Mid-Atlantic/Northeast Visibility Union
MANE-VU

Reducing Regional Haze for Improved Visibility and Health

89 South Street, Suite 602 Boston, MA 02111
617-259-2005 otcair.org/manevu

June 29, 2020

Mr. Andrew Wheeler, Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Attention: Docket ID No. EPA-HQ-OAR-2015-0072

RE: *Review of the National Ambient Air Quality Standards for Particulate Matter*

Dear Administrator Wheeler:

The Mid-Atlantic/Northeast Visibility Union (MANE-VU) appreciates the opportunity to comment on the United States Environmental Protection Agency's (EPA's) proposed action, *Review of the National Ambient Air Quality Standards for Particulate Matter* [85 Fed. Reg. 24094-24144 (April 30, 2020)] (hereinafter, the Proposed Action). MANE-VU is the regional visibility planning organization of the air agencies in the Mid-Atlantic and Northeast, and includes eleven states and the District of Columbia (the States), as well as two tribal nations. It provides technical resources for multi-pollutant air quality planning and coordinates regional haze planning activities to help its members reduce visibility impairment at Class I areas in the MANE-VU region in furtherance of achieving national visibility goals in EPA's Regional Haze Rule.

MANE-VU recognizes EPA staff's significant effort in the current review of the particulate matter (PM) National Ambient Air Quality Standards (NAAQS), as reflected in the preparation of an almost 2,000 page Integrated Science Assessment and a Policy Assessment of more than 530 pages. However, in light of the inadequate NAAQS review process leading up to this proposal, MANE-VU urges the EPA Administrator to withdraw his decision in the Proposed Action to retain the NAAQS for particulate matter less than 2.5 microns ($PM_{2.5}$) without revision. A new proposal should include a more robust process that fully addresses the Agency's statutory requirements to promulgate primary NAAQS that protect public health with an "*adequate margin of safety*" and secondary NAAQS that "*protect public welfare from any known or anticipated adverse effects*" (Clean Air Act, 42 U.S.C. §7409(b)).

In issuing a new $PM_{2.5}$ NAAQS proposal, MANE-VU encourages EPA to strongly consider the recommendations of the Independent Particulate Matter Review Panel (IPMRP). The 20 members of the IPMRP, who had been members of the disbanded Clean Air Scientific Advisory Committee (CASAC) PM Review Panel, have expertise in a wide range of disciplines necessary for a

thorough review of the PM NAAQS. Seven of the IPMRP members also previously served on the chartered CASAC, three members had chaired CASAC review panels, and one was a former CASAC chair. Including additional expertise and experience would be more consistent with past $PM_{2.5}$ NAAQS reviews, for example, as was done in 2012.

At a meeting in October 2019, which was conducted according to CASAC procedures, the IPMRP reviewed EPA's draft Policy Assessment (PA) for the PM NAAQS and generated a consensus report of their findings.[1] **The IPMRP recommendations included the following:**

- The annual Primary $PM_{2.5}$ NAAQS should be revised to a level between 10 micrograms per cubic meter ($\mu g/m^3$) and 8 $\mu g/m^3$.
- The 24-hour Primary $PM_{2.5}$ NAAQS should be revised to a level between 30 $\mu g/m^3$ and 25 $\mu g/m^3$ to protect public health protection in locations where the 24-hour standard, and not the annual standard, is controlling.
- Based on available evidence regarding visibility effects, and to be requisite to protect public welfare, the annual secondary standard should be revised to a level at least equal to that of the revised primary annual $PM_{2.5}$ standard.
- The current 24-hour secondary standard is also not adequate to protect against visibility effects. The IPMRP provided detailed recommendations regarding alternative indicators, averaging times, forms, and levels that should be considered by EPA in a revised PA.

