

March 15, 2015

Administrator Gina McCarthy
Environmental Protection Agency
1200 Pennsylvania Avenue., NW
Mail code 28221T
Washington, DC 20460
Docket ID NO. EPA-HQ-OAR-2008-0699

Via Internet: <http://regulations.gov>
Via Email: A-and-R-Docket@epa.gov

Dear Administrator McCarthy:

I am writing to urge you to set the primary ozone (O₃) National Ambient Air Quality Standard (NAAQS) at 60 parts per billion (0.060 ppm), because this level is necessary to protect the public health within an adequate margin of safety.

As a concerned citizen, and a student in an Environmental Law class taught at the City University of New York (CUNY) School of Law, I am writing to comment on the proposed revisions to the NAAQS for ozone. CUNY School of Law, founded in 1983, was developed with a mission of promoting “law in the service of human needs.” Thousands of public interest-minded lawyers have graduated from CUNY School of Law, and are working in a diverse array of legal practices. Because Environmental Law is a field that appeals to many public interest practitioners, CUNY School of Law offers an Administrative Law class taught in the context of Environmental Law. It is in this class that I learned about the proposed rulemaking to revise the NAAQS for ozone. After researching the very real effects that this proposed rule will have on the Long Island City, NY community and broader New York City, I comment in my capacity both as a student in this class and a concerned New Yorker.

I. Introduction

Under the Clean Air Act (CAA) § 109(b)(1) the “National primary ambient air quality standards ... shall be ambient air quality standards to the attainment and maintenance of which in the judgement of the Administrator, based on such criteria and allowing an *adequate margin of safety*, are requisite to protect the public health.” The public, of course, is sensitive to ozone in varying degrees, as high levels of ozone often target the young, elderly, or infirmed. As the CAA indicates, the NAAQS need to be set within an *adequate margin of safety* to protect public health. This standard prescribes the NAAQS to be set at a level that does not force the lungs of sensitive and at-risk populations to suffer, but rather encourages everyone to get outdoors and become active members of the community. The only way to safely do this is to set the primary ozone NAAQS at 60 parts per billion, the level recommended by the Clean Air Scientific Advisory Committee (CASAC).

II. Discussion

The EPA noted that this standard, 60 parts per billion, “inappropriately places very little weight on uncertainties in the health effects evidence and exposure/risk information.”¹ The requirement in the CAA, however, that the primary standards provide an adequate margin of safety, was intended to address the uncertainties surrounding inconsistent scientific and technical information available at the time.² In addressing the adequate margin of safety element, the Environmental Protection Agency (EPA) generally considers: (1) the nature and severity of the health effects, (2) the size of sensitive populations at risk, and (3) the kind and degree of the uncertainties that must be addressed.³ After a proper consideration of these factors, the EPA must set the primary ozone NAAQS at 60 parts per billion.

¹ National Ambient Air Quality Standards for Ozone, 79 Fed. Reg. 75234 (Dec. 17, 2014) (to be codified at 40 C.F.R. pts. 50, 51, 52, 53, 58).

² *Id.*

³ *Id.* at 75238

1. The Health Effects Associated with High Ozone Output are Severe.

The consequences associated with high levels of ozone in the air have been well documented. “Ozone is the most widespread air pollutant and is known to cause coughing, wheezing, and asthma attacks and increases the risk of hospital admissions and emergency room visits, as well as the risk of premature death.”⁴ Though air quality has undoubtedly improved recently, air pollution is still a significant threat to New Yorkers, contributing to 6% of deaths in the city annually.⁵ Ozone alone is linked to approximately 400 deaths, 800 hospital visits, and more than 4000 emergency department visits annually in New York City.⁶ Residents of large urban areas, myself included, are particularly at risk, as everyone living in a large city is exposed by the current levels of pollutants.⁷ Though ozone will never be eliminated from the New York City air, setting the NAAQS at 60 parts per billion will increase the overall health of the city.

A study commissioned by the New York City Department of Health and Mental Hygiene estimated the effects that a more stringent ozone standard would have on the health of the city. The study found that if the ozone level were reduced by 10%, the EPA could prevent approximately 80 premature deaths annually.⁸ Further, the EPA could prevent 180 hospital admissions and 950 emergency department visits annually.⁹

Controlled human exposure studies support setting the primary NAAQS at 60 parts per billion. These studies, commonly known as the Adams Studies, were advanced by petitioners in *Mississippi v. EPA*. The Adams Studies attempted to measure the effects of ozone on humans by

⁴ Am. Lung Ass’n, *American Lung Association Urges EPA to Heed Letter on Ozone National Ambient Air Quality Standard in Order to Protect Public Health*, LUNG.ORG (Jun. 27, 2014).

⁵ NEW YORK CITY DEP’T OF HEALTH AND MENTAL HYGIENE, AIR POLLUTION AND THE HEALTH OF NEW YORKERS: THE IMPACT OF FINE PARTICLES AND OZONE 4.

