

## **Appendix F-4c**

### **NC's Comments on New Jersey's Draft RH SIP**

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October 22, 2019

Mr. Francis Steitz, Air Quality Division Director  
New Jersey Department of Environmental Protection  
Attn: REGIONAL HAZE SIP 2018-2028  
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P.O. Box 420  
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Subject: New Jersey's Proposed Regional Haze SIP (2018-2028)

Dear Mr. Steitz:

The North Carolina (NC) Division of Air Quality (DAQ) appreciates the opportunity to review New Jersey's (NJ) proposed *State Implementation Plan (SIP) For Regional Haze*, August 2019. This letter provides the DAQ's comments on NJ's proposed SIP.

### Background

NJ incorporated the Mid-Atlantic/Northeast Visibility Union (MANE-VU) Inter-RPO Ask in its proposed regional haze SIP.<sup>1</sup> The Inter-RPO Ask identifies NC as reasonably anticipated to contribute to visibility impairment in MANE-VU Class I areas including the Brigantine Wilderness Area (Brigantine). MANE-VU considered the results of a weight-of-evidence approach based on emissions (tons per year) divided by distance (kilometers) (Q/d) calculations, CALPUFF modeling, and HYSPLIT back trajectories to identify upwind states reasonably anticipated to contribute to visibility impairment at a MANE-VU Class I area. States that contributed  $\geq 2\%$  of the visibility impairment to a Class I area and had an average mass impact of over 1% (0.01 microgram per cubic meter), were identified for consultation, and included in the Inter-RPO Ask. Based on these results, MANE-VU concluded that its modeling and trajectory analyses appear to support NC as being a 2% contribution state.<sup>2</sup> Consequently, for NC, NJ modeled potential emissions reductions associated with the Inter-RPO Ask control measures and included the emissions reductions in the control case for defining the long-term strategy (LTS) and reasonable progress goals (RPGs) for 2028 for Brigantine.

The DAQ participated in the consultation calls MANE-VU held with states included in the Inter-RPO Ask. The DAQ also submitted comments documenting significant concerns with MANE-VU's methodologies used to determine that NC as reasonably anticipated to contribute to visibility impairment in MANE-VU Class I areas. The DAQ reviewed MANE-VU's responses to the DAQ's questions and

<sup>1</sup> Statement of the Mid-Atlantic/Northeast Visibility Union (MANE-VU) States Concerning a Course of Action in Contributing States Located Upwind Of MANE-VU Toward Assuring Reasonable Progress for the Second Regional Haze Implementation Period (2018-2028), August 25, 2017.

<sup>2</sup> Selection of States for MANE-VU Regional Haze Consultation (2018), MANE-VU Technical Support Committee, Sept. 5, 2017.



comments and believes that the technical questions the DAQ offered regarding the short-comings of MANE-VU's analysis were not adequately addressed by MANE-VU.<sup>3</sup> As articulated in the DAQ's comments on the Ask, the DAQ still believes that the MANE-VU methodologies resulted in inaccurate conclusions that emissions from NC are "reasonably anticipated" to contribute to visibility impairment in MANE-VU Class I areas. The DAQ has included its comments on the MANE-VU Inter-RPO Ask as an attachment to this letter, and requests that NJ consider these comments in its final regional haze SIP.

The following comments on the NJ SIP address (1) why NJ should not include in the LTS/RPG for Brigantine control measures identified in the MANE-VU Ask for upwind states such as NC, and (2) why the DAQ believes that NC is not "reasonably anticipated" to contribute to visibility impairment for Brigantine.

### **Long-Term Strategy (LTS) and Reasonable Progress Goals (RPG)**

As stated on pages 18 and 22-24 of NJ's proposed SIP, NJ identified NC as a state reasonably anticipated to contribute to visibility impairment at Brigantine and, therefore, included in the LTS/RPG for Brigantine control measures originating from the MANE-VU Inter-RPO Ask.<sup>4</sup> The DAQ strongly disagrees with the inclusion of the control measures for NC in the LTS/RPG for Brigantine because the DAQ has not agreed to adopt any of the measures and, for this reason, would be inconsistent with the regional haze rule and U.S. Environmental Protection Agency's (EPA) regional haze guidance.