In keeping with our organization's mission, MANE-VU's comments will focus on the need to promulgate secondary $PM_{2.5}$ NAAQS that are adequate to protect public welfare and that facilitate achievement of visibility goals. The IPMRP report noted that in the previous two PM NAAQS reviews, CASAC recommended combinations of indicator, averaging time, level and form that are considerably more protective than the current NAAQS. Specifically, the report notes that:

> In comments during the 2006 review, CASAC also concluded that the current 35 $\mu g/m^3$ daily standard was inadequate to protect visibility, and recommended a secondary NAAQS with a $PM_{2.5}$ mass indicator, 4 to 8-hour daylight averaging time, 20 to 30 $\mu g/m^3$ level, and 92nd to 98th percentile form (Hopke, 2004; Henderson, 2006). Note also that CASAC comments during the 2012 review reiterated that the current NAAQS was inadequate for protecting visibility, observing that "*the levels of the current $PM_{2.5}$ and PM_{10} standards are too high, and their averaging times are too long, to guard against levels of visual air quality considered adverse over the short (hour or less) time periods during which changes in visual air quality are perceptible.*" CASAC further noted that a form as lenient as the 90th (to 98th) percentile only be considered if the averaging time was for the single worst hour of the day, recommending the 95th to 98th percentile range if combined with multi-hour, sub-daily daylight averaging time.[2] (italics added)

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[1] Letter from Christopher Frey, *et al.*, to EPA Administrator Andrew Wheeler dated October 22, 2019, Docket ID No. EPA–HQ–OAR–2015–0072, Subject: Advice from the Independent Particulate Matter Review Panel (formerly EPA CASAC Particulate Matter Review Panel) on EPA's Policy Assessment for the Review of the National Ambient Air Quality Standards for Particulate Matter (External Review Draft – September 2019). Available at: https://yosemite.epa.gov/sab/sabproduct.nsf/81DF85B5460CC14F8525849B0043144B/$File/Independent+Particulate+Matter+Review+Panel+Letter+on+Draft+PA.pdf.

[2] *Ibid.* Page B-35.

The IPMRP report also discusses recent developments that provide further support for a revised secondary standard, including:

- Recent research on the economic effect of scenic views on property values;
- New analyses of visibility preference indices which call into question whether a single level of PM light extinction is appropriate for protecting visibility in all urban and rural areas in all regions of the country; and
- Direct light extinction methods that, if used as an alternative to the current filter-based, calculated method, would allow for an hourly or multi-hour daylight-only averaging time in the place of the current 24-hour averaging time.

States in the MANE-VU region are in various stages of preparing and submitting State Implementation Plans (SIPs) for the second planning period of the Regional Haze Rule (RHR). As required by the RHR, states have established Reasonable Progress Goals (RPGs) for the second planning period extending to 2028. Although the RPGs themselves are not directly enforceable, they are essential in helping states make incremental progress towards the overarching RHR goal of achieving natural conditions at Class I areas by 2064.

Table 1 shows 5-year average haze indices (in deciviews, or dv) for the following metrics for Class I areas in and near MANE-VU, which are used to evaluate progress towards those goals:[3]

- The 2000-2004 Baseline for the 20% Clearest Days,
- The 2000-2004 Baseline for the 20% Most Impaired Days,
- The 2014-2018 Current Conditions for the 20% Clearest Days, and
- The 2014-2018 Current Conditions the 20% Most Impaired Days

These values are compared to the 2028 RPGs for the 20% Clearest Days and the 20% Most Impaired Days and the 2028 Uniform Rate of Progress (URP) for the 20% Most Impaired Days. For all of the Class I areas listed in Table 1, the Current Conditions for the 20% Most Impaired Days are below the corresponding 2028 URP levels. This provides for some optimism that the MANE-VU Class I areas (and those near MANE-VU) are on track to meet the goal of Natural Conditions by 2064. However, Table 1 also shows the following less optimistic data:

For the 20% Clearest Days, current conditions are above the 2028 RPGs for:

- Five of the seven Class I areas in MANE-VU and
- Two of the four Class I areas near MANE-VU.

For the 20% Most Impaired Days, current conditions are above the 2028 RPGs for:

- All seven Class I areas in MANE-VU and
- All four Class I areas near MANE-VU.

[3] Because of their proximity to each other, some of the Class I areas share an Interagency Monitoring of Protected Visual Environments (IMPROVE) monitor. These include Great Gulf/Presidential Range-Dry River, Moosehorn/Roosevelt Campobello, and Dolly Sods/Otter Creek Wilderness Areas (see Table 1).