⁶ *Id.*

⁷ *Id.* at 5.

⁸ *Id.* at 4.

⁹ *Id.*

placing subjects in a controlled environment with direct exposure to ozone.¹⁰ These studies found that some individuals exposed to ozone at 60 parts per billion experienced lung function decrements of at least 10 percent.¹¹ The Adams studies were relied upon by the EPA to decrease the primary ozone NAAQS from 80 parts per billion, but were not given the weight they deserve to set the standard at 60 parts per billion. This likely happened, in part, because only a small number of individuals responded at the 60 parts per billion level (2 out of 30).¹² Though this may seem like a small number, it represents a 7 percent response rate, roughly equivalent, if extrapolated, to 21.2 Americans.¹³ Because of the impact that ozone has on a significant percentage of the population, the American Thoracic Society, the American Medical Association, and other well-respected medical associations supported the findings. They concluded:

“The Adams study confirms our understanding that in healthy populations, an important fraction of the population will experience larger-than-average decrements in [forced expiratory volume] when exposed to low levels of ozone. It is reasonable to assume that these effects would be even greater when extrapolated to other populations known to have sensitivities to ozone (children, asthmatics, COPD patients). We feel the correct conclusion to draw from the Adams study is that there is a significant fraction of the population that will express significant responses to low levels of ozone.”¹⁴

The EPA also agreed generally with the findings of the Adams report and, upon reanalysis of the data, found statistically significant lung decrement to a small percentage of the population at 60 parts per billion.¹⁵

¹⁰ *Mississippi v. EPA*, 723 F.3d 246, 261 (D.C. Cir. 2013).

¹¹ *Id.*

¹² National Ambient Air Quality Standards for Ozone, 73 Fed. Reg. 16436, 16454 (proposed Mar. 27, 2008) (to be codified at 40 C.F.R. pts. 50, 58).

¹³ *Id.*

¹⁴ *Id.*

¹⁵ *Id.*

In summary, ozone's consequences to human health are severe. It is directly linked to hundreds of deaths in New York City, while it hospitalizes many more. Even at 60 parts per billion, the effects of ozone have been found to contribute to significant decreased lung function. This data must not be ignored, as it has been supported by many well-respected medical associations. The primary ozone NAAQS must reflect the most up-to-date medical studies and consequently be set at 60 parts per billion to adequately protect human health.

2. The Population Sensitive to Ozone is Large.

The EPA, in advancing the previous primary NAAQS, acknowledged that different subpopulations are more likely to experience adverse effects at low levels of ozone output, which required the agency to set the standard at a level below the level at which adverse effects occur.¹⁶ With this in mind, CASAC concluded that the existing standard, in light of recent studies, did not adequately protect certain at-risk groups. CASAC proceeded to recommend the 60-65 parts per billion standard, which it found necessary for compliance with the CAA. EPA set its standard “appreciably below” the former 80 parts per billion NAAQS, yet deviated substantially from the recommendation that CASAC made to protect these at-risk groups.

Although certain populations are more sensitive to high levels of ozone, anyone who spends time outdoors where ozone levels are high is at risk.¹⁷ The American Lung Association (ALA) lists five groups of people who are especially vulnerable to high levels of ozone, including children and teens, people aged 65 and older, people who exercise outdoors, people with existing lung disease, and people with cardiovascular disease.¹⁸ The ALA also suggests that new evidence shows that

¹⁶ *Mississippi*, 723 F.3d at 265.

¹⁷ Am. Lung Ass'n, *Ozone Pollution*, STATEOFTHEAIR.ORG (2013).

¹⁸ *Id.*

women and obese individuals may be particularly sensitive to ozone.¹⁹ This leaves a very small sliver of the population that is not particularly sensitive to ozone.

Additionally, federal agencies are directed, to the greatest extent practicable, to make environmental justice part of their mission by addressing adverse human health effects on minority or low-income populations.²⁰ Ozone pollution disproportionately affects low-income individuals and racial minorities who are more prone to asthma. 9.3 percent of adult New Yorkers, or about 1.4 million individuals, have asthma.²¹ Asthma routinely contributes to hundreds of deaths and tens of thousands of hospitalizations each year in New York State.²² In New York City, asthma is much more prevalent in the lowest income neighborhoods, with rates in the Bronx being among the highest rates throughout the state.²³ This is because children living in the poorest households are nearly twice as likely to develop asthma as those living in the wealthiest households in New York City.²⁴

High asthma rates in low-income neighborhoods lead to higher hospitalization rates, which cost taxpayer money. In 2009, the rate of asthma related hospital visits in the poorest New York City neighborhoods was three times the rate of the wealthiest.²⁵ Asthma rates among Medicaid recipients in New York grew by 30.4 percent in a five year span from 2008-2013, while asthma-related expenditures increased by \$111.7 million to \$532.7 million in that same span.²⁶ To keep up

¹⁹ *Id.*

²⁰ Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 Fed. Reg. 7629, 7631 (executed as Executive Order 12898 on Feb. 11, 1994).

