

[EPA Promulgates Numerous States' Implementation Plans for the 2012 PM2.5 National Ambient Air Quality Standards](#)

Directs final rules of state implementation plans of airborne nano-particulates and timeline for compliance for various States.

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WHAT IT DOES

The Environmental Protection Agency (EPA) promulgated a final rule on the 2017-2020 standards of State Implementation Plans (SIP) for various States and approved deadlines for compliance, as summarized below. The EPA provides guidance on SIPs for various States to demonstrate they meet infrastructure requirements of the Clean Air Act (CAA) for the National Ambient Air Quality Standards (NAAQS) promulgated for fine [particulate matter \(PM2.5\)](#) on December 14, 2012. PM2.5 is a specific notation for [airborne fine particulates](#) that are less than 2.5 micrometers in diameter.

The Clean Air Act requires states to submit state implementation plans (SIPs) that implement, maintain, and enforce a new or revised national ambient air quality standard (NAAQS) within 3 years of EPA issuing the standard. Such Infrastructure SIP is required for all states. These infrastructure requirements for SIPs were set forth in section 110(a)(1) and (2) of the CAA, which is presented in the relevant EPA publication, found [here](#).

Statewide nano-particulate air pollution SIP final rules have been set, which meet federal regulations, and their compliance will be instituted according to various states' deadlines as follows:

- [Florida](#), [North Carolina](#), and [South Carolina](#) - May 8, 2017
- [Kentucky](#) and [Ohio](#) - April 7, 2017
- [Tennessee](#) - June 6, 2017
- [Maine](#), [New Hampshire](#), [Rhode Island](#), [Vermont](#), and [Washington State](#) - May 10, 2017
- [Wyoming](#) - May 25, 2017

SIPs are not approved to apply on any Indian reservation land or in any other area where EPA or an Indian tribe has demonstrated that a tribe has jurisdiction, as previously specified by Executive Order (EO) 13175 (65 FR 67249, November 9, 2000). This EO has been [summarized by the EPA](#).

RELEVANT SCIENCE

Nanoparticles are many thousands-of-times smaller than the unaided human eye can see. Such fine particles become disbursed into the air readily, and are produced from numerous types of combustion processes, including: motor vehicles, power plants, residential wood burning, forest fires, agricultural burning, and some industrial processes.

The EPA has [reported](#) on the impact of nano-particulate matter in the air is the direct link to potential health problems as well as environmental effects. Because of these potential risks, the regulation of airborne nano-particulates is crucial enough to be regulated by federal law, to be overseen by the EPA, and to require States' compliance.

Indeed, inhaled very small (< 10 micrometers) and nanoparticles pose serious health concerns. Such tiny particles are small enough to readily flow deep into the lungs where they can become trapped, cause irritation, or be transferred into the bloodstream by which they are carried elsewhere and do further harm to the body. People with heart or lung diseases, children, and older adults are the most likely to be affected by particle pollution exposure. Known deleterious effects caused to human health include:

- premature death in people with heart or lung disease
- nonfatal heart attacks
- irregular heartbeat
- aggravated [asthma](#)
- decreased lung function
- increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.

EPA suggests that the government website [AirNow](#) can help people monitor the air quality in their vicinity, which may assist in the protection of health against elevated PM levels.

Damaging effects to the natural world, which are caused by airborne nanoparticles, include:

- Impairment of visibility (contribution to smog, haze)
- Particles can be carried over long distances by wind and then settle on ground or water. Depending on their chemical composition, the effects of this settling may include:
 - making lakes and streams acidic
 - changing the nutrient balance in coastal waters and large river basins
 - depleting the nutrients in soil
 - damaging sensitive forests and farm crops
 - affecting the diversity of ecosystems
 - contributing to [acid rain effects](#)
 - Such environmental effects can stain and damage stone and culturally important objects such as statues and monuments.

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