Wisconsin Regional Haze Second Implementation Period Progress Report

DRAFT FOR PUBLIC REVIEW

Developed By:
The Wisconsin Department of Natural Resources

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List of Acronyms and Abbreviations

AEI	Air Emissions Inventory
BACT	Best Available Control Technology
BART	Best Available Retrofit Technology
Boiler MACT	Maximum Available Control Technology Standard for Industrial, Commercial, and Institutional Boilers and Process Heaters
CAA	Clean Air Act
CAMPD	Clean Air Markets Program Data
CTG	Control Techniques Guidelines
CSAPR	Cross-State Air Pollution Rule
CSN	Chemical Speciation Network
EGU	Electricity Generating Unit
EOM	Enhanced Ozone Monitoring
EPA	U.S. Environmental Protection Agency
ERC	Emission Reduction Credit
FLMs	Federal Land Mangers
FS	U.S. Forest Service
FWS	U.S. Fish and Wildlife Service
I/M	Inspection and Maintenance
IMPROVE	Interagency Monitoring of Protected Visual Environments
LADCO	Lake Michigan Air Directors Consortium
LTS	Long-term Strategy
MACT	Maximum Achievable Control Technology
mmBtu	Million British Thermal Unit
MOVES	MOtor Vehicle Emissions Simulator
NAAQS	National Ambient Air Quality Standard
NADP	National Atmospheric Deposition Program
NPS	National Park Service
NCore	National Core Monitoring Network
NEI	National Emissions Inventory
NH_3	Ammonia
NO_x	Nitrogen Oxides
NSR	New Source Review
$PM_{2.5}$	Particulate Matter with Diameter less than 2.5 µm
PSD	Prevention of Significant Deterioration
Q/d	Distance (d) weighted emissions (Q)
RACM	Reasonably Available Control Measures
RACT	Reasonably Available Control Technology
RFG	Reformulated Gasoline
RHR	Regional Haze Rule
RPG	Reasonable Progress Goal
SCOTUS	Supreme Court of the United States
SIP	State Implementation Plan
SLAMS	State and Local Air Monitoring Stations
SMP	Smoke Management Plan

SO_2	Sulfur Dioxide
SPM	Special Purpose Monitoring
STN	Speciation Trends Network
TIP	Tribal Implementation Plan
TSD	Technical Support Document
URP	Uniform Rate of Progress
VOC	Volatile Organic Compound
WDNR	Wisconsin Department of Natural Resources

1. INTRODUCTION

The Wisconsin Department of Natural Resources (WDNR) submitted its regional haze State Implementation Plan (SIP) for the second implementation period (Round 2) to the U.S. Environmental Protection Agency (EPA) on July 30, 2021. Wisconsin's Round 2 SIP was developed to address the requirements of Clean Air Act (CAA) section 169A and in accordance with the Regional Haze Rule (RHR) (40 CFR 51.308). The EPA approved Wisconsin's Round 2 SIP on November 19, 2024 (89 FR 91269).

The RHR requires a report that provides an assessment of whether a regional haze SIP is being implemented appropriately and whether reasonable visibility progress is being achieved consistent with the projected visibility improvement in the SIP (40 CFR 51.308(g) and (h)). This progress report for Round 2 planning was due by January 31, 2025. Since Wisconsin's Round 2 SIP was not approved until November 19, 2024, there was inadequate time to complete the progress report before this deadline. This report follows guidance issued by EPA in 2024 to provide assistance to states in the development of Round 2 progress reports due in 2025.[1] The guidance contains recommendations for addressing the following report requirements:

Progress Report Elements

- Status of Control Strategies in the Regional Haze SIP
- Emission Reductions from Regional Haze SIP Strategies
- Visibility Progress
- Emissions Progress
- Assessment of Changes Impeding Visibility Progress
- Assessment of Current Strategy
- Long-Term Strategies Containing Smoke Management Programs
- Determination of Adequacy

Procedural Requirements

- Consultation with Federal Land Managers
- Public Comment Period

Section 2 provides a summary of Wisconsin's Round 2 SIP. Section 3 addresses each of the required progress report elements and supports the determination that further revision of the Round 2 SIP is not needed at this time. Section 4 addresses the procedural requirements for this progress report.

Collectively, this report contains or otherwise addresses all required elements for the Round 2 progress report.

[1] Overview of Elements for the Regional Haze Second Planning Period State Implementation Plan Progress Reports Due in 2025. July 2024. U.S. Environmental Protection Agency – OAQPS.

2. SUMMARY OF WISCONSIN'S REGIONAL HAZE SIP FOR THE SECOND IMPLEMENTATION PERIOD (2018–2028)

Wisconsin's regional haze SIP for the second implementation period (2018-2028) described regional haze in the upper Midwest, including the identification of affected Class I areas, the calculation of baseline and natural visibility for those areas, and the statutory and regulatory background. The SIP provided a lengthy description of how regional haze plan requirements were met, including how Wisconsin consulted with other states through the Lake Michigan Air Directors Consortium (LADCO) process to establish goals for reasonable further progress to mitigate anthropogenic visibility impairment. Analysis performed by LADCO determined that emission sources in Wisconsin contribute to visibility impairment at four LADCO Class I areas: the Isle Royale National Park and Seney Wilderness Area in northern Michigan; and Boundary Waters Canoe Wilderness Area and Voyageurs National Park in northern Minnesota.

The LADCO states affecting the northern Class I areas agreed that the priority sources and emissions to be addressed were: sulfur dioxide (SO_2) from point sources (electric generating units, or EGUs, and non-EGUs); nitrogen oxides (NO_x) from point sources (EGUs and non-EGUs) and mobile sources (on-road and off-road); and ammonia (NH_3) from agricultural operations. The Round 2 SIP further identified facilities for four-factor analysis and assessed the need for control measures for these sources. The SIP also met other regional haze requirements, including establishing reasonable progress goals (RPGs), developing a long-term strategy (LTS) showing how Wisconsin intends to progress towards meeting the RPGs, and providing a monitoring strategy.

As discussed in the Round 2 SIP, Wisconsin participated in a LADCO-facilitated consultation process with the other LADCO states, as well as EPA and Federal Land Managers (FLMs). To assist states with their source selection, this workgroup generated source lists based on various Q/d thresholds, where Q/d is the relationship of emissions and distance determined by dividing the emission rate (Q) by the distance to the nearest Class I area (d). The resulting Q/d ratio is a simple metric for assessing the potential contribution of a source to the visibility impact of a specific Class I area. The sources with the largest Q/d values were expected to have the largest visibility impact. For the required four-factor analysis, the WDNR decided to analyze sources with distance weighted emissions (Q/d) greater than 10.