²¹ NEW YORK STATE COMPTROLLER, THE PREVALENCE AND COST OF ASTHMA IN NEW YORK STATE 4-5 (2014).

²² *Id.*

²³ *Id.* at 16.

²⁴ *Id.* at 1.

²⁵ *Id.* at 2.

²⁶ *Id.* at 6.

with this trend, New York increased Medicaid spending by about \$9 billion or 20 percent in that same time period.²⁷

To protect the most vulnerable populations with an adequate margin of safety, the standard needs to be set below the level at which at-risk or vulnerable populations are adversely affected by ozone. As detailed in section 1 above, adverse responses can begin to develop within a small, yet statistically significant population, at 60 parts per billion. From an environmental justice and an economic perspective, the EPA must consider both increased hospitalization rates of asthmatics in New York City and the financial burden in setting the primary NAAQS for ozone.

3. The Uncertainties Surrounding Ozone are Overstated.

Virtually all policy-relevant scientific research comes with some level of uncertainty.²⁸ While there is conceded uncertainty surrounding whether some observed health effects are causal in nature or not, the EPA’s review of the health effects surrounding ozone output has been “extensive and deliberate.”²⁹ A certain level of confidence in the scientific studies provided an adequate basis for regulatory decision making.³⁰

In *Mississippi v. EPA*, the EPA pointed to declining uncertainty below the 75 parts per billion standard.³¹ The Court went on to say that had CASAC reached a “scientific conclusion” that 70 parts per billion or some other concentration of ozone in the air was adverse to human health, EPA’s failure to justify its own uncertainty at that level would be “unacceptable.”³² Agencies must not merely use the terms “substantial uncertainty” as a crutch to justify their actions, rather, they

²⁷ *Id.*

²⁸ National Ambient Air Quality Standards for Ozone, 73 Fed. Reg. at 16440.

²⁹ *Id.*

³⁰ *Id.*

³¹ *Mississippi*, 723 F.3d at 265.

³² *Id.*

“must explain the evidence which is available, and must offer a rational connection between the facts found and the choice made.”³³

The EPA erred in demanding that CASAC reach a “scientific conclusion” that adverse health effects would occur below the 70 parts per billion level, which was the ceiling of CASAC’s recommendation at the time. The EPA assumed that CASAC exercised its own judgment to recommend that the standard be set at a lower level.³⁴ The EPA’s decision to deviate from this standard did not consider the weight of the scientific evidence that CASAC offered, rather, rested in part on CASAC’s failure to specify that the standard recommended rested on a “scientific conclusion” of adverse health effects at that level.³⁵

In demanding a “scientific conclusion,” the EPA arbitrarily ignored the solid evidence put forth by CASAC that lower levels of ozone (60 parts per billion) are adverse to human health. In an October 2006 CASAC letter, CASAC noted that “a large body of data clearly demonstrates adverse human health effects and at the current level.”³⁶ CASAC also pointed out many scientific studies that show “evidence for adverse health effects at concentrations lower than the current standard.”³⁷ In making this recommendation, CASAC cited to the 2006 Adams study which found statistically significant adverse human health effects on healthy individuals at the 60 parts per billion level. On the basis of this study, among many others, CASAC used the “overwhelming scientific evidence” it found to recommend a lower standard to protect human health, particularly in sensitive subpopulations.³⁸

Scientific evidence is always refuted, particularly policy-related scientific research. The EPA’s demand that a “scientific conclusion” be reached was in error. The distinction between a “scientific

³³ *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 52 (1983).

³⁴ *Mississippi*, 23 F.3d at 265.

³⁵ *Id.* at 270.

³⁶ *Id.* at 274.

³⁷ *Id.*

³⁸ *Id.* at 268.

conclusion” and a recommendation based on “overwhelming scientific evidence” that CASAC made is at best arbitrary.³⁹ In setting the primary NAAQS for ozone, the EPA must weigh heavily the scientific evidence that exists to show that an ozone concentration of 60 parts per billion is adverse to human health of sensitive and at-risk subpopulations.

III. Conclusion

As a law student and a New Yorker, I am deeply invested in the proposed rule to revise the primary NAAQS for ozone output. The CAA requires the primary NAAQS to be set within an *adequate margin of safety* to protect public health. With overwhelming evidence that ozone output at 60 parts per billion can cause adverse human health effects to certain at-risk and sensitive populations, the standard must be set at a level that protects those individuals. The only way to adequately protect at-risk and sensitive populations is to set the primary ozone NAAQS at 60 parts per billion. This will substantially decrease ozone related deaths and hospitalizations, saving taxpayer money in the future.

Sincerely,

/s/ Thomas J. Power

Thomas J. Power

³⁹ *Lead Indus. Ass'n v. EPA*, 647 F.2d 1130, 1145 (D.C. Cir. 1980).