

# Air Quality

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## Mission

To attain and maintain clean and breathable air throughout the state; air that meets or exceeds all health-based standards.

## Summary of Activities

The **Indiana Department of Environmental Management (IDEM)** implements a variety of state and federal programs to ensure air quality. It improves and safeguards the quality of Indiana's air through the following activities:

- ◆ Evaluating and issuing permits for construction and operation. In recent years, there have been several hundred applications for new or modified air emitting sources filed with IDEM each year. There are approximately 750 "sources", such as steel mills, chemical plants, power plants, and automotive manufacturing facilities, that are considered major emitters and require comprehensive operating permits.
- ◆ Inspecting and providing compliance assistance to regulated businesses. IDEM air inspectors annually inspect the most significant sources and provide them with targeted assistance, especially when new air quality rules need to be implemented.
- ◆ Developing state rules to reduce emissions. New rules include incorporating federal requirements as they are issued, as well as developing rules specifically needed to address Indiana's air pollution problems.
- ◆ Monitoring Indiana's air quality. Indiana maintains an extensive network of permanent monitors that measure the levels of a variety of pollutants, including ozone, carbon monoxide, sulfur dioxide, particulate matter (dust and soot), air toxics and lead. Temporary monitors can also be located to assess specific situations.

## External Factors

**Ozone sources:** Motor vehicles, manufacturing, industrial and everyday activities emit nitrogen oxides and volatile organic compounds that react in sunlight to form ozone. Pollutants that cause ozone include gasoline vapors, chemical solvents and combustible fuels. Certain emissions can cause ozone at greater distances. Emissions of nitrogen oxides from tall sources, such as smokestacks, are more likely than sources near ground level to travel downwind and increase ozone levels in surrounding urban and rural areas.

**Vehicle miles traveled:** Cars and trucks are significant sources of carbon monoxide, nitrogen oxides, particulate matter, and volatile organic compound emissions. IDEM uses studies of total vehicle miles traveled to estimate emissions of these pollutants. In 1998, Hoosiers drove 68 million miles annually, an average of 188,000 miles per day. From 1991 to 1998, annual vehicle miles traveled increased by 21%; Indiana's population increased by about 7% during the same period. The increasing rate of vehicle miles traveled reduces the air quality benefits from cleaner vehicles and fuels, as well as increasing traffic congestion and creating a need for additional road construction and maintenance.



**Sulfur Dioxide:** Populations particularly sensitive to sulfur dioxide include children, older adults, asthmatics, and people with chronic lung and cardiovascular disease. Sulfur dioxide is a primary component of acid rain, and sulfur dioxide levels in Indiana's air have decreased dramatically. All areas of Indiana currently meet state and federal health standards for sulfur dioxide, as measured by air quality monitors. Many Indiana power plants have greatly reduced sulfur dioxide emissions by using low-sulfur coal, increasing use of lower polluting boilers, and investing in air pollution control equipment such as scrubbers.

**Dust & Soot:** "Particulates" are small pieces of aerosol mists, dust, dirt and soot emitted by sources such as cars, trucks, construction projects, factories, unpaved roads, fireplaces, and wood stoves. Older adults, children, and people with chronic lung disease are especially sensitive to particulates. Recent studies indicate that the smallest particulates pose the most serious health threat, because they can be inhaled more deeply into the lungs and are more difficult to exhale.

**Airborne toxic and other organic compounds:** Many chemicals in the air affect human health and the environment. Some chemicals occur naturally. Others are released by a variety of human activities such as manufacturing, driving, cleaning or painting.

## Evaluation and Accomplishments

All areas of Indiana currently meet state and federal air quality health standards for carbon monoxide, large particulates, sulfur dioxide, and lead. Ozone levels have decreased everywhere in Indiana, but still remain a health concern, especially in larger urban areas. With improved monitoring and research into the source of emissions, more is understood about the types and levels of many toxic chemicals for which there are no promulgated health standards.

IDEM issued more than 300 Title V permits and began processing more than 700 such permits. To ensure that air pollution sources are in compliance with state and federal laws, IDEM has inspected 650 of 900 major air pollution sources and provided significant oversight to sources using continuous emissions monitors or periodic stack tests. From July 1998 through June 1999, IDEM performed 240 inspections of dry-cleaners and chrome electroplaters. It created and posted data on a TOXWATCH Web page -- [www.state.in.us/idem/oam/toxwatch](http://www.state.in.us/idem/oam/toxwatch) -- in the fall of 1999, including real time ozone information and data. IDEM also enhanced its ability to monitor for toxics in Northwest Indiana by establishing two new monitoring sites in Lake County using funds from enforcement settlements with companies in northwest Indiana.



## Plans for the Biennium

IDEM will continue to issue all current permits on a timely basis. It will complete issuance of 750 Title V permits, and continue to collect and analyze air samples and emissions. The agency will promulgate and implement a rule to reduce emissions of nitrogen oxides from power plants, industrial boilers and other sources significantly by 2003. It will continue to inspect sources for compliance with current requirements and work with Indiana businesses to implement new rules to reduce emissions of toxic chemicals from hazardous waste combustors, shipbuilding, flexible foam manufacturing, and a number of other industries. IDEM will also increase its understanding of the risk posed by chemicals present in Indiana's ambient air.

