged over three years for both primary and secondary standards. In 2012, the primary level was set at 12.0 micrograms per cubic meter.

The point being that the standards have been tightened over the years to reflect the major improvement in air quality overall across the country and in the Pittsburgh region. In fact, according to EPA data, the national trend in PM_{2.5} has decreased by 42 percent nationwide from 2000 to 2016, falling from an annual average of 13.4 to 7.8. In the Northeast region of the country, which includes Pittsburgh, PM_{2.5} levels have dropped by 45 percent going from an average of 13.8 in 2000 to 7.6 in 2016. These data belie the Lung Association’s claim of deteriorating air quality due to climate change. Just more hyperbolic fear mongering.

The latest Lung Association ranking places the Pittsburgh region as eighth worst of 187 regions for annual particle pollution. It does, however, note that the region’s overall air quality has improved since 2000. For example, readings from a line chart in the Association’s report puts the three-year average in 2000-02 at slightly above 21 parts per cubic meter while for 2014-16 the average was under 13. Note however that the actual numerical values are not presented in the report. The report does note that the annual particle pollution level has been reduced by 8.6 micrograms per cubic meter of air (a 40 percent decline)—a fact that somehow eluded local media coverage.

Furthermore, recent readings from the area’s monitors show an interesting result that points to deliberate misuse of the data by the Lung Association. Of all 19 monitors and 29 three-year average readings there were only two monitors with particle counts above the critical limit of 12.0 per cubic meter of air—the Liberty Borough monitor (two readings of 12.9 and 13.1) and the Steubenville monitor (one of its three readings at 12.7). The other 26 particle count readings in the 12-county region were below the critical level, including the other two from the Steubenville monitor (10.3 and 9.8). In fact, the average of all 29 readings (the three-year annual average for each monitor) for the three-state, 12-county area is just 9.9, well below the critical level of 12.0 and contradicts the Lung Association’s chart showing an area-wide level of over 12.0. This amounts to deliberately and falsely labeling the region as out of compliance. Indeed, how can Butler and Indiana be lumped in when no monitor readings are available in these counties? There is no excuse for this level of statistical and reportorial malpractice.

Earlier *Policy Briefs* noted, and it is worth repeating, the Liberty monitor is in close proximity to U.S. Steel's Clairton Coke Works. Another point that is being overlooked is how much better the readings from this monitor are compared to 10 years ago. Looking at the three-year annual average, the two readings from 2004-06 this monitor came in at 20.2 and 21.1. Thus, in 10 years the readings show the levels of PM_{2.5} were reduced by 35 percent and 38 percent, respectively.

Amazingly, the Lung Association's report assigns Allegheny County a failing grade on its particulate matter levels due to the readings at the Liberty monitor. The other seven monitors and their eight readings in the County were well in compliance, averaging 9.6 particles per cubic meter. Allegheny County was the only one of the 12 to receive to receive a "fail" for its level of particle pollution.

Regarding the other monitor showing levels above the acceptable amount, the Steubenville monitor, located on the Ohio River and not too far from industrial sites, had a three-year average reading of 15.1 a decade ago (only one reading was taken at that time). PM_{2.5} levels have been reduced by 16 percent at this monitor and it bears repeating that only one of three readings from this monitor were above the acceptable level of 12.0 (12.7).

The Lung Association's latest report, and the headlines that immediately followed, give the impression that air quality in the Pittsburgh area has gotten worse over the last few years. But, in fact, the opposite has been true. Only one of the 12 counties in the region received a failing grade—Allegheny County. And, as was noted above, that was based on the readings from just one of the eight monitors stationed around the county. The other seven are consistently reporting air that is well below the critical level. Even at the offending monitor the levels are just above the critical level—a critical level that has been lowered dramatically over the years including down from 15 parts per cubic meter five years ago. The Lung Association's smear campaign is unjustified and does not reflect the progress the area has made in improving its air quality.

How much money will the folks charged with trying to attract businesses have to spend to offset the annual barrage of misleading news about the area's air quality? What will Amazon think? Presumably they and other companies are smart enough to have studied the Lung Association's air quality analysis and commentary and found them to be seriously flawed and misleading.

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