Wisconsin's Round 2 SIP identified three potential sources for four-factor analysis with Q/d greater than 10:

- WPL - Edgewater Generating Station
- Ahlstrom – Kaukauna mill
- Ahlstrom – Rhinelander mill

After the submittal of the SIP, multiple changes occurred at these sources which further supported the WDNR's determination that no additional control measures at the sources were necessary. Additional information on this documentation can be found in Section 3.1.

Based on the information provided in the SIP, additional controls of emissions at

Wisconsin sources were not necessary to meet regional haze progress for the second planning period. The WDNR's demonstration of reasonable progress was based on measures that go beyond those included for the first planning period. To fulfill its LTS requirements, the WDNR committed to continue requiring the emission limits, averaging periods, monitoring and record keeping requirements, and compliance deadlines associated with regulations and permitting requirements already in place for Wisconsin's emission sources. Considering Wisconsin's relative contribution to visibility impairment at the Northern LADCO Class I Areas and the magnitude and expected reduction in its SO_2 and NO_x emissions, the WDNR determined that Wisconsin was meeting its share of emission reductions needed to make reasonable progress for the second planning period.

Since there are no mandatory Class I Federal areas in Wisconsin covered by the RHR, Wisconsin was not required to report uniform rate of progress (URP). However, Wisconsin voluntarily reported URP for Isle Royale, Seney, Boundary Waters, and Voyageurs as shown in Table 1. Wisconsin determined that the RPGs will be met at all northern LADCO Class I areas since the RPGs based on 2028 visibility projections were lower than the URP glidepath even on the most impaired days. The RPGs are based on LADCO's 2028 visibility projections, which accounted for on-the-books and on-the-way controls. Round 2 RPGs will also meet the 2038 URP glidepath points for the third implementation period. Additional reductions are expected in the point source sector that were not included in LADCO's simulation of Wisconsin's LTS, increasing the likelihood of Wisconsin meeting the RPGs.

Table 1. Comparison of the Uniform Rate of Progress with Reasonable Progress Goals (in deciviews) for Northern LADCO Class I Areas for the Second Implementation Period

Northern LADCO Class I Areas	URP at 2028	RPG based on 2028 Visibility Modeling	RPG – URP for 2028
Isle Royale	15.85	14.97	-0.88
Seney	18.59	16.94	-1.65
Boundary Waters	14.69	13.46	-1.23
Voyageurs	14.48	13.74	-0.74

Additional details about Wisconsin's four-factor analysis, RPGs for the northern Class I areas, and satisfaction of other regional haze rule requirements can be found in Wisconsin's Round 2 SIP.

3. ELEMENTS OF WISCONSIN'S REGIONAL HAZE PERIODIC REPORT

3.1. Status of Control Strategies in the Regional Haze SIP

40 CFR 51.308(g)(1) requires that the five-year periodic report contain: "*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.*"

As mentioned in Section 2, Wisconsin included several control measures in its Round 2 SIP for achieving the RPGs for the Class I areas in Michigan and Minnesota. The following is a description of the status of these measures.

Four-Factor Analysis

Wisconsin used Q/d information developed by LADCO to select emissions units with a Q/d over 10, which were located across three facilities. These facilities were WPL – Edgewater generating station, Ahlstrom - Kaukauna mill, and Ahlstrom - Rhinelander mill. As part of the four-factor analysis work, the WDNR utilized the 2015 LADCO Four-Factor Analysis and a supplemental 2020 WDNR analysis of potential control scenarios, that could potentially be implemented to reduce emissions from large source categories of NO_x and SO_2 to make reasonable progress toward meeting visibility improvement goals.

WPL – Edgewater's coal fired boiler B25 has operated a dry scrubber for SO_2 control since 2016, and selective catalytic reduction for NO_x control since 2014. At the time the WDNR was drafting its SIP, WPL had announced publicly that B25 would be retired before 2023. Because boiler B25 was already well controlled and expected to retire by 2023, no further analysis of additional emission control measures was necessary. In June 2020, WPL announced the retirement of B25 would be delayed until 2025. Because of this, Wisconsin provided additional information updating its four-factor analysis explaining that existing controls on the boiler were effective and additional controls were still not necessary for reasonable progress. In 2024 WPL announced another delay in retirement to 2028,[2] however, this delay does not impact the WDNR's determination that existing control measures at the facility are sufficient.

Ahlstrom – Kaukauna is a kraft pulp and paper mill that manufactures unbleached pulp. Processes include kraft chemical recovery processes, paper machines, a boiler house and a wastewater treatment plant. Boiler B11 was a twin cyclone steam generating unit capable of combusting multiple fuels (including coal) and was equipped with a multi-cyclone and ESP in series. After the submittal of the SIP, B11 suffered an explosion and as of August 2022 was no longer operational. The unit was not repaired and was replaced with a natural gas boiler (B84). On January 2, 2024, the WDNR issued the Title V operation permit renewal 44503118A–P30 which listed B11 as having ceased operation. The Title I Construction Permit 23–JAM–079 for the new natural gas-fired Boiler B84 also detailed the retirement of B11. If Ahlstrom – Kaukauna

[2] Wisconsin energy companies announce plan to continue operations at Columbia Energy Center, commit to exploring conversion to natural gas. Alliant Energy. Online. https://www.alliantenergy.com/news/news-center/2024/12/120424-columbia-energy-center. Dec. 4, 2024.

intends to resume operation of B11 or replace it with a new coal boiler in the future, it would be treated as a new source with emissions limited by the construction permitting process, be subject to PSD review, and require BACT controls. There have been no updates to the status of control measures at Ahlstrom – Kaukauna since Wisconsin's final SIP approval. Sections 3.2 and 3.4 reflect the impact of this retirement on more recent emissions.

Ahlstrom – Rhinelander is a paper mill with four paper machines producing a variety of specialty papers including greaseproof, label backing, and wet strength papers. Two natural gas-fired boilers and a coal-fired cyclone boiler produced steam for the manufacturing operations with the cyclone boiler having been the primary boiler. The SO_2 emissions from coal boiler B26 were limited to 3.0 Lbs/mmBtu, averaged over 24 hours, in Title V permit #744008100-P22. During the SIP review process, the WDNR confirmed the coal to gas conversion of the Boiler B26. The shutdown of Ahlstrom – Rhinelander's B26 was reflected in two permits. First, Title I construction permit 22-MMC-035 allowed Ahlstrom - Rhinelander to install a new gas fired boiler (B40) which would result in the removal of B26. Second, the facility's renewed Title V operation permit 744008100-P22 which stipulated that the operation of B26 was prohibited. Since the issuing of these permits, there has been no change to the status of control measures, and the retirement is reflected in the updated emissions inventories in Sections 3.2 and 3.4.