Section 51.308(f)(2) of the Regional Haze Rule requires SIPs to include *...enforceable emissions limitations, compliance schedules, and other measures that are necessary to make reasonable progress as determined pursuant to (f)(2)(i) through (iv).*" With respect to consultation with upwind states, Section 51.308(f)(2)(ii)(A) of the rule requires that: *The state must demonstrate that it has included in its implementation plan all measures agreed to during state-to-state consultations or a regional planning process, or measures that will provide equivalent visibility improvement.*<sup>5</sup>

In addition, EPA's regional haze guidance document reinforces the need for a downwind and an upwind state to agree on control measures for the upwind state before the upwind state control measures are to be included in the downwind state's LTS/RPGs. Under Step 6 of EPA's guidance, in Footnote #80, EPA states that: *...If another contributing state has not yet even determined the measures that are necessary to make reasonable progress at the jointly affected Class I area, then the state with the Class I area must set the RPGs based on whatever measures that the contributing state has actually adopted to meet the requirements for the first implementation period and other CAA requirements. The state with the Class I area may not base its RPGs on speculation about what another state will do.*<sup>6</sup>

The DAQ has not agreed with NJ or any other MANE-VU state to include any control measures, including those included in the Inter-RPO Ask, in any LTS for setting RPGs for Brigantine or any other MANE-VU Class I Federal area. Therefore, the DAQ requests that NJ revise its LTS/RPG for Brigantine to exclude the control measures identified in the Inter-RPO Ask and NJ's proposed regional haze SIP. Should NJ decide to include the Inter-RPO Ask control measures for NC in the final SIP for Brigantine, doing so will be inconsistent with the requirements of Section 51.308(f)(2) of the regional haze rule because the measures will not be federally enforceable.

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<sup>3</sup> MANE-VU Regional Haze Consultation Report, July 27, 2018, MANE-VU Technical Support Committee.

<sup>4</sup> See Chapter 4 (Long-term Strategies (Asks)), Section 4.2 (The MANE-VU Inter-RPO "Asks") of the NJ's proposed SIP.

<sup>5</sup> 40 CFR § 51.308(f) - Regional haze program requirements, requirements for periodic comprehensive revisions of implementation plans for regional haze.

<sup>6</sup> Guidance on Regional Haze State Implementation Plans for the Second Implementation Period, EPA-457/B-19-003, August 2019.

**Upwind State Contributions to Brigantine**

The DAQ documented in its comments on the Inter-RPO Ask several technical concerns with the screening methodologies explaining why it is inappropriate for MANE-VU to use the results to draw any conclusions regarding NC’s contribution to visibility impairment in any of the MANE-VU Class I areas. Instead, the DAQ recommended that MANE-VU conduct state-of-the-art photochemical grid and source apportionment modeling to evaluate upwind state contributions to visibility impairment in Class I areas.

MANE-VU completed Community Multiscale Air Quality (CMAQ) photochemical grid modeling for 2011 and 2028 for regional haze but did not conduct zero-out runs to evaluate upwind state contributions to Brigantine and other MANE-VU Class I areas.<sup>7</sup> In addition, EPA and the Visibility Improvement - State and Tribal Association of the Southeast (VISTAS) recently completed separate regional haze modeling studies using the Comprehensive Air Quality Model with Extensions (CAMx) photochemical grid model. The following table compares the uniform rate of progress (URP) and the modeling results from each study for Brigantine in 2028 for the 20% most impaired days. The three modeling studies predict impacts below the URP for Brigantine in 2028. VISTAS modeling shows an impact that is 0.9 dv and 0.4 dv above the MANE-VU and EPA modeling results, respectively. The modeling results are reasonably close given the different modeling platforms and year of meteorology data used in these studies.