Figures 1 through 8 show annual haze indices, in dv, for the 20% Most Impaired Days at the Class I areas in and near MANE-VU. For all of those Class I areas, a distinct downward trend in haze indices (i.e., improvement in visibility) is evident for the years between approximately 2005 to 2015. However, in more recent years (e.g., 2016 to 2018), this trend has leveled off for some of the Class I areas (e.g., Acadia National Park and James River Face Wilderness) and has shown a rise at other Class I areas (e.g., The Great Gulf/Presidential Range-Dry River, Lye Brook, Moosehorn/Roosevelt-Campobello, and Dolly Sods/Otter Creek Wilderness Areas). Also shown on each figure is the level of the 2064 Natural Conditions goal for the 20% Most Impaired days for that Class I area. The natural conditions goal year of 2064 is a very long planning horizon, but nevertheless, downward trends in annual haze indices must be maintained if these goals are to be met.

As is well-documented in EPA's Proposed Action and supporting materials, $PM_{2.5}$ in the atmosphere is efficient at light scattering, and therefore an important contributor to regional haze and visibility impairment. Measurement of current conditions above the 2028 20% Most Impaired Day RPGs for all of the Class I areas in and near MANE-VU and the trends in annual haze indices that have leveled off, or have even gone up, at many of these Class I areas in recent years call into question the adequacy of the existing secondary $PM_{2.5}$ NAAQS for providing the protection necessary to achieve visibility goals.

In conclusion, MANE-VU respectfully requests that EPA withdraw the Proposed Action, and re-issue a new proposal to set the annual secondary $PM_{2.5}$ NAAQS at a level at least as stringent as the annual primary NAAQS. MANE-VU also requests that EPA reevaluate both the 24-hour and annual secondary NAAQS to determine whether more stringent standards are necessary to fulfill the Agency's statutory mandate to protect public welfare. That analysis should include a careful review of the combinations of indicator, averaging time, level and form recommended by previous CASACs and the additional information identified by the IPMRP, as discussed above. Adoption of more stringent secondary NAAQS for $PM_{2.5}$ will help ensure that incremental progress is made towards meeting the 2028 RPGs and the required 2064 goal of natural conditions at MANE-VU's Class I areas.

Sincerely,

Peter Walke
Commissioner, Vermont Department of Environmental Conservation
MANE-VU Chair

cc: MANE-VU Commissioners and Air Directors
U.S. EPA Regional Administrators for Regions I, II, and III
MANE-VU Technical Support Committee

Table and Figures

Table 1: Baseline Conditions, Current Conditions, Uniform Rate of Progress (URP), and Reasonable Progress Goals (RPG) for Class I Areas in and near MANE-VU (in deciviews)

Class I Area	State	20% Clearest Days			20% Most Impaired Days			
		Base Line (2000-04)	Current (2014-18)	RPG (2028)	Baseline (2000-04)	Current (2014-18)	URP (2028)	RPG (2028)
Acadia	ME	8.78	6.58	6.33	22.01	14.54	17.36	13.35
Moosehorn	ME	9.16	6.59	6.45	20.65	13.32	16.38	13.12
Roosevelt-Campobello	ME/NB							
Great Gulf	NH	7.65	4.99	5.06	21.88	13.07	17.04	12.00
Presidential Range-Dry River	NH							
Lye Brook	VT	6.37	5.03	3.86	23.57	14.73	18.23	13.68
Brigantine	NJ	14.33	11.26	10.47	27.43	19.31	20.74	17.97
Dolly Sods	WV	12.28	6.68	7.27	28.29	17.65	20.54	15.09
Otter Creek	WV							
James River Face	VA	14.21	9.47	9.36	28.08	17.89	20.64	15.31
Shenandoah	VA	10.96	6.85	6.83	28.32	17.07	20.80	14.25

Notes:

1) Source of data: *Mid-Atlantic/Northeast U.S. Visibility Data (2nd RH SIP Metrics)*, Maine Department of Environmental Protection, May 1, 2020 Revision
2) NB = New Brunswick, Canada
3) Because of physical proximity, the following Class I area pairs share an IMPROVE monitor: Moosehorn/Roosevelt-Campobello, Great Gulf/Presidential Range-Dry River, and Dolly Sods/Otter Creek.

