



Arkansas Environmental Support
425 West Capitol Avenue
A-TCBY-22D
Little Rock, AR 72203
Cell: 501-215-0024
Email: schiver@entergy.com
Stan Chivers, Air Lead
Arkansas Environmental Support

AR-22-007

VIA U.S. Mail and E-mail (airplancomments@adeq.state.ar.us)

April 28, 2022

Erika Droke
Arkansas Department of Energy and Environment
Division of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118

Re: Comments on the Proposed Arkansas Regional Haze Planning Period II State Implementation Plan

Dear Ms. Droke:

Entergy Services, LLC (Entergy) appreciates the opportunity to submit comments on behalf of Entergy Arkansas, LLC on the Arkansas Department of Energy and Environment, Division of Environmental Quality's (DEQ's) proposed *Arkansas Regional Haze Planning Period II State Implementation Plan* ("the proposed SIP"). Entergy Arkansas is an electric utility engaged primarily in the generation, purchase, transmission, distribution, and sale of electricity in portions of Arkansas. Entergy Arkansas provides electrical utility service to approximately 728,000 electric customers in the state. Entergy Arkansas co-owns and operates two facilities addressed in the proposed SIP: the White Bluff Electric Power Plant ("White Bluff") and the Independence Steam Electric Station ("Independence").¹

In general, Entergy supports the proposed SIP and appreciates all the work that DEQ has undertaken in preparing the proposed SIP and the considerations that went into DEQ's analysis of reasonable progress for the second regional haze planning period. Specifically, Entergy offers the following comments on the proposed SIP:

¹ Entergy Arkansas, LLC owns a portion of Unit 1 at Independence and a portion of each generating unit at White Bluff. Entergy Mississippi, LLC owns a portion of each generating unit at Independence.

1. Entergy supports DEQ's consideration of visibility impairment potential in its selection of sources for four-factor analyses for potential reasonable progress controls. According to DEQ, its analysis is consistent with EPA Guidance and "was designed to ensure that source selection resulted in a set of pollutants and sources the evaluation of which has the potential to meaningfully reduce their contributions to visibility impairment." Proposed SIP at V-8. Entergy agrees with DEQ that consideration of visibility impairment potential is consistent with the guidance EPA issued for the second regional haze planning period, which offers states the option of using estimates of visibility impacts to select sources for analysis of emission control measures.² Moreover, visibility impairment potential appears to be a necessary component of the visibility goal of the Clean Air Act—to prevent future, and remedy existing, visibility impairment from *manmade air pollution* in Class I areas. CAA Section 169A(a)(1). Accordingly, it would be inappropriate to ignore visibility impairment potential in selecting sources for a reasonable progress analysis.
2. Entergy supports DEQ's consideration of visibility conditions in addition to the four-statutory reasonable progress factors:

[A] state is not limited to solely considering these factors. In addition to the mandatory factors, DEQ also considered in its evaluation the progress that has been achieved at these federal Class I areas, the anticipated visibility impairment in 2028 at these federal Class I areas. This approach is consistent with the flexibility provided to states under the RHR, the recommendations included in EPA's guidance, and the iterative nature of the regional haze program.

Proposed SIP at V-12 – V-13.

Entergy agrees with DEQ that it is important to consider historical and projected visibility progress to "provide valuable context for the consideration of potential control measures that may be necessary for ensuring reasonable progress." Proposed SIP at V-16. As DEQ notes, Class I areas in Arkansas and in other states affected by emissions from Arkansas sources, with the exception of the Wichita Mountains, are on track in making reasonable progress for the second planning period before consideration of additional control measures. *Id.* Accordingly, Entergy agrees with DEQ that "[a]ny additional controls required by DEQ and/or other states will further accelerate progress toward natural visibility conditions during Planning Period II." *Id.*

3. Entergy supports DEQ's conclusion in the proposed SIP that White Bluff did not need to undertake a four-factor analysis for potential reasonable progress controls. Proposed SIP at V-16. In accordance with Arkansas's SIP for the first regional haze planning

² EPA, "Guidance on Regional Haze State Implementation Plans for the Second Implementation Period," at 19 (2019) (2019 EPA Guidance).

period and the Administrative Order to which Entergy is subject, the two coal-fired units at White Bluff will cease to use coal by December 31, 2028.³ Entergy also is separately subject to a Consent Decree that imposes the same condition on the two coal-fired units at White Bluff.⁴ As a result of these orders, Entergy is legally prohibited from burning coal in these units after December 31, 2028, and DEQ's conclusion with respect to White Bluff is supported by EPA's 2019 regional haze guidance for the second planning period.⁵

Entergy agrees with the proposed condition that DEQ has included in the proposed SIP with respect to White Bluff:

If Entergy chooses to continue operations of the White Bluff units after December 31, 2028, they must apply for a permit revision to burn a different fuel. Such a permit revision would be subject to new source review requirements. If the change would result in a significant increase in emissions, prevention of significant deterioration and best available control technology requirements would be triggered.