**Comparison of URP and Photochemical Grid Modeling of Visibility Impairment for Brigantine in 2028 for 20% Most Impaired Days**

Conditions	Deciviews
Uniform Rate of Progress for 2028 (EPA)	20.74
MANE-VU/OTC – CMAQ/2011 Meteorological Data	18.16
VISTAS – CAMx/2011 Meteorological Data	19.06
EPA – CAMx/2016 Meteorological Data	18.66

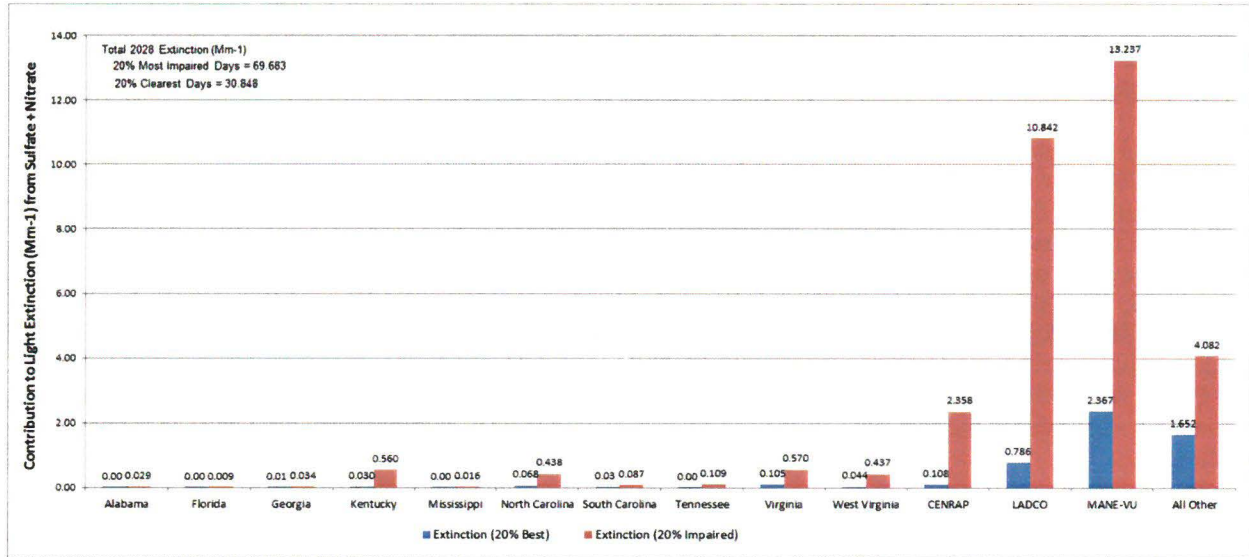
For each VISTAS state, VISTAS also conducted Particulate Matter Source Apportionment Technology (PSAT) source apportionment modeling for sulfate and nitrate to evaluate statewide contributions of emissions to visibility impairment in Class I areas. Sulfate and nitrate were evaluated because these two pollutants currently account for the majority of the visibility impairment associated with anthropogenic sources in the VISTAS and MANE-VU regions. Figure 1 shows the combined impact of sulfate and nitrate on visibility impairment for Brigantine in 2028. As these results show, NC’s total sulfate and nitrate contribution to visibility impairment in 2028 to Brigantine is 0.63% for the 20% most impaired days and 0.22% for the 20% clearest days.

Documentation of the VISTAS modeling and results is currently undergoing review by the VISTAS state and local agencies and tribal authorities. Although the modeling results are considered preliminary, VISTAS does not anticipate that the modeling results will change. Once finalized, VISTAS will make the modeling results and documentation available to the public.

