



Welcome to Lehigh Valley Breathes April 2024 Update!

Our PurpleAir monitors have been busy collecting data over the last month. As we build a larger and larger database, the analysis becomes more complex. We thought we'd use this month's update to dive deeper into recent news on the PM 2.5 front from the U.S. Environmental Protection Agency (EPA).

On February 7, 2024, the EPA finalized much stronger air quality standards for soot pollution, more precisely defined as fine particle pollution. The previous soot standard since 2012 has been 12 micrograms/cubic meter (12m/m<sup>3</sup>). The new standard – known officially as the annual health-based national ambient air quality standard for fine particulate matter – will now be 9 m/m<sup>3</sup>, a reduction of 25%. Based on the most recent scientific evidence, technical information, and recommendations from the Clean Air Scientific Advisory Committee (CASAC) and its particulate matter expert panel, the EPA estimates that the new standard will prevent up to 4,500 premature deaths, and 290,000 lost workdays for a net health benefit of up to \$46 billion in 2032.

The strengthening of air quality standards for soot pollution has unfortunately been delayed for a number of years. The standard came up for review in 2020, but the previous administration chose not to make any changes despite the growing body of scientific evidence linking air pollution to lethal outcomes. In April 2020, the previous EPA Administrator Andrew Wheeler, announced the EPA would maintain the then-current standards after his predecessor had already disbanded the particulate matter expert panel earlier in the Trump administration. This announcement came at the beginning of the COVID-19 pandemic, during which Harvard's T.H. Chan School of Public Health published a study that indicated an increase in long-term exposure to fine particulate pollution of just 1m/m<sup>3</sup> was associated with a 15% greater likelihood of dying of COVID-19 due to the amount of lung damage this type of pollution causes over time.

Despite these and other concerning findings, no changes were made.

In June 2021, the EPA announced that it would reconsider the decision to retain the previous air quality standards. The February 7, 2024, announcement is a result of that reconsideration. The EPA held a virtual public hearing and reviewed about 700,000 written comments.

What does this mean for the Lehigh Valley Breathes project?

First and foremost, it means that we're not out here working on the problem by ourselves. Fine particle matter comes from a variety of sources – construction sites, industrial processes, power plants, gasoline and diesel engines. While the LV Breathes project is focused on a very specific subset of fine PM emissions – mobile sources from the transportation sector – the new standards will apply to fine PM emissions from all the various sources. Our project will identify specific transportation sources and locations of high levels of PM 2.5. From that analysis, we will develop recommendations for how to reduce those levels through various policies

that could be implemented within the region. Meanwhile other sources of particle pollution will be controlled by the implementation of available and developing technologies to manage emissions in other sectors. Together, our small project will add an increment of improvement to the broader problem of PM 2.5 pollution in the Valley.

A second important focus of both the LV Breathes project and the revised air quality standards is an understanding of how PM 2.5 affects marginalized sub-populations. A recent study published in the New England Journal of Medicine in March 2023 took a close look at how PM 2.5 air pollution affects mortality based on both race and income level. Their findings indicated that a reduction in PM 2.5 levels provided greater benefit to marginalized sub-populations. This is because those populations are at greater risk of higher mortality rates from PM 2.5 pollution, to begin with. Their findings and other studies have also shown substantial adverse health effects at PM 2.5 levels, even below the old standard of 12m/m<sup>3</sup>.

What does that mean practically? If LV Breathes can identify “hotspots” in the Valley that show higher levels of PM 2.5 readings and if those can be correlated to marginalized sub-populations, policies can be developed that would preclude the creation near those populations of more facilities that might be likely to attract vehicles that would produce high levels of PM 2.5. Without the geographic specificity of the LV Breathes project, it is currently impossible to tell where, or even if, such hotspots exist. And the new air quality standards will bolster the requirement that PM 2.5 levels be more protective not only of marginalized communities but also of those in our more health-sensitive population, including children, the elderly, the immunocompromised, and those who are most affected by poor air quality.

While we’re considering this new air quality standard, let’s take a few minutes to look at the economic effects of cleaner air. It has been a given for several decades now that every time the EPA creates new air quality rules, there has been significant pushback from a large number of major companies, particularly manufacturers and trade associations. Their lobbyists create doomsday scenarios that never quite materialize. To quote Paul Billings, National Senior Vice President for Public Policy for the American Lung Association, “We’ve heard the same Chicken Little ‘the sky is falling’ argument from industry every time EPA has proposed an update to the PM standard. And industry has a perfect record on their projections: They’ve been wrong every single time about what the impact would be on economic growth and development.”

Let’s go back and look at those statistics on the number of lost workdays that will be avoided with the new standards – 290,000. Add to that the cost of premature deaths and the projected net health benefits of \$46 billion due to improved air quality provides a significant boost to the economy.

Earthjustice, a law firm that has been working on behalf of the environment at the federal level since 1978, performed an analysis on 14 metropolitan areas from 2012 to 2021 in which they looked at unemployment rates, real GDP, and the PM 2.5 air quality index. Their findings showed that, on average, unemployment rates decreased 2%, real GDP increased 21% and the PM 2.5 air quality index improved 12%. Looking closer to home, for the same period for Philadelphia, the unemployment rate decreased 2.2%, real GDP increased 8.7%, and the PM 2.5 air quality improved 15.2%. The analysis covered the time period from the implementation of the 12m/m<sup>3</sup> standard in 2012 to before the period of reconsideration of that standard in 2021. So, the results show what a change from a 15m/m<sup>3</sup> to a 12m/m<sup>3</sup> standard can do. It is not unreasonable to think that the latest change to a standard of 9m/m<sup>3</sup> will have the same salutary effect on our health without causing economic disaster.

We hope that this has given you a better understanding of the new fine particle standard and how, in conjunction with the LV Breathes project, it will help us all to breathe easy. See you next month.

*\*The opinions reflected herein do not necessarily represent the perspectives of Lehigh or Northampton Counties in total.*