Figure 1: Annual 20% Most Impaired Day Haze Indices for Acadia, 2000-2018

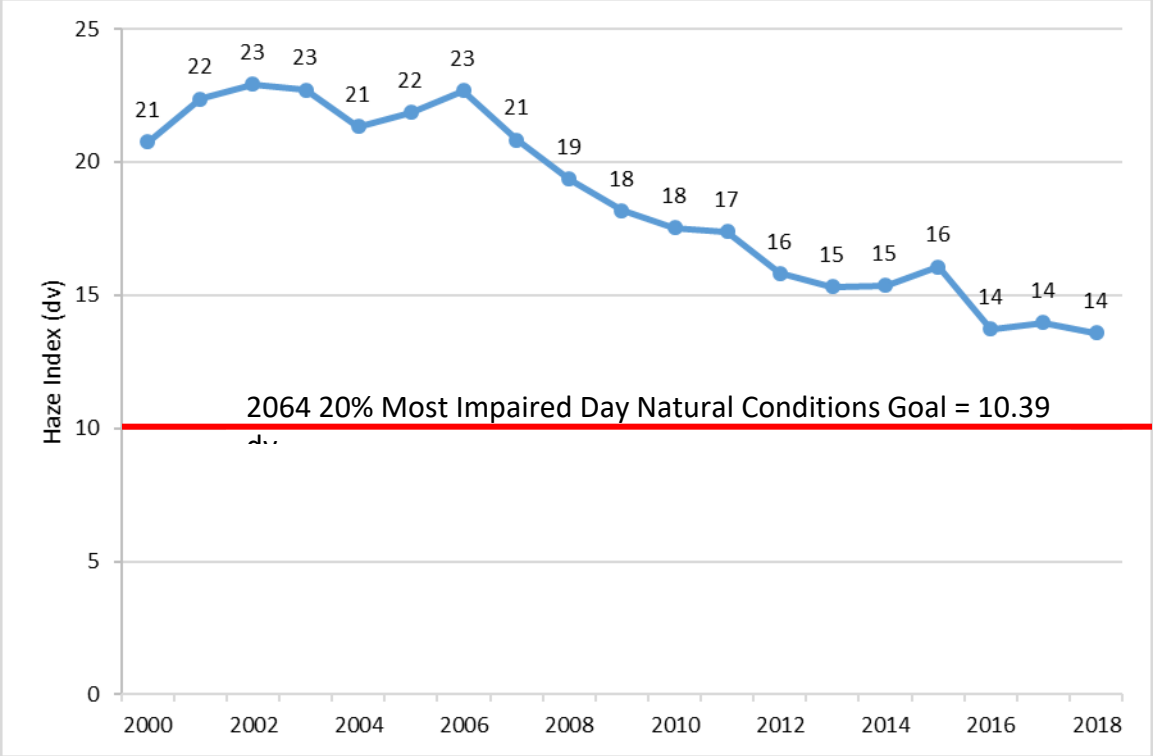

Figure 2: Annual 20% Most Impaired Day Haze Indices for Moosehorn/Roosevelt-Campobello, 2000-2018

