State of Nebraska

Regional Haze Progress Report for the Second Implementation period (2019-2028)

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Jesse Bradley, Director

MONTH XX, 2026

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INTRODUCTION

NOTE: *The Nebraska Department of Environmental Quality, Department of Environment (NDEE) and the Nebraska Department of Natural Resources (NDNR) merged into one agency effective July 1, 2025, and now is known as Nebraska Department of Water, Energy, and Environment (DWEE).*

In 1999, the U.S. Environmental Protection Agency (EPA) enacted the Regional Haze (RH) Rule to undertake improvement of air quality in national parks and wilderness areas, specifically requiring coordination between state and federal agencies to improve visibility in 156 national parks and wilderness areas (known as Class I areas).

The rule requires states, in coordination with the EPA, the National Park Service, U.S. Fish and Wildlife Service, the U.S. Forest Service, and other interested parties, to develop and implement air quality protection plans (state implementation plans, or SIPs) to reduce visibility impairment. Each plan and subsequent revision will address a 10-year planning period, with the first period being 2008-2018. The first State plans for regional haze were due in December 2007; comprehensive periodic revisions to these initial plans were due in 2021, with subsequent SIP revisions due in 2031, 2038, and every 10 years thereafter.

Five-year progress reports describe the most recent progress towards reasonable progress goals established for each mandatory Class I area that may be affected by emissions from sources within a State. Progress reports are due at the five-year intervals between each SIP revision, pursuant to the requirements found at 40 CFR 51.308(g).

As of the date of this progress report, the status of Nebraska's Regional Haze (RH) State Implementation Plan (SIP) is as follows:

- First Planning period (2008-2018). The initial SIP was partially approved and partially disapproved (77 Federal Register (FR) 40149, July 6, 2012). The disapproved elements are (1) Best Available Retrofit Technology (BART) sulfur dioxide (SO_2) analysis for Gerald Gentleman Station (GGS) and (2) the long-term strategy for SO_2 at GGS based on this BART analysis. The BART analysis was addressed by a Federal Implementation Plan (FIP), issued in the 2012 rulemaking, which relied on the Cross-State Air Pollution Rule (CSAPR). On August 1, 2024, EPA proposed a FIP to address the long-term strategy (89 FR 62691) which relies on a sulfur dioxide (SO_2) emission limit for GGS; the comment period ended on October 30, 2024, but no further rulemaking has been issued.

  The two elements listed above that were disapproved in the first period are addressed in the second period SIP revision, presently under review by EPA.

- Second Planning period (2019-2028). Nebraska submitted its second planning period SIP revision in August 2024; EPA has not published its proposed action as of the date of this report.

Emission reduction measures included in the first period SIP and second period SIP revision are implemented. Nebraska Public Power District (NPPD) requested a voluntary annual emission limit to further reduce (cap) SO_2 at GGS beginning in Calendar year 2027 in their air quality operating permit renewal application, received by DWEE on September 27, 2024. NPPD's voluntary SO_2 emission limit is included in the air quality operating permit issued on April 1, 2026.

Recent visibility impairing emissions from Nebraska point sources, including electricity generating units (EGUs), show significant reductions in particulate matter, and less change in other pollutants, when compared to the 2020 emissions data[1] included in Nebraska's second planning period SIP revision. The top seven electricity generating units (EGUs) in Nebraska have, collectively, demonstrated significant emission reductions since 2020.

Nebraska has no Class I areas within its borders and 2024 visibility data[2] indicate that Class I areas in other states potentially affected by emissions from Nebraska continue to demonstrate reasonable progress in visibility improvement thus far in the second planning period. States with Class I areas potentially affected by Nebraska emissions are projected to meet or exceed reasonable progress goals for 2028[3] and no requests from surrounding states were made of Nebraska for emission reductions during this period.

Therefore, Nebraska is continuing with the current emission reduction measures and long-term strategy included in its most recent RH SIP revision and concluded that the second period SIP revision requires no further revision at this time to achieve established goals for visibility improvement and emission reductions.

Nebraska has complied with requirements for Federal Land Manager (FLM) consultation and public notice and comment in accordance with 40 CFR 51.308(i) and 51.102.

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[1] 2023 and 2024 emissions data are included in this progress report for comparison in Section I.B. The overall total reduction for Nebraska's SO_2 and NO_x point source emissions since 2020 is a 1.3% decline. The top seven emitting Nebraska EGUs have demonstrated a 10.3% decrease in SO_2 and NO_x, collectively since 2020. Particulate matter (PM) emissions from point sources and the top seven EGUs (collectively) have decreased by 26.1% and 12.7%, respectively, since 2020.

[2] Deciview Trends (2024) Visibility Conditions https://views.cira.colostate.edu/fed/Sites/?appkey=SBA_AqrvVisibility

[3] 2028 Projected Visibility Conditions https://www.epa.gov/sites/default/files/2019-10/documents/updated_2028_regional_haze_modeling-tsd-2019_0.pdf

PROGRESS REPORT

I. Requirements for Periodic Reports

40 CFR 51.308(g) ***Requirements for periodic reports describing progress towards the reasonable progress goals.*** *Each State identified in § 51.300(b) must periodically submit a report to the Administrator evaluating progress towards the reasonable progress goal for each mandatory Class I Federal area located within the State and in each mandatory Class I Federal area located outside the State that may be affected by emissions from within the State…Periodic progress reports must contain at a minimum the following elements:*

A. *40 CFR 51.308(g)(1) A description of the status of implementation of all measures included in the implementation plan for achieving reasonable progress goals for mandatory Class I Federal areas both within and outside the State.*

Measures for Gerald Gentleman Station, Nebraska City Station and North Omaha Station as described in Nebraska's RH SIPs for both the first and second planning periods have been implemented and are described below.

NOTE: Facility identification numbers (DEQ Facility ID#) are designated with the past acronym (DEQ) for the agency and that is how it is displayed in the public records search application on the agency website.

Gerald Gentleman Station (GGS)

In its September 27, 2024, air operating permit renewal application[4], GGS requested an annual SO_2 emission limit of 27,739 tons per year (tpy) beginning in 2027 and included a copy of the Memorandum of Understanding (MOU) between NPPD (GGS) and DWEE for reference. The final air quality operating permit[5], which includes the requested reduced SO_2 emission limit (cap) as a permit condition, was made available for public notice and comment from April 7 through May 9, 2025. The air quality operating permit was issued on April 1, 2026, and contains the following emission limits and control measures:

[4] This application is available via NDWEE's public records portal at https://ecmp.nebraska.gov/PublicAccess/index.html?MyQueryID=340 - DEQ Facility Number 34385, DEQ Program: Air, Document Date: 9/27/2024, Document Type/Description: DEQ Application - Operating.

