The State of New Hampshire
Department of Environmental Services

Robert R. Scott, Commissioner

November 26, 2019

Aaron Yeow
Designated Federal Officer
Clean Air Scientific Advisory Committee (CASAC)
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Via e-mail: yeow.aaron@epa.gov

Re: Notification of a Public Meeting of the Chartered Clean Air Scientific Advisory Committee (CASAC) [FRL-10001-58-OA]

Dear Mr. Yeow:

The New Hampshire Department of Environmental Services (NHDES) offers the following comments for consideration in the CASAC peer review of EPA's "Integrated Science Assessment for Ozone and Related Photochemical Oxidants (External Review Draft— September 2019)" (ISA) and "Policy Assessment for the Review of the Ozone National Ambient Air Quality Standards (External Review Draft)" (PA). As noticed in 84 FR 58713 (November 1, 2019), CASAC will conduct a peer review of those documents in December, 2019. Some of these comments are also relevant to CASAC's "Draft Report on EPA's Policy Assessment for the Review of the National Ambient Air Quality Standards (NAAQS) for Particulate Matter (External Review Draft— September 2019)."

NHDES is concerned that EPA's efforts to "streamline" the NAAQS review process is too rigid and inflexible with regard to more complicated reviews required under the Clean Air Act (CAA). In an effort to simplify and expedite NAAQS review, the new process eliminates expert panels and places strict limits on the research that can be considered during review. NHDES acknowledges that some simpler NAAQS reviews may benefit from the new process. However, when reviewing pollutants that have proved challenging to attain, and for which current scientific research is very active, the EPA process should be very deliberative to ensure critical information is included and thoroughly reviewed by experts in the various fields. Failing to consider key information and excluding input from experts that regularly work with that information can lead to setting a flawed NAAQS. New Hampshire, and other states, rely on strong, evidence-based NAAQS to protect the health and welfare of our residents.

NHDES provides specific comments on the topics listed below which supplement additional comments in conjunction with NESCAUM:

- The compressed NAAQS review schedule is too rigid and needs to be flexible to allow more time during complicated reviews.
- CASAC needs supplemental expert information to ensure that all information critical for NAAQS review is adequately represented.
- CASAC should recommend a more robust secondary ozone NAAQS that better represents the cumulative season exposure that causes vegetation damage.
- CASAC should transition from a midnight to midnight 24-hour Fine Particulate Matter ($PM_{2.5}$) NAAQS to one that utilizes a rolling 24-hour period.

1. The compressed NAAQS review schedule is too rigid and needs to be flexible to allow more time during complicated reviews.

In May 2018, then EPA Administrator Scott Pruitt issued the "Back-to-Basics" memorandum, which outlines a framework for "streamlining" NAAQS reviews. In keeping with the directives in that memorandum, the review schedule in EPA's draft IRP for the ozone NAAQS, which was issued in October 2018, was significantly accelerated compared to previous NAAQS reviews. The newly accelerated schedule for ozone allows for only one draft of the ISA (which was then scheduled to be released in spring 2019), and then quickly moves towards the Policy Assessment (PA) and combines it with the Risk and Exposure Assessment analysis (REA), which is due in fall 2019. The new timeline does not allow for a second review the ISA, which would included any changes based on comments received in the first review, prior to preparation of the PA/REA which was due in October 2019. Review of other NAAQS would be similarly accelerated.

The new schedule is too compressed to apply as a one-size-fits-all for NAAQS reviews. Some cases are simply too complex to compress all the needed information into an expedited review and should instead undergo more public and expert review than currently allotted with the new timeline.

NHDES recommends developing two tracks for for the review of a NAAQS so that a compressed timeline can be used when appropriate, and a slower, more intensive review can be applied during more complex cases. NHDES suggests that NAAQS that were not modified during the last two review cycles could apply the faster track, and NAAQS that have been modified during either of the past two review cycles could undergo a longer review and comment period up to the length of the previous process. The logic behind this is that with any NAAQS that has recently undergone a modification, the public interest in it is heightened and the science in the field is active meaning there is more data to review. In the case of simpler NAAQS reviews, EPA could opt for flexibility to switch tracks from faster to slower to accommodate high public interest and/or robust health impact research for pollutant being reviewed.

In particular, NHDES has great concern in the proposed accelerated timeline for more complicated NAAQS reviews such as ozone and $PM_{2.5}$, which are both in the NAAQS review process now. They are both challenging and widespread air pollutants with a significant body of active health impact research. Using these pollutants to test the accelerated timeline will likely short-cut the scientific deliberation and public processes since there will be much stakeholder interest and because there is a vast amount of scientific data to consider. As a result, the accelerated timeline increases the risk that considerable changes will be made and that those changes would not be reviewable until the process has already moved to the next step in the NAAQS review, placing interested parties into a mode of catch-up and response. It also forces the intended audience of the next document into reviewing changes that have not been widely vetted in an open review. Such quickly-made changes could incorporate flaws that would be rushed towards policy in the PA.

