ENVIRONMENTAL
Fact Sheet

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

29 Hazen Drive, Concord, New Hampshire 03301 • (603) 271-3503 • www.des.nh.gov

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EPA Criteria Air Pollutants

The following tables provide information on six air pollutants, classified as "criteria air pollutants" by the U.S. Environmental Protection Agency. The first table describes each pollutant, including its sources and effects. The second table lists the current National Ambient Air Quality Standards (NAAQS) for these pollutants set by EPA to protect public health and welfare. For more information on air pollution in New Hampshire, visit www.des.nh.gov and go to the A-Z list "Air Resources Division." For current air quality information, visit www.airquality.nh.gov.

EPA CRITERIA AIR POLLUTANTS

Pollutant	Sources	Health and Environmental Effects
Ozone (O_3) Ground-level A colorless gas that forms as a result of chemical reactions between volatile organic compounds (VOCs), nitrogen oxides (NO_x), and oxygen in the presence of heat and sunlight.	Motor vehicles, electric utilities, factories, landfills, industrial solvents, and miscellaneous small sources such as gas stations, lawn equipment, etc.	Causes coughing, chest tightness, wheezing and can inflame and damage lung tissue. Aggravates asthma and can even be a cause of asthma. Irritates the respiratory system, reduces lung function and makes it more difficult to breathe. Aggravates chronic lung diseases and may cause permanent lung damage. May reduce yield of agricultural crops and damages forests and other vegetation.
Carbon Monoxide (CO) An odorless, colorless gas resulting from incomplete fossil fuel combustion.	Motor vehicles (the majority of CO in NH), small engines, some industrial processes, boilers and incinerators. High concentrations can be found in confined spaces like parking garages, poorly ventilated tunnels, or traffic intersections especially during peak hours.	Impairs the ability of blood to deliver oxygen to vital tissues affecting the cardiovascular, pulmonary, and nervous systems. Symptoms include dizziness, headaches, nausea, fatigue, memory and visual impairment, and decreased muscular control.
Nitrogen Dioxide (NO_2) A brownish gas that forms quickly when fuel is burned at high temperatures. Contributes to the formation of ground-level ozone and fine particle pollution	Motor vehicles, electric utilities, industrial boilers, and off-road equipment.	Irritates the lungs, may cause lung damage and lower resistance to respiratory infections such as influenza. May adversely affect terrestrial and aquatic ecosystems through regional transport and deposition.

Particulate Matter (PM) Mixture of solid particles and liquid droplets in the air; particles may be visible or microscopic.	Formed directly from windblown dust, crushing and grinding operations, unpaved roads and construction, fuel combustion (from motor vehicles, power plants, industrial facilities), wood stoves, and agriculture (plowing, burning off fields). May also be formed in the atmosphere from gases such as SO_2 and NO_x.	Causes eye, nose and throat irritation, decreased lung function, aggravated asthma, development of chronic bronchitis, irregular heartbeat, nonfatal heart attacks, and premature death in people with heart or lung disease. Serves as a carrier for toxic metals, damages human-made materials, and is a major cause of reduced visibility in many parts of the U.S.
Sulfur Dioxide (SO_2) A highly reactive colorless gas, odorless at low concentrations, but pungent at very high concentrations.	Formed when fuel containing sulfur (mainly oil and coal) is burned in industrial, institutional, utility, and residential furnaces and boilers. Other sources include petroleum refineries, smelters, paper mills, and chemical plants.	May cause breathing problems, respiratory illness, alterations in the lungs defenses, aggravation of existing cardiovascular disease, and permanent damage to lungs. Forms acid aerosols and sulfuric acid, which are associated with acidification of lakes and streams, accelerated corrosion of buildings and monuments, and reduced visibility.
Lead - A heavy metal found naturally in the environment and in manufactured products.	Soil, dust, paint, etc., transportation sources using lead in their fuels, coal combustion, smelters, car battery plants, and combustion of garbage containing lead products.	Elevated levels can cause brain and other nervous system damage and adversely affect kidney function, blood chemistry, and digestion if ingested or directly inhaled. Children are at special risk due to cumulative effects even at low doses. Lead can also harm wildlife through deposition onto leaves which are a food source for grazing animals.

National Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Primary Standard	Secondary Standard	Regulation Allowance
Ozone (O_3)	8-hour average concentration 0.075 parts per million	Same as primary	3-year average of the annual fourth-highest daily maximum concentration at or below the standard.
Carbon Monoxide (CO)	8-hour average concentration 9 parts per million	N/A	Not to be exceeded more than once per year
	1-hour average concentration 35 parts per million	N/A	Not to be exceeded more than once per year
Nitrogen Dioxide (NO_2)	1-hour average concentration 100 parts per billion	Same as primary	3-year average of 98th percentile concentration at or below the standard
	Annual Arithmetic Mean 53 parts per billion	Same as primary	Annual Mean
Particulate Matter (PM_{10})	24-hour average concentration 150 micrograms per cubic meter	Same as primary	Not to be exceeded more than once per year on average over a 3-year period.
Particulate Matter ($PM_{2.5}$)	24-hour average concentration 35 micrograms per cubic meter	Same as primary	3-year average of 98th percentile concentration at or below the standard
	Annual Arithmetic Mean: 15 micrograms per cubic meter	Same as primary	3-year average at or below the standard
Sulfur Dioxide (SO_2)	1-hour average concentration 75 parts per billion	Maximum 3-Hour concentration 0.5 parts per million	3 year average of 99th percentile of 1 hr daily maximum conc. at or below standard (primary). Not to be exceeded more than once per year (secondary)
Lead	Rolling 3 month average 0.15 micrograms per cubic meter	Same as primary	Not to be exceeded.

For the most up to date NAAQS table please visit: www.epa.gov/air/criteria.html