

# **STATE IMPLEMENTATION PLAN DEVELOPMENT GUIDE**

**A Twelve Step Approach to the Development  
of an Air Pollution Control Plan**

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## **INTRODUCTION**

The purpose of this document is to provide the reader with information regarding the process of developing an air pollution control plan, otherwise known as a “State Implementation Plan”, or “SIP.” The use of acronyms and references to regulatory requirements have intentionally been minimized or eliminated altogether.

## **LOCAL – STATE - FEDERAL AIR POLLUTION AGENCIES**

Although the 1990 Clean Air Act (Act) is a federal law covering the entire nation, state and local air pollution control agencies (Agency) do much of the work to fulfill the requirements of the Act. For example, an Agency would hold a local hearing on a permit application by a power or chemical plant or take the lead in assessing a penalty to a company for violating an air pollution standard. Additionally, an Agency would develop community air pollution control programs to address automobile emissions, outdoor burning, road dust, or similar sources of air pollution.

Agencies develop and maintain SIPs that explain how they will protect against air pollution under the Act. A SIP is a collection of programs, policies and rules that Agencies use to attain and maintain the primary and secondary National Ambient Air Quality Standards (Standards), Prevention of Significant Deterioration (PSD) increments, and visibility protection. The U.S. Environmental Protection Agency (EPA) must approve each SIP, and if a SIP fails in some way to protect the Standards, EPA may reject an Agency’s SIP and assume administration of any specific portion of the Act in that state and/or develop its own implementation plan for the state.

Under the Act, EPA sets Standards for air pollutants. These Standards ensure that all Americans have the same basic level of health and environmental protection. EPA makes regulations to control sources of air pollution. The Act allows Agencies to adopt and enforce more protective air pollution regulations than EPA. However, Agencies are not allowed to have weaker air pollution regulations than those established by EPA.

Because air pollution control problems often require special understanding of such factors as local industries, geography, housing patterns, and economic constraints, Agencies are better suited to regulate sources of air pollution than EPA. The Act recognizes this fact and confers upon Agencies the primary responsibility for assuring that air pollution never exceeds the Standards.

## **THREE MAJOR SIP COMPONENTS:**

- (1) Agency Rulemaking.
- (2) Agency Control Plan Development.
- (3) Agency Non-Regulatory Actions.

**(1) Agency Rulemaking:** This type of action involves revisions to Agency air pollution rules that may or may not be included in the SIP. If rulemaking actions are necessary to establish a federally enforceable SIP to meet the Standards – the Agency shall submit the rules to EPA. For

example: local rules establishing an oxygenated fuel program or establishing authority to enforce a state or federal emission standard. Public notice must mention the proposed rules will be submitted to EPA. Agencies must notify the public of all rulemaking actions.

Rulemaking actions that are not required to meet the Standards do not need to be submitted as a SIP revision and therefore, do not have to meet federal public hearing requirements. This includes revisions to Agency programs that fail to meet the Standards. Otherwise, all Agency rulemaking actions must follow federal public hearing requirements, including a 30-day public notice prior to hearing, prominent advertisement in affected areas, and an opportunity to review proposed rules or programs.

**(2) Agency Control Plan Development:** When air quality monitoring of outside air reveals air pollution that exceeds the Standards, Agencies are required to identify the source(s) of the pollution and develop a SIP to bring the area back into compliance.

Air pollution control measures are developed through a public process and must utilize effective and adequate measures to attain and maintain the Standards. Agencies submit SIPs to EPA for review and approval. Until a SIP is approved by EPA, it is enforceable only as a matter of state / local law, but not federal law. EPA may declare a SIP inadequate and require SIP revisions if a SIP fails to protect the Standards.

SIPs are regulatory documents that Agencies update as federal requirements are revised and state / local conditions change. Agencies are required to revise SIPs whenever EPA issues any new or revised Standard.

