



Matthew Mehalik, Ph.D.  
Executive Director  
Breathe Project  
Energy Innovation Center  
1435 Bedford Ave. Suite 140  
Pittsburgh, PA 15219  
412-514-5008  
[mmehalik@breatheproject.org](mailto:mmehalik@breatheproject.org)  
[breatheproject.org](http://breatheproject.org)

### Remarks for Public Comment

Attn: Mr. Aaron Yeow, DFO

Via email: [yeow.aaron@epa.gov](mailto:yeow.aaron@epa.gov) and [Docket\\_ORD@epa.gov](mailto:Docket_ORD@epa.gov)

U.S. Environmental Protection Agency  
EPA Docket Center (ORD Docket)  
Mail Code: 28221T  
1200 Pennsylvania Avenue NW  
Washington, DC 20460

Ref. Docket ID No. EPA-HQ-ORD-2014-0859

Thank you for the opportunity to comment on the Policy Assessment for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter (External Review Draft - October 2021)<sup>1</sup> as related to Docket ID No. EPA-HQ-ORD-2014-0859.

The Breathe Project is a Southwestern Pennsylvania organization that avails itself of top-level health, epidemiological, and air quality science and public health information. We are a collaboration of over 50 organizations working to improve air quality, eliminate climate pollution and make our region a healthy and prosperous place to live. We are public health professionals, academics, environmental advocates, and citizens. We use the best available science and technology to better understand the quality of the air we breathe and provide opportunities for citizens to engage and act.

The Breathe Project contends that Southwestern Pennsylvania's air quality situation deserves particular attention when considering revisions to the NAAQS annual standard and 24-hour standard because special weather, topographic, and point source conditions point to a need to improve both standards.

Our region's 2.6 million people are at risk unless both the annual and daily standards are revised. This includes vulnerable populations who bear disproportionate risks from current levels of air pollution: 39,165 children with pediatric asthma; 229,400 people with adult asthma; 161,000 people with COPD; 205,000 people with cardiovascular disease; 283,000 people living with low incomes; and 368,000 people of color.<sup>2</sup> The environmental justice concerns are clear, substantial, and must play a prominent role in setting updated standards.

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<sup>1</sup> USEPA Clean Air Scientific Advisory Committee, "Policy Assessment for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter (External Review Draft - October 2021)," Online: [https://casac.epa.gov/ords/sab/f?p=105:18:8025737255323:::RP,18:P18\\_ID:2607](https://casac.epa.gov/ords/sab/f?p=105:18:8025737255323:::RP,18:P18_ID:2607), Viewed November 29, 2021.

<sup>2</sup> ALA SOTA 2021, Available online: <https://www.lung.org/research/sota/city-rankings/states/pennsylvania/alleggheny>, accessed 11/29/21.

**I. The Breathe Project supports efforts to improve the annual average standard so that it can be set to 8ug/m3.**

The EPA's own past risk assessment, which is and has been the method for determining the impacts of regulatory changes, calculated that 17,000 long-term PM<sub>2.5</sub> exposure-related deaths from heart disease in a single year will occur by just meeting the current annual standard of 12 ug/m3.

Instead, if the standard matched the former World Health Organization's annual standard of 10 ug/m3, these deaths can be reduced by up to 18% (3060 people) per year. This number jumps up to 27% (4590 people) per year at an annual standard of 9 ug/m3. These numbers are just from heart disease deaths.<sup>3</sup>

Overall, it is possible prevent over 12,500 premature deaths per year by embracing a 9 ug/m3 annual standard.<sup>4</sup>

Moreover, the review of science literature affirms PM 2.5 exposure levels and chronic health effects with no apparent lower bound<sup>5</sup> and acute health effects with no apparent lower bound<sup>6</sup>. This means that it is critical to reduce the PM standard in order to reduce negative health effects.

Our region already suffers from some of the worst air pollution in the United States. According to an analysis of our region's pollution sources from the National Emissions Inventory, particle pollution from stationary industrial point source pollution is the largest contributor to our region's pollution, accounting for approximately two-thirds of our region's pollution. Air quality ranks "not good" two thirds of all days in our region through 2019.

Figure 1 shows an analysis of data from one of our region's monitors in Allegheny County, Liberty, (which has a 2016 – 2018 annual design value of 12.6 ug/m3), indicates measurements that rank worse than 97 percent of data from all monitors throughout the U.S. and exceeds the current standard. Data from two other nearby monitors (Braddock, Parkway) exceed the world health standards and rank worse than 94 percent of all monitors in the U.S. Across Allegheny County, data from 9 monitors have been in the worst 30 percent of all monitors nationally, and the region has averaged only one monitor above the 50<sup>th</sup> percentile nationally.

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<sup>3</sup> 85 FR 24094, pp. 24117-24118.

<sup>4</sup> U.S. EPA. Policy Assessment for the Review of the National Ambient Air Quality Standards for Particulate Matter, January 2020. EPA-452/R-20-002.

<sup>5</sup> Cohen, Brauer, et al, "Estimates and 25-year trends of the global burden of disease attributable to ambient air pollution: an analysis of data from the Global Burden of Diseases Study 2015," Lancet 2017; 389: 1907–18.