Proposed SIP at V-17.

4. Entergy supports DEQ's determination with respect to the Independence units that additional controls are not required to make reasonable further progress at any Class I area for the second planning period. Proposed SIP at V-25. The two coal-fired units at Independence are subject to the same Consent Decree referenced above with respect to White Bluff and, under the terms of the Consent Decree, must cease to use coal by December 31, 2030.⁶ In addition, as explained in the proposed SIP:

DEQ proposes to enter into an administrative order with Entergy that would render the requirement to cease coal-fired operations by no later than December 31, 2030 at Independence enforceable by DEQ and, upon approval, by EPA as part of the SIP. A draft version of the proposed administrative order has been included in Appendix F for public review. Prior to submission to EPA, a final administrative order that incorporates any changes in response to public comment must be signed by DEQ and Entergy to render the requirements enforceable as a matter of state law.

³ Administrative Order LIS No. 18-073 (Aug. 7, 2018), available at <https://www.adeq.state/ar.us/air/planning/sip/pdfs/regional-haze/entergy-ao-executed-8-7-2018.pdf>.

⁴ *Sierra Club, et al. v. Entergy Arkansas, LLC, et al.*, No 4:18-cv-00854-KGB (E.D. Ark.), Consent Decree lodged on November 16, 2018, and entered on March 11, 2021.

⁵ 2019 EPA Guidance at 20 ("If a source is expected to close by December 31, 2028, under an enforceable requirement, a state may consider that to be sufficient reason not to select the source at the source selection step.").

⁶ *Supra* n. 3.

Proposed SIP at V-24.⁷ In evaluating whether additional control measures are necessary for Independence for the second planning period, DEQ weighed the four statutory factors⁸ and visibility considerations. Proposed SIP at V-24—25. DEQ found that the cost of compliance for each potential control strategy for Independence, after factoring in the planned cessation of coal-fired operations by December 31, 2030, exceeded DEQ’s cost threshold for electric generating units. Proposed SIP at V-25. Although Entergy disagrees with the annualized costs that DEQ calculated for Independence (see Comment 5 below), Entergy agrees that the costs of compliance at Independence would be excessive and, as a result, that further controls on Independence should not be required to make reasonable progress during the second planning period.⁹

Entergy also supports DEQ’s consideration of the uniform rate of progress (URP) glidepath in its analysis for Independence. Specifically, the proposed SIP states that

each federal Class I area for which Independence is within the nitrate- or sulfate-specific area of influence are on track to make greater progress than the URP glidepath in 2028 before consideration of additional controls at Independence. Although the URP is not determinative in making a decision with respect to whether a control is reasonable after consideration of the four factors, being below the URP glidepath means that the additional demonstrations under 40 C.F.R. 51.308(f)(3)(ii) are not required.

Proposed SIP at V-25.

Entergy also agrees with DEQ’s proposed treatment of Independence if the coal-fired units continue to operate on a different fuel after December 31, 2030. “Similar to White Bluff, if Independence were to continue to operate past December 31, 2030, a

⁷ Entergy previously provided DEQ with suggested clarifying revisions to the draft Administrative Order that need to be incorporated into the final Order before it is executed by the parties. See E-mail from Stan Chivers (Entergy) to DEQ, “EAL Draft AO - with Entergy’s suggested revisions 03.03.2022.docx” (March 4, 2022) (https://www.adeq.state.ar.us/air/planning/sip/pdfs/regional-haze/comments/entergy-arkansas-llc_rh-sip-comment_3-4-22.pdf).

⁸ The Clean Air Act requires that the cost of compliance, the time necessary for compliance, the energy and non-air quality environmental impacts, and remaining useful life of the source be taken into account for reasonable progress purposes. CAA Section 169A(g)(1). According to DEQ, the energy and non-air quality environmental impacts were factored into the cost of compliance for the potential controls considered for Independence. Proposed SIP at V-23.

