BETTER AIR QUALITY AND THE TIP/LRTP

Reading Area Transportation Study (MPO)

Air Quality Conformity: A Quick Primer

Our county has 2 monitors that track real time air quality data.

Go to airnow.gov to see current air quality conditions in Berks County.
You can also download the AirNow app on your phone or tablet.
Historical readings are also available from epa.gov/outdoor-air-quality-data.

There are standards for air quality.

Readings from our air quality monitors are compared to the National Ambient Air Quality Standards (NAAQS), which are set by the U.S. Environmental Protection Agency (EPA).

EPA'S NAAQS

EPA's NAAQS protect public health and the environment from the adverse effects of air pollution. The NAAQS cover six major pollutants, known as criteria pollutants, which include: Ozone (O_3), Particulate Matter ($PM_{2.5}$ and PM_{10}), Carbon Monoxide (CO), Lead (Pb), Nitrogen Dioxide (NO_2), and Sulfur Dioxide (SO_2). These standards are designed to offer protection not only to the general public but also to sensitive populations such as children, the elderly, and individuals with preexisting respiratory conditions. The EPA periodically reviews and, if necessary, revises these standards to ensure they continue to provide the intended level of health and environmental protection.

Berks County is currently classified as a "Nonattainment" area for ozone, signifying that it does not formally meet EPA's standards. However, recently there have been minimal exceedances and the county remains in compliance with all other EPA criteria pollutants. Looking ahead, the region is anticipated to be redesignated to a "Maintenance" status, which will signify that the region is attaining the ozone standard.

COUNTY	NAAQS	STATUS
Berks	2008 8-hour Ozone	Nonattainment

Region attains all other air quality standards.

OUR TOP 5 EMISSION SOURCES

Emission Distribution by Sector

SECTOR GROUP	VOC	NOx	$PM_{2.5}$
Mobile	10.9%	68.3%	6.4%
Biogenics	60.6%	6.5%	0%
Solvent	14.9%	0%	0%
Fuel Comb	4.1%	23.7%	45.4%
Waste Disposal	1.9%	1.3%	13.3%

The EPA's National Emissions Inventory (NEI) tracks emissions by different sources. For Berks County, cars and trucks (Mobile) contribute over 68% nitrogen oxide (NOx) emissions, a precursor to ozone. Plants, trees, and other natural sources (Biogenics) give off more than 60% of our total volatile organic compound (VOC) emissions, another precursor to ozone. Fossil fuel powered plants (Fuel Comb) emit over 45% of fine particulate matter ($PM_{2.5}$).

FUTURE AIR QUALITY

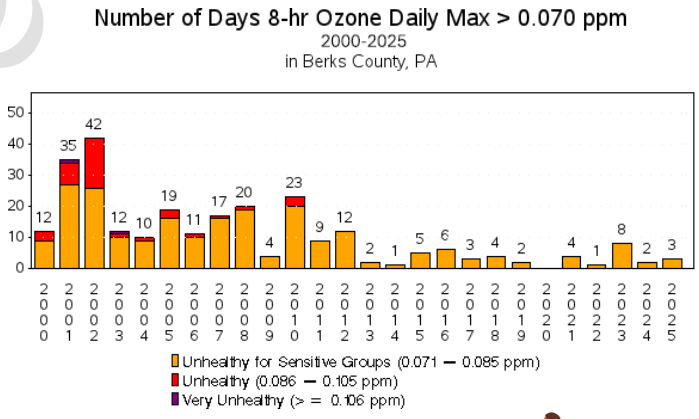
Our MPO plans for cleaner air.

The projects in the region's Transportation Improvement Program (TIP) and Long Range Transportation Plan (LRTP) are assessed for their potential impact on mobile source emissions. This assessment is documented in the Air Quality Conformity Report for the Reading MPO. Transportation Conformity is conducted for the full regional project list to ensure that federal funding and approval are awarded to transportation activities that are consistent with air quality goals. The pollutants that are analyzed include precursors to ozone, for which motor vehicle emissions budgets are established for transportation conformity purposes.

Terms defined on next page.

IMPROVING AIR QUALITY

There are good trends in our air quality as shown in the chart below. Since 2000, there have been significant reductions in the number of days exceeding the ozone standard. The challenge is to maintain that trend as the region grows.



BERKS COUNTY TRANSPORTATION CONFORMITY RESULTS

The Reading MPO has demonstrated that transportation emissions will continue to decline over the next 20 years due to vehicle technology (e.g. cleaner cars) and our regional investments to reduce traffic congestion, and improve usage of other travel modes like biking, walking, and transit. Our future year emissions are also lower than regional motor vehicle emission budgets (targets) as established by the Pennsylvania Department of Environmental Protection (DEP).

DRIVING TOWARDS A CLEANER FUTURE

Electric vehicles are one of several transportation strategies that can help improve air quality and reduce greenhouse gas emissions. As vehicle technologies continue to evolve and charging infrastructure expands, electric vehicles offer the potential for cleaner air, quieter roadways, and reduced emissions—particularly in urban and high traffic areas.

FOR MORE INFORMATION VISIT:
berkspa.gov/departments/planning-commission

Pennsylvania
Department of Transportation

DEFINITION OF TERMS

NAAQS

The Clean Air Act requires EPA to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. Two of the common air pollutants are ozone and particulate matter.

The 2008 8-hour ozone NAAQs are met when the 3-year average of the annual fourth highest daily maximum 8-hour concentration is less than 0.075 parts per million (ppm).

OZONE

Ozone is a gas composed of three atoms of oxygen (O_3). Ozone occurs both in the Earth's upper atmosphere and at ground level. Ozone can be good or bad, depending on where it is found. Breathing ozone can trigger a variety of health problems, particularly for children, the elderly, and people of all ages who have lung diseases such as asthma.

FINE PARTICULATE MATTER

PM stands for particulate matter (also called particle pollution): the term for a mixture of solid particles and liquid droplets found in the air. Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye. Others are so small they can only be detected using an electron microscope. $PM_{2.5}$ refers to fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller.

VOC AND NOx

Ground level or "bad" ozone is not emitted directly into the air, but is created by chemical reactions between oxides of nitrogen (NOx) and volatile organic compounds (VOC) in the presence of sunlight. Emissions from industrial facilities and electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents are some of the major sources of NOx and VOC.

MOTOR VEHICLE EMISSION BUDGET

The allocation of emissions reductions and control strategies results in an emission reduction target for all sources. For on-road mobile sources, this target can be translated into an area's Motor Vehicle Emissions Budget (MVEB), which identifies the allowable on-road emissions levels to attain the air quality standards. These budgets are a cap on emissions and represent the "holding capacity" of the area. The MVEB is used in the transportation conformity process to cap the emissions allowed by motor vehicles on the regional transportation network as planned.

TIP/LRTP

Each metropolitan planning organization (MPO) is required to develop a Transportation Improvement Program (TIP)—a list of upcoming transportation projects—covering a period of at least four years. The TIP should include capital and non-capital surface transportation projects, bicycle and pedestrian facilities and other transportation enhancements, Federal Lands Highway projects, and safety projects included in the State's Strategic Highway Safety Plan.

Each MPO must also prepare a long-range transportation plan (LRTP) that provides for the development and implementation of the multimodal transportation system, including transit, highway, bicycle, pedestrian, and accessible transportation. This plan must identify how the transportation system will meet the MPO's economic, transportation, development, and sustainability goals – among others for a 20+- year planning horizon.