

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Policy Assessment for the Ozone National Ambient Air Quality Standards, External Review Draft,
84 Fed. Reg. 58,711 (Nov. 1, 2019).

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Clean Air Task Force respectfully submits the following comments on the Environmental Protection Agency's ("EPA") "Policy Assessment for the Ozone National Ambient Air Quality Standards, External Review Draft." 84 Fed. Reg. 58,711 (Nov. 1, 2019). Our organization is concerned about the health, environmental, and economic impacts of air pollution and supports implementation of strong, science-based National Ambient Air Quality Standards ("NAAQS") that ensure protection of public health and the environment.

A Secondary Standard Identical to the Primary Standard is Not Appropriate

EPA must select and revise secondary standards for an air pollutant based on "the latest scientific knowledge useful in indicating the kind and extent of all identifiable effects"¹ at a level "requisite to protect the public welfare from any known or anticipated adverse effects associated with the presence of [the] air pollutant in the ambient air."² As reiterated recently, EPA may not reference implementation concerns in setting the standard.³

Despite long-established scientific understanding that cumulative exposure measures are more appropriate for estimating welfare impacts than measures focused only on peak exposures, the draft PA recommends adopting identical primary and secondary standards. However, as recognized by multiple prior CASACs, a cumulative, seasonal metric such as the W126 would more accurately reflect the cumulative nature of welfare effects. Additionally, as in the review of the 2015 ozone standards, the draft PA recommends using a maximum of 17 ppm-hrs to protect against the effects of tree growth loss, but now fails to rationally account for the relaxed stringency of the metric when averaged over three years.

¹ 42 U.S.C. § 7408(a)(2).

² *Id.* § 7408(b)(2).

³ *Murray Energy v. EPA*, 936 F.3d 597, 623–24 (D.C. Cir. 2019).

A. EPA should adopt a secondary standard based on a biologically appropriate metric such as a seasonal W126 index rather than the fourth-high form

The draft PA ultimately recommends setting the form of the secondary standard to be identical to that of the primary standard, contravening over a decade of consensus science, prior EPA recommendations, the conclusions in this very PA, and the *Murray Energy* court’s directions on remand.⁴ The draft PA finds that, “[a]s in the last review, the currently available evidence continues to support a cumulative, seasonal exposure index as a biologically relevant and appropriate metric for assessment of the evidence of exposure/risk information for vegetation, most particularly for growth-related effects.”⁵ The draft ISA finds that “[t]he cumulative weighted indices (W126 and AOT40) and exposure-response relationships presented in this section continue to be used in analyses in the scientific literature and are the best available approach for studying the effects of ozone exposure on vegetation in the U.S.”⁶ These findings are consistent with CASAC’s prior recommendation to use W126, at a level between 7 and 15 ppm-hrs,⁷ and EPA’s agreement that W126 was “the most biologically relevant metric[] for consideration of [ozone] exposures eliciting vegetation-related effects.”⁸ As this draft PA continues to recognize, the W126 metric is supported by strong scientific evidence as an appropriate measure for broad array of vegetation-related effects that impact the public welfare.⁹

Despite these findings, the draft PA recommends setting the form of the secondary standard to be equal to that of the primary: the annual fourth-highest daily maximum 8-hour average concentration, averaged across three consecutive years (the “fourth-high” form).¹⁰ However, there is no good reason to depart from a more biologically appropriate cumulative measure such as the W126 index. Although the two measures are correlated, there is considerable geographic and temporal variation between them. Due to the sigmoidal weighting function of the W126 index, it is particularly sensitive to changes in ozone exposures toward the middle of the daily ozone concentration distribution. In contrast, the fourth-high value depends only on the high tail end of that distribution. Thus, strategies for compliance with standards based on each measure can differ in important ways. Also, even in areas where both W126 and fourth-high forms of the

⁴ 936 F.3d 597. The draft PA notes at 4-13 that EPA is considering this decision, “recognizing that issues raised by the court in its remand of the secondary standard will be considered over the course of this review.” Rather than making recommendations which have already been rejected by the courts, the PA should focus on compliance with applicable court mandates.

⁵ Draft PA at 4-66.

⁶ Draft ISA at 8-197.

⁷ Letter from Dr. H. Christopher Frey, Chair, CASAC, to the Honorable Gina McCarthy, Administrator, US EPA (June 26, 2014) (“CASAC Letter of June 26, 2014”), available at [http://yosemite.epa.gov/sab/sabproduct.nsf/4620a620d0120f93852572410080d786/5EFA320CCAD326E885257D030071531C/\\$File/EPA-CASAC-14-004+unsigned.pdf](http://yosemite.epa.gov/sab/sabproduct.nsf/4620a620d0120f93852572410080d786/5EFA320CCAD326E885257D030071531C/$File/EPA-CASAC-14-004+unsigned.pdf).

⁸ 80 Fed. Reg. at 65,373-74.

⁹ See Draft PA at 4-66 to 4-68.

¹⁰ Draft PA at 4-86.

standards would be met, there is no guarantee that meeting the fourth-high metric will ensure attainment of W126 levels that are adequately protective in the future.

An air quality modeling study from 2014 demonstrated the important temporal and regional variation in how the W126 and fourth-high metrics.¹¹ This study investigated the emission reductions required to meet various levels of potential future ozone standards of the two forms, and found significant differences between the approaches that would be required to meet each form of the standard. In particular, the study found that a fourth-high form of the standard is more protective, in terms of W126, in cities as compared to rural areas.