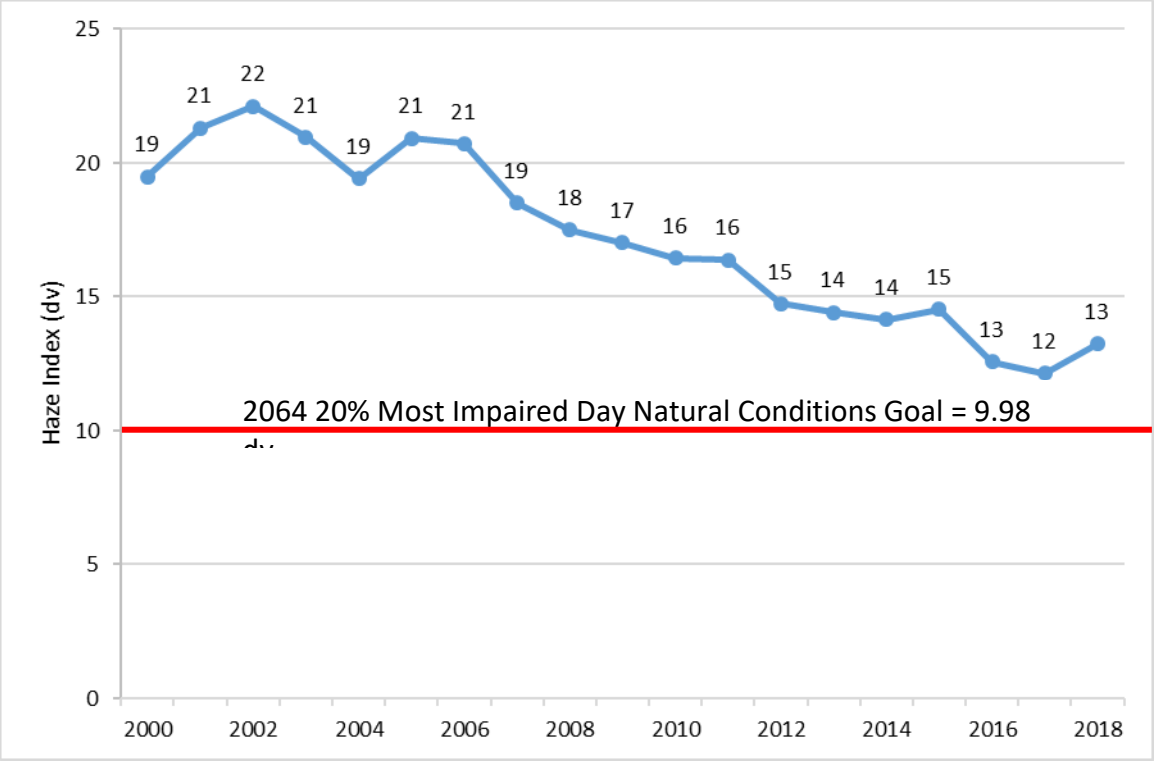

Figure 3: Annual 20% Most Impaired Day Haze Indices for Great Gulf/Presidential Range-Dry River, 2001-2018