The Federal Register noticed the actual release of the draft ISA and PA documents for the ozone NAAQS on September 26, 2019 and November 1, 2019, respectively, with the concurrent CASAC review of both documents. The CASAC is then scheduled to meet on the first week in December of 2019. The Integrated Review Plan (IRP) also does not allow for any comments on the ISA, which is the scientific foundation of the review, prior to policy development.

Allowing additional comment during more complex NAAQS reviews not only helps to improve the final product, but also increases public understanding and buy-in. Restricting public access reverses transparency because the public gets to see less of the development and deliberative process.

2. CASAC needs supplemental expert information to ensure that all information critical for NAAQS review is adequately represented.

While NHDES appreciates the intention of accelerating and simplifying the NAAQS review process, NHDES feels that it is inappropriate for EPA to remove from the review process a panel selected to include a wide range of expertise, and instead rely on a small CASAC panel. CASAC is already charged with a heavy workload in a wide variety of tasks. The CASAC panel, while very accomplished, cannot possibly be experts in all fields needed for each review. In an attempt to address this, EPA proposed to create a pool of expert subject matter consultants that can be drawn upon to assist CASAC. While still potentially helpful, such a pool is not as comprehensive the previous expert panels that underwent a careful deliberative process to jointly and expertly consider all aspects of NAAQS reviews. Such panels are particularly essential for pollutants, like ozone and $PM_{2.5}$, which are associated with a wide range of complex health and welfare effects. EPA should not restrict the number of experts advising the process and should return to a process that includes expert panels.

It is also important that EPA not dismiss relevant science where patient identity has been protected. While the goal of being fully transparent is laudable, becoming too limiting in acceptable research will lead EPA to dismiss a large set of directly pertinent science. Since most studies on human health responses to air pollution exposure are designed to protect patient

personal information, there is a very large potential for the dismissed data to result in a usable data set that is greatly insufficient. At the very least, EPA should track and report the resulting differences in both approaches (EPA proposed transparent science versus science excluded by EPA's transparent approach). The public deserves to know the how the results of the new transparency approach affects the NAAQS review. It is difficult to establish that the new review policy won't have a detrimental effect without performing this step.

3. **CASAC should recommend a more robust secondary ozone NAAQS that better represents the cumulative season exposure that causes vegetation damage.**

During the 2015 ozone NAAQS review, a secondary standard in the form of a W126 was recommended by the CASAC in order to better represent vegetative damage risk during the growing season. This should again be taken under consideration. Vegetation is constantly exposed to environmental conditions and damage to crops and forests has been detected in areas that have not violated the current 8-hour form of the secondary standard. One drawback to the form of W126 is that it is complicated and too difficult to explain. This should not be a disqualifier. The form and logic of most design values are not simple either, but their statistical importance is defensable. Therefore NHDES feels that the W126 is defensable as a secondary form for the ozone NAAQS.

EPA ultimately chose to not follow the CASAC's recommendation of a W126 secondary ozone standard and instead set the secondary 2015 ozone NAAQS at the same level and form as the primary standard. Subsequently, the DC Circuit Court remanded that EPA either lower the secondary ozone NAAQS to protect against unusually damaging cumulative seasonal exposures, or explain its conclusion that the unadjusted average is an appropriate benchmark notwithstanding CASAC's contrary advice. The current draft ozone PA references, but does not explicitly respond to, the August 2019 remand. With the advice of experts, CASAC should carefully review the information related to the secondary standard in the ISA and PA, along with the analyses performed by the earlier CASAC panel, in order to recommend a NAAQS that will be protective of vegetation damage and other welfare effects associated with cumulative seasonal exposures.

4. **CASAC should transition from a midnight to midnight 24-hour $PM_{2.5}$ NAAQS to one that utilizes a rolling 24-hour period.**

Prior to EPA's decision to streamline the expert deliberative process, it selected and designated an expert panel of approximately 20 scientists to augment the expertise of the CASAC charter members in the review of the $PM_{2.5}$ NAAQS. However, in October 2018, EPA disbanded that panel. Many of the disbanded experts in that panel rejoined and formed the Independent Particulate Matter Review Panel (IPMRP).

