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**Another View of Heinz Endowments' Air Quality Findings**

In a report<sup>1</sup> released March 9, the Heinz Endowments presented a very negative picture of air quality in the Pittsburgh region. Two of their key assertions need close examination.

First this statement, in referring to particulate matter as measured by PM<sub>2.5</sub> (particles less than 2.5 micrometers measured in micrograms per cubic meter) and ozone, “Despite significant improvement, air quality has remained poor throughout the last decade in Pittsburgh and the surrounding region.” Second, “People in the region may be dying prematurely from harmful levels of air pollution.”

Note that the surrounding region beyond Allegheny County includes Lawrence, Butler, Armstrong and Greene counties—where there are no particulate matter monitors—as well as Washington and Westmoreland counties, where all the monitors show readings below the EPA standard for annual average concentration of 15 micrograms per cubic meter.

In Allegheny County, the monitors in North Braddock and Liberty Borough had annual average PM<sub>2.5</sub> readings above 15 micrograms (19.6 and 15.47 respectively in 2008). The Liberty monitor is very near the Clairton Coke plant and is set up specifically to keep tabs on the air quality near the facility, which on occasion can see spikes in particulates if there is an accident or thermal inversion.

In Beaver County, one of the monitors at Eight Street and River Alley registered an annual average reading of 15.18 micrograms per cubic meter while the second monitor at the same location registered 14.42 micrograms. Both measurements are taken as indicators of pollution levels rather than being averaged, even though they are physically quite close together. The two monitors point out a problem. The accuracy of monitors is not what one would expect after all the years of development. A 6 percent difference in annual averages could actually be hiding a much wider range of reading differences day to day, with some errors offsetting each other.

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<sup>1</sup> “Fine Particulate Matter (PM<sub>2.5</sub>) and Ozone (O<sub>3</sub>) Air Quality in Western Pennsylvania in the 2000s”

So here's the bottom line. Washington and Westmoreland are labeled as non-attainment areas even though monitor readings in those counties are within Federal limits. Lawrence, Butler, Armstrong and Greene are labeled non-attainment with no readings in the counties. Allegheny County is a non-attainment area because of over-the-limit particle concentrations at monitors in North Braddock and Liberty Borough, especially Liberty Borough. Fair enough for that immediate area.

But what of South Fayette in Allegheny County where the monitor readings fall well below (11.46) the 15 microgram per cubic meter standard? If South Fayette air is unsafe to breathe, then so is the air in large areas of virtually every state east of the Mississippi that have not been declared non-attainment areas. Only New England, excluding Connecticut, and Florida have substantially lower particulate matter concentrations than South Fayette. This would also hold true for several states west of the Mississippi including Texas and Missouri. In short, an entire region has been declared to have unsafe air because of a couple of monitors in fairly small area of Allegheny County and one in Beaver County.

Moreover, as for the ozone problem, bear in mind that, of 1198 ozone monitors in the continental U.S. in 2008, (the latest posted EPA data), 378 failed to meet the current 0.075 ppm 8hr average standard. Four of the 13 monitors in the Pittsburgh region registered levels above 0.075. However, only one (Harrison City) recorded a reading above the previous long standing limit of 0.080 ppm. Yet, the entire Pittsburgh seven county metro area has been declared a non-attainment area.

Amazingly, 508 monitors across the country in 2008 had 8hr average readings of 0.07 to 0.08 ppm. That is to say over 60 percent of all monitors were either above the EPA limit or within 0.005 ppm (6.6 percent) of the limit. Likewise, over 80 percent of the monitors posted measurements were above the limit or within 0.01 ppm (13 percent) of the limit. So, unless one lives near a monitor that has well above the old limit of 0.08 ppm, say in San Bernardino, CA, at 0.110 ppm, chances are, whether the local reading is 0.078 ppm or 0.073 ppm, it is unlikely one would notice much, if any, difference in air quality.

A very big problem for the ozone readings is the fairly narrow range of the data over much of the country. Thus, designating large geographic areas as being unhealthy based on a small fraction of monitors who surpass the EPA's limit (and only one significantly) is a disservice to the communities affected and does little to actually focus attention on the one monitor area where remediation actions might be undertaken. But the larger point is that setting arbitrary standards such as 0.075 ppm when such a large fraction of all readings lie within 0.01 ppm of the standard makes the cutoff highly suspect and inefficient in conveying any meaning or policy guidance.

Finally, the Heinz Endowments report's finding that Pittsburgh air quality "may" be leading to premature deaths is unworthy of serious researchers. Unless the authors include evidence that points with reasonable certainty towards the assertion that premature deaths are the result of the region's air quality they should never put the statement in the report.

A recent *Policy Brief (Volume 11, Number 3)* debunked and refuted claims made in the Post-Gazette that premature heart and lung related deaths in the region could be tied statistically to the region's air quality. The *Brief* raised three major questions the Heinz report would have done well to consider. First, why was the sharp drop in heart related deaths over the period 2000 to 2008 ignored? Taking that phenomenon into account substantially reduces the "premature" death calculation to levels that could easily be explained by a myriad of factors unrelated to air quality.

Second, the *Brief* asked how death rates in municipalities showed so little correlation to their proximity to pollution sources. And third, for the period 2003 to 2007, actual lung related deaths per 100,000 people were lower in 10 of the 14 western Pennsylvania counties studied by the Post-Gazette than the U.S. average death rate.

In summary, the Heinz Endowments report sheds no new light on the region's air quality situation and by using hyperbolic rhetoric to describe the region's air quality they have garnered a couple days news coverage while demeaning a lot of communities whose air is as good as most of the eastern seaboard. And by needlessly and carelessly raising the specter of premature deaths the report goes too far.

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