<sup>6</sup> Schwartz et al, "The Concentration Response Relation between PM 2.5 and Daily Deaths," Environ Health Perspect. 2002 Oct; 110(10): 1025–1029.

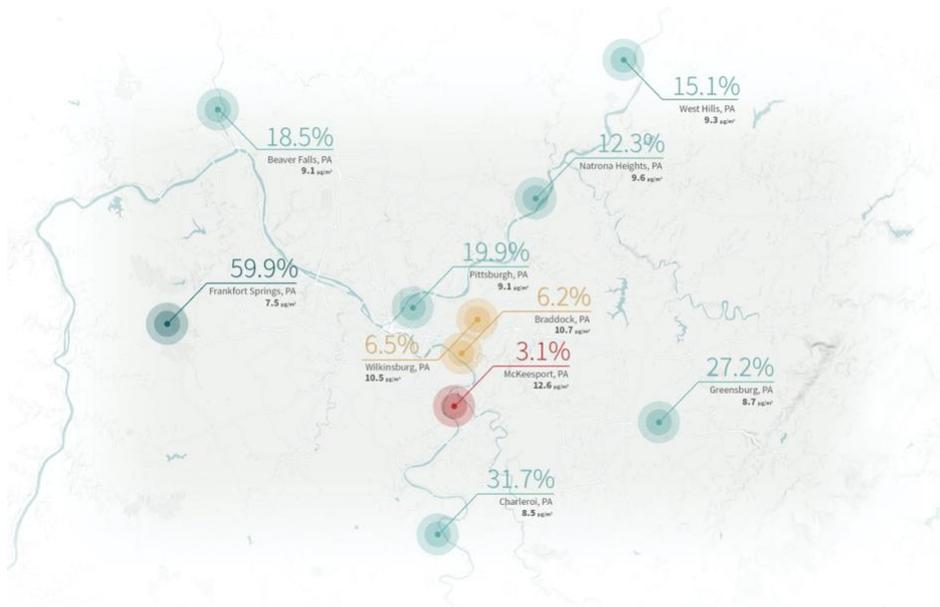


Figure 1: Pittsburgh Area PM<sub>2.5</sub> Annual DVs 2016-2018. Chart shows Pittsburgh regional monitor locations, names, national percentile rank, and 2016 - 2018 annual design value. The Liberty monitor, labeled “McKeesport, PA,” ranks at the 3.1 percentile of the national monitoring network. The Braddock monitor ranks at the 6.2 percentile. The parkway monitor (labeled “Wilkinsburg, PA”) ranks at the 6.5 percentile. Analysis completed by Clean Air Task Force, 2019.

Allegheny County ranks in the top 1 percent of counties in the U.S. for cancer risk from point source air pollution. Our air poses a significant threat to public health with an increased risk of heart and lung disease, asthma, diabetes, cancer and premature death.<sup>7</sup>

A 2017 study of asthma in regional schools found children exposed to the highest levels of PM<sub>2.5</sub> had nearly a two-fold risk of having a diagnosis of asthma. In the city of Clairton, where North America’s largest coking operation and the region’s largest source of particle pollution exists, 34% of the children were at risk for asthma compared to the national rate of 8% and the state and county rates of 10-13%.<sup>8</sup>

All of these tragic statistics for Southwestern Pennsylvania can be traced directly to the fact that the current annual standard of 12  $\mu\text{g}/\text{m}^3$  is not serving the region adequately. Our region’s air regulator, the Allegheny County Health Department, has the authority under the state of Pennsylvania and the Clean Air Act to enforce air quality standards. Their most recent submission to the PM<sub>2.5</sub> State Implementation Plan set as a target an annual average of 12  $\mu\text{g}/\text{m}^3$  for PM<sub>2.5</sub>. The Allegheny County Health Department repeatedly states that their authority is limited to enforcement of the standard. This means our region will lock into place the negative health outcomes that are outlined in this testimony unless the annual standard is updated to a more health protective value.

<sup>7</sup> <https://breatheproject.org/resources/air-pollution-sources/> and [https://breatheproject.org/app/uploads/2018/03/18-02-26\\_health\\_facts.pdf](https://breatheproject.org/app/uploads/2018/03/18-02-26_health_facts.pdf)

<sup>8</sup> Deborah A. Gentile , Tricia Morphew , Jennifer Elliott , Albert A. Presto & David P. Skoner (2020): Asthma Prevalence and Control among Schoolchildren Residing near Outdoor Air Pollution Sites, Journal of Asthma, DOI: [10.1080/02770903.2020.1840584](https://doi.org/10.1080/02770903.2020.1840584).

Our region clearly needs a more health protective standard for PM 2.5. Because the scientific studies mentioned earlier have identified no lower bound as a threshold for safe exposure, a new standard should be as health protective as possible. The Breathe Project encourages the EPA to set its annual standard to 8 ug/m<sup>3</sup>, the level at which there is a clear consensus of evidence suggesting benefits for reducing PM 2.5 emissions below this level as an annual standard. Let's save thousands of lives, reduce burdens on vulnerable people, and take action that makes everyone proud of our country by embracing this standard.