Federal and State Programs

Wisconsin relied on several other control measures in its Round 2 SIP for achieving the RPGs. The status of these different control measures is described below. Most of these control measures described remain the same as described in the Round 2 SIP and have been implemented as such. Any updates to the control measures are noted within the appropriate source sector below.

Point Sources

Federal Transport Rules for NO_x and SO_2 – The Cross-State Air Pollution Rule (CSAPR), which replaced the Clean Air Interstate Rule in 2015, implemented a first phase of NO_x and SO_2 emission budgets in 2015 and 2016. The CSAPR Update Rule finalized in 2016 further reduced Wisconsin EGU NO_x emissions during the ozone season starting in 2017.

State NO_x Reasonably Available Control Technology (RACT) – Wisconsin has implemented RACT for major NO_x sources in southeast Wisconsin as part of compliance requirements for the 1997 and 2008 ozone NAAQS. The NO_x RACT requirements are codified under ss. NR 428.20 to 428.25, Wis. Adm. Code and became applicable May 1, 2009. The applicable NO_x emission limit for a specific NO_x emitting unit is determined based on the type and the size of combustion unit and the type of fuel used.

State NO_x Reasonably Available Control Measures (RACM) – Wisconsin implemented RACM for NO_x sources in the state's nonattainment areas for the 1997 ozone NAAQS. The NO_x RACM requirements are codified under ss. NR 428.04 to 428.12, Wis. Adm. Code and became applicable in January 2001. Specific lbs/mmBtu NO_x emission limits apply to both new and existing NO_x emission units located in several southeast counties of Wisconsin, including

Kenosha, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, and Waukesha counties, that meet the applicability criteria listed in ss. NR 428.04 and 428.05, Wis. Adm. Code.

2010 SO_2 NAAQS Requirements - In 2010, the EPA revised the primary SO_2 NAAQS, setting a 1-hour standard of 75 ppb. The EPA then undertook a multi-round process to make initial area designations for this NAAQS. In August 2013, in Round 1 of its designations, the EPA designated a portion of Oneida County as nonattainment for this NAAQS, with the Ahlstrom - Rhinelander mill being a primary source of SO_2 emissions in that area. In December 2020, in Round 4 of its designations, the EPA finalized a designation of nonattainment for part of Outagamie County, identifying the Ahlstrom – Kaukauna mill as the primary SO_2 source in that area. Based on certified 2018-2020 SO_2 monitoring data that demonstrates attainment of the 2010 SO_2 NAAQS, the EPA changed the designation of this area to "attainment" effective April 30, 2021 (86 FR 19576). In part as a response to these actions, both sources have demonstrated reduced SO_2 emissions from the 2016 Base emissions, and both of the areas designated by the EPA are now meeting the 2010 SO_2 NAAQS. As detailed in the Round 2 SIP, a number of Wisconsin facilities are also subject to required SO_2 modeling in air permits and continue to demonstrate compliance with this NAAQS, pursuant to Ch. NR 404, Wis. Adm. Code.

Boiler MACT and Title V Permitting Actions - Compliance with the Maximum Available Control Technology Standard for Industrial, Commercial, and Institutional Boilers and Process Heaters (Boiler MACT) has led to significant reductions in NO_x and SO_2 for Wisconsin non-EGU facilities, due to control measures such as converting/repowering from coal to natural gas or process gas, boiler heat input limitations, and installation of DSI equipment. Additional permitting actions not necessarily associated with any state or federal regulation have also led to significant reductions of NO_x and SO_2 emissions. These additional reductions in NO_x and SO_2 emissions have further improved visibility at the Northern LADCO Class I areas for Round 2.

Source Retirement and Replacement Schedules - Information on anticipated Wisconsin point source EGU and non-EGU retirements/replacements were included in LADCO's 2028 modeled emissions. Several non-EGU coal boilers have also been retired and in some cases replaced by gas boilers. These shutdowns and replacements continue to contribute to Wisconsin's emission reductions and the associated visibility improvements at the affected LADCO Northern Class I areas for Round 2. Section 3.5 and Appendix 1 contain more details on the status of retirements and replacements.

Measures to Mitigate the Impacts of Construction Activities

New Source Review (NSR) and Prevention of Significant Deterioration (PSD) - For the construction of new major sources, the visibility impacts of such sources will continue to be managed in conformance with existing requirements pertaining to NSR and PSD. This involves analysis of visibility impacts and consultation with FLMs in determining if a new major source or major modification is installing Best Available Control Technology (BACT), and if it may have an adverse impact on visibility in Class I areas. The WDNR commits to ensuring that permitting of new and modified sources through Wisconsin's NSR program is consistent with making reasonable progress toward the visibility goals of the Round 2 SIP. Source retirement and replacement schedules, which must be considered by a state when developing its LTS (40

CFR § 51.308(f)(2)(iv)(C)), will be managed to comply with existing requirements under the PSD program.

Fugitive Dust and Particulate Matter from Direct, Portable or Construction Areas - The WDNR has authority to regulate and enforce fugitive dust and particulate matter emissions from direct and portable sources and construction areas within the state. Section NR 415.03, Wis. Adm. Code, contains general limitations for particulate matter emissions and s. NR 415.04, Wis. Adm. Code, contains fugitive dust requirements that apply to all sources, regardless of if the code sections are referenced in a source's air permit, if the source is not required to have an air permit, or if the source is already subject to PSD.

On-road Mobile Source Programs

Federal Motor Vehicle Emission Control Program – Both NO_x and volatile organic compound (VOC) emissions from on-road mobile sources are substantially controlled through federal new vehicle emission standards programs and fuel standards. These regulations have continued to reduce emissions in Wisconsin as newer vehicles enter the fleet.

Inspection and maintenance (I/M) programs – The Wisconsin administered I/M program is an ongoing program that limits onroad NO_x and VOC emissions in southeastern Wisconsin counties. The Wisconsin I/M program was first implemented in 1984 and has gone through several modifications and enhancements since that time. The I/M program requirements are codified in ch. NR 485, Wis. Adm. Code. The I/M program reduces average vehicle NO_x and VOC emissions and garners some level of continued incremental reduction as fleets turn over to new vehicles.

Reformulated gasoline – The CAA has required the use of reformulated gasoline (RFG) in southeast Wisconsin since 1995. The RFG program has gone through three phases since its initiation. As with the I/M program, the RFG program reduces average vehicle NO_x and VOC emissions and garners some level of continued incremental reduction as fleets turn over to new vehicles.