As part of their recent $PM_{2.5}$ NAAQS review, the IPMRP stated that "the use of calendar-day 24-hour averages for the short-term standard may not be protective of public health, unless the level is set low enough to prevent potentially harmful peak exposures" and recommended that

"EPA conduct a comparative analysis of an hourly 24-hour rolling average versus the current 24-hour calendar-day (midnight to midnight) average to assess the potential health protective benefits of a change in form." NHDES supports this recommendation.

In New Hampshire and many other locations in the nation, $PM_{2.5}$ concentrations rise in valley communities during winter months as a result of wood burning for residential heating. During cold weather, thermal inversions can trap air pollution near the ground, causing concentrations to rise overnight. In some cases, $PM_{2.5}$ concentrations rise above the 24-hour NAAQS level during periods when peak concentrations span midnight. With a midnight to midnight 24-hour NAAQS calculation, this causes the peak concentration to be split between two days rather than one continuous period. Since people breathe on a continuous basis, the midnight split is an artificial artifact that is confusing when determining and communicating to the public what is unhealthy. NHDES has changed its air pollution advisory policy to apply rolling 24-hour exceedances in its public air quality notices instead of the midnight to midnight period. This was done to better protect the pubic, but it risks confusing them since such events do not count towards official NAAQS violations.

Using Keene, New Hampshire as a community that experiences winter-time wood smoke events, a comparison of the two different methodologies was prepared. Figures 1 and 2 demonstrate how the two methodologies compare over an eight-year period at Keene, New Hampshire for current 24-hour $PM_{2.5}$ NAAQS design values and exceedance days per year. Table 1 summarizes the design value data for the same eight-year period and presents the percent increase from midnight to midnight design values to the hypothetical rolling 24-hour design value for each period.

Rolling 24-hour $PM_{2.5}$ design value concentrations are higher than the midnight to midnight calculation, ranging from 12% to 22% higher over the eight-year period. The design value methodology for rolling 24-hour averages simply replaces the 98th percentile midnight to midnight values with the 98th percentile of daily maximum rolling 24-hour average concentrations.

The older midnight to midnight form is a carryover from Federal Reference Method (FRM) filter device limitations where the monitor was set to collect 24-hour samples on a midnight to midnight clock basis. Newer Federal Equivalent Method (FEM) technology that measures and reports $PM_{2.5}$ concentrations is on an hourly basis is now well established and the monitoring networks are now dense enough that the form of the NAAQS should no longer be based on the artificial limitations of older technology. Lung damage is caused by exposure to $PM_{2.5}$ regardless if the time period was midnight to midnight or any other 24-hour period, and EPA should strongly consider transitioning the 24-hour $PM_{2.5}$ NAAQS to a rolling 24-hour format

Figure 1: Difference Between 24-Hour $PM_{2.5}$ Design Values Calculated by Midnight to Midnight and Rolling 24-Hour Methodologies at Keene, NH (2011-2018)

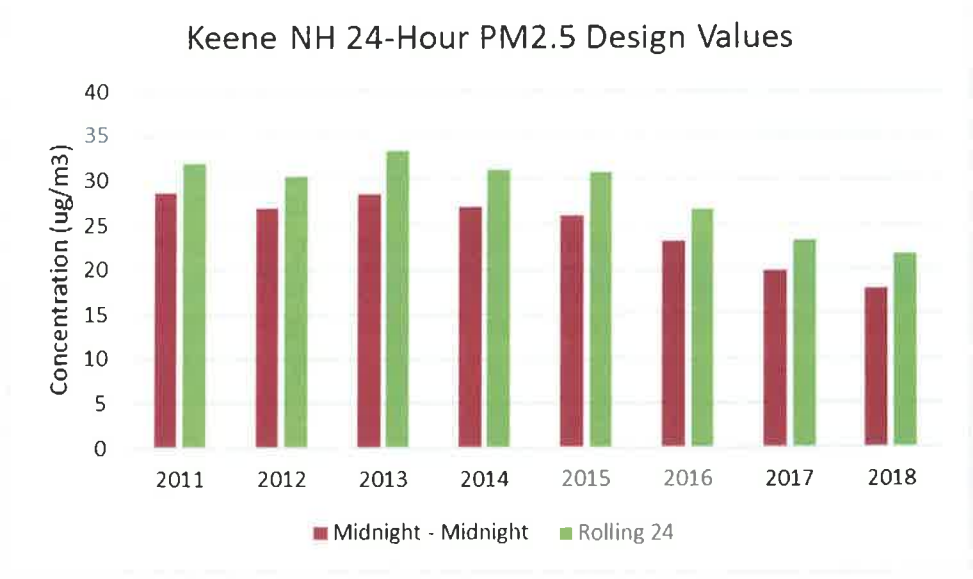

Figure 2: Difference Between 24-Hour $PM_{2.5}$ Exceedance Days Calculated by Midnight to Midnight and Rolling 24-Hour Methodologies at Keene, NH (2011-2018)