⁹ In the proposed SIP, DEQ notes that Entergy did not provide a basis for the three-year timeframe necessary to implement Dry Sorbent Injection (DSI) and Enhanced DSI control options at Independence. Proposed SIP at V-23, Table V-11. The three-year timeframe is a reasonable estimate and has been used before with respect to DSI installation. For example, in *United States, et al. v. Ameren Missouri*, 421 F. Supp. 3d 729, 824 (E.D. Mo 2019), the district court gave Ameren a three-year deadline to install and begin operating DSI at one of its plants. Although the U.S. Court of Appeals for the Eighth Circuit overturned the requirement for DSI on appeal, the district court’s decision on the timeline for installation and operation of DSI was not an issue in the appeal. *United States, et al. v. Ameren Missouri*, 9 F.4th 989 (8th Cir. 2021).

permit revision with new source review would be required for the new fuel.”
Proposed SIP at V-25.

5. Although Entergy supports the conclusion that DEQ reached with respect to Independence—that further controls should not be required for the second planning period based on cost considerations—Entergy does not support one aspect of DEQ’s cost evaluation. Specifically, DEQ should not use 3.25 percent – the bank prime rate at the time of the SIP proposal – for capital recovery calculations for the sources evaluated for potential reasonable progress controls. *See, e.g.,* proposed SIP at V-20 and V-21. As discussed in the Texas Commission on Environmental Quality’s *Response to Comments Received Concerning the 2021 Regional Haze State Implementation Plan (SIP) Revision* (herein referred to as the “TCEQ RTC”), “[u]sing the bank prime rate in the four-factor analysis would not reflect **real** costs expected to be imposed on selected sources.” TCEQ RTC at 23-24, emphasis added.

Moreover, even if the bank prime rate were representative of actual costs in real time, DEQ’s use of a rate from a fixed point in time—the rate established during the first two years of the Covid 19 pandemic—is already outdated and there is no guarantee that it will not change further before costs are realized several years in the future. As illustrated in Attachment 1, the bank prime rate has fluctuated significantly over the years. The rate was 4.75 percent as recently as October 2019, but then dropped to 4.25 percent on March 3, 2020, and then to 3.25 percent on March 15, 2020. The March 2020 rates resulted from emergency Covid 19 measures initiated by the Federal Reserve, first, on March 3, 2020, when it lowered interest rates by half a point, and, second, on March 15, 2020, when it dropped interest rates to zero to one-quarter point.¹⁰ Recently, however, the bank prime rate increased from 3.25 percent to 3.5 percent as a result of actions by the Federal Reserve and it is possible that the rate could rise again after the Federal Reserve’s next meeting on May 4, 2022.

Based on the history of the bank prime rate, the unprecedented amount of inflation in 2021 and 2022, and current worldwide economic pressures, it is inappropriate to rely upon a bank prime rate set due to conditions related to the Covid 19 pandemic for capital recovery calculations. Entergy, in its Four-Factor Analysis for Independence, provided support for using an interest rate of seven percent in calculating costs. Entergy maintains that seven percent is a more appropriate number given the history of the bank prime rate. At the least, DEQ should use a historical average to establish the interest rate used for capital recovery calculations but specifically *exclude* from that average the artificially low 3.25 percent bank prime rate resulting from the Federal Reserve’s emergency Covid 19 measures.

¹⁰ Clarida, Richard H., Burcu Duygan-Bump, and Chiara Scotti (2021), “The COVID-19 Crisis and the Federal Reserve’s Policy Response,” Finance and Economics Discussion Series 2021-035. Washington, Board of Governors of the Federal Reserve System, available at <https://doi.org/10.17016/FEDS.2021.035>.