Additional details on federal on-road mobile source regulations can be found in Table 16 of the Round 2 SIP.

Non-road Mobile Source Programs

Similar to onroad sources, NO_x and VOCs emitted by non-road mobile sources are significantly controlled via federal standards for new engines. The nonroad regulations continue to slowly decrease average unit and sector total emissions as equipment fleets are replaced each year, pulling the dirtiest equipment out of circulation. The new engine tier requirements are implemented in conjunction with fuel programs regulating fuel sulfur content. The fuel programs enable achievement of various new engine tier NO_x and VOC emission limits. The RFG program noted in the onroad control measures also contributes to lower NO_x and VOC emissions from the nonroad mobile sector.

Additional details on federal non-road mobile source regulations can be found in Table 17 of the Round 2 SIP.

Area Sources

VOC RACT/Control Techniques Guidelines (CTGs) – Wisconsin has implemented many VOC RACT/CTGs rules under ss. NR 419 through 424, Wis. Adm. Code. A number of these rules limit VOC emissions from area sources. There are also a number of federal programs in place which reduce area source VOC emissions. VOC emission standards for consumer and commercial products were promulgated under 40 CFR Part 59. This program will continue to limit VOCs emitted from this source category. Another federal rule, the area source hazardous air pollutant control rule, also controls area source VOC emissions associated with fuel storage and transfer activities (40 CFR 63, Subparts R, BBBBBB, and CCCCCC). VOC control measures can be found in Section 3.5.1 of Wisconsin's Round 2 SIP.

Smoke Management Practices for Prescribed Fire Burns – The WDNR has worked with land managers in the state to prepare a plan to address controllable fire activities that can impact visibility locally. Appendix 6 of Wisconsin's Round 2 SIP contains the "Wisconsin Smoke Management Plan: Best Management Practices for Prescribed Burns" (April 2021).

Monitoring

Wisconsin currently maintains a monitoring network to measure and report levels of various pollutants, including those that contribute to impairment of visibility in Class I areas. Wisconsin is not required to perform direct haze monitoring. However, Wisconsin's ongoing monitoring efforts and resulting data will be used to certify and quality assure modeling efforts used in evaluating visibility impacts and contribution – with a focus on the Class I areas in Michigan and Minnesota. This approach fulfills section 40 CFR 51.308(d)(4)(iii) of the RHR.

Wisconsin's monitoring network consists of State and Local Air Monitoring Stations (SLAMS), which are a network of monitoring sites whose size and distribution is largely determined by the monitoring requirements for the NAAQS and the needs of monitoring organizations to meet their respective tribal/state implementation plan (TIP/SIP) requirements, which include National Core Monitoring Network (NCore), and all other state or locally operated sites that have not been designated as Special Purpose Monitoring (SPM) sites. The WDNR operates additional networks not required under SLAMS including Chemical Speciation Network (CSN), SPM sites, and the National Atmospheric Deposition Program (NADP).

Wisconsin does not operate any monitoring sites under the federal Interagency Monitoring of Protected Visual Environments (IMPROVE) program; however, Wisconsin does operate Speciation Trends Network (STN) sites. Specific site information, including the pollutants

measured, site locations (address and latitude/longitude), and the sampling schedule, is found in the WDNR's latest monitoring network plan.[3]

3.2. Emission Reductions from the Regional Haze SIP Strategies

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

This section discusses historic NO_x and SO_2 emissions from elevated point sources in Wisconsin. As described in the Round 2 SIP, the LADCO Workgroup agreed that the priority emission sources affecting visibility of the Northern Class I areas to evaluate further for reasonable progress are NO_x and SO_2 from point sources (EGUs and non-EGUs). Historic emissions from EGU point sources (the sources that supply electricity to the grid for sale) were obtained primarily from the EPA's Clean Air Markets Program Data (CAMPD) EGU database, or the Wisconsin Air Emissions Inventory (AEI) if CAMPD data was not available for the facility (e.g., for EGU facilities less than 25 MW). Non-EGU point source historic emissions were obtained from the Wisconsin AEI.

Overall Point Source Emissions

Table 2 provides a summary of the changes in the NO_x and SO_2 emissions from Wisconsin EGU and non-EGU point sources since the 2016 base year, and Figure 2 provides this information graphically. Note that total statewide emissions for all sectors are shown in Section 3.4.

As shown in Figure 1 and Table 2, point source NO_x and SO_2 emissions decreased significantly from 2016 to 2023 and are already well below the 2028 targets. The large decreases in EGU emissions (36% NO_x and 73% SO_2) are from implementation of a combination of shutdowns, fuel switching and emission controls, primarily to comply with the CAIR/CSAPR and federal consent decree emission limitations. Significant NO_x and SO_2 decreases at non-EGUs (42% NO_x and 68% SO_2), including at the two facilities selected for four-factor analysis, are primarily due to facilities shutting down coal boilers (and in some cases replacing with gas boilers) to comply with federal regulations, such as the Boiler MACT and the 1-hour SO_2 NAAQS (see also Appendix 1).

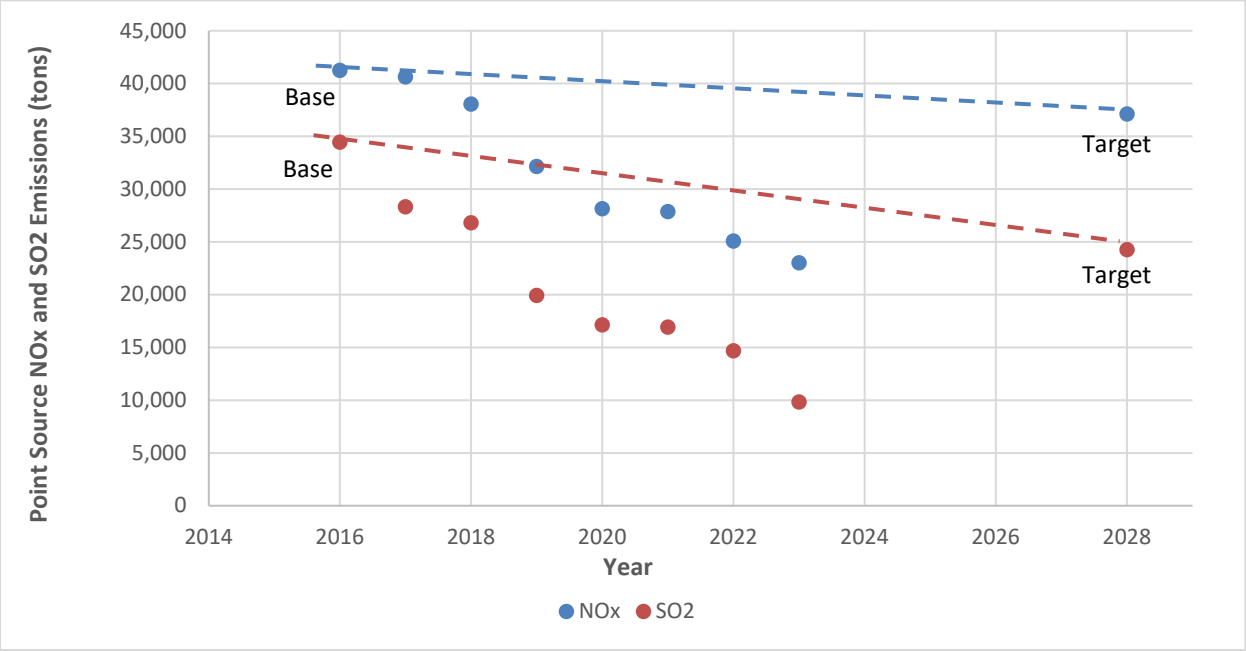
[3] Wisconsin Department of Natural Resources 2025 Monitoring Network Plan (June 2024). Wisconsin Department of Natural Resources – Air Monitoring Section. Online. https://dnr.wisconsin.gov/sites/default/files/topic/AirQuality/Final2025AirMonitorNetworkPlan.pdf. June 6, 2024.