[5] The final operating permit ID O-24R1-039 is available via NDWEE's public records portal at https://ecmp.nebraska.gov/PublicAccess/index.html?MyQueryID=340 - DEQ Facility number 34385, DEQ Program: Air, Document Date: 4/1/2026, Document Type/Description: DEQ Issued Permit - Operating

GERALD GENTLEMAN STATION (GGS)	**DEQ Facility #** 34385
Operating Permit ID: OP24R1-039 (April 1, 2026)	
Units 1 and 2 (Unit 1: Coal-fired/No. 2 Diesel/natural gas firing; Unit 2: coal-fired/natural gas firing)	
PM	**Baghouse on each unit** **Permit limit for each unit** 0.10 lb/mmBtu [fossil fuel] (three 1-hr periods) *filterable*: 0.03 lb/mmBtu or 0.3 lb/MWh (three 1-hr periods)
NO_x	**Low NO_x burner with overfire air on each unit** **Permit limit for each unit** 0.20 lb/MMBtu [gaseous fuel] and 0.30 lb/MMBtu [liquid fuel] and 0.70 lb/MMBtu [solid fuel] (three 1-hr periods) 0.46 lb/MMBtu (1 year) **Permit limit for both units averaged** 0.23 lb/MMBtu (30-boiler operating day average)
	CSAPR Annual Trading Program **Emissions allowances = 5,256 tpy** [Unit 1] **5,765 tpy** [Unit 2]
SO_2	**No control equipment** **Permit limit for each unit** 0.80 lb/MMBtu [liquid fuel] and 1.2 lb/MMBtu [solid fuel] (three 1-hr periods) 27,739 tpy SO_2 emission cap (annual, beginning calendar year 2027)[6] **Low-sulfur coal in use to comply with permit limit**
	Cross-State Air Pollution Rule (CSAPR) Group 2 Trading Program (40 CFR 52.39 part 97, Subpart DDDDD; July 6, 2012 - 77 FR 40149) **Emissions allowances = 13,780 tpy** [Unit 1] **15,116 tpy** [Unit 2]
Compliance Status All controls are operational. Compliance inspection conducted by DWEE on March 3, 2025 - no violations. Annual compliance certification received on March 18, 2026 - no deviations reported. Annual emissions inventory for 2024 received on March 17, 2026.	

[6] A Memorandum of Understanding (MOU) was established between NPPD and DWEE on June 29, 2022. The requirements of the MOU are listed in Condition III.(A)(2)(a), Condition III.(A)(3)(j) and Condition III.(A)(4)(g) of OP24R1-39 as "state enforceable only". The complete MOU is also attached to OP24R1-039.

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Nebraska City Station (NCS)

The current air quality operating permit[7] was issued on December 23, 2025. Air quality construction permits[8] were issued in March 2020 (plantwide applicability limits for SO_2 and NO_x) and December 2024 (installation of wet dust extractors on coal tripper systems).

The current air quality operating permit contains the following emission limits and control measures:

NEBRASKA CITY STATION (NCS)	**DEQ Facility #** 58343
Operating Permit ID: OP25R1-015 (December 23, 2025)	
Unit 1 (wall-fired, dry bottom coal-fired boiler with No.2 diesel/natural gas firing for startup & flame stabilization only)	
PM	**Electrostatic precipitator & gas conditioning system** **Permit limit** *filterable:* 0.10 lb/MMBtu [fossil fuel] (three 1-hr test runs or test method average) and 0.03lb/MMBtu or 0.3 lb/MWh (three 1-hr test runs or test method average)
NO_x	**Low NO_x burner with overfire air** **Permit limit** 0.20 lb/MMBtu [gaseous fossil fuel] / 0.30 lb/MMBtu [liquid fossil fuel] / 0.70 lb/MMBtu [solid fossil fuel] (average of three contiguous 1-hr periods) 0.23 lb/MMBtu (30 day rolling average) 0.46 lb/MMBtu (1 year)
	CSAPR Annual Trading Program **Emissions allowances = 4,696 tpy** (40 CFR 52.39 part 97, Subpart AAAAA)
SO_2	**No control equipment** **Permit limit** 0.80 lb/MMBtu [liquid fuel] / 1.2 lb/MMBtu [solid fuel] (average of three contiguous 1-hr periods) **Low-sulfur coal in use to comply with permit limits**
	CSAPR Group 2 Trading program **Emissions allowances = 12,313 tpy** (40 CFR 52.39 part 97, Subpart DDDDD)
Unit 2 (wall-fired, dry bottom coal-fired boiler with natural-gas firing for startup & flame stabilization only)	
PM	**Baghouse** **Permit limit** *filterable:* 0.14 lb/MWh or 0.15 lb/MMBtu (boiler operating day) 0.013 lb/MMBtu (test method average or 30 day rolling avg w/PM CEMS) 0.03 lb/MMBtu or 0.3 lb/MWh (1 hour) *filterable+condensable:* 0.027 lb/MMBtu (test method average)

[7] The current operating permit ID O-19R1-013 is available via NDWEE's public records portal at https://ecmp.nebraska.gov/PublicAccess/index.html?MyQueryID=340 – DEQ Facility Number 58343, DEQ Program: Air, Document Date: 12/3/2020, Document Type/Description: DEQ Issued Permit - Operating.

[8] Current construction permits ID CP24-011 and CP19-012 are available via NDWEE's public records portal at https://ecmp.nebraska.gov/PublicAccess/index.html?MyQueryID=340 – DEQ Facility Number 58343, DEQ Program: Air, Document Date: 12/4/2024 and 3/6/2020, Document Type/Description: DEQ Issued Permit – Construction.

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NO_x	**Selective Catalytic Reduction (SCR)** **Permit limit** 0.07 lb/MMBtu (30 day rolling average) 1.0 lb/MWh (30 day rolling average)
	CSAPR Annual program **Emissions allowances = 4,180 tpy** (40 CFR 52.39 part 97, Subpart AAAAA)
SO_2	**Spray Dry Absorber (SDA)** **Permit limit** 1.4lb/MWh or 95% reduction (30 day rolling average) 0.095 lb/MMBtu (30 day rolling average) 0.163 lb/MMBtu (24 hour rolling average) 0.48 lb/MMBtu (3 hour rolling average) 0.2 lb/MMBtu or 1.5 lb/MWh (30 boiler operating days) **Low-sulfur coal in use to comply with permit limit**.
	CSAPR Group 2 Trading program **Emissions allowances = 3,377 tpy** (40 CFR 52.39 part 97, Subpart DDDDD)
SO_2	**Plantwide Applicability Limit (PAL)** 17,389 tpy (12 consecutive calendar months)
NO_x	**Plantwide Applicability Limit (PAL)** 6,140 tpy (12 consecutive calendar months)
Compliance Status All controls are operational. Compliance inspection conducted by DWEE on February 10, 2026 - no violations. Annual compliance certification received on March 27, 2026 - no deviations reported. Annual emissions inventory for 2024 was received on March 27, 2026.	
Construction Permit ID: CP24-011 (December 4, 2024)	
PM	**Wet Dust Extractor A** 0.01 grain/dry standard cubic foot (three 1-hr or test method average)
PM	**Wet Dust Extractor B** 0.01 grain/dry standard cubic foot (three 1-hr or test method average)

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North Omaha Station (NOS)

The current air quality operating permit issued by Omaha Air Quality Control[9] was set to expire on May 25, 2026. A permit application was received on November 24, 2025 and the permit revision process is underway.

The timeline for retirement of Units 1, 2, and 3 and conversion of Units 4 and 5 to natural gas has been extended[10] and is contingent upon two new natural gas power plants and the expansion of an existing natural gas power plant coming online to help OPPD meet their electrical generation demand and satisfying the requirements of the Southwest Power Pool (SPP) for generation interconnection and transmission service.

