

Why Monongalia County Deserves the PM_{2.5} NonAttainment Designation and What We Should Do About It.

On June 29, 2004, EPA proposed to designate Monongalia County as a “Nonattainment Area” for Fine Particulate air pollution (PM_{2.5}). Designations are based on a number of criteria, including monitoring data, population and projected population growth, pollutant emissions, traffic patterns, and degree of urbanization. There are several reasons why EPA MUST take this action, even though the local pollution monitor does not show a violation of the PM 2.5 standard.

- Monitors show that Monongalia County is already very near violations of the standard. For the last three years, the PM 2.5 monitor at the Morgantown airport has registered 14.9 ug/m³, compared to the 15.0 ug/m³ NAAQS standard. In some years, the level has been even higher than this standard, meaning health effects are already occurring.
- Air dispersion models indicate that 40 % of the modeled sites do violate the standard, with the maximum estimate of 15.6 ug/m³
- Monitoring in Marion County shows significant violations of the standard, even though pollutant emissions are five times lower in Marion County than Monongalia County. The Clean Air Act requires that areas violating the standard **AND ADJOINING AREAS THAT CONTRIBUTE SIGNIFICANTLY TO NONATTAINMENT** must be included in the Nonattainment Area designation.
- Monongalia County has more than 5 times greater pollutant emissions than Marion County. Monongalia County also has a higher population, more traffic (Vehicle Miles Traveled), and a greater degree of urbanization.
- Monongalia County’s population is expected to grow. Growth averaged 8 % per decade 1990-2000, while Marion County’s population declined 1 %. Thus emissions in Mon County are likely to continue to increase, further exacerbating the problem.

What to Do:

Air pollution control is one of the best investments a business or community can make, because it increases worker productivity and reduces health costs. In the long run, it is much cheaper to clean up than to operate with dirty air. Cities like Martinsburg, WV have entered into “Early Action Compacts” with EPA. In this program, the City, County, local businesses, and public interest groups negotiate agreements locally that provide the most flexibility for achieving healthier air. Under the terms of that program, nonattainment designations were deferred until 2007. Unfortunately, that opportunity has expired for Monongalia County.

The most important goal now, is to **improve air quality** as soon as possible so that the nonattainment designation will be lifted, and local citizens and their employers will no longer suffer the health costs of dirty air. **Delays will only serve to make more people sick.**

- Identify large sources of emissions, especially “uncontrolled” sources where pollution controls will be most effective.
- Work with local planning entities to reduce traffic congestion and “Vehicle Miles Traveled”, thereby reducing emissions of pollutants.
- Encourage the WV Department of Environmental Protection to strictly monitor emissions, vigorously enforce pollution limits and punish violators.
- Work with WV-DEP, US-EPA, local businesses, and civic groups to develop the most efficient Implementation Plan possible to protect health and reduce avoidable regulatory burdens.

HEALTH AND ENVIRONMENTAL EFFECTS OF PARTICULATE MATTER

Particulate Matter (PM_{2.5})

- Is associated with serious health effects.
- Is associated with increased hospital admissions and emergency room visits for people with heart and lung disease.
- Is associated with **work and school absences**.

Why are We Concerned About Particulate Matter?

Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles (larger than 2.5 micrometers) come from a variety of sources including windblown dust and grinding operations. Fine particles (less than 2.5 micrometers) often come from fuel combustion, power plants, and diesel buses and trucks.

They are of health concern because they easily reach the deepest recesses of the lungs. Batteries of studies have linked particulate matter, especially fine particles (alone or in combination with other air pollutants), with a series of significant health problems, including:

- Premature death;
- Respiratory related hospital admissions and emergency room visits;
- Aggravated asthma;
- Acute respiratory symptoms, aggravated coughing and difficult or painful breathing;
- Chronic bronchitis;
- Decreased lung function that can be experienced as shortness of breath; and
- Work and school absences.

Who is Most at Risk from Exposure to Fine Particles?