Table 2. Annual NOx and SO_2 Actual and Target (2028) Emissions for Wisconsin EGUs and Non-EGUs.

Sector	Emissions (Tons)[a]								
	2016	2017	2018	2019	2020	2021	2022	2023	2028 Modeled[b]
NO_x									
Point – EGU	16,637	18,391	15,917	12,272	11,248	13,256	11,129	10,378	12,916
Point – Non-EGU	23,259	22,262	22,148	19,882	16,890	14,607	13,975	12,636	24,206
TOTAL	**39,896**	**40,653**	**38,064**	**32,154**	**28,138**	**27,864**	**25,104**	**23,014**	**37,122**
SO_2									
Point – EGU	12,882	11,586	10,112	5,063	4,548	5,592	4,578	3,729	4,700
Point – Non-EGU	19,985	16,742	16,707	14,883	12,597	11,355	10,126	6,120	19,559
TOTAL	**32,867**	**28,329**	**26,819**	**19,946**	**17,145**	**16,947**	**14,703**	**9,849**	**24,259**

[a] Emissions are from WDNR AEI unless otherwise noted. EGU emissions separated out using NAICS codes 221112, 221113, 221117, 221118 and 221121.
[b] Projected emissions modeled by LADCO for visibility impact.

Figure 1. Annual NOx and SO_2 Emissions (Tons per Year) for Wisconsin Point Sources from 2016 Base to 2028 Target.[a]



[a] Actual emissions from the WDNR AEI used for 2017 through 2023. 2016 base and 2028 modeled emissions from Wisconsin's Round 2 SIP used for base and target.

Individual Point Source Emissions

The LADCO Workgroup considered unit-level Q/d thresholds of 1, 4, and 10, and LADCO provided key information for the different thresholds. The individual states could then use this information to inform which sources in the state to select for further analysis. Tables 3 and 4 provide a comparison between each source's actual emissions in 2016 (the "base" year for Wisconsin's Round 2 SIP) and the most recent actual emissions from 2023. Appendix 1 provides updates additional to the control information from the Round 2 SIP (Appendix 3 of the SIP), and taken together many of these controls have contributed to the emission reductions at these sources.

As shown in Table 3 and 4, overall emissions from these highest impacting Wisconsin point sources have significantly decreased from 2016-2023 (43% for NO_x and 72% for SO_2 at EGUs, and 67% for NO_x and 77% for SO_2 at non-EGUs). These large emission reductions are expected to have significantly reduced the visibility impact on the northern Class I areas. There are also several additional committed controls that will be implemented after 2023, which will contribute to Wisconsin being even further below the 2028 emissions targets for point source NO_x and SO_2 emissions (see Appendix 1).

Table 3. Wisconsin EGU Sources over Q/d = 1.[a]

Facility ID	Facility Name	Unit ID	2016 Q/d[b]	NOx Annual Tons[c]		SO_2 Annual Tons[c]	
				2016	2023	2016	2023
460033090	WPL – Edgewater	B24	12.2	821	Retired	2,983	Retired
		B25	11.0	486	536	2,998	391
111003090	WPL – Columbia	B21	5.6	1,668	1,503	643	719
		B22	6.1	1,778	675	736	698
241007690	We Energies – Oak Creek (includes Elm Road)	B18	4.2	1,110	897	335	145
		B19	4.1	1,108	1,058	282	162
		B25	3.8	532	235	14	5
		B26		387	308	10	7
		B27		195	435	27	55
		B28		342	369	38	49
230006260	We Energies – Pleasant Prairie	B20	4.9	1,265	Retired	575	Retired
		B21	3.9	949	Retired	512	Retired
737009020	Wisconsin Public Service Corporation- Weston Plant	B03	3.4	306	221	762	70
		B04	4.3	700	694	575	459
606034110	JP Madgett	B25	5.4	1,239	618	920	652
405031990	WI Public Service Corp - JP Pulliam Plant	B26	3.5	302	Retired	591	Retired
		B27	1.0	99	18	157	1
802033320	Xcel Energy Bay Front Generating Station	B20	3.6	155	123	45	26
		B21		165	120	52	28
663020930	Dairyland Power Coop Genoa Station-Eop	B20	1.8	578	Retired	253	Retired
246004000		P11	1.3	62	74	3	4

Facility ID	Facility Name	Unit ID	2016 Q/d[b]	NOx Annual Tons[c]		SO_2 Annual Tons[c]	
				2016	2023	2016	2023
	Wisconsin Electric Power Company D/B/A We Energies-Port Washington	P12		60	71	3	5
		P21		51	70	3	4
		P22		53	70	3	4
436035930	Manitowoc Public Utilities	B28	1.25	27	57	68	5
		B09		49	50	194	100
Total Emissions				**14,487**	**8,202**	**12,782**	**3,589**
% Change 2016-2023					**-43%**		**-72%**

[a] Also note that the existing/future control measures, known as of March 2025, are shown in Appendix 1.

[b] Q/d values are from LADCO-states consultation process (see Appendix 2 of Round 2 SIP). "Q" is emission rate based on 2016 inventory. "d" is the distance to the closest class I area.

[c] 2016 data from the WDNR Air Emissions Inventory, and 2023 data from EPA Clean Air Markets Program Data (CAMPD). Some individual sources show an emission increase, due to natural variability in operations year-to-year.

