dvrpc Alert

The **Alert** newsletter provides monthly updates on transportation and air quality planning activities within the Delaware Valley.

March 2024

Air Quality Regulation

EPA Finalizes Stronger Air Quality Standards for Fine Particulate Matter

On February 7, 2024, the United States Environmental Protection Agency (EPA) announced that it had finalized a rule to strengthen the national air quality standard for annual concentrations of fine particulate matter ($PM_{2.5}$) from 12 micrograms per cubic meter ($\mu g/m^3$) to 9 $\mu g/m^3$. The revision comes as a growing body of scientific evidence regarding the effects of $PM_{2.5}$ on human health called into question the adequacy of the current standard.

According to the EPA, particulate matter is an air pollutant that consists of a mixture of airborne solid particles and liquid droplets that can be categorized by the size of the particles. Coarse particle pollution (PM_{10}) is defined as particles with a diameter of less than 10 micrometers while $PM_{2.5}$ consists of particles less than 2.5 micrometers in diameter. Smaller particles pose a greater health risk because they can penetrate deeper into the lungs than larger particles. Sources of particulate pollution include vehicle exhausts, especially from older diesel models; concrete and other dusts from construction sites; rubber particles from tires; road dust; microplastics; and smoke and soot from wild and manmade fires, among other things.

The recently revised standard is just one component of the National Ambient Air Quality Standards (NAAQS). Under the Clean Air Act, EPA is required to set and periodically review air quality standards for six criteria pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide. These standards are based on extensive scientific research on how the pollutants affect human health. Some standards differ by the form of the pollutant or the time period over which data is averaged. For example, the permissible concentrations of particulate matter are higher for PM_{10} than they are for $PM_{2.5}$, and $PM_{2.5}$ concentrations are calculated on both an annual and a daily level. The recent changes only affect the annual $PM_{2.5}$ standard while the daily $PM_{2.5}$ and PM_{10} standards are not being changed.

NAAQS, which apply to the background air quality of a wide area, are distinct from emissions standards, which apply to specific sources of pollution such as motor vehicles or power plants. Furthermore, while NAAQS are based on health effects, emissions standards consider the availability of cost-effective control technologies.

The determination of whether an area, such as a county or metropolitan area, is meeting NAAQS is based on readings from a nationwide network of monitors and computer modeling. An area that does not meet the national standards for one or more criteria pollutants is said to be a “nonattainment” area and must submit a plan to EPA that outlines what actions the area will take to improve air quality. A former nonattainment area that is now meeting the standards is called a maintenance area.

Under the current standards, the entire DVRPC region is classified as a nonattainment area for 8-hour ozone and a maintenance area for daily $PM_{2.5}$. Delaware County is also a maintenance area for the annual $PM_{2.5}$ standard. However, the recent revision may change that. In accordance with the Clean Air Act, EPA has two years after finalizing a revised standard to redesignate whether areas are meeting the standard or not. An analysis performed by EPA using data from 2020-2022 indicates

Save the Date

DEADLINE SOON!

March 27, 2024

DVRPC Transportation and Community Development Initiative

Applications Due

Information is available at: www.dvrpc.org/tcdi/

Tuesday

May 28, 2024

EPA Clean Ports Program Air Quality Planning and Zero Emissions Deployment Grants

Applications Due

For more information visit: www.epa.gov/ports-initiative/cleanports

that Delaware and Camden Counties are currently just above the new limit, but this is an estimate. It does not necessarily mean the counties will be designated as nonattainment areas since the official decision has yet to be made and will likely use newer data.

Energy and Emissions

Latest Power Plant Emissions Data Shows Progress

Last month, the United States Environmental Protection Agency (EPA) released its data on power plant emissions from 2023. The yearly update shows that the U.S. continued to make progress toward reducing harmful emissions resulting from electricity generation although more work is needed to decarbonize the electric grid and protect the environment. The data shows that between 2022 and 2023, sulfur dioxide (SO_2), mercury (Hg), and nitrogen oxides (NO_x) emissions from electricity generation saw the greatest relative improvements with a decrease of 24 percent, 17 percent, and 15 percent respectively. Over the same period, carbon dioxide (CO_2) emissions from power plants dropped by 7 percent.

Among the primary drivers of emissions reductions are improved pollution controls and the decreasing reliance on coal-fired power plants across the country. According to the EPA, coal combustion is the single largest source of SO_2 and the second largest source of NO_x. Both SO_2 and NO_x are reactive chemicals that contribute to the formation of smog and acid rain, and they irritate the cardiovascular systems of those exposed to high concentrations. Coal power plants are also the largest manmade source of mercury emissions. Mercury is a heavy metal and neurotoxin which can adversely affect the brain and nervous system in many ways, especially in children. Thanks to growing awareness and regulations on its use in consumer products, Americans are exposed to much less mercury today than they were in the past. However, mercury still naturally occurs in coal and other fossil fuels and can become airborne when those fuels are burned.

According to the update, coal generation declined 18 percent from 2022 to 2023. However, natural gas generation increased 8 percent during the same period. While the use of natural gas can be an improvement over coal, particularly in terms of SO_2, NO_x, and mercury pollution, it is still a fossil fuel that emits greenhouse gases and contributes to climate change.

Clean Transportation

EPA Launches Clean Ports Program

On February 28, 2024, the United States Environmental Protection Agency (EPA) announced $3 billion in competitive funding opportunities to reduce emissions at ports throughout the country. Most of the money will be distributed by the Zero-Emission Technology Deployment Competition, while $150 million will go to funding air quality planning activities. The deadline to apply for both the deployment and planning competitions is May 28.

Ports are critical nodes in the American economy and supply chain, but they are also home to significant concentrations of heavy equipment as well as truck and railroad traffic. Most of this equipment is currently powered by diesel engines which emit air pollutants that harm public health and contribute to climate change. With many ports located in areas already overburdened by a range of environmental issues, these emissions and other environmental effects disproportionately impact marginalized communities. The $2.79 billion in deployment funds will help address these concerns by helping ports purchase electric- or hydrogen-powered versions of the equipment they rely on, including drayage trucks, rail locomotives, tugboats, cranes, and forklifts. These funds can also be used to purchase related infrastructure, such as electric vehicle chargers, and support workforce development.

The Clean Ports Program complements other aspects of the EPA's Ports Initiative including the Diesel Emissions Reduction Act (DERA), which awarded $1.2 million to the Port of Philadelphia in 2021 for the conversion of a gantry crane from diesel to electric. Several DERA grants have also been awarded to the Mid-Atlantic Regional Air Management Association to replace older drayage trucks with newer and more efficient models.

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