



Richard E. Dunn, Director

Air Protection Branch

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November 24, 2020

Via email to: melissa.duff@ky.gov

Ms. Melissa Duff
Director, Division for Air Quality
Kentucky Department for Environmental Protection
300 Sower Blvd Fl 2
Frankfort, KY 40601-6571

Subject: Reasonable Progress Analyses for the Regional Haze Second Planning Period (2028)

Dear Ms. Duff,

The purpose of this letter is to request that you share your state's reasonable progress evaluations for sources within Kentucky that significantly contribute to visibility impairment in Class I federal areas (Class I areas) located within the State of Georgia. These Class I areas are the Cohutta Wilderness Area, Okefenokee Wilderness Area, and Wolf Island Wilderness. Georgia has a strong interest in improving air quality and visibility at these Class I areas and across the State.

As you know, consultation between states is a requirement of the Regional Haze Rule (RHR) located at 40 CFR Part 51, Subpart P – Protection of Visibility under 40 CFR 51.308(f)(2)(ii):

The State must consult with those States that have emissions that are reasonably anticipated to contribute to visibility impairment in the mandatory Class I Federal area to develop coordinated emission management strategies containing the emission reductions necessary to make reasonable progress.

As part of the Visibility Improvement – State and Tribal Association of the Southeast (VISTAS), the regional planning organization for the southeastern United States,¹ my staff within the Georgia Environmental Protection Division (EPD) have been working closely with your staff and expect to continue to do so. This collaborative approach to regional haze state implementation plan (SIP) development has been a highly productive endeavor. VISTAS states have leveraged internal resources throughout this process so that final regional haze plans will provide for significant visibility improvement by the end of this second planning period, 2028.

Below is a summary of the general process EPD followed to determine which sources in Kentucky may be contributing to visibility impairment at Georgia Class I areas in such a manner as to warrant a reasonable progress evaluation.

¹ <https://www.metro4-sesarm.org/content/vistas-regional-haze-program>

VISTAS initially used an Area of Influence (AoI) analysis to identify the areas and sources most likely contributing to poor visibility in Class I areas. The AoI analysis used the HYSPLIT Trajectory Model² to determine the origin of the air parcels affecting visibility within each Class I area. This information was spatially combined with emissions data to determine the pollutants, sectors, and individual sources that are likely to be contributing to the visibility impairment at each Class I area. VISTAS analyzed this information to determine that the pollutants and sector with the largest impact on visibility impairment were sulfur dioxide (SO₂) and nitrogen oxides (NO_x) from point sources.

Next, VISTAS states used the results of the AoI analysis to identify sources to “tag” for Particulate Matter Source Apportionment Technology (PSAT) modeling. PSAT modeling uses “reactive tracers” to apportion particulate matter among different sources, source categories, and regions. PSAT was implemented with the Comprehensive Air Quality Model with Extensions (CAMx) photochemical model to determine visibility impairment due to individual facilities. PSAT results showed that in 2028 the majority of anthropogenic visibility impairment at Class I areas continues to be from point source SO₂ and NO_x emissions.

Using the PSAT data, VISTAS states identified for reasonable progress analysis the sources shown to have a sulfate or nitrate impact on one or more Class I areas that is greater than or equal to 1.00% of the total sulfate plus nitrate point source visibility impairment on the 20% percent most impaired days for that Class I area. While no facilities in Kentucky have a nitrate impact greater than 1.00%, one facility in Kentucky has a sulfate impact greater than 1.00% on at least one of Georgia's Class I areas. The projected impacts from this facility has been the topic of informal communications between our respective planning staffs. Table 1 lists the Kentucky facility that has a sulfate impact greater than 1.00% and provides SO₂ emission rates used in the PSAT analysis for this facility.

Table 1: Kentucky Facilities with Greater Than 1.00% Sulfate Impact on Georgia Class I Areas.

Facility Name	Facility ID	Contribution to Visibility Impairment, Cohutta	Contribution to Visibility Impairment, Okefenokee	Contribution to Visibility Impairment, Wolf Island	2028 Projected SO ₂ Emissions (tpy)
Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	21145-6037011	1.44%	1.03%	< 1.00%	19,504.75

EPD requests that you share with us your reasonable progress evaluations for this facility when it is completed. Such evaluations could include updated 2028 emissions estimates, imposition of federally-enforceable SO₂ limitations such that the facility impacts to Georgia Class I areas are less than 1.00%, other analyses or application of guidance indicating that current controls are sufficient for reasonable progress in this round of planning, results of four-factor analyses as

² <https://www.ready.noaa.gov/HYSPLIT.php>

described in 40 CFR 51.308(f)(2)(i), or other facility-specific information you deem pertinent to the improvement of visibility impairment at the Cohutta Wilderness Area, Okefenokee Wilderness Area, and Wolf Island Wilderness. Please provide this information by December 31, 2020, so that it may be included in Georgia's consultation draft of the regional haze SIP for the second planning period.

Should your staff have any questions on this request or on Georgia's regional haze state implementation plan development, please contact Dr. James Boylan at (404) 363-7014 or James.Boylan@dnr.ga.gov. I look forward to continuing this collaboration both directly and through VISTAS.

Sincerely,

A handwritten signature in black ink that reads "Karen Hays". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Karen Hays, P.E
Chief
Air Protection Branch

cc: Rick Shewekah, Kentucky DEP (rick.shewekah@ky.gov)
James Boylan, Georgia EPD (james.boylan@dnr.ga.gov)
Dika Kuoh, Georgia EPD (dika.kuoh@dnr.ga.gov)