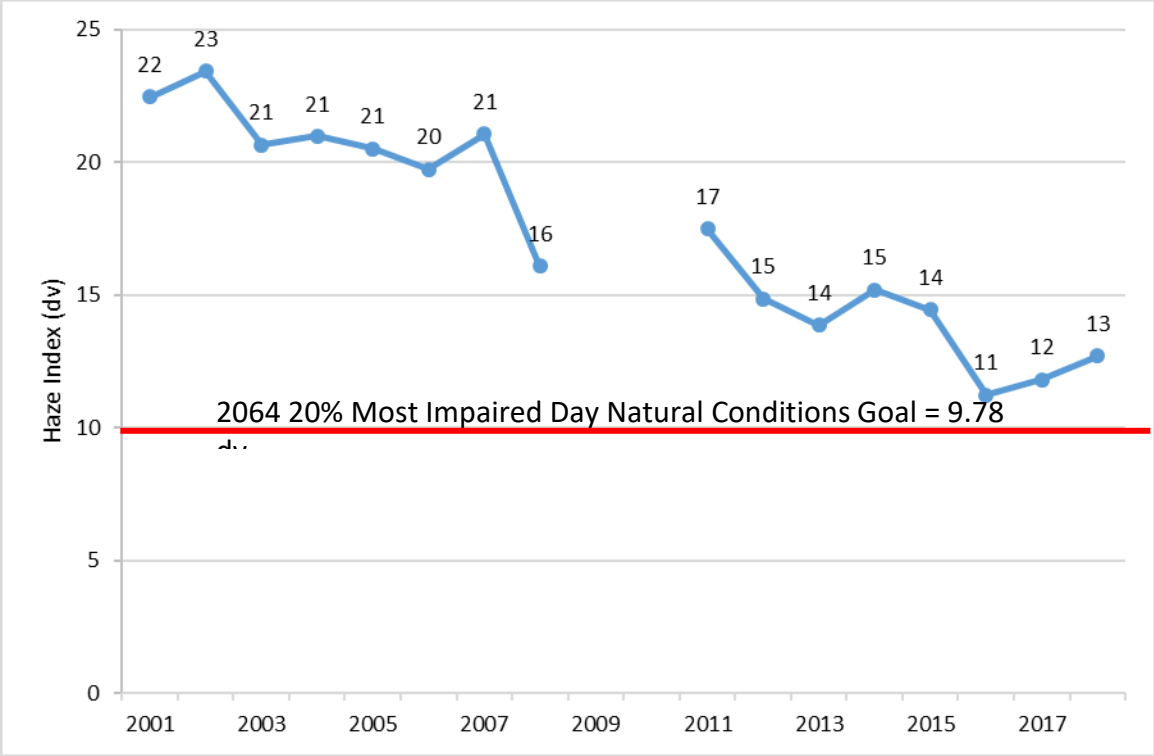

Figure 4: Annual 20% Most Impaired Day Haze Indices for Lye Brook, 2000-2018

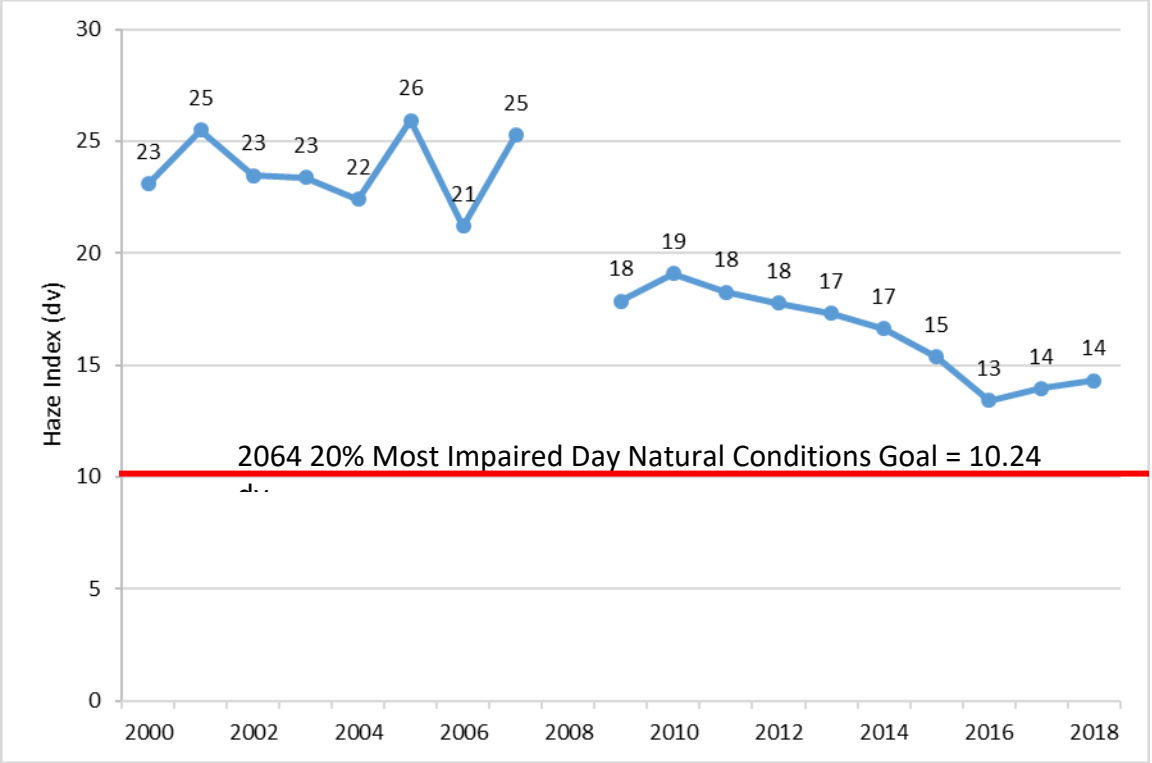