- **The Elderly:**
 - Studies estimate that **tens of thousands of people die** prematurely each year from exposure to ambient levels of fine particles.
 - Studies also indicate that exposure to fine particles is associated with thousands of hospital admissions each year. Many of these hospital admissions are elderly people suffering from lung or heart disease.
- **Individuals with Preexisting Heart or Lung Disease:**
 - Breathing fine particles can also adversely affect individuals with heart disease, emphysema, and chronic bronchitis by causing additional medical treatment. Inhaling fine particulate matter has been attributed to increased hospital admissions, emergency room visits and premature death among sensitive populations.
- **Children:**
 - The average adult breathes 13,000 liters of air per day; children breathe 50 percent more air per pound of body weight than adults.
 - Because children's respiratory systems are still developing, they are more susceptible to environmental threats than healthy adults.
 - Exposure to fine particles is associated with increased frequency of childhood illnesses.
 - Fine particles are also associated with increased respiratory symptoms and reduced lung function in children, including aggravated coughing and difficulty or pain in breathing. These result in school absences and limitations in normal childhood activities.
- **Asthmatics and Asthmatic Children:**

- More and more people are being diagnosed with asthma every year. Fourteen Americans die every day from asthma, a rate three times greater than just 20 years ago. Children make up 25 percent of the population, but comprise 40 percent of all asthma cases.
- Breathing fine particles, alone or with other pollutants, can aggravate asthma, causing greater use of medication and resulting in more medical treatment and hospital visits.

What Improvements Would Result from EPA's New Standards?

EPA's new standards will provide increased health protection from the following effects:

- **About 15,000 lives each year will be saved**, especially among the elderly and those with existing heart and lung diseases.
- **Reduced risk of hospital admissions by thousands each year**, and fewer emergency room visits, especially in the elderly and those with existing heart and lung diseases.
- Reduced risk of symptoms associated with chronic bronchitis, **tens of thousands fewer cases** each year.
- Reduced risk of respiratory symptoms in children, hundreds of thousands fewer incidences each year of symptoms such as aggravated coughing and difficult or painful breathing.
- Reduced risk of aggravation of asthma, **hundreds of thousands fewer incidences** each year, in children and adults with asthma.
- Reduced risks of susceptibility to childhood illnesses.
- Improved visibility over broad regions in the east and urban areas.

Background: What is Particulate Matter and What are "Fine" Particles?

- Particulate matter originates from a variety of sources, including diesel trucks, power plants, wood stoves and industrial processes. The chemical and physical composition of these various particles vary widely. While individual particles cannot be seen with the naked eye, collectively they can appear as black soot, dust clouds, or gray hazes.
- Those particles that are less than 2.5 micrometers in diameter are known as "fine" particles; those larger than 2.5 micrometers are known as "coarse" particles. Fine particles result from fuel combustion (from motor vehicles, power generation, industrial facilities), residential fireplaces and wood stoves. Fine particles can be formed in the atmosphere from gases such as sulfur dioxide, nitrogen oxides, and volatile organic compounds. Coarse particles are generally emitted from sources such as vehicles traveling on unpaved roads, materials handling, and crushing and grinding operations, and windblown dust.
- Before 1987, EPA's standards regulated larger particles (so called "total suspended particulates"), including those larger than 10 micrometers. By 1987, research had shown that the particles of greatest health concern were those equal to or less than 10 micrometers that can penetrate into sensitive regions of the respiratory tract. At that time EPA and states took action to monitor and regulate particulate matter 10 micrometers and smaller.
- In the years since the previous standard was enacted, hundreds of significant new scientific studies have been published on the health effects of particulate matter. Recent studies suggest those adverse health effects, such as premature deaths and increased morbidity in children and other sensitive populations, have been associated with particle levels well below those allowed by the current standard.

Condensed from US-EPA webpages: <http://www.epa.gov/ttn/oarpg/naaqsfm/pmhealth.html> and www.epa.gov/air/urbanair/pm/chf.html