Table 4. Wisconsin Non-EGU Sources over Q/d = 1.[a]

Facility ID	Facility Name	2016 Q/d[b]	NOx Annual Tons[c]		SO_2 Annual Tons[c]	
			2016	2023	2016	2023
445031180	Ahlstrom NA Specialty Solutions LLC – Kaukauna	29.8	1,577	487	6,532	410
744008100	Ahlstrom NA Specialty Solutions LLC – Rhinelander	13.3	1,168	54	1,596	1
772010030	WISCONSIN RAPIDS PAPER MILL	13.2	1,875	0	1,622	0
772009480	ND Paper Inc – Biron Division	11.8	1,436	735	2,506	529
405032870	GEORGIA-PACIFIC – Green Bay	9.0	840	168	1,286	0
737009570	Ahlstrom Mosinee LLC – Mosinee	7.6	640	335	1,469	983
816036430	GRAYMONT (WI) LLC – Superior	6.6	454	380	454	176
816009590	Superior Refining Company LLC	5.0	365	208	28	24
617049840	CARDINAL FG CO – Menominee	5.0	1,574	174	61	57
405032100	GREEN BAY PACKAGING INC MILL DIVISION	4.0	203	46	751	1
772010690	DOMTAR A W LLC-NEKOOSA	3.8	309	275	888	1160
111071180	CARDINAL FG – Portage	3.8	1,426	204	62	65
436034390	CARMEUSE LIME AND STONE - ROCKWELL OPERATION	3.8	310	395	710	629
851009390	Park Falls Industrial Management, LLC	2.8	264	0	157	0
405032210	PROCTER & GAMBLE PAPER PRODUCTS CO	2.7	374	337	0	1
735008010	PACKAGING CORPORATION OF AMERICA – Tomahawk	2.6	289	441	53	55
445031290	Appleton Property Ventures LLC	1.6	250	110	146	2
241870530	General Mitchell International Airport	1.5	443	241[d]	52	26[d]

Facility ID	Facility Name	2016 Q/d[b]	NOx Annual Tons[c]		SO_2 Annual Tons[c]	
			2016	2023	2016	2023
405032650	Ahlstrom NA Specialty Solutions LLC – De Pere	1.4	98	16	231	0
265006830	USG INTERIORS LLC	1.1	47	27	359	188
NA	POKEGAMA (Railyard)	1.1	152	166[d]	0	0[d]
Total Emissions			**14,094**	**4,799**	**18,963**	**4,307**
% Change 2016-2023				**-67%**		**-77%**

[a] Also note that the existing/future control measures, known as of March 2025, are shown in Appendix1.

[b] Q/d values are from LADCO-states consultation process (see Appendix 2 of Round 2 SIP). "Q" is emission rate based on 2016 inventory. "d" is the distance to the closest class I area.

[c] Reported to the WDNR Air Emissions Inventory. Some individual sources show an emission increase, due to natural variability in operations year-to-year.

[d] Emissions from the 2022v1 Emissions Modeling Platform.

3.3. Visibility Progress

The requirements of 40 CFR 51.308(g)(3) relate to assessments of visibility conditions and apply only to states that contain Class I areas. Wisconsin does not have any Class I areas subject to the regional haze rule.

3.4. Emissions Progress

40 CFR 51.308(g)(4) requires: *"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."*

To satisfy the required analysis of emissions, this section compares Wisconsin's emissions from 2017 through 2022. Table 5 includes 2017 and 2020 National Emissions Inventory (NEI) emissions to assess progress, however, substantial methodological changes make the two years difficult to compare as discussed below. 2022 emissions shown in Table 5 are from the 2022v1 Emissions Modeling Platform and are the most recent emissions available for comparison.

Table 5 shows 2017, 2020 and 2022 annual emissions in Wisconsin for NH_3, NO_x, $PM_{2.5}$, SO_2, and VOCs. In 2020, the EPA made substantial methodology changes from 2017 for calculating emissions for several area source categories.[4] This resulted in significant increases in Wisconsin's area source NH_3, $PM_{2.5}$, and VOC emissions for 2020 and 2022 when compared to 2017. More details on the change in methodology can be found in the EPA's TSD Section 2.[5] Due to these changes, the 2017 NEI NH_3, $PM_{2.5}$, and VOC emissions are not directly comparable with the 2020 NEI and 2022v1 Platform emissions. However, it is unlikely there was an actual significant increase in these emissions if the 2017 emissions were back calculated.

[4] Area source categories with significant changes included: Agriculture – Fertilizer Application and Waste Disposal (NH_3); Fuel Combustion – Residential – Wood and multiple categories of Dust ($PM_{2.5}$); Miscellaneous Non-Industrial NEC and Solvent – Graphic Arts (VOC).

[5] 2020 National Emissions Inventory Technical Support Document: Overview, US EPA. Online. https://www.epa.gov/system/files/documents/2023-01/NEI2020_TSD_Section2_Overview_0.pdf. August 2023.

Table 5. 2017, 2020 and 2022 Wisconsin Emissions in Tons per Year.

2017[a]	NH_3	NO_x	$PM_{2.5}$	SO_2	VOC
Point – EGU	1,339	19,542	698	13,246	905
Point – Non-EGU	351	21,304	4,125	14,490	19,863
Area	63,060	26,349	54,770	1,883	92,811
On-road	1,881	64,770	2,279	358	34,751
Off-road	53	36,590	2,641	93	38,571
TOTAL	**66,684**	**168,554**	**64,513**	**30,070**	**186,902**
2020[b]	**NH_3**	**NO_x**	**$PM_{2.5}$**	**SO_2**	**VOC**
Point – EGU	178	10,976	798	4,523	722
Point – Non-EGU	334	17,482	3,482	12,502	17,894
Area	87,828	33,434	74,722	2,036	144,249
On-road	1,698	57,872	1,834	186	21,025
Off-road	47	19,044	1,841	22	31,627
TOTAL	**90,085**	**138,808**	**82,678**	**19,269**	**215,517**
2022[c]	**NH_3**	**NO_x**	**$PM_{2.5}$**	**SO_2**	**VOC**
Point – EGU	209	11,281	978	4,625	509
Point – Non-EGU	301	15,389	3,627	10,062	19,183
Area	84,281	34,212	78,313	2,170	151,545
On-road	3,702	49,804	1,560	168	20,300
Off-road	48	17,339	1,634	20	28,872
TOTAL	**88,541**	**128,025**	**86,112**	**17,045**	**220,409**
Total % Change (2017-2022)	**24%[d]**	**-32%**	**25%[d]**	**-76%**	**15%[d]**

[a] Data from 2017 NEI (Table 7 of Round 2 SIP, page 23).