The current air quality operating permit contains the following emission limits and control measures:

NORTH OMAHA STATION (NOS)	**DEQ Facility #** 59763
Operating Permit ID: O-21-0002-TV (May 26, 2021)	
NOS – Units 1, 2, and 3 (Tangentially fired natural gas fired boilers)	
PM	**No control equipment** **Permit limit** *Unit 1:* 0.21 lb/Btu *Units 2 & 3:* 0.20 lb/MMBtu
NO_x	**No control equipment** **Permit limit** *All units:* 0.40 lb/MMBtu
	Cross-State Air Pollution Rule (CSAPR) Annual Program (40 CFR 52.39 part 97, Subpart AAAAA) **Emissions allowances = 500 tpy** [Unit 1] **681 tpy** [Unit 2] **680 tpy** [Unit 3]
SO_2	**No control equipment** **Permit limit** *All units:* 2.5 lb/MMBtu
	Cross-State Air Pollution Rule (CSAPR) Group 2 Trading Program (40 CFR 52.39 part 97, Subpart DDDDD) **Emissions allowances = 1,310 tpy** [Unit 1] **1,784 tpy** [Unit 2] **1,784 tpy** [Unit 3]
NOS – Units #4 and #5 (Tangentially fired coal-fired boiler [Unit #4]; Dry bottom wall-fire coal fired boiler [Unit #5])	
PM	**Electrostatic precipitator on each unit** **Permit limit** *Unit 4:* 0.19 lb/MMBtu *Unit 5:* 0.17 lb/MMBtu
NO_x	**No control equipment** **Permit limit** *Unit 4:* 0.40 lb/MMBtu *Unit 5:* 0.46 lb/MMBtu

[9] Operating permit ID O-219-0002-TV was issued by Omaha Air Quality Control, which has been delegated authority by EPA to issue air quality operating and construction permits. For more information please visit https://publicworks.cityofomaha.org/environment-quality/.

[10] The OPPD Board of Directors approved an extension to the retirement of Units 1, 2, and 3, and refueling of Units 4 and 5 until the District's new natural gas plants are operational, https://oppd.com/media/318551/2022-8-august-resolution-6518-nos-current-state-extension.pdf.

	Cross-State Air Pollution Rule (CSAPR) Annual Program (40 CFR 52.39 part 97, Subpart AAAAA) **Emissions allowances = 787 tpy** [Unit 4] **1,390 tpy** [Unit 5]
SO_2	**No control equipment** **Permit limit** *All units:* 2.5 lb/MMBtu **Low-sulfur coal in use to comply with permit limit.**
	Cross-State Air Pollution Rule (CSAPR) Group 2 Trading Program (40 CFR 52.39 part 97, Subpart DDDDD) **Emissions allowances = 2,064 tpy** [Unit 4] **3,645 tpy** [Unit 5]
Compliance Status All controls are operational. Compliance inspection conducted by Omaha Air Quality Control (OAQC) on July 22, 2025 - no violations. Annual compliance certification received on July 22, 2025 – no deviations reported. Annual emissions inventory for 2024 was received on March 27, 2026.	

B. *40 CFR 51.308(g)(2) A summary of the emissions reductions achieved throughout the State through implementation of the measures described in paragraph (g)(1) of this section.*

Point source emission reductions of visibility-impairing pollutants achieved since the first planning period can be attributed to implementation of emission reduction measures taken by sources in the state. State point source emissions inventory data for 2023 are the most recent available, specifically, NO_x, SO_2, $PM_{2.5}$, PM_{10}, Volatile Organic Compounds (VOC), and ammonia (NH_3). Though the 2023 National Emissions Inventory (NEI) is underway, emissions data for other source categories (mobile, fires, etc.) will not be available from EPA until 2026[11].

Changes in Nebraska NO_x, SO_2, $PM_{2.5}$, PM_{10}, VOC, and NH_3 point emissions at key milestones during the implementation of the RH Rule are included in **Tables 1** through **6**. Emission inventory data included in these tables is described as follows:

- 2002 data - a baseline for the regional haze program;
- 2010 data - a reference point for the first planning period;
- 2019 data - a reference point for the first year of the second planning period;
- 2020 data - the most recent emission inventory data included in Nebraska's second period SIP; it should be noted they may not be representative of a typical year's emissions due to significant disruptions in business and industry operations[12] during the COVID 19 outbreak;

[11] 2023 National Emissions Inventory, https://www.epa.gov/air-emissions-inventories/2023-national-emissions-inventory-nei-documentation.

[12] U.S. Bureau of Labor Statistics 2020 Results of the Business Response Survey, https://www.bls.gov/brs/2020-results.htm.

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- 2023 data - the most recent statewide point source inventory data available; and,
- 2024 data - the most recent emission inventory data available for individual point sources mentioned in this report.

Emissions data presented in this report were obtained from state emission inventories https://ndeqsleis.nebraska.gov/, National Emission Inventories (https://www.epa.gov/air-emissions-inventories/national-emissions-inventory-nei), and EPA's Clean Air Markets Program Data (CAMPD), https://campd.epa.gov/.

Table 1. Nebraska's Total Nitrogen Oxides Emissions (tpy)

Source	2002	2010	2019	2020	2023
Point	101,620	48,066	31,512	28,416	27,872
% change since 2020					**-1.9%**
% change since 2019					**-11.6%**
% change since 2002					**-72.6%**

Table 2. Nebraska's Total Sulfur Dioxide Emissions (tpy)

Source	2002	2010	2019	2020	2023
Point	105,086	67,963	48,024	42,527	44,030
% change since 2020					**3.5%**
% change since 2019					**-8.3%**
% change since 2002					**-58.1%**

Table 3. Nebraska's Total Fine Particulate Matter ($PM_{2.5}$) Emissions (tpy)

Source	2002	2010	2019	2020	2023
Point	2,393	2,529	1,355	2,009	1,383
% change since 2020					**-31.2%**
% change since 2019					**2.1%**
% change since 2002					**-42.2%**

Table 4. Nebraska's Total Coarse Particulate Matter (PM_{10}) Emissions (tpy)

Source	2002	2010	2019	2020	2023
Point	11,744	7,536	3,077	4,678	3,558
% change since 2020					**-23.9%**
% change since 2019					**-15.6%**
% change since 2002					**-69.7%**

Table 5. Nebraska's Total Volatile Organic Compound Emissions (tpy)

Source	2002	2010	2019	2020	2023
Point	9,592	8,373	8,188	7,765	9,006
% change since 2020					**16.0%**
% change since 2019					**10.0%**
% change since 2002					**-6.1%**

Table 6. Nebraska's Total Ammonia (NH3) Emissions (tpy)

Source	2002	2010	2019	2020	2023
Point	612	767	2,699	1,063	1,009
% change since 2020					**-5.1%**
% change since 2019					**-62.6%**
% change since 2002					**64.9%**

Tables 1 through **6** illustrate significant reductions in most pollutant emissions since the baseline period, especially for the two key visibility-impairing pollutants (NO_x and SO_2). Thus far in the current (second) planning period changes in emissions continue to demonstrate reasonable progress for Nebraska. Visibility conditions at Class I areas potentially affected by Nebraska source emissions continue to meet or exceed the respective reasonable progress goals (RPGs) set by the states in which they reside, and some areas are anticipated to achieve natural visibility conditions prior to 2064. With the significant decrease of NO_x and SO_2 emissions from facilities located in Nebraska the potential for visibility impacts to Class I areas are significantly decreased. Visibility conditions are discussed in Section I.F. of this report.

Increases in VOC emissions thus far in the second period can mainly be attributed to the increased production of bio-fuels, expansion of existing facilities and new industry coming into the State.

Based on the emissions data from 2020, DWEE found that 93% of SO_2 emissions and 61.6% of NO_x emissions in Nebraska can be attributed to the seven largest power plants[13] in the state. Emissions data for these facilities are included in **Tables 7** through **12** and illustrate significant progress of reducing emissions thus far in the second planning period.

In 2023, NO_x and SO_2 emissions from Nebraska's top seven electricity generating units (EGUs) accounted for 94.7% and 63.6% of the state's total emissions of these pollutants, respectively. Emission totals from 2023 and, more recently, 2024 are included to illustrate

[13] Gerald Gentleman Station, Nebraska City Station, North Omaha Station, Whelan Energy Center, Sheldon Station, Lon D Wright Power Plant, and Platte Generating Station.

progress thus far in the second planning period. Collectively, these seven sources have demonstrated significant emission reductions.

