



Connecticut Bureau of Air Management, Anne Gobin, Acting
Maine Bureau of Air Quality Control, James Brooks
Massachusetts Bureau of Waste Prevention, Barbara Kwetz
New Hampshire Air Resources Division, Robert Scott
New Jersey Division of Air Quality, William O'Sullivan
New York Division of Air Resources, David Shaw, Acting
Rhode Island Office of Air Resources, Stephen Majkut
Vermont Air Pollution Control Division, Richard Valentinetti

November 5, 2003

Dr. Philip Hopke, Chair
Clean Air Science Advisory Committee
Attention: Mr. Fred Butterfield, Designated Federal Officer
EPA Science Advisory Board (1400A)
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: NESCAUM Comments on First Draft PM Staff Paper

Dear Dr. Hopke:

The Northeast States for Coordinated Air Use Management (NESCAUM) appreciates the opportunity to provide comments to the Clean Air Scientific Advisory Committee (CASAC) on EPA's August 2003 First Draft Staff Paper, "Review of the National Ambient Air Quality Standards for Particulate Matter: Policy Assessment of Scientific and Technical Information." For over 36 years, NESCAUM has provided a forum for regional cooperation and the exchange of technical and policy information among air quality regulators and our eight member states. The revision of the National Ambient Air Quality Standard (NAAQS) for Particulate Matter (PM) has profound implications for the health and welfare of millions of citizens. Furthermore, the nature and form of the standards will have a profound impact on the state regulatory agencies charged with implementing them. Our comments will address four key areas: 1) the need for a protective primary annual $PM_{2.5}$ standard; 2) the need for a protective daily $PM_{2.5}$ standard that a) is consistent with the annual standard, b) will provide an adequate margin of safety for populations, and c) will provide uniform Air Quality Index health messaging; 3) the need to pursue further research on subdaily health impacts of airborne particles toward the possibility of addressing this exposure timeframe in future regulations; and 4) the need to establish a secondary standard to address the considerable environmental deterioration caused by $PM_{2.5}$.

NESCAUM has found that the current draft Staff Paper has adequately summarized the policy-relevant PM health effects information from the Criteria Document. We find that the draft Staff Paper makes a strong case that there is a large and convincing body of evidence that confirms the association between short- and long-term ambient PM_{10} exposures and mortality and morbidity effects, as well as a growing body of studies that confirm such associations with ambient $PM_{2.5}$ exposures. As the draft Staff Paper notes, results for $PM_{2.5}$ exposure studies across the U.S. and Canada show estimates for various

Kenneth A. Colburn, Executive Director
101 Merrimac Street, 10th Floor
Boston, Massachusetts 02114
Phone (617) 367-8540
Fax (617) 742-9162
www.nescaum.org

health endpoints that are relatively consistent among the studies. In addition, the coherence in the array of health effects—from subtle changes in cardiac and lung function to increased mortality from cardiorespiratory diseases—has also been observed among these studies. We agree with the draft Staff Paper's finding that the entire group of epidemiologic PM studies clearly calls into question the adequacy of the level of protection afforded by current fine particle and PM₁₀ standards.

With respect to a long-term PM_{2.5} standard, we concur with EPA's conclusion that newly available long-term mortality and morbidity studies lend support for considering an annual fine particle standard at a level below the current standard. We support the agency's consideration of lowering the annual PM_{2.5} standard from 15 µg/m³ to potentially as low as 12 µg/m³. We believe that EPA's 1996 decision to rely exclusively on a stringent annual standard failed to recognize the implications of emerging scientific evidence suggesting that short-term exposure periods do impose a heavy health burden on our populations. Currently, we do not believe that the existing annual or the daily standards will protect our populations from significant and recurring elevated exposure to fine particles. We are concerned that the majority of the Northeast region is currently attaining the ambient air quality standards for fine PM—the whole region is in attainment for the daily standard and about 7% of our region's monitors are exceeding the annual standard—and yet our region's population has been shown to have significant adverse cardiopulmonary health outcomes at these levels of exposure. The current Staff Paper's review of the new health effects studies substantiates NESCAUM's recommendations provided to EPA and CASAC in 1996 and 2001 supporting our long-held view that a more stringent daily fine particle standard—in combination with an adequately protective annual standard—is necessary in order to protect public health.

With respect to the daily fine particle standard, NESCAUM has consistently argued that data demonstrate the occurrence of health effects at levels substantially below EPA's current 24-hour PM_{2.5} standard of 65 µg/m³. Since 1996, it has become increasingly evident that EPA's daily standard does not adequately protect populations against episodic exposures to high pollutant concentrations. As the draft Staff Paper concludes, the body of short-term health effects studies suggests consideration of 24-hour PM_{2.5} standard levels well below the level of the current standard, ranging from 30 µg/m³ to 50 µg/m³. Based upon growing epidemiologic and toxicological evidence NESCAUM recommends a daily fine particle standard of no higher than 25 µg/m³ to 30 µg/m³ with a 98th percentile form, and would point to the recent analyses and conclusions reached by the California Air Resources Board and Canadian Council of Ministers of the Environment that are comparable to our conclusion. In addition, we are troubled by the public outreach challenge created by the disconnect between EPA's current national daily PM_{2.5} standard (65 µg/m³) and EPA's Air Quality Index (AQI) PM_{2.5} health messaging category identified as "unhealthy for sensitive groups" (40.5 µg/m³). In the densely populated Northeast, these sensitive groups comprise a substantial percentage of our population, particularly in our urban environments. This inconsistent approach to "health-protective" standard setting and public outreach and communication regarding "unhealthy" air quality is a weakness for this criteria pollutant. Furthermore, this disconnect between the ambient air quality standard and the air quality index is

inconsistent with past Agency practice. At this time, the AQI for ozone (8-hour breakpoint) for the moderate category of exposure impact and concern begins at 0.085 ppm, which is the daily standard for this criteria pollutant.

We agree with the draft Staff Paper conclusion that a growing body of studies provides additional evidence of effects associated with exposure periods shorter than 24-hours (e.g., one to several hours). This is an important area of research that EPA needs to pursue in order to provide adequate protection of public health and to provide the basis for the consideration of a shorter-term standard in the future. Another area demanding greater Agency attention is the impact of PM_{2.5} on environmental quality. With respect to welfare costs associated with ambient fine particles, visibility impairment and ecosystem destruction due to acid deposition are a significant and growing concern. NESCAUM recognizes the complexity of assessing the multi-factorial effects of fine particles and we realize that the justification for a protective secondary standard is a substantial undertaking. However, contrary to the findings of the PM Staff Paper, we feel that quantifiable relationships between ambient fine particulate concentrations and environmental deterioration do exist and are sufficient to establish a secondary standard on the basis of acid deposition. The secondary standard should more comprehensively consider the cost associated with visibility impairment. A secondary standard can and should be based upon the protection of our most sensitive public welfare assets. Action must be taken while research continues to refine the economic assessment of costs and welfare benefits of a secondary standard.

NESCAUM and its member states are committed to working with EPA to address specific implementation issues regarding this rulemaking and appreciate your willingness to consider these comments as you move forward on this important issue. We are actively engaged in more technical analyses regarding appropriate PM standards and their form and look forward to providing detailed comments in EPA's Second Draft Staff Paper.

Sincerely,



Kenneth A. Colburn
Executive Director