## **II. The Breathe Project supports improving the 24-hour standard so that it is set to 30 ug/m<sup>3</sup> or 25ug/m<sup>3</sup> for the 98<sup>th</sup> percentile.**

According to the current Policy Assessment, "...Revising the level of the 24-hour standard to 30 g/m<sup>3</sup> is estimated to lower PM<sub>2.5-2</sub> associated risks across a more limited population and number of areas then revising the annual standard (section 3.4.2.3). Risk reduction predictions are largely confined to areas located in the western U.S., several of which are also likely to experience risk reductions upon meeting a revised annual standard."<sup>9</sup>

We assert that Southwestern PA is a region that would also benefit from revising the 24-hour standard to 30 ug/m<sup>3</sup> or 25 ug/m<sup>3</sup>.

Allegheny County currently walks the line between attainment and nonattainment of the 24-hour standard based on the latest 2018 – 2020 data, a period that includes large scale economic disruptions that occurred during a global pandemic that caused large reductions in air emissions throughout all the northeastern U.S. Prior to this period, Allegheny County has been a longstanding nonattainment region for the 3-year annual average and 24-average standards every year through the 2017 - 2019.

Allegheny County, particularly in the Mon Valley near the Liberty Monitor, experiences a substantial number of days with temperature inversions, and these inversions have large impacts on regional air quality. We know that these events frequently occur in the overnight or early morning hours when atmospheric conditions and low wind velocity conditions trap pollution emitted overnight by industrial operators.

Based on EPA's Highest-10 NowCast AQI Locations data, which tracks which regions of the country rank in the top-10 worst airsheds, based on Air Quality Index information on an hourly basis, our county has appeared on this top-10 worst list over 83 times in 2021 through November 29, 2021.<sup>10</sup> The bulk of these appearances occurred in the spring, early summer, and late fall periods of time, when wildfires regions were not dominating this list, as was the case during summer and early fall periods of time, and especially when these overnight temperature inversions were common.

A Clean Air Task Force analysis of surface emissions under inversion conditions from 2016 – 2019 showed that these temperature inversions augment the pollution gradient to be nearly a factor of 2.0 at the Liberty monitor (to 19 ug/m<sup>3</sup> on average) when compared with surrounding monitors (10 ug/m<sup>3</sup>)

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<sup>9</sup> USEPA Clean Air Scientific Advisory Committee, "Policy Assessment for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter (External Review Draft - October 2021)," Online: [https://casac.epa.gov/ords/sab/f?p=105:18:8025737255323:::RP,18:P18\\_ID:2607](https://casac.epa.gov/ords/sab/f?p=105:18:8025737255323:::RP,18:P18_ID:2607), Viewed November 29, 2021. pp. 3-156 and 3-157.

<sup>10</sup> EPA Highest NowCast AQI Locations, Available online: <https://www.airnow.gov/national-maps/>

under strong inversion conditions.<sup>11</sup> These events can cause short-term spikes in air quality that frequently exceed 150 (Unhealthy for Everyone) level on the AQI for at least several hours in the overnight period that then decrease when the inversions dissipate, typically after 11 am. These weather dynamics result in the 24-hour average coming in just under the 35ug/m<sup>3</sup> 24-hour standard; however, a large portion of the population breathes high levels of pollution in the overnight hours, producing frequent complaints about air quality.

In fact, the Create Lab at Carnegie Mellon University has created a crowdsourced app that documented over 55,000 air quality complaints over 4 years. These complaints are based on people smelling bad air, which has been shown to have a strong correlation with sulfur emissions, precursors to PM 2.5 formation.<sup>12</sup> The visualization of these reports, in another app, “Plume Pgh,” shows how weather inversions trap these pollutants in the Mon Valley, resulting in these smell reports that occur in the waking hours, when people get up and enter the dome of pollution in the mornings.<sup>13</sup>

Additionally, other evidence of the impact of these inversions can be seen on cameras that are pointed at polluting facilities in the Mon Valley<sup>14</sup>, such as at the Clairton Coke Works<sup>15</sup> and the Edgar Thomson Works.<sup>16</sup>

Our region can benefit from revisions to the 24-hour standard because of the unique conditions that exacerbate pollution in Southwestern Pennsylvania in addition to the revisions to the annual standard.

Thank you for your time and consideration.

Sincerely,

Matthew M. Mehalik, Ph.D.  
Executive Director  
Breathe Project

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<sup>11</sup> Graham, John. “Pittsburgh Air Quality Trends,” Presentation at the “Air We Breathe Asthma Summit,” Pittsburgh, PA, November 5, 2021.

<sup>12</sup> See “Summary of Findings” and “Relationship between Smell Reports and Pollutants” at <https://smellpgh.org/analysis>

<sup>13</sup> See <https://plumepgh.org/?date=2021-10-14> for a good example.

<sup>14</sup> These cameras can be accessed for any date at <https://breatheproject.org/learn/breathe-cam/>

<sup>15</sup> For one example of many, please see <https://tinyurl.com/5296xtyk>.

<sup>16</sup> For one example of many, please see <https://tinyurl.com/y9nnhjwt>.