Table 7. Nebraska Top Seven EGU Nitrogen Oxides Emissions (tpy)

Source	2010	2019	2020	2023	2024	% change 2019 to 2024
Gerald Gentleman Station	13,164	7,477	6,289	7,184	5,915	-20.9%
Nebraska City Station	8,830	4,149	5,318	4,235	3,634	-12.4%
North Omaha Station	6,765	3,343	3,176	2,477	1,779	-46.8%
Sheldon Station	5,824	2,036	1,338	1,955	1,958	-4.7%
Platte Generating Station	1,201	565	444	400	466	-17.7%
Whelan Energy Center	1,079	796	605	965	792	-0.9%
Lon D. Wright Power Plant	449	943	843	999	1092	6.3%
TOTAL	37,312	**19,311**	18,013	18,215	**15,636**	**-22.4%**

Table 8. Nebraska Top Seven EGU Sulfur Dioxide Emissions (tpy)

Source	2010	2019	2020	2023	2024	% change 2019 to 2024
Gerald Gentleman Station	29,741	23,412	18,176	20,877	20,517	-12.4%
Nebraska City Station	14,296	10,386	11,480	10,616	7,968	-23.3%
North Omaha Station	10,515	5,793	5,447	4,315	2,935	-49.3%
Sheldon Station	3,758	2,071	1,460	2,507	2,336	12.8%
Platte Generating Station	2,365	500	369	354	347	-30.6%
Whelan Energy Center	2,301	2,191	2,015	2,126	2,009	-8.3%
Lon D. Wright Power Plant	1,206	985	913	1,233	1,221	24.0%
TOTAL	64,182	**44,340**	39,860	42,028	**37,333**	**-17.7%**

Table 9. Nebraska Top Seven EGU Fine Particulate Matter ($PM_{2.5}$) Emissions (tpy)

Source	2019	2020	2023	2024	% change 2019 to 2024
Gerald Gentleman Station	81	68	73	65	-19.8%
Nebraska City Station	162	140	48	52	-67.9%
North Omaha Station	174	164	147	108	-37.9%
Sheldon Station	1	1	1	1	0%
Platte Generating Station	2	1	2	1	-50.0%
Whelan Energy Center	42	47	51	39	-7.1%
Lon D. Wright Power Plant	43	59	70	70	62.9%
TOTAL	**505**	480	392	**336**	**-33.5%**

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Table 10. Nebraska Top Seven EGU Coarse Particulate Matter (PM_{10}) Emissions (tpy)

Source	2019	2020	2023	2024	% change 2019 to 2024
Gerald Gentleman Station	182	150	223	137	-24.7%
Nebraska City Station	308	275	108	112	-63.6%
North Omaha Station	269	252	222	163	-39.4%
Sheldon Station	8	6	6	5	-37.5%
Platte Generating Station	5	4	7	6	20.0%
Whelan Energy Center	105	113	126	101	-3.8%
Lon D. Wright Power Plant	122	109	130	143	17.2%
TOTAL	**999**	909	821	**524**	**-33.2%**

Emission reductions at these seven sources have resulted in exceeding reasonable progress in Nebraska, as described in the second period RH SIP. Likewise, Class I areas potentially affected by Nebraska point source emissions continue to achieve and exceed reasonable progress goals (RPGs) toward natural visibility conditions, as established by states in which they reside.

In developing the second period SIP revision, two of the three sources described in Section I.A. were selected for four-factor analysis, based on their estimated potential visibility impacts at Class I areas; their respective emissions comprise a significant portion of the statewide point source NO_x and SO_2 emissions. Emission reductions of NO_x and SO_2 at each of these facilities thus far during the second planning period are significant, as illustrated in **Tables 11** and **12**.

Tables 11 and **12** summarize NO_x and SO_2 emission reduction for the three sources addressed in the most recent RH SIP, illustrating progress achieved thus far in the second period.

Table 11. Nitrogen Oxides Emission Reductions since the First Planning Period (GGS, NCS, NOS)

Source	2019	2024	% change since 2019
Gerald Gentleman Station	7,478	5,914	-20.9%
Nebraska City Station	4,150	3,633	-12.5%
North Omaha Station	3,343	1,779	-46.8%
Total	**14,971**	**11,326**	**-24.3%**

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Table 12. Sulfur Dioxide Emission Reductions since the First Planning Period (GGS, NCS, NOS)

Source	2019	2024	% change since 2019
Gerald Gentleman Station	23,412	20,517	-12.4%
Nebraska City Station	10,387	7,968	-23.3%
North Omaha Station	5,793	2,935	-49.3%
Total	**39,592**	**31,420**	**-20.6%**

In summary, significant emission reductions have been achieved by Nebraska's sources have been achieved through implementation of federal and state regulations, permitting programs, and the measures included in Nebraska's SIP and SIP revision.

C. 40 CFR 51.308(g)(3) For each mandatory Class I Federal area within the State, the State must assess the following visibility conditions and changes, with values for most impaired, least impaired and/or clearest days as applicable expressed in terms of 5-year averages of these annual values. The period for calculating current visibility conditions is the most recent 5-year period preceding the required date of the progress report for which data are available as of a date 6 months preceding the required date of the progress report.

This element does not apply to Nebraska since it has no Class I Federal areas within the state. A brief review of visibility data was conducted for Class I areas outside of the state potentially affected by sources in Nebraska, and current visibility conditions at these areas these areas continue to demonstrate visibility improvement that meets or exceeds the reasonable progress goals set by the respective states. This is addressed in more detail in **Section I.F.** of this report.

D. 40 CFR 51.308(g)(4) An analysis tracking the change over the period since the period addressed in the most recent plan required under paragraph (f) of this section in emissions of pollutants contributing to visibility impairment from all sources and activities within the State. Emissions changes should be identified by type of source or activity. With respect to all sources and activities, the analysis must extend at least through the most recent year for which the state has submitted emission inventory information to the Administrator in compliance with the triennial reporting requirements of subpart A of this part as of a date 6 months preceding the required date of the progress report. With respect to sources that report directly to a centralized emissions data system operated by

the Administrator, the analysis must extend through the most recent year for which the Administrator has provided a State-level summary of such reported data or an internet-based tool by which the State may obtain such a summary as of a date 6 months preceding the required date of the progress report. The State is not required to backcast previously reported emissions to be consistent with more recent emissions estimation procedures, and may draw attention to actual or possible inconsistencies created by changes in estimation procedures.

In Nebraska's second period SIP (Section III.), an analysis of Nebraska's state emissions inventory data for 2002, 2010, 2019, 2020, and 2023 was provided. The most recent emissions data available at the state level for the point source category are from 2023 and these are included in **Tables 1** through **6**. Data for other source categories (onroad, nonroad, fires, and agricultural activities) are not yet available as these are calculated as part of the 2023 National Emissions Inventory (NEI), which is in progress and will be published in 2026[14]. Additional point source data for the top seven emitting EGUs in the state are included in **Tables 7** through **12**.

The primary visibility-impairing emissions affecting those Class I areas identified in Nebraska's RH SIP for the second period are NO_x and SO_2. Since 2019, Nebraska point source emissions of NO_x, SO_2, PM_{10}, and ammonia decreased. $PM_{2.5}$ and VOC emissions increased slightly during this period, , which was not anticipated, though is likely due to increased operations and planned projects.