6. Entergy appreciates DEQ's documentation of the recent, substantial emissions reductions that have occurred in Arkansas. Proposed SIP at IV-9 – IV-26. Arkansas sources have made significant progress in reducing emissions that contribute to visibility impairment in Class I areas and documenting these emissions reductions provides important context for the proposed SIP provisions.
7. Entergy appreciates DEQ's discussion of the emission reductions anticipated from the Arkansas Energy Efficiency Resource Program. Proposed SIP at VI-1 – 10. This program will provide important contributions to reasonable progress in the state for the second regional haze planning period and, thus, must be included in the state's long-term strategy. Including emissions reductions from the program is consistent with EPA's regional haze rules, which require states to include "the anticipated net effect on visibility due to projected changes in point, area, and mobile source emissions over the period addressed by the long-term strategy." 40 C.F.R. § 51.308(f)(2)(iv)(E).
8. Entergy appreciates DEQ's research into and documentation of how the Integrated Planning Model (IPM) should and should not be used. Entergy agrees with DEQ that "[t]he IPM model is primarily an economic model that may make unrealistic choices, such as shutting down must-run units or changing fuels at plants not designed for and with no plans for fuel switching." Proposed SIP at II-10.
9. Entergy appreciates DEQ's documentation of the progress in visibility conditions at the two Arkansas Class I areas – Caney Creek and Upper Buffalo – from the start of the regional haze program through 2019. Proposed SIP at II-4, Table II-1 and Table II-2; II-18, Table II-3 and Table II-4; and IV-16, Table IV-3. To further support DEQ's proposed SIP, Entergy is providing in Attachment 2 updated versions of the four tables included in Section II of the proposed SIP. These updated versions consider the latest visibility data for 2020 that were made available to the Interagency Monitoring of Protected Visual Environments (IMPROVE) steering committee members on February 7, 2022.¹¹ Entergy also is providing in Attachment 3 two figures that graphically present the trends in visibility conditions at the Class I areas through 2020. These figures present the same information, but in a different format and with 2020 data, as the information provided in the proposed SIP at II-5, Figure II-2; II-6, Figure II-3; II-19, Figure II-14; and II-20, Figure II-15. Entergy has not undertaken an effort to update the other figures in the proposed SIP with 2020 visibility information or to verify the information presented by the DEQ based on its own modeling or the modeling conducted by the Visibility Improvement - State and Tribal Association of the Southeast (VISTAS).
10. Entergy appreciates DEQ conducting its own predictive modeling using the Comprehensive Air Quality Model with Extensions (CAMx) to correct certain inaccuracies in EPA's modeling. Proposed SIP Appendix L; *see also*, e.g., at VI-15 and VI-16.

¹¹ E-mail from Scott Copeland (USDA Forest Service), "2020 IMPROVE Data", Received by Jeremy Jewell (Trinity Consultants), February 7, 2022.

Entergy appreciates DEQ's consideration of its comments. Please contact me at (501) 215-0024 or schiver@entergy.com if you have any questions regarding the comments.

Entergy Services, LLC

A handwritten signature in black ink that reads "Stan Chivers". The signature is written in a cursive, flowing style.