Figure 5: Annual 20% Most Impaired Day Haze Indices for Brigantine, 2000-2018

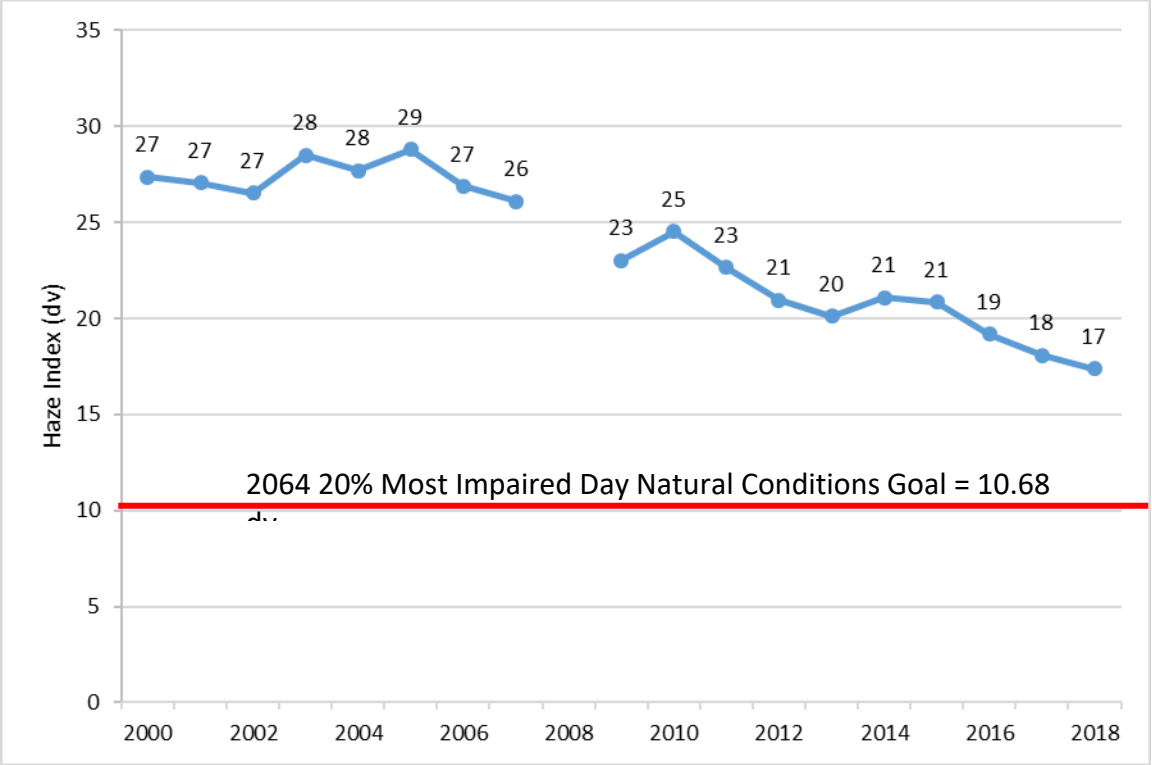

Figure 6: Annual 20% Most Impaired Day Haze Indices for Dolly Sods/Otter Creek, 2000-2018