With respect to key source emissions, the top seven contributing EGUs in the state accounted for 94.4% of SO_2 and 61.3% of NO_x point source emissions in the 2019 state emissions inventory. Emissions of these pollutants from these EGUs, collectively, decreased for the time period of 2019 through 2023 (by 20.6% and 24.3%, respectively) as did particulate emissions (down 33.3%, overall). As noted previously, year-to-year fluctuations in emissions are not uncommon, however these seven sources have shown a significant downward trend in visibility impairing emissions since implementation of the RH rule.

E. *40 CFR 51.308(g)(5) An assessment of any significant changes in anthropogenic emissions within or outside the State that have occurred since the period addressed in the most recent plan required under paragraph (f) of this section including whether or not these changes in anthropogenic emissions were anticipated in that most recent plan and*

[14] https://www.epa.gov/air-emissions-inventories/2023-national-emissions-inventory-nei-documentation

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whether they have limited or impeded progress in reducing pollutant emissions and improving visibility.

Point source anthropogenic emissions in Nebraska have not changed significantly since the period addressed in Nebraska's RH SIP for the second period (2020), but continue on a downward trend. Key sources, specifically the top seven emitting EGUs, have individually experienced changes in some pollutant emissions that may be associated with varying demands for electricity, weather-related events, or changes in operations, but continue demonstrate significant overall reductions in visibility-impairing pollutants. When examining historical emission inventory data, these fluctuations occur periodically but were not anticipated at the time Nebraska developed and submitted its most recent SIP revision. Overall, emissions from these seven sources show a significant downward trend and there is no indication that annual emission fluctuations have limited or impeded progress in reducing pollutant emissions and/or improving visibility at Class I areas potentially affected by Nebraska emissions.

F. *40 CFR 51.308(g)(6) An assessment of whether the current implementation plan elements and strategies are sufficient to enable the State, or other States with mandatory Class I Federal areas affected by emissions from the State, to meet all established reasonable progress goals for the period covered by the most recent plan required under paragraph (f) of this section.*

States[15] in which affected Class I areas are located that were addressed in Nebraska's RH SIP revision set reasonable progress goals (RPGs) for the second planning period in their respective RH SIP revisions[16]. Current visibility conditions for affected areas are available from the Federal Land Manager Environmental Database,[17] and are summarized as follows, by state.

South Dakota

South Dakota is relying on EPA's 2064 Glideslope adjustment[18] for the second period, due to the impacts from international anthropogenic emissions and U.S. prescribed fire

[15] South Dakota, New Mexico.
[16] South Dakota RH SIP revision, https://danr.sd.gov/Environment/AirQuality/RegionalHaze/docs/SIP%20draft%20revised%20since%20sending%20to%20FLMs.pdf; New Mexico draft RH SIP revision, https://cloud.env.nm.gov/resources/_translator.php/OTI5MTYyMThlZDhlMTUyZGRkYTJiNDBmNV8xODMxNTA~.pdf
[17] Federal Land Manager Environmental Database, https://views.cira.colostate.edu/fed/.
[18] Updated EPA 2028 Regional Haze – Technical Support Document, https://www.epa.gov/visibility/technical-support-document-epas-updated-2028-regional-haze-modeling.

emissions and the state's inability to control those emissions. The RPGs set for the Class I areas in the state are described in the South Dakota RH SIP revision (Table 4-5) and current visibility conditions (most impaired days, in deciviews) are better than the established RPGs for the second period. South Dakota's RPGs and visibility conditions are contained in **Figures 1** through **3**. It should also be noted that significant impacts from Canadian wildfires in 2023 were experienced by states in the northern plains, including South Dakota. Visibility conditions (deciviews) at both areas in 2024 were below the adjusted glideslope point (RPGs) for 2028, indicating that the most current visibility conditions were better than the RPGs for 2028.

Figure 1. South Dakota Reasonable Progress Goals (2028)

Table 4-5 -- 2028 reasonable progress summary for South Dakota's two Class I Areas

Calendar Year	Badlands National Park		Wind Cave National Park	
	Most Impaired (dv)	Clearest (dv)	Most Impaired (dv)	Clearest (dv)
2000-2004 Average	15	6.9	13.1	5.1
2014-2018 Average	12.3	5.4	10.5	3.5
2028OTBa2 Average	11.53	5.1	9.76	3.4
2028 Adjusted Glideslope (Int Anthro and Rx Fires)	13.0	N/A	11.9	N/A
2064 Adjusted Natural Conditions (Int Anthro and Rx Fires)	10.06	N/A	10.06	N/A

SOURCE: South Dakota RH SIP (Second Period)

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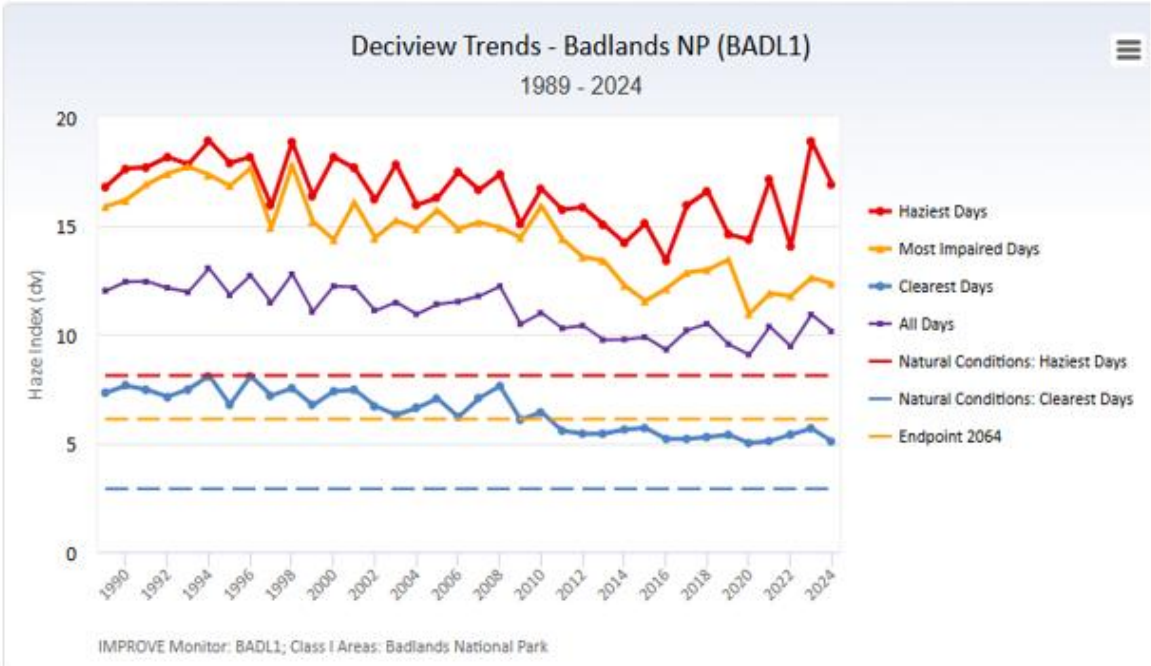
Figure 2. Badlands National Park Deciview Trends (1989-2024)