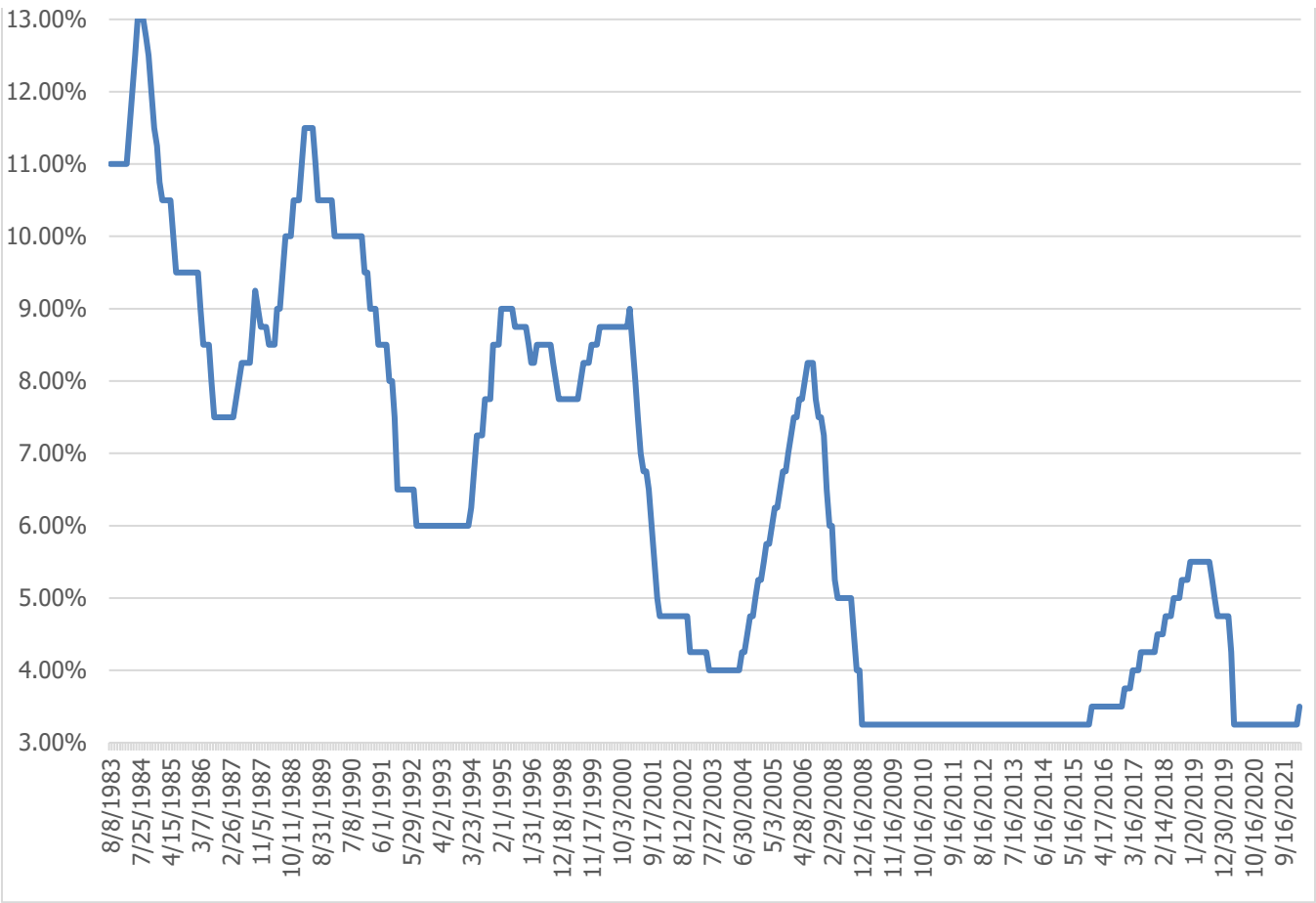
Stan Chivers

Air Lead, Arkansas Environmental Support

ec: Tricia Treece, DEQ
David Triplett, Entergy
Susan Floyd, Entergy
Debra Jezouit, Baker Botts
Jeremy Jewell, Trinity Consultants

Attachment 1. History of Bank Prime Rate

Figure 1. History of Bank Prime Rate, Aug. 8, 1983 to Mar. 17, 2022



Attachment 2. Class I Area Visibility Progress - Updated Information

Proposed SIP Table II-1, Updated to Include 2020 Data
Baseline (2000-2004), Current (2016-2020), and Natural Visibility Conditions for the
Twenty Percent Most Impaired Days and Twenty Percent Clearest Days at Caney Creek ^a

Metric	Baseline Visibility Conditions ^b (deciviews)	Current Visibility Conditions ^c (deciviews)	Natural Visibility Conditions (deciviews)
Most Impaired Days	23.99	17.02	9.54
Clearest Days	11.24	7.78	4.23

^a See proposed SIP at II-4, footnote 10

^b See proposed SIP at II-4, footnote 11

^c 2016-2020 average

Proposed SIP Table II-2, Updated to Include 2020 Data
Progress Toward Natural Visibility Conditions at Caney Creek

Metric	Progress to Date ^a (deciviews)	Progress During Planning Period I ^b (deciviews)	Difference between Current and Natural Visibility Conditions ^c (deciviews)
Most Impaired Days	6.97	5.7	7.48
Clearest Days	3.46	3.22	3.55

^a Difference between baseline (2000-2004) average conditions and 2016-2020 average conditions

^b See proposed SIP at II-4, footnote 14

^c Difference between 2016-2020 average conditions and natural conditions

Proposed SIP Table II-3, Updated to Include 2020 Data
Baseline (2000-2004), Current (2016-2020), and Natural Visibility Conditions for the
Twenty Percent Most Impaired Days and Twenty Percent Clearest Days at Upper Buffalo ^a

Metric	Baseline Visibility Conditions ^b (deciviews)	Current Visibility Conditions ^c (deciviews)	Natural Visibility Conditions (deciviews)
Most Impaired Days	24.21	16.94	9.41
Clearest Days	11.71	8.25	4.18

^a See proposed SIP at II-18, footnote 36

^b See proposed SIP at II-4, footnote 37

^c 2016-2020 average

Proposed SIP Table II-4, *Updated to Include 2020 Data*
Progress Toward Natural Visibility Conditions at Upper Buffalo

Metric	Progress to Date ^a (deciviews)	Progress During Planning Period I ^b (deciviews)	Difference between Current and Natural Visibility Conditions ^c (deciviews)
Most Impaired Days	7.27	6.26	7.53
Clearest Days	3.46	3.51	4.07