EPA has also conducted a number of comparative analyses of air quality data and site specific relationship of the W126 and fourth-high forms. The draft PA, figure 4D-8, also shows many monitors that have observed decreases in the fourth-high metric but increases in W126.¹² Although the two metrics are correlated, the relationship exhibits significant variability. CATF also previously submitted comments to EPA detailing the organization's own analysis showing the large variability in W126 that would be permitted under a fourth-high form of the secondary standard.¹³

EPA must adopt standards based on science. A review of the science, including the review in this draft PA, establishes that an appropriate standard must take into account the cumulative effects of ozone on public welfare, through a metric such as W126. A contrary recommendation is not justified.

B. The secondary standard must be lowered to account for the reduced stringency from averaging over three years

The draft PA fails to justify averaging the W126 index over 3 years without lowering the level of the standard. In its Welfare Risk Assessment letter to the Administrator for the 2015 standards, CASAC reaffirmed its recommendation to adopt W126 at a level between 7 and 15 ppm-hrs, and explicitly did *not* support a level higher than 15 ppm-hrs.¹⁴ The PA for the 2015 standards cautioned that “at 17 ppm-hrs, the median tree species has 6% relative biomass loss” (RBL) *in any given year*, which would be “unacceptably high.” However, EPA departed from CASAC’s recommendation and relaxed the standard in part by using a three-year averaging time. When EPA was challenged in court on this point, the court remanded, directing EPA to either lower the

¹¹ Nopmongcol et al., *A modeling analysis of alternative primary and secondary US ozone standards in urban and rural areas*, 99 Atmospheric Environment 266-276 (2014).

¹² Draft PA at 4D-16.

¹³ Clean Air Task Force, *Comments of Clean Air Task Force on Proposed Rule, National Ambient Air Quality Standards for Ozone*, 79 Fed. Reg. 75,233 (Dec. 17, 2014), EPA-HQ OAR-2008-0699 (March 17, 2015).

¹⁴ CASAC Letter of June 26, 2014.

standard or explain the basis for its decision, contrary to CASAC’s advice, to average over 3 years.¹⁵

It remains a mathematical truth that a longer averaging period for a standard weakens its effective stringency. A region that must remain below the W126 value cutoff each and every year must necessarily impose stricter controls than if the region may use years below the cutoff to average out years above that cutoff. As the draft PA recognizes, recent air quality data from 2015–2017 indicate that, across sites meeting the current standard, seven have single-year W126 index values above 17 ppm-hrs, and two have single-year W126 index values above 19 ppm-hrs.¹⁶ Previously, the CASAC has found that a single year standard is more biologically relevant, better protects perennials from the cumulative effects of ozone exposure, and protects against single unusually damaging years that would be obscured in the average.¹⁷ One-year values are critical because that damage is not offset by values in later years.¹⁸

The stated reasons in the draft PA for maintaining the 3-year averaging period without lowering the standard do not make sense. The draft PA acknowledges that single-year W126 values varied from three-year averages by “no more than 12 ppm-hrs from the average for the 3-year period, with 98% of them varying by no more than 5 ppm-hrs from the average.”¹⁹ This level of variation, 5 ppm-hrs, is a highly significant difference compared to the 19 ppm-hr level that is expected to lead to “unacceptably high” levels of RBL.²⁰ Similarly, acknowledged differences of “a few percent” in RBL between the two measures²¹ are highly significant compared to the median 6% RBL that consensus holds would be unacceptable.

The draft PA also attempts to justify a three-year averaging period by referencing the uncertainty in the data.²² But the existence of uncertainty has nothing to do with averaging the damage metric over three years instead of one. The *opposite*, in fact, may well be true: there are necessarily more studies that cover shorter periods than studies that cover longer ones, and the form of the standard should reflect that evidence.²³ And whatever uncertainty exists with respect to other welfare-related endpoints – e.g., crop yield loss, visible foliar injury, or climate-related effects as described by this draft PA²⁴ – similarly cautions for setting a more protective standard.

¹⁵ Murray Energy, 936 F.3d at 617–18.

¹⁶ Draft PA at 4-56.

¹⁷ CASAC Letter of June 26, 2014 at iii.

¹⁸ Murray Energy, 936 F.3d at 617 (citing to CASAC Letter of June 26, 2014 and EPA finding at 80 Fed. Reg. 65,373).

¹⁹ Draft PA at 4-56.

²⁰ Draft PA at 4-65 (describing a RBL of 5.3% for a W126 index of 17 ppm-hrs).

²¹ Draft PA at 4-71; *see also id.* at 4A-20 to 4A-21.

²² Draft PA at 4-71, 4-72.

²³ *See* Draft PA at 4-71.

²⁴ Draft PA at 4-68.

While averaging the W126 metric over multiple years may or may not be desirable as a matter of policy, the decision to expand the averaging period must be accompanied by lowering the level of the standard in order to account for the fact that a longer averaging period can mask unacceptable one-year effects. If EPA is determined to recommend a three-year averaging time, it must reduce the level of the standard accordingly.

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Thank you for the opportunity to provide comments on EPA's External Review Draft of the Policy Assessment for the Ozone National Ambient Air Quality Standards. If you have any questions about our submission, please reach out to Alan Masinter at amasinter@catf.us.

Sincerely,

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