January 27, 2021

Brad Frost,
Office of Community Relations,
Illinois Environmental Protection Agency,
1021 North Grand Ave. East P.O. Box 19506,
Springfield, IL

RE: Wildfire Exceptional Events Demonstration for Ground-Level Ozone in the Chicago 2008 Ozone Nonattainment Area

Dear Mr. Frost:

Environmental Law & Policy Center (ELPC), Respiratory Health Association (RHA), Illinois Environmental Council (IEC), and Earthjustice appreciate the opportunity to comment on the *Wildfire Exceptional Events Demonstration for Ground-Level Ozone in the Chicago 2008 Ozone Nonattainment Area.* Illinois EPA's draft Demonstration Document proposes to find that the June 18 and 19, 2020 ozone readings at the Northbrook air quality monitor should be ignored for purposes of determining the Chicago area's compliance with the 2008 ozone National Ambient Air Quality Standards (NAAQS) of 75 ppb because they are asserted to be "exceptional events" influenced by smoke from wildfires in Arizona.

ELPC, RHA, IEC, and Earthjustice are concerned that (1) Illinois EPA has not made the regulatory significance and practical effects of an exceptional event concurrence from EPA sufficiently clear to the public; and (2) the Draft Demonstration Document does not appear to adequately establish that the ozone concentrations would not have violated the NAAQS on those two days but-for the influence of wildfire smoke. Therefore, we request that Illinois EPA clarify to the public whether redesignation to attainment under the 2008 ozone NAAQS will result in foregone emissions reductions and that Illinois EPA better support the conclusion that the Northbrook monitor's ozone readings would not have exceed 75 ppb on June 19 and 20, 2020, but-for the influence of the wildfire.

Significance of the Exceptional Event

If U.S. EPA concurs that these are exceptional events, the Chicago area could potentially be redesignated as attainment for the 2008 ozone standards. If not, the area would miss its July 20, 2021 deadline for attaining the NAAQS. Missing that deadline would result in the area being re-classified from "serious" to "severe" nonattainment, which would trigger additional regulatory requirements.

Regardless of whether U.S. EPA concurs that these two days were exceptional events and redesignates the Chicago area to attainment for the 2008 ozone NAAQS, monitoring data from 2018–2020 shows that the Chicago area remains in nonattainment for the 2015 ozone NAAQS, which have a level of 70 ppb. The area is therefore likely to be reclassified from "marginal" to "moderate."

While the Chicago area will therefore remain nonattainment regardless of whether U.S. EPA concurs in these exceptional events, we are concerned that the practical, on-the-ground difference will be between "severe" nonattainment under the 2008 standard and "moderate" nonattainment under the 2015 standard was not well-explained to public.

Here are some of the problems and consequences:

1. Different categories of nonattainment trigger different regulatory requirements. We understand that several of the requirements for "severe" areas are already in place in Chicago because of previous "severe" nonattainment designations under older ozone standards. But **a reclassification to "severe" would also trigger additional requirements** beyond those currently in place or that would be required under only "moderate" nonattainment for the 2015 standard. First, the threshold to qualify as a "major source" in a "severe" area would be only 25 tons of emissions per year, compared to the current 50 tons per year for "serious," or 100 tons per year for "moderate." Second, as a "severe" nonattainment area under the 2008 standard, the Chicago area would have to show a 9% rate of progress, and as a "moderate" nonattainment area under the 2015 standard, it would have to show a 15% rate of progress. But these percentages cannot be directly compared because they are relative to different baseline emissions years—2011 for the 2008 standard and 2017 for the 2015 standard.

2. As recently reported in the news media, since November 2020 **the Illinois Secretary of State has not been enforcing the vehicle emissions testing requirement** for vehicle registration renewals. This testing is a requirement of Illinois EPA's federally-approved State Implementation Plan for ozone. We understand that the Secretary of State will begin enforcing the requirement again in March 2021, and that vehicles for which the registration was renewed without an emissions test will be recalled in the future for testing. However, because the public has heard from these news reports that there are no consequences for skipping emissions tests until the Secretary of State restarts testing and because vehicles skipping tests will not be tested until next year, more excessively polluting vehicles will be on the roads for many months to come.

3. Our organizations are also concerned that **there may be higher than realized emissions of ozone-forming NOx in the Chicago area because of the possibility of widespread tampering with NOx controls on diesel trucks.** In Spring 2020, the Chicago area did not experience the same decrease in air pollution due to Covid-19 restrictions that many other areas saw; a *Chicago Tribune* article notes that one possible explanation for the continued pollution is the large amount of diesel engine traffic through Chicago, including freight delivery vehicles.[1]

[1] Michael Hawthorne, *Many Cities Around the Globe Saw Cleaner Air After Being Shut Down for COVID-19. But Not Chicago*, Chicago Tribune, May 14, 2020, https://www.chicagotribune.com/news/environment/ct-met-covid-chicago-air-quality-20200514-rqam273qqfbmnfsyn3vzm4f45e-story.html.

