dvrpc
Alert

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

October 2023

Monitoring Air Pollution

NASA Launches Satellite Instrument to Improve Air Quality Monitoring

Monitoring air quality is a complex science that relies on analyzing vast quantities of data, but collecting that data, especially on a continental scale, is a difficult task. However, climate researchers will soon have a new tool at their disposal thanks to the efforts of the National Aeronautics and Space Administration (NASA) and the Smithsonian Astrophysical Observatory. The recently launched instrument, known as Tropospheric Emissions: Monitoring of Pollution (TEMPO), will provide pollution readings at a significantly higher resolution than was previously possible.

TEMPO is spectrometer that collects visible and ultraviolet light in order to measure the air pollutant ozone and its precursors including nitrogen dioxide and formaldehyde. It is attached to a commercial communications satellite in geostationary orbit, a type of orbit that keeps the satellite over the same location on earth as the planet rotates. This allows the instrument to scan North America from East to West every hour during daylight.

The host satellite was launched in April of this year, and TEMPO was switched on this summer. The instrument is now being calibrated using measurements from researchers on the ground, and near real time data is expected to be made publicly available beginning in spring 2024. TEMPO will form a constellation with other instruments covering Europe and Asia to help researchers understand how air pollution moves between continents.

TEMPO represents a large improvement in satellite-based pollution monitoring technology. Each pixel captured by the sensor represents only a few square miles, providing many times greater resolution than previously launched ozone monitoring instruments. Previously launched instruments also required at least a day between readings of the same location due to their low earth orbit. This made it difficult to track the effects of human activities—like traffic—that vary throughout the day. Brian McDonald, an environmental engineer at the National Oceanic and Atmospheric Administration, speaking to the *New York Times*, stated that the hourly updates will be a “real game changer” for scientists investigating the sources of air pollution.

These advances in pollution monitoring come at a time of heightened public interest following an exceptionally bad summer for wildfire smoke that visibly diminished air quality for millions of Americans. The United States has generally experienced improvements in air quality since the 1970 passage of the Clean Air Act, but some worry that progress towards healthier air has slowed in recent years with ozone concentrations remaining stubbornly high in several large cities. According to the US Environmental Protection Agency (EPA), ground level ozone can inflame and damage people’s airways and make it harder to breathe, especially for those with asthma. Nationally, concentrations of ozone have decreased 22% since 1990. However, the nine counties in the DVRPC region remain within a nonattainment area for 8-hour ozone, meaning ozone concentrations do not meet the National Ambient Air Quality Standards set by EPA despite improvements over previous decades.

Save the Date

Monday

November 13, 2023

FHWA EV Charger Accessibility and Accelerator Grants

Applications Due

Information is available at: www.DVRPC.org/IIJA

Friday

December 1, 2023

US EPA Diesel Emissions Reduction Act Grants

Applications Due

Information is available at: www.epa.gov/dera

Grant Opportunities

EPA Announces Competitive Grant Program to Reduce Pollution

During last month's Climate Week 2023, the United States Environmental Protection Agency (EPA) released the notice of funding opportunity for a $4.6 billion competitive grant program to help state and local governments implement measures that reduce greenhouse gas (GHG) emissions and fight climate change. The recently announced implementation grants are the second phase of the Climate Pollution Reduction Grant (CPRG) program that began with planning grants for states and metropolitan areas.

In June of this year, DVRPC received $1 million from EPA to develop a Priority Climate Action Plan (PCAP) for the Philadelphia-Camden-Wilmington Metropolitan Statistical Area (MSA), which includes three counties outside DVRPC's nine county region: Salem County, New Jersey; New Castle County, Delaware; and Cecil County, Maryland. As the largest metropolitan planning organization in the MSA, DVRPC has assumed the leading role for CPRG planning efforts in the MSA. DVRPC is currently working with stakeholders to develop a PCAP that includes an inventory of current regional GHG emissions and a list of high-priority measures that can be implemented in the near-term to reduce those emissions. The PCAP, which must be submitted by March of next year, will focus on the region's energy sector and will be expanded upon in a Comprehensive Climate Action Plan due in 2025. Submitting a PCAP is a requirement for DVRPC and county and municipal governments in the region to be eligible to apply for the second round of funding that will go towards implementing the measures listed in the PCAP. Applications for implementation funds are due April 1, 2024, and EPA anticipates awarding 30 to 115 grants ranging from $2 million to $500 million.

Regulation Enforcement

Pennsauken Company Fined for Selling Devices to Defeat Emission Controls

The United States Environmental Protection Agency (EPA) has announced a settlement with a Pennsauken, New Jersey-based company over allegations that it illegally sold auto parts designed to circumvent emissions control systems. According to the settlement agreement filed by the Enforcement and Compliance Assurance Division of EPA Region IX, Maxon Performance Parts of Pennsauken sold 148 parts between June 2019 and November 2021 that violated the Clean Air Act. Most of the parts sold were aftermarket parts for diesel pickup trucks that were intended to bypass the exhaust gas recirculation devices installed by the original vehicle manufacturer in order to meet emissions standards. Exhaust gas recirculation is used by vehicle manufacturers to limit the production of oxides of nitrogen (NO_x) by reducing the temperatures at which diesel engines operate. As part of the settlement, Maxon Performance Parts neither admits nor denies the allegations made by EPA, but it does agree to pay a civil penalty of $30,000. This is a significant reduction of the legal maximum of $5,179 per violation, or $766,492 in total, based on the company's inability to pay a larger fine.

The recently announced settlement is one of dozens resulting from Stopping Aftermarket Defeat Devices for Vehicles and Engines, a National Enforcement and Compliance Initiative launched by EPA in 2020. A study conducted by EPA concluded that, between 2009 and 2020, emissions controls had been removed from over 550,000 diesel pickup trucks, accounting for approximately 15 percent of registered diesel vehicles. These modifications will result in 570,000 tons of excess NO_x and 5,000 tons of excess particulate matter being released into the environment over the lifetime of the vehicles. The study estimates that these excess emissions are equivalent to adding nine million additional diesel pickup trucks to the roads.

Oxides of nitrogen are a class of reactive gases that are known to irritate the human respiratory system and aggravate respiratory diseases such as asthma. The gases also react with other airborne substances to form ozone and particulate matter, which each have their own negative effects on human health and the environment.

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