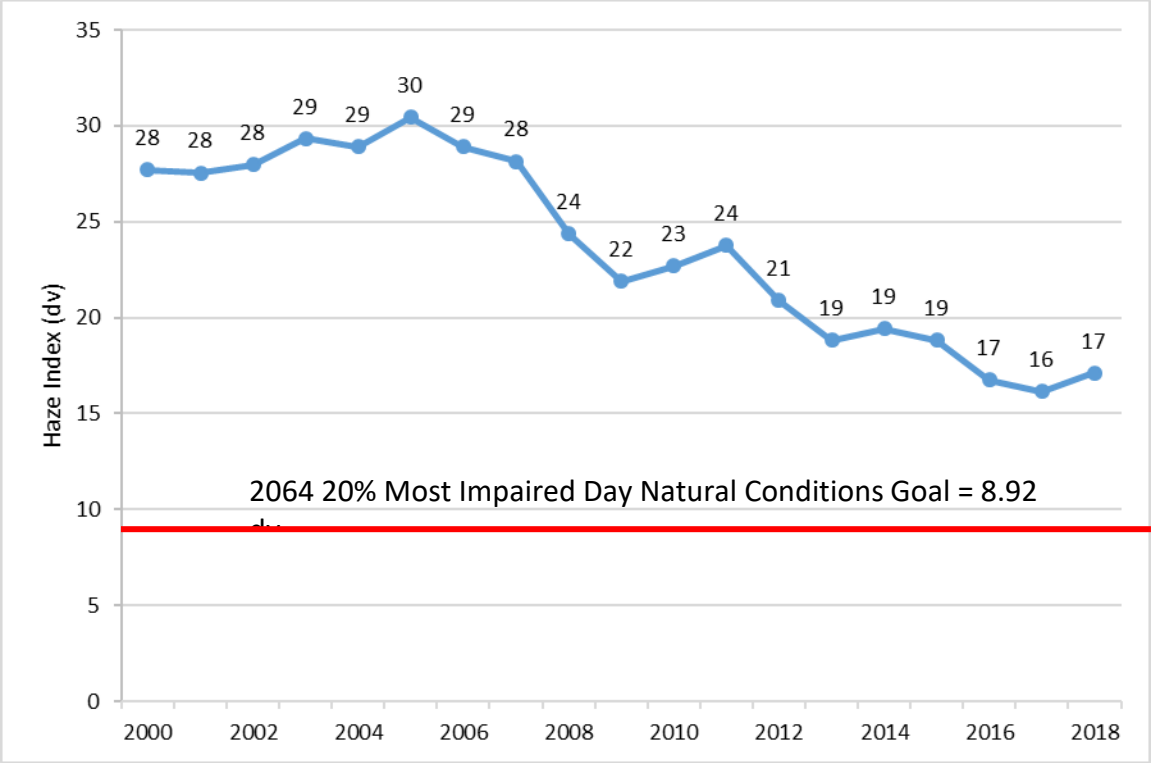

Figure 7: Annual 20% Most Impaired Day Haze Indices for James River Face, 2001-2018

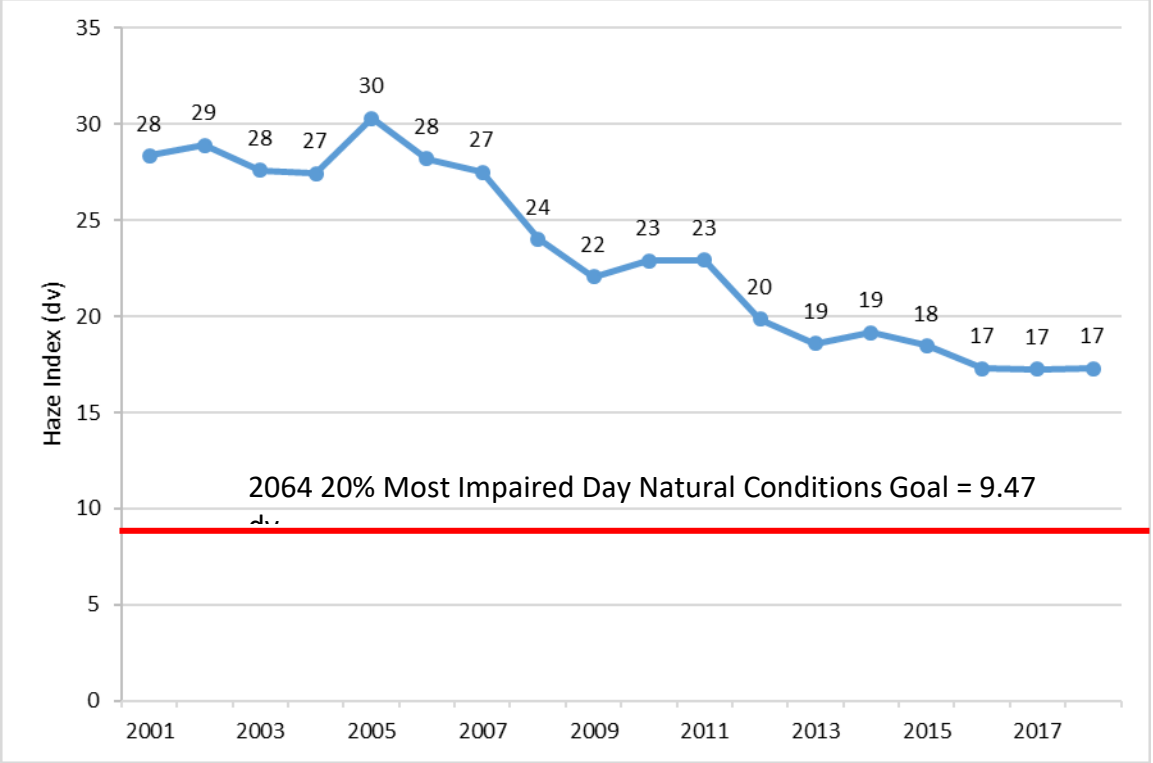

Figure 8: Annual 20% Most Impaired Day Haze Indices for Shenandoah, 2000-2018