The Chicago Metropolitan Agency for Planning estimates that a quarter of all freight in the nation passes through metropolitan Chicago,[2] and as the Covid-19 pandemic drags on, there has been an increased volume of online shopping and package delivery across the country. U.S. EPA recently released a report on tampering with NOx emissions controls on diesel pickup trucks, estimating that there were 18,000 trucks with defeated NOx controls on the road in Illinois from 2009–2019, resulting in nearly 18,700 tons of excess NOx emissions.[3] While U.S. EPA has not yet released any similar analysis of tampering with NOx controls on larger diesel trucks like those used to move commercial freight, the emission control systems on those larger trucks are very similar in function, so it remains possible that there could be similar widespread noncompliance.

4. U.S. EPA has not finished its actions in response to the D.C. Circuit's remand[4] of the designations for several counties in the Chicago area under the 2015 ozone standard: McHenry County, IL, originally designated attainment; Kenosha County, WI, partially designated attainment; and Porter County, IN, originally designated attainment. Until it is known whether these areas will now be included in the nonattainment area for the 2015 standard, it remains possible that redesignation under the 2008 standard will result in a geographically smaller nonattainment area, so that no nonattainment area restrictions apply in those counties or partial counties.

Without a clearer understanding of the on-the-ground differences between the "severe" and "moderate" nonattainment designations, and without more information about how Illinois will remedy the missed vehicle emissions tests or the prevalence of tampering with NOx emissions controls on diesel trucks, the public is left to wonder if redesignation to attainment under the 2008 standard may lead to foregone emissions reductions, despite the Chicago area's continued nonattainment under the 2015 standard.

Exceptional Events Regulatory Background

The Clean Air Act authorizes the U.S. EPA to promulgate regulations allowing for the exclusion of air monitoring data influenced by "exceptional events" from regulatory determination, including determinations on whether an area has attained the NAAQS. 42 U.S.C. § 7619(b). The statute provides that in promulgating regulations, the EPA must follow "the principle that protection of public health is the highest priority." *Id.* § 7619(b)(3)(A). The statute also states the regulations must, at a minimum, provide that:

> a clear causal relationship must exist between the measured exceedances of a national ambient air quality standard and the exceptional event to demonstrate that the exceptional event caused a specific air pollution concentration at a particular air quality monitoring location

Id. § 7619(b)(3)(A).

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[2] *Freight*, CMAP, https://www.cmap.illinois.gov/mobility/freight; *On to 2050 Draft Plan: Maintain the Region's Status as North America's Freight Hub*, CMAP, https://www.cmap.illinois.gov/2050/draft/mobility/freight.

[3] *Tampered Diesel Pickup Trucks: A Review of Aggregated Evidence from EPA Civil Enforcement Investigations*, at 16, https://www.epa.gov/sites/production/files/2021-01/documents/epaaedletterreportontampereddieselpickups.pdf.

[4] The court remanded these and other designations to EPA in a lawsuit brought by petitioners including RHA, ELPC, the City of Chicago, and the State of Illinois. *Clean Wisconsin v. E.P.A.*, 964 F.3d 1145 (D.C. Cir. 2020).

The regulations promulgated by EPA on exceptional events clearly state:

> A State, federal land manager or other federal agency may request the Administrator to exclude data showing exceedances or violations of any national ambient air quality standard that are directly due to an exceptional event from use in [listed regulatory determinations] by demonstrating to the Administrator's satisfaction that such event caused a specific air pollution concentration at a particular air quality monitoring location.

40 C.F.R. § 50.14(a)(1)(ii).

Both the governing statute and the regulation, therefore, make clear that a state must establish a causal connection between the exceptional event and the "exceedance," "violation," or "specific air pollution concentration." In other words, a state must show not just that the exceptional event caused *higher* pollution levels, but that the exceptional event caused pollution levels to exceed the NAAQS when they otherwise would not have.

EPA has also issued a *Guidance on the Preparation of Exceptional Events Demonstrations for Wildfire Events that May Influence Ozone Concentrations*.[5] This *Guidance* states that:

> The EPA reviews exceptional events demonstrations on a case-by-case basis using a weight of evidence approach considering the specifics of the individual event. This means the EPA considers all relevant evidence submitted with a demonstration or otherwise known to the EPA and qualitatively "weighs" this evidence based on its relevance to the Exceptional Events Rule criterion being addressed, the degree of certainty, the persuasiveness, and other considerations appropriate to the individual pollutant and the nature and type of event before acting to approve or disapprove an air agency's request to exclude data.

Guidance, p. 3.

Illinois EPA's Draft Exceptional Event Demonstration Document

The Illinois draft Demonstration Document provides extensive data and charts that appear to demonstrate that the smoke from the Arizona wildfires reached the Northbrook monitor on June 19 and 20, 2020 and may have led to a higher ozone reading than would have occurred without the smoke. What the document does not so clearly establish, however, is that the monitor would not have registered exceedances of the NAAQS on those dates without the influence of the wildfire smoke.