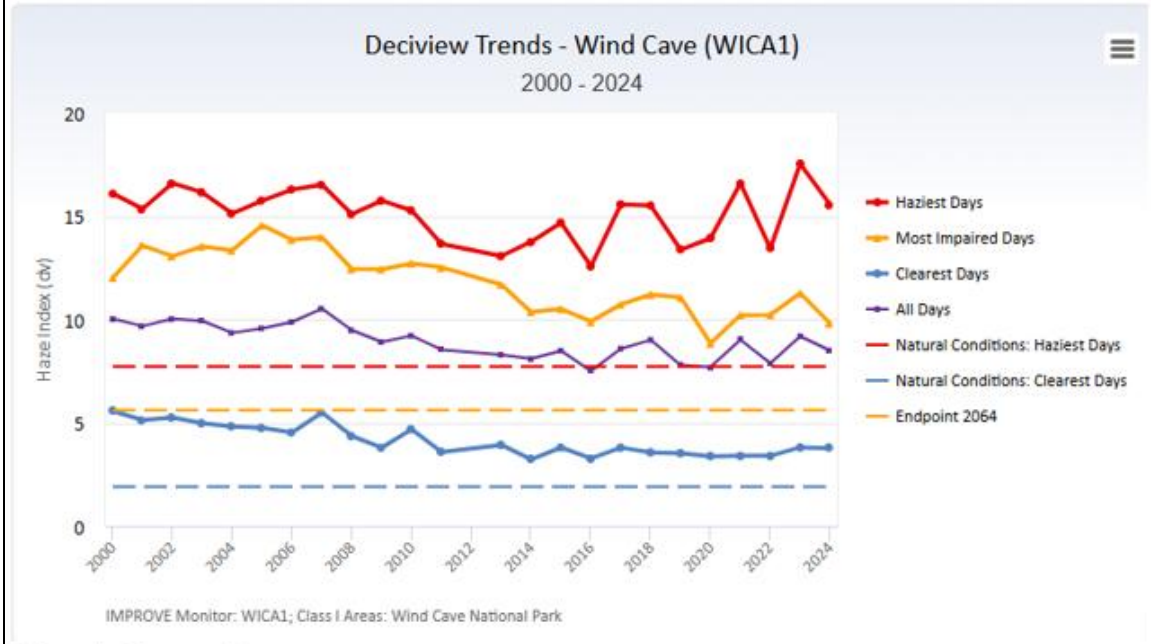


Final Chart Data:

SeriesName	AuxID	YearNum	FactValue	ParamName	Units
Most Impaired Days	90	2019	13.43041	Deciview	Haze Index (dv)
Most Impaired Days	90	2020	10.93351	Deciview	Haze Index (dv)
Most Impaired Days	90	2021	11.8785	Deciview	Haze Index (dv)
Most Impaired Days	90	2022	11.76045	Deciview	Haze Index (dv)
Most Impaired Days	90	2023	12.59777	Deciview	Haze Index (dv)
Most Impaired Days	90	2024	12.3204	Deciview	Haze Index (dv)
Clearest Days	10	2019	5.38223	Deciview	Haze Index (dv)
Clearest Days	10	2020	4.99408	Deciview	Haze Index (dv)
Clearest Days	10	2021	5.09181	Deciview	Haze Index (dv)
Clearest Days	10	2022	5.38791	Deciview	Haze Index (dv)
Clearest Days	10	2023	5.6736	Deciview	Haze Index (dv)
Clearest Days	10	2024	5.07444	Deciview	Haze Index (dv)

SOURCE: Federal Land Manager Database (AQRV Express Tools – Product #1, Annual Extinction Trends), https://views.cira.colostate.edu/fed/Express/AqrvTools.aspx#Visibility

Figure 3. Wind Cave National Park Deciview Trends (2000-2024)



Final Chart Data:

SeriesName	AuxID	YearNum	FactValue	ParamName	Units
Most Impaired Days	90	2019	11.0547	Deciview	Haze Index (dv)
Most Impaired Days	90	2020	8.83488	Deciview	Haze Index (dv)
Most Impaired Days	90	2021	10.18794	Deciview	Haze Index (dv)
Most Impaired Days	90	2022	10.20721	Deciview	Haze Index (dv)
Most Impaired Days	90	2023	11.25762	Deciview	Haze Index (dv)
Most Impaired Days	90	2024	9.7922	Deciview	Haze Index (dv)
Clearest Days	10	2019	3.51785	Deciview	Haze Index (dv)
Clearest Days	10	2020	3.36564	Deciview	Haze Index (dv)
Clearest Days	10	2021	3.40032	Deciview	Haze Index (dv)
Clearest Days	10	2022	3.39089	Deciview	Haze Index (dv)
Clearest Days	10	2023	3.80015	Deciview	Haze Index (dv)
Clearest Days	10	2024	3.76529	Deciview	Haze Index (dv)

SOURCE: Federal Land Manager Database (AQRV Express Tools – Product #1, Annual Extinction Trends), https://views.cira.colostate.edu/fed/Express/AqrvTools.aspx#Visibility

Based on this assessment and the continuing downward trend in visibility-impairing emissions, Nebraska determines that the current implementation plan elements and strategies are sufficient to enable South Dakota to meet its established RPGs for the second planning period at affected Class I areas in the state.

New Mexico

New Mexico set RPGs for its Class I areas that correspond to the modeled future year (2028) Most Impaired Days (MID). These are based on the Western Regional Air Partnership (WRAP) 2028 'On the Books' modeling scenario (2028OTBa2) and are shown in **Figures 4** and **6**. The RPGs set for the affected Class I area (Wheeler Peak Wilderness

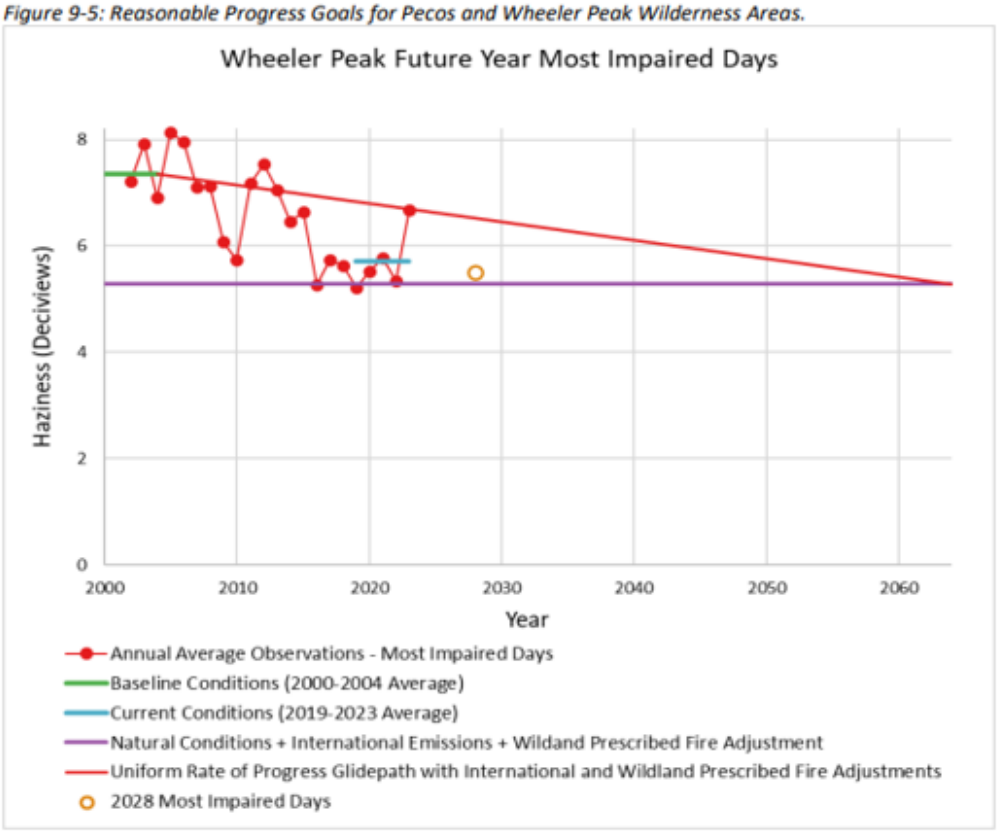
Area) are described in the New Mexico Draft RH SIP revision[19] (Figure 9.2.5); because the value (dv) of the RPG and original and adjusted glidepaths were not displayed in the draft SIP revision, the *WRAP Projected 2028 Reasonable Progress Goals* and *Adjustments to Uniform Rate of Progress Glidepath* charts are provided for context.