[b] Data from 2020 NEI.

[c] Data from 2022v1 Emissions Modeling Platform.

[d] Increase in emissions due to substantial methodology changes between the 2017 NEI and the 2020 NEI/2022v1 Emissions Modeling Platform.

Regardless of the shift in 2020 and 2022 area source emissions, Wisconsin has seen a substantial decrease in emissions from EGU and non-EGU point sources. As detailed in Section 3.2, since 2016 NO_x emissions have decreased 36% and SO_2 emissions have decreased 73% from EGU point sources. The reductions for non-EGU point sources are similar, with NO_x emissions decreasing by 42% and SO_2 by 68%. Additional emission data on NO_x and SO_2 emissions trends

at the larger EGU and non-EGU point sources can be found in Tables 3 and 4. Based on historical emissions trends, emission reductions at these point sources are expected to continue.

3.5. Assessment of Changes Impeding Visibility Progress

40 CFR 51.308(g)(5) requires: *"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 whether they have limited or impeded progress in reducing pollutant emissions and improving visibility."*

While Wisconsin did not rely on EGU shutdowns or conversions to meet its RPGs, anticipated actions that would impact emissions were summarized in the Round 2 SIP. Since the SIP was submitted, shutdown or conversion plans for multiple EGUs have changed. These changes are summarized in Table 6. Wisconsin does not anticipate these adjustments will significantly impact Wisconsin's ability to meet its RPGs but may affect the accuracy of 2028 adjusted projections.

Table 6. Wisconsin EGU Shutdown and Conversion Updates.

EGU Name	Unit	Anticipated Action in SIP	Updated Status
We Energies - Oak Creek	B18 B19	No anticipated action	Convert to natural gas by 2030
We Energies - Oak Creek	B27 B28	Shut down by 2024	Shut down by 2026
WPL - Edgewater	B25	Shut down by 2022	Convert to natural gas by 2028
WPL - Columbia	B21 B22	Shut down by 2025	Shut down by 2029
WPSC – Weston	B03	No anticipated action	Shut down by 2031
WPSC – Weston	B04	No anticipated action	Convert to natural gas by 2030
Xcel Energy - Bay Front Generating Station	B20 B21	No anticipated action	Converted to natural gas in 2020

Outside of the changes listed in Table 6, the WDNR is not aware of any significant unexpected increase in anthropogenic emissions that occurred since the submittal of the Round 2 SIP that were not projected in the SIP modeling analysis, or any significant expected reduction in anthropogenic emissions documented in the SIP that did not occur.

3.6. Assessment of Current Strategy

40 CFR 51.308(g)(6) requires: *"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."*

Table 7 shows the annual mean visibility on the most impaired days for the Class I areas analyzed in the Round 2 SIP from the base year used in analysis, compared with RPGs calculated based on LADCO's 2028 visibility modeling. Table 8 shows the five-year rolling average visibility for the most impaired days at the same sites.

Table 7. Annual Mean Visibility of Most Impaired Days at Affected Class I Areas, in Deciviews.[a]

Class I Area	2016	2017	2018	2019	2020	2021[b]	2022	2023[b]	RPG
Boundary Waters	12.20	14.48	13.83	13.12	14.23	14.29	12.41	12.83	13.46
Isle Royale	13.61	15.45	14.68	15.03	13.79	15.14	12.60	14.51	14.97
Seney	16.09	16.23	16.81	16.32	15.54	16.97	15.28	16.10	16.94
Voyagers	12.56	14.24	14.43	13.56	14.89	15.04	12.06	13.00	13.74

[a] Data from IMPROVE RHR Summary Data. RHR Summary Data – Improve
[b] 2021 and 2023 were heavily impacted by wildfires.

Table 8. 5-year Average Visibility on Most Impaired Days at Affected Class I Areas, in Deciviews.[a]

Class I Area	2012-2016	2013-2017	2014-2018	2015-2019	2016-2020	2017-2021	2018-2022	2019-2023	RPG
Boundary Waters	14.58	14.35	13.96	13.50	13.57	13.99	13.58	13.38	13.46
Isle Royale	16.05	15.84	15.54	14.88	14.51	14.82	14.25	14.21	14.97
Seney	18.50	17.89	17.57	17.05	16.20	16.37	16.18	16.04	16.94
Voyagers	15.04	14.59	14.18	13.69	13.94	14.43	14.00	13.71	13.74

[a] Data from IMPROVE RHR Summary Data. RHR Summary Data – Improve

EGU and non-EGU point sources have made substantial NO_x and SO_2 reductions as shown in Section 3.2. As detailed in Section 3.4, due to the methodology changes of the 2020 NEI and subsequent impacts on the 2022v1 modeling platform, comparison of those years to the 2016 base year used in the Round 2 SIP cannot be used to assess progress for NH_3, $PM_{2.5}$, and VOCs without backcasting.

While methodology changes to area source emissions shown in Section 3.4 make it difficult to assess emission trends for NH_3, $PM_{2.5}$, and VOCs, there is no reason to believe significant changes to anthropogenic emissions have occurred. There have been no significant changes in the state that would suggest any deficiencies in the Round 2 SIP that would prevent the

achievement of RPGs in the northern LADCO Class I areas. Looking forward, Wisconsin's Round 2 SIP did not rely on any measures that have yet to become effective. However, changes to coal EGU shutdown and conversion dates listed in Table 6 suggest there could be additional emission reductions by the end of the current implementation period. Therefore, Wisconsin's current implementation plan is adequate to meet is share of emission reductions.

3.7. Long-Term Strategies Containing Smoke Management Programs

40 CFR 51.308(g)(8) requires: *"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."*

The WDNR has worked with land managers in the state to prepare a plan to address controllable fire activities that can impact visibility locally. Wisconsin's Smoke Management Plan (SMP) requires an annual review of acres burned by fuel type with prescribed fire to evaluate the effectiveness of the plan. Appendix 6 of the Round 2 SIP contains the Wisconsin's SMP. There have been no updates to the SMP since it was included in the SIP in 2021.

3.8. Determination of Adequacy

40 CFR 51.308(h) requires: *"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 reductions, the State must provide to the Administrator a negative declaration that further 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."*

Based upon the evidence presented in this document and the options above, the WDNR has determined that its existing, EPA-approved Round 2 SIP is adequate to meet the requirements of the RHR and to ensure achievement of the established RPGs for the Class I areas impacted by Wisconsin emissions (Boundary Waters and Voyageurs in Minnesota; and Isle Royale and Seney in Michigan). The plan requires no further substantive revision to achieve established goals for visibility improvement and emissions reductions. Wisconsin will continue to implement the measures of its current SIP and begin preparation for the next scheduled regional haze SIP revision due on July 31, 2028.[6]

As required by 40 CFR 51.308(h)(1), Wisconsin declares that further revision of its existing implementation plan is not needed at this time.