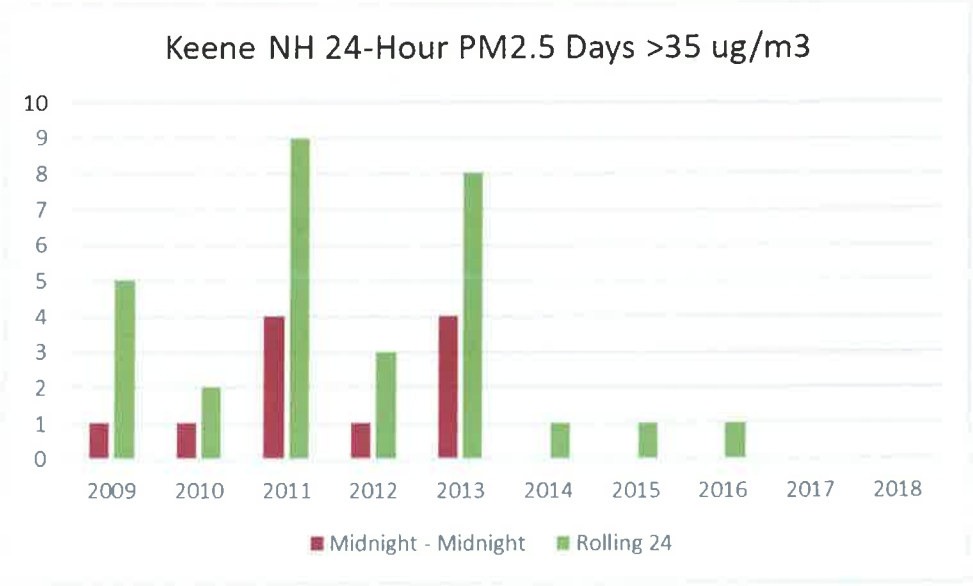

Table 1: Percent Differences between 24-Hour $PM_{2.5}$ Design Values Calculated by Midnight to Midnight and Rolling 24-Hour Methodologies at Keene, NH (2011-2018)

Design Values	2011	2012	2013	2014	2015	2016	2017	2018
Midnight - Midnight	28.6	26.9	28.4	27.0	26.1	23.1	19.8	17.8
Rolling 24	31.9	30.5	33.4	31.2	31.0	26.7	23.3	21.7
Percent Increase	12%	13%	17%	16%	19%	15%	17%	22%

Based on the scientific evidence, the IPMRP also found that:

> *[T]he current suite of primary fine particle ($PM_{2.5}$) annual and 24-hour standards are not protective of public health. Both of these standards should be revised to new levels, while retaining their current indicators, averaging times, and forms. The annual standard should be revised to a range of 10 $\mu g/m^3$ to 8 $\mu g/m^3$. The 24-hour standard should be revised to a range of 30 $\mu g/m^3$ to 25 $\mu g/m^3$. These scientific findings are based on consistent epidemiological evidence from multiple multi-city studies, augmented with evidence from single-city studies, at policy-relevant ambient concentrations in areas with design values at and below the levels of the current standards, and are supported by research from experimental models in animals and humans and by accountability studies.*

NHDES strongly urges CASAC to revise its draft review of the PA document to incorporate these recommendations.

Summary

NHDES appreciates the opportunity to comment on these important matters. We share the responsibility to protect public health and believe we should be well informed without skipping important steps. The "streamlined" process currently in use at EPA to review NAAQS attempts to expedite what historically has been a lengthy process. However, the new process severely limits the opportunities for scientific input from CASAC and the public and results in less than fully-informed standards that run a significant risk of not adequately protecting public health and the environment.

EPA should allow for a less compressed review schedule for more complex NAAQS reviews that allows for redrafting documents in response to comments. Further, the expert panel should be reformed in an official role for the $PM_{2.5}$ NAAQS and implemented for the ozone NAAQS and other NAAQS moving forward. CASAC should be strengthened with informed input from the beginning of the process with the breadth and depth of expertise needed to fully evaluate the diverse studies and health endpoints relevant to reviewing those standards.

NHDES strongly recommends that CASAC consider the input and recommendations of the IPMRP regarding the primary and secondary $PM_{2.5}$ NAAQS, including transforming from a calendar day (midnight to midnight) 24-hour standard to a rolling 24-hour version.

Thank you for your strong consideration.

Sincerely,

Craig A. Wright
Director, Air Resources Division