The draft Demonstration Document seems to acknowledge as much, saying:

> Although the meteorological conditions that existed during the event could have potentially caused elevated ozone at usual summer season levels without the increased burden of the additional wildfire-related precursor emissions, the influence of the Arizona wildfire smoke plume emissions caused significant additional impact that elevated ozone levels beyond normal expectations. As the

[5] Sept. 16, 2016, https://www.epa.gov/sites/production/files/2018-10/documents/exceptional_events_guidance_9-16-16_final.pdf.

> smoke plume aged and mixed with anthropogenic NOx, ozone concentrations accumulated to levels likely not possible without the smoke.

Draft Demonstration Document, p. 69.

We understand that the kind of modeling that would be required to show the contribution of wildfire smoke to the ozone concentrations on those two days may be challenging. Without such modeling, however, Illinois is apparently relying primarily on its similar day analysis and data showing ozone levels on those days were on the higher end of historic readings to show that wildfire smoke not only contributed to ozone formation, but contributed significantly enough that, but-for the smoke, the NAAQS would not have been exceeded at the Northbrook monitor.

The Draft Demonstration Document establishes that the ozone readings at the Northbrook monitor on June 18 and 19, 2020, 80 ppb and 82 ppb, were the second and third highest readings at that monitor in 2020 and were above the 99th percentile of readings at that monitor over a five-year period. Draft Demonstration Document, pp. 27–30. But, as the document acknowledges, these ozone concentrations "do not appear to be unprecedented." *Id.* at 30. In fact, the Northbrook monitor experienced another reading of 82 ppb on June 5, 2020 which Illinois EPA has not asserted was affected by wildfire smoke or any other exceptional event.

Illinois's Similar Day Analysis compares the ozone level on June 19, 2020 to the ozone levels on four other days that were identifies as "similar" based on their temperature, wind speed, wind direction, and barometric pressure. The document states that "[f]rom the list of potential days, four were selected as having the closest comparison in each of meteorological parameters to June 19, 2020." Draft Demonstration Document, p. 60. The document does not make clear:

1. Why both days were not analyzed.
2. Why, if only one day was to be analyzed, June 19 was chosen.
3. How many potential similar days were originally identified based on the stated meteorological parameters and what criteria were used to winnow the larger list down to only four comparator days.

Other states' exceptional events demonstrations have sought to establish the but-for causation of 2016 ozone exceedances by comparing the observed ozone readings with the NOAA CMAQ Ozone model forecasts, which predicated ozone levels but did not account for the impacts of wildfire smoke.[6] Illinois EPA staff indicated during an informal meeting that the NOAA CMAQ forecasts for 2020 *already included* the wildfire smoke in its model (unlike in 2016), so Illinois did not have a set of modeling or forecasts without the smoke against which it could compare the observed ozone levels. If states lack the resources or modelling capacity to definitively show that an exceptional event caused an exceedance of the ozone NAAQS (rather than just leading to higher exceedances than would otherwise occur), they should clearly state so and ask U.S. EPA to better supporting states' modelling ability.

[6] Maryland Dept. of the Environment, *State of Maryland Exceptional Event Demonstration and Analysis of the May 2016 Fort McMurray, Alberta Canada Wildfire and its Impact on Maryland's Air Quality on May 25 and 26, 2016*, October 2017, https://www.epa.gov/sites/production/files/2018-07/documents/mde_may_25_26_ee_demo.pdf; Ohio EPA, *May 2016 Canadian Wildfire Ozone and $PM_{2.5}$ Exceptional Event Demonstration*, October 2017, https://epa.ohio.gov/portals/27/SIP/ozone/May_2016_exceptional_event_final.pdf.

In Maryland's demonstration document, the state examined the NOx/ozone ratio to show that the high ozone levels were due to smoke-influenced ozone production, not emissions from upstream electric generating units. In Ohio's Demonstration Document, the state examined electric generating unit NOx emissions on the exceptional event days. Illinois did not similarly attempt to demonstrate that the increased ozone levels were not the result of increased nearby emissions. Some explanation of nearby emissions, or an explanation of why they were not considered, should be included.

It would be contrary to the Clean Air Act to allow a state to demonstrate an exceptional event without showing that the NAAQS would not have been exceeded but-for the exceptional event. If a state must only show that a wildfire *contributed* to higher ozone levels, an 82 ppb reading could be excluded from consideration even if that day's ozone concentration would have been 80 ppb without the influence of the wildfire.

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ELPC, RHA, IEC, and Earthjustice appreciate Illinois EPA's consideration of our comments. We respectfully request that Illinois EPA (1) clarify to the public whether redesignation to attainment under the 2008 ozone NAAQS will result in foregone emissions reductions; and (2) better support the conclusion that the Northbrook monitor's ozone readings would not have exceed 75 ppb on June 19 and 20, 2020, but-for the influence of the wildfire. In closing, we urge Illinois EPA not to lose sight of the reality that Illinois residents are still breathing unhealthy air and that it will take continued effort to bring the Chicago area into attainment with the 2015 ozone standard.

Respectfully,

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