**(3) Agency Non-Regulatory Actions:** Agency non-regulatory actions usually involve provisions that serve only to clarify SIP operation or to provide technical background information. The following are examples of non-regulatory items that may be submitted for inclusion into the SIP:

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| (1) Legal Authority.         | (11) Design Concentrations.   |
| (2) Resource Availability.   | (12) Area Designations and Classifications.   |
| (3) SIP Adoption Procedures. | (13) Alternative Control Strategies.  |
| (4) SIP Reporting.           | (14) Demonstration of Attainment.   |
| (5) Enforceability.          | (15) Reasonable Further Progress.   |
| (6) Ambient Monitoring.      | (16) Monitoring Network Review.   |
| (7) Emission Inventories.    | (17) Dispersion Modeling Reports.   |
| (8) Dispersion Modeling.     | (18) Receptor Modeling Reports.   |
| (9) Receptor Modeling.       | (19) Quality Assurance Project Plans (QAPP).  |
| (10) Emission Inventories.   | (20) Statewide Control Plans i.e., Smoke Mangement, Visibility, and Emergency Episode Avoidance Plan. |

# TWELVE STEPS TO SIP DEVELOPMENT

## LOCAL SIP FOR PARTICULATE MATTER OR GASEOUS POLLUTANTS

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- STEP 1:** **Establish Air Pollution Standards.** EPA or Agencies establish standards for particulate matter (PM), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>) and ozone (O<sub>3</sub>). Standards may be established to protect human health and/or the environment. Currently, EPA has established federal air pollution Standards for these pollutants.
- STEP 2:** **Identify Polluted Areas.** Agencies Evaluate potential “hotspots” for air pollution based upon public complaints, source emissions data, visual observation, airshed meteorology, or other risk factors.
- STEP 3:** **Install Air Monitors.** Agencies place ambient air monitors in hotspot areas and collect data showing concentrations of air pollution over time. If the monitors record concentrations of air pollution that exceed the applicable standard, EPA may designate the affected area as “nonattainment”, i.e. fails to meet Standards.
- STEP 4:** **Designate Polluted Area.** Agencies determine the appropriate geographic area affected by air pollution and this “nonattainment area boundary” is submitted to EPA by a state’s governor. Areas may be designated as either nonattainment, attainment, or unclassifiable. “Attainment” areas have air pollution that meets or exceeds the standards while “Unclassified” areas are those for which data is not available to make the attainment/nonattainment distinction.
- STEP 5:** **Determine Sources of Air Pollution.** Agencies conduct studies to determine the sources of air pollution. Monitors are generally located in population centers in order to measure air pollution that affects human health. A monitor is also located in a nearby “clean” area in order to provide a control or background sample. Sources of air pollution may include combustion sources associated with industrial activities, residential woodstove heating, unpaved roadways, forestry slash burning, and/or automobile exhaust. Monitoring throughout the year may also indicate seasonal fluctuations in air pollution.
- STEP 6:** **Inventory Air Pollutants.** After the sources of air pollution are identified, their emissions are quantified in order to estimate their relative contributions to air pollution over a calendar year. This activity is called an “Emission Inventory”.
- STEP 7:** **Perform Computer Modeling.** The nonattainment area can be divided into smaller units. Using weather data and information from the emission inventory, Agencies perform computer modeling to determine where air pollution concentrates and to predict future concentrations.

- STEP 8:** **Develop Control Strategies.** Agencies establish work groups that include representatives of the sources of air pollution, environmental or health groups, and members of the general public. Air pollution control measures are discussed and evaluated for their effectiveness to reduce air pollution in the short term and for 10 to 15 years into the future. Selected control measures are included into the SIP.
- STEP 9:** **Develop Control Plan (SIP).** Agencies develop a SIP that characterizes the nonattainment area's air pollution problems. The SIP includes all the rules, regulations, stipulations, and control measures that will be implemented to improve air quality in the short term and for 10 to 15 years into the future. The SIP must also include "Contingency Measures" that Agencies must take if the planned control measures fail.
- STEP 10:** **Conduct Public Hearing.** Agencies must make the final SIP available to the public for review and comment for a minimum 30 days. Agencies assemble public comments and may make revisions consistent with comments. Agencies are also required to retain all public comments and its responses for review and submittal to EPA.
- STEP 11:** **Approve SIP Through Authority.** The Agency or other appointed oversight board approves the SIP. This action also requires public notice. Record of approval must be documented and submitted to EPA.
- STEP 12:** **Submit SIP to EPA.** Following public hearing and approval of SIP by the appropriate authority, a state's governor submits the SIP to EPA. EPA has six months to determine whether the SIP is complete and an additional 12 months to approve or deny the SIP.

## **RELATED WEBSITES FOR SIP DEVELOPMENT**

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(1) <http://www.epa.gov/ttn/amtic/files/ambient/pm25/workshop/spatial/paisie.pdf>

**NOTE: \*.PDF = 113 pages**

(2) <http://icode.trintegral.net/sipman/index.cfm>

**NOTE: Excellent Website**