^a Difference between baseline (2000-2004) average conditions and 2016-2020 average conditions

^b See proposed SIP at II-4, footnote 40

^c Difference between 2016-2020 average conditions and natural conditions

Attachment 3. Plots of Class I Area Visibility Observations

Figure 2. Year-by-Year (2000 – 2020) Observations of Visibility Conditions at Caney Creek on the 20 Percent Most Impaired Days and the 20 Clearest Days

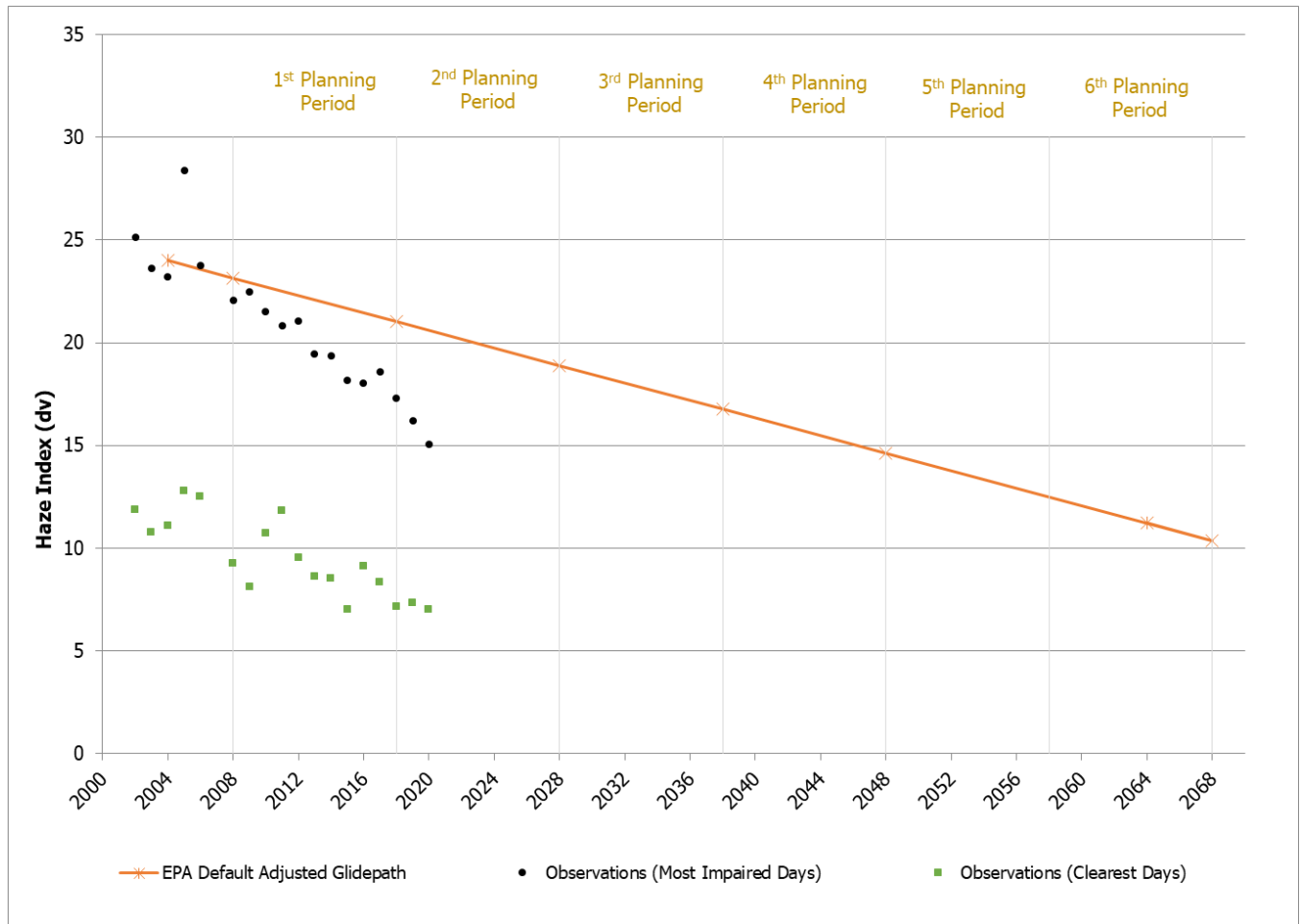


Figure 3. Year-by-Year (2000 – 2020) Observations of Visibility Conditions at Upper Buffalo on the 20 Percent Most Impaired Days and the 20 Clearest Days

