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dvrpc | September 2019

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



Air Quality and Health

Study Shows Damage to Lungs from Increasing Air Pollution Similar to Smoking

Numerous studies have shown a clear connection of air pollutants with some heart and lung diseases, however, new research published in the *Journal of the American Medical Association (JAMA)* in August 2019, demonstrates an association between long-term exposure to all major air pollutants with an increase in emphysema seen on lung scans. This association was especially prevalent with increases in ozone pollution levels. Emphysema is a condition in which destruction of lung tissue leads to wheezing, coughing, and shortness of breath, and increases the risk of death.

The researchers found if the ambient ozone level was 3 parts per billion (ppb) higher where you live compared to another location over 10 years, that was associated with an increase in emphysema roughly the equivalent of smoking a pack of cigarettes a day for 29 years. And the study determined that ozone levels in some major U.S. cities are increasing by that amount, due in part to climate change. The annual averages of ozone levels in study areas were between about 10 and 25 ppb.

"We were surprised to see how strong air pollution's impact was on the progression of emphysema on lung scans, in the same league as the effects of cigarette smoking, which is by far the best-known cause of emphysema," said the study's senior co-author, Dr. Joel Kaufman.

The results are based on an extensive, 18-year study involving more than 7,000 people and a detailed examination of the air pollution they encountered between 2000 and 2018 in six metropolitan regions across the U.S.: Chicago, Winston-Salem, N.C., Baltimore, Los Angeles, St. Paul, Minnesota, and New York. The participants were drawn from the Multi-Ethnic Study of Atherosclerosis (MESA) Air and Lung studies.

The authors developed exposure assessment methods for air pollution levels, collecting detailed measurement of exposures over many years in these metropolitan regions, and at the homes of many of the participants. This work in the MESA Air study was led by the University of Washington. While most of the airborne pollutants are in decline because of successful efforts to reduce them, the study found that ozone has been increasing.



Save the Date

**Monday
September 23, 2019**

**Application Deadline for
PA DEP Class 8 Truck and
Transit Bus Replacement
Grants**

**For information on the grant
program, please visit:
[www.depgis.state.pa.us/
DrivingPAForward](http://www.depgis.state.pa.us/DrivingPAForward)**

**Friday
September 20, 2019**

**Brownfield Basics Event
9:00 am – 12:30 pm**

*Location of Meeting:
DVRPC Conference Center
8th Floor
6th and Race Streets
Philadelphia, PA*

*Please pre-register at
www.dvrpc.org*

The study authors cite increasing temperatures as a factor in increasing ozone levels because higher temperatures help drive the chemical reaction that forms ozone from its constituent pollutants.

To read more about the University of Washington's study on air pollution and emphysema, please visit the August 13, 2019 edition of UW News at: <https://www.washington.edu/news/2019/08/13>.



Air Quality News

DVRPC, City of Philadelphia, and SEPTA Awarded \$2.09 Million to Replace Heavy-Duty Diesel Vehicles in the Five-County Region.

On August 1, 2019, Pennsylvania Governor Tom Wolf announced that 34 cleaner energy transportation projects will receive \$8,489,844 in *Driving PA Forward* grants and rebates. Funded by Pennsylvania's share of the settlement with Volkswagen Group of America for cheating on U.S. Environmental Protection Agency (EPA) emissions tests, the Department of Environmental Protection (DEP) is committing funding for a range of clean energy transportation projects on Pennsylvania roads, at schools, and at marine ports and airports.

Counties in southeastern Pennsylvania received over a quarter of funds awarded this grant round, with DVRPC, in partnership with the City of Philadelphia (City) and SEPTA, being awarded \$2,093,042 to replace ten class 8, heavy-duty diesel vehicles with a combination of alternative fuel vehicles and new cleaner diesel vehicles.

The City will receive \$1,093,041 to replace five diesel trash trucks with new Compressed Natural Gas (CNG) fueled trash haulers that will serve neighborhoods in South and Southwest Philadelphia. SEPTA will receive \$1,000,001 to replace five utility vehicles with four new diesel trucks and one diesel-electric hybrid truck. The vehicles serve the entire SEPTA service area in southeastern Pennsylvania.

The replacement of older diesel vehicles through this grant will reduce air pollution by an estimated 1,736 pounds (lbs.) of nitrogen oxides (NO_x), 74 lbs. of hydrocarbons (HC), 61 lbs. of fine particulate matter (PM_{2.5}), and 378 lbs. of carbon monoxide each year in southeastern Pennsylvania. These newer cleaner vehicles will improve air quality in the communities that they serve as well as the larger region.

NO_x and HC are the main constituents of ground-level ozone and PM_{2.5} emissions and have a direct impact on the communities where they are emitted.

The other projects awarded in this round of *Driving PA Forward* gGrants include electric vehicle (EV) charging infrastructure, and new diesel and alternative fuel schools buses, delivery vehicles, and waste haulers. Additional project grants awarded in southeast Pennsylvania include:

- Two DC fast charging stations in Falls Township, Bucks County,
- Six Level Two EV charging stations in Whitemarsh Township, Montgomery County,
- One Level Two EV charging station for the Penn Mutual Insurance Company, Montgomery County,
- Six Level Two EV charging station in various locations in Philadelphia County,
- Unspecified number of clean diesel wastehaulers, out of 13 awarded, operated by Advanced Disposal Services, based in Norristown, Montgomery County,
- Unspecified number of clean diesel school buses, out of 18 awarded, operated by First Student, based in Plymouth and Hatfield Townships, Montgomery County.

For more information on Pennsylvania's VW grant programs, please visit: www.depgis.state.pa.us/drivingpaforward/



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