New Mexico is proposing to rely on the Uniform Rate of Progress (URP) with International and Wildland Prescribed Fire Adjustments. Visibility trends are provided in **Figure 7**.

Figure 4. Wheeler Peak Reasonable Progress Goals (2028)

9.2.5 Pecos Wilderness Area & Wheeler Peak Wilderness Area

Figure 9-5: Reasonable Progress Goals for Pecos and Wheeler Peak Wilderness Areas.



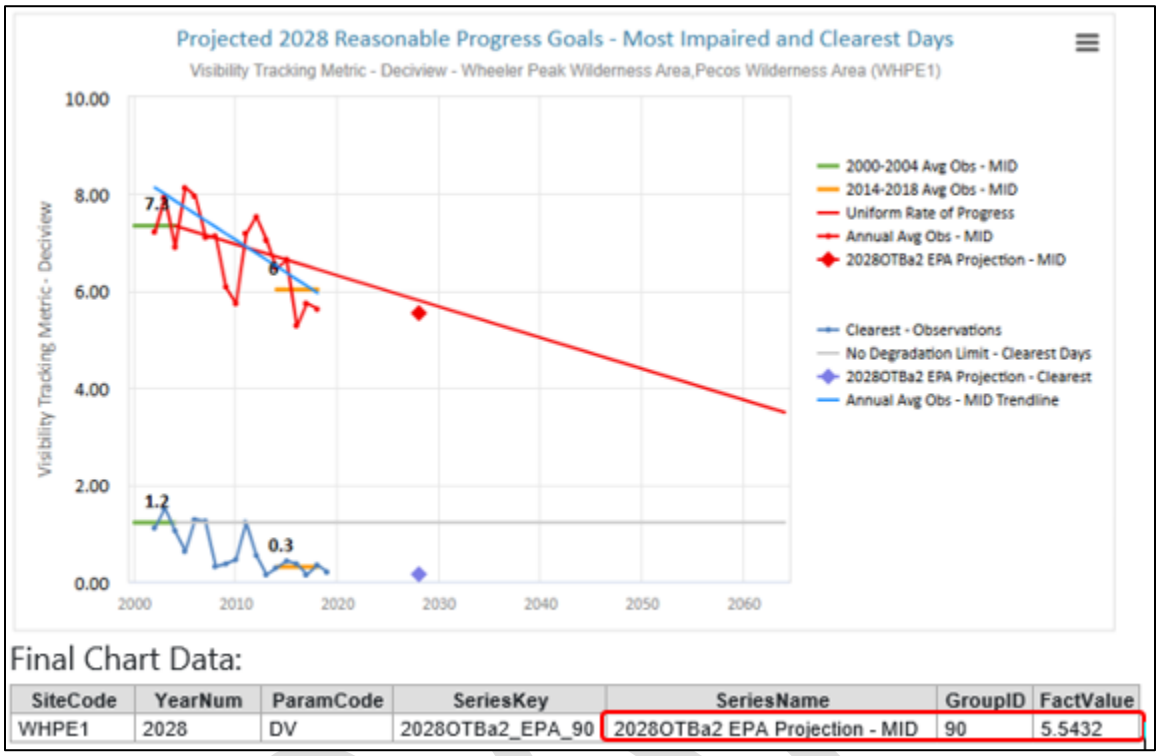
Values for WHPE1:

	Deciviews
Baseline Conditions (2000-2004 Average)	7.3
Current Conditions (2019-2023 Average)	5.7
Natural Conditions + International Emissions + Wildland Prescribed Fire Adjustment	5.3
2028 Most Impaired Days (Modeled Reasonable Progress Goal)	5.5
2028 Point on URP Glidepath	6.5

SOURCE: New Mexico South Dakota RH SIP (Second Period)

[19] New Mexico Draft Regional Haze SIP revision for the Second Planning Period, https://cloud.env.nm.gov/resources/_translator.php/OTI5MTYyMThlZDhlMTUyZGRkYTJiNDBmNV8xODMxNTA~.pdf

Figure 5. Wheeler Peak Projected 2028 Reasonable Progress Goals

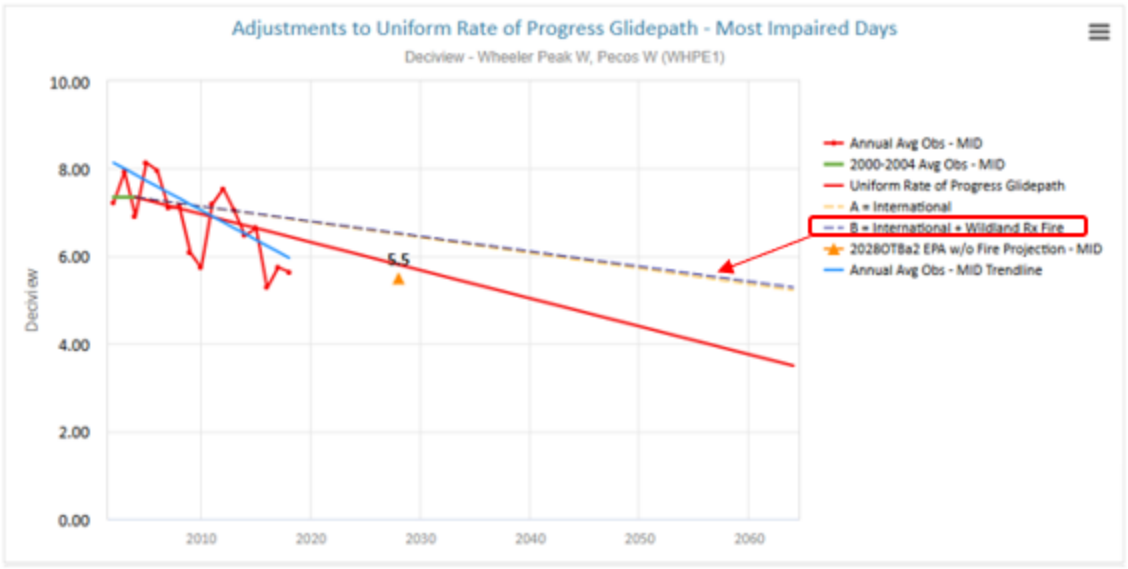


Final Chart Data:

SiteCode	YearNum	ParamCode	SeriesKey	SeriesName	GroupID	FactValue
WHPE1	2028	DV	2028OTBa2_EPA_90	2028OTBa2 EPA Projection - MID	90	5.5432