Relative to the screening methodologies used by MANE-VU, photochemical grid and source apportionment models are regarded as superior to other techniques like Q/d and CALPUFF for determining statewide contributions because the models account for meteorological conditions and photochemistry over long distances that are not fully addressed by the screening methodologies. In addition, state contributions to visibility impairment in Class I areas should be calculated for 2028, not 2015, to allow states to coordinate regional haze planning with other regulatory programs including, but not limited to, the 2010 1-hour SO<sub>2</sub> National Ambient Air Quality Standard (NAAQS), the 2012 annual

<sup>7</sup> See Appendix C to NJ’s proposed regional haze SIP containing the document titled: *Ozone Transport Commission/Mid Atlantic Northeastern Visibility Union 2011 Based Modeling Platform Support Document October 2018 Update*, 2nd Version October 18, 2018.

PM<sub>2.5</sub> NAAQS, the 2015 8-hour ozone NAAQS, and the Mercury and Air Toxics Standards (MATS) rule.<sup>8</sup> This point is supported by EPA's regional haze guidance which recommends the use of 2028 year emissions for calculating baseline visibility impacts before selecting sources for further analysis.<sup>9</sup>



**Figure 1. Contribution of All Sources to Brigantine, NJ from Sulfate and Nitrate (Mm-1)**

The DAQ believes that use of photochemical and source apportionment models such as CAMx/PSAT provide a much more accurate estimate of statewide contributions to visibility impairment in Class I areas than the screening methodologies used by MANE-VU to identify contributing states. Given the VISTAS modeling results, NC's contribution to visibility impairment to Brigantine is well below the 2% threshold established by MANE-VU and; therefore; the DAQ requests that NC be removed from NJ's list of states considered to be reasonably attributing to visibility impairment at Brigantine.

### Conclusions

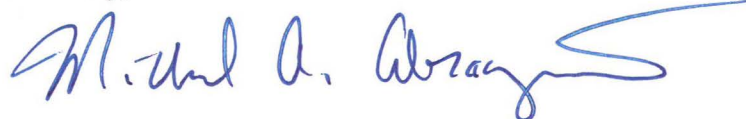
Based on the CAMx/PSAT modeling conducted by the VISTAS states, NC's statewide contribution to visibility impairment in the Brigantine is significantly below the 2% contribution threshold that the MANE-VU states used to identify upwind states as reasonably anticipated to contribute to visibility impairment in MANE-VU Class I areas. As the DAQ noted in its comments on the MANE-VU Inter-RPO Ask, the DAQ believes that MANE-VU's screening methodologies are flawed in several areas and overstate upwind contributions to downwind state Class I areas. The DAQ also strongly disagrees with NJ applying the MANE-VU Inter-RPO Ask control measures in the LTS/RPG for Brigantine as doing so would be inconsistent with the regional haze rule and guidance.

<sup>8</sup> EPA extended the deadline for states to submit their second-round regional haze SIPs from July 31, 2018 to July 31, 2021 to provide states the opportunity to coordinate development of regional haze SIPs with other federal regulatory programs. See *Protection of Visibility: Amendments to Requirements for State Plans*, Final rule, 82 FR 3117.

<sup>9</sup> Guidance on Regional Haze State Implementation Plans for the Second Implementation Period, EPA-457/B-19-003, August 2019. See Step 3(a) "Estimating baseline visibility impacts for source selection", page 17.

Thank you for the opportunity to comment on the Inter-RPO Ask. I hope that these comments are helpful, and I look forward to continuing to work with you and the MANE-VU states to develop reasonable regional haze SIPs. Please contact Randy Strait (randy.strait@ncdenr.gov) of my staff at 919-707-8721 if you have any questions regarding this matter.

Sincerely,



Michael A. Abraczinskas, Director  
Division of Air Quality, NCDEQ

MAA/rps

Attachment

cc: Michael Pjetraj, NCDAQ  
Randy Strait, NCDAQ