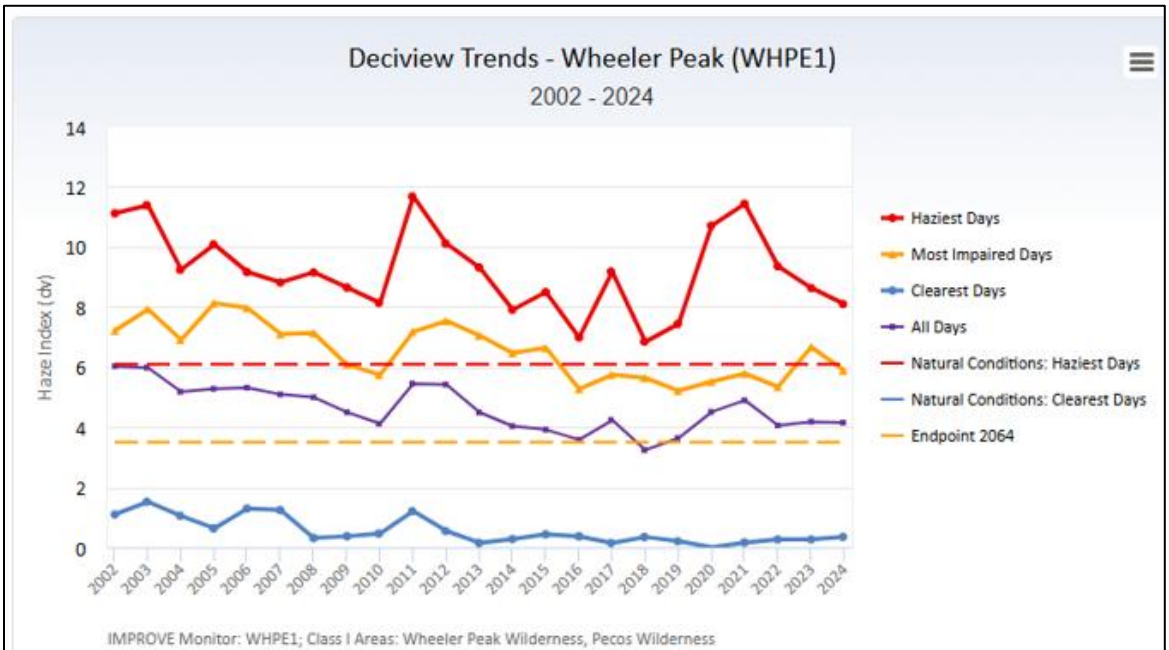
SOURCE: WRAP Technical Support System – Modeling Express Tools > Visibility Progress and Projections Product #4, https://views.cira.colostate.edu/tssv2/

Figure 6. Wheeler Peak Adjustments to Uniform Rate of Progress



SOURCE: WRAP Technical Support System – Modeling Express Tools > Visibility Progress and Projections Product #5, https://views.cira.colostate.edu/tssv2/

Figure 7. Wheeler Peak Deciview Trends (2002-2024)



Final Chart Data:

SeriesName	AuxID	YearNum	FactValue	ParamName	Units
Most Impaired Days	90	2019	5.21158	Deciview	Haze Index (dv)
Most Impaired Days	90	2020	5.51618	Deciview	Haze Index (dv)
Most Impaired Days	90	2021	5.78183	Deciview	Haze Index (dv)
Most Impaired Days	90	2022	5.33928	Deciview	Haze Index (dv)
Most Impaired Days	90	2023	6.66645	Deciview	Haze Index (dv)
Most Impaired Days	90	2024	5.87809	Deciview	Haze Index (dv)
Clearest Days	10	2019	0.20443	Deciview	Haze Index (dv)
Clearest Days	10	2020	-0.00403	Deciview	Haze Index (dv)
Clearest Days	10	2021	0.16114	Deciview	Haze Index (dv)
Clearest Days	10	2022	0.26072	Deciview	Haze Index (dv)
Clearest Days	10	2023	0.26991	Deciview	Haze Index (dv)
Clearest Days	10	2024	0.35295	Deciview	Haze Index (dv)

SOURCE: Federal Land Manager Database (AQRV Express Tools – Product #1, Annual Extinction Trends), https://views.cira.colostate.edu/fed/Express/AqrvTools.aspx#Visibility

Current visibility conditions at this area remain slightly above the RPG but are progressing at a rate consistent with the adjusted glidepath on which New Mexico is relying. Based on this assessment and the continuing downward trend in visibility-impairing emissions, Nebraska determines that the current implementation plan elements and strategies are sufficient to enable New Mexico to meet its established RPGs for the second planning period at the affected Class I areas in the state.

Colorado and Oklahoma

Three additional Class I areas were briefly addressed in Nebraska's RH SIP for the second period, though contributions to visibility impairment from Nebraska sources at these areas was below the chosen source selection threshold. These areas were Rocky Mountain and Great Sand Dunes National Parks (Colorado), and Wichita Mountains Wilderness Area (Oklahoma). Current visibility conditions at these areas are better than or improving at a rate consistent with achieving the RPGs for those respective areas. Based on this assessment and the continuing downward trend in visibility-impairing emissions, Nebraska determines that its current implementation plan elements and strategies are sufficient to enable these states to meet their respective RPGs for the second planning period at these Class I areas.

G. 40 CFR 51.308(g)(7) For progress reports for the first implementation period only, a review of the State's visibility monitoring strategy and any modifications to the strategy as necessary.

This element does not apply to Nebraska since this progress report addresses the second implementation period.

H. 40 CFR 51.308(g)(8) For a state with a long-term strategy that includes a smoke management program for prescribed fires on wildland that conducts a periodic program assessment, a summary of the most recent periodic assessment of the smoke management program including conclusions if any that were reached in the assessment as to whether the program is meeting its goals regarding improving ecosystem health and reducing the damaging effects of catastrophic wildfires.

This element does not apply to Nebraska since the state does not have a Smoke Management Plan or program. Smoke management strategies are addressed in Nebraska's first and second planning period RH SIPs (Initial 2011 SIP – section 11.3.4; 2024 SIP revision – section H.4)

*II. 40 CFR 51.308(h) **Determination of the adequacy of existing implementation plan**. At the same time the State is required to submit any progress report to EPA in accordance with paragraph (g) of this section, the State must also take one of the following actions based upon the information presented in the progress report:*

(1) If the State determines that the existing implementation plan requires no further substantive revision at this time in order to achieve established goals for visibility improvement and emissions

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reductions, the State must provide to the Administrator a declaration that revision of the existing implementation plan is not needed at this time.

(2) If the State determines that the implementation plan is or may be inadequate to ensure reasonable progress due to emissions from sources in another State(s) which participated in a regional planning process, the State must provide notification to the Administrator and to the other State(s) which participated in the regional planning process with the States. The State must also collaborate with the other State(s) through the regional planning process for the purpose of developing additional strategies to address the plan's deficiencies.

(3) Where the State determines that the implementation plan is or may be inadequate to ensure reasonable progress due to emissions from sources in another country, the State shall provide notification, along with available information, to the Administrator.

(4) Where the State determines that the implementation plan is or may be inadequate to ensure reasonable progress due to emissions from sources within the State, the State shall revise its implementation plan to address the plan's deficiencies within one year.

DWEE determines and declares, pursuant to 40 CFR 51.308(h)(1), that Nebraska's second period RH SIP revision requires no further substantive revision at this time in order to achieve established goals for visibility improvement and emissions reductions.

III. *40 CFR 51.308(i)(2) **The State must provide the Federal Land Manager with an opportunity for consultation**, in person…The opportunity for consultation on an implementation plan (or plan revision) or **on a progress report** must be provided no less than 60 days prior to said public hearing or public comment opportunity.*

DWEE provided a copy of the draft progress report to FLMs on March 4, 2025. A consultation call was held on April 22, 2025 at 11:00 am CDT. A reply from the U.S. Forest Service contact was received on March 18, 2025, stating that no revisions to the report were recommended. Written comments from the National Park Service (NPS) were provided on May 2, 2025. Documentation of FLM consultation and DWEE responses to comments and questions will be included in Attachment 2 as part of the final report submission to EPA..

No revisions were made to this progress report as a result of FLM comments during the consultation process.

IV. ***Public notice and comment.***

DWEE provided this report and related attachments for public notice and comment during the following period: (dates). Public notice documentation, public comments received, and

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DWEE responses to those comments are included in Attachment 3 to this report. *This section will be revised and finalized following the public notice and comment period.*

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