[6] In December 2024, the EPA proposed to extend the Round 3 SIP due date by three years, to provide time to revise the RHR (89 FR 104471). The WDNR will begin on the Round 3 SIP once the RHR revisions are finalized.

4. PROCEDURAL REQUIREMENTS

4.1. Consultation with Federal Land Managers

40 CFR Part 51.308(i) requires that:

> *"(2) The State must provide the Federal Land Manager with an opportunity for consultation, in person at a point early enough in the State's policy analyses of its long-term strategy emission reduction obligation so that information and recommendations provided by the Federal Land Manager can meaningfully inform the State's decisions on the long-term strategy. The opportunity for consultation will be deemed to have been early enough if the consultation has taken place at least 120 days prior to holding any public hearing or other public comment opportunity on an implementation plan (or plan revision) for regional haze required by this subpart. 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. This consultation must include the opportunity for the affected Federal Land Managers to discuss their:*
>
> > *(i) Assessment of impairment of visibility in any mandatory Class I Federal area; and*
> >
> > *(ii) Recommendations on the development and implementation of strategies to address visibility impairment.*
>
> *(3) In developing any implementation plan (or plan revision), the State must include a description of how it addressed any comments provided by the Federal Land Managers."*

The WDNR sent the draft progress report to the FLMs for their review on May 21, 2025. Appendix 2 contains the notification to FLMs, a summary of the comments received, and the WDNR's response to these comments.

4.2. Public Comment Period

The WDNR noticed the draft progress report on the WDNR's Air Regulations, Policies and Guidance Public Notices website on August 28, 2025. The public comment period closed on September 29, 2025.

APPENDIX 1

Updated Control Measures for Wisconsin Individual Point Sources

Table 1. Updated Wisconsin Point Source Control Measures.[a]

FID	Facility	Unit(s)	Updated Control Measures	Impact to Emissions Projections
EGUs				
460033090	WPL – Edgewater	B25	Convert from coal to natural gas by 2028 and operate intermittently, instead of retiring in 2022 (June 2024 public announcement).	No impact
111003090	WPL – Columbia	B21 & B22	Delay retirement of coal units from 2025 to 2029 (Dec 2024 public announcement).	Less than projected starting in 2029.
241007690	We Energies – Oak Creek / Elm Road	B18 & B19	Convert from coal to natural gas by 2030 (Nov 2023 public announcement). Previously no planned conversion/retirement date.	Less than projected starting in 2030.
		B25, B26, B27, B28	Units B25 & B26 retired in 2024 instead of 2023. Delay retirement of units B27 and B28 from May 2024 to Dec. 2026 (June 2025 public announcement).	No impact
737009020	WPSC – Weston Plant	B03 & B04	Convert unit B04 to natural gas by 2030, and retire unit B03 by 2031 (Nov 2023 public announcement). Previously no planned conversion/retirement date.	Less than projected starting in 2030.
802033320	Xcel Energy Bay Front Generating Station	B20 & B21	Facility stopped using coal as back-up fuel in Dec 2020, and natural gas replaced the coal use.	Less than projected. 2023 actual emissions are more accurate for projection.
Non-EGUs[b]				
737009570	Ahlstrom Mosinee LLC – Mosinee	B20 & B24	Lower SO_2 emission limits established to meet 1-hour SO_2 NAAQS; B20 & B24 are required to not operate at the same time (Operating permit 73700957A-P30, issued Feb. 2024). B20 retired in March 2025.	Less than projected. 2025 actual emissions will be more accurate for projection to reflect updated permit requirements and B20 retirement.

851009390	Park Falls Industrial Management, LLC	B24	Coal boiler B24 was demolished in 2021, and facility closed in 2024.	Projected emissions are now "0".
405032650	Ahlstrom NA Specialty Solutions LLC – De Pere	B23 & B24	Coal boiler B24 shutdown; coal boiler B23 de-rated to 99.3 mmBtu/hr and converted to only fire natural gas, equipped with low NO_x burners (Operating permit 40503265A-S22, issued April 2021)	Less than projected. 2023 actual emissions are more accurate for projection.

[a] Control measures are additional to the control measures listed in Appendix 3 of the Round 2 SIP "Information for Wisconsin Point Source Facilities Over Q/d = 1." If control information did not change for a facility from what was included in the Round 2 SIP, the facility is not listed in the table.
[b] The Ahlstrom – Kaukauna and Ahlstrom – Rhinelander paper mill control measure updates were submitted as part of the Round 2 SIP, after the initial submittal in July 2021. See Section 2 of the main document for details.

APPENDIX 2

Response to Comments on Draft Regional Haze Second Implementation Period Progress Report

Federal Land Manager Review

The Wisconsin Department of Natural Resources (DNR) notified Federal Land Managers (FLMs) and the U.S. Environmental Protection Agency (EPA) of the availability of its draft regional haze progress report on May 21, 2025. This notification formally started the required 60-day review process for the FLMs under 40 CFR Part 51.308(i)(2). The DNR received a written response from the National Park Service (NPS) and Forest Service (FS).

Public Comment Period

The WDNR noticed the draft report for public comment from August 28, 2025 until September 10, 2025.

This appendix includes:

Comments Received on Draft Progress Report
Response to Comments on Draft Progress Report
E-mail Notification of Draft Progress Report for EPA/FLM Review

Response to FLM Comments on Wisconsin's Draft Regional Haze Progress Report

This document summarizes the comments received during consultation with FLMs on Wisconsin's draft regional haze progress report, the DNR's response to the comments, and modifications made to the progress report in response to these comments.

The DNR received written comments from the NPS on July 17, 2025. The first comment regarded the DNR's use of average visibility in section 3.6, with NPS recommending the use of most impaired days. The second comment addressed the years used in Table 2, stating data for intervening years should be included. The last comment asked the DNR to clarify a statement made in section 3.4.

On July 14, 2025, the FS confirmed its review of the progress report was complete and no comments were identified. The Fish and Wildlife Service (FWS) acknowledged receipt of the initial notification on May 21, 2025, and did not provide DNR any individual comments.

National Park Service Comments:

1. In section 3.6, *Assessment of Current Strategy*, the NPS recommended updates to include an assessment of most impaired days instead of (or in addition to) annual mean visibility, citing progress report requirements under 40 CFR 51.308(g)(3).

   Response: While 40 CFR 51.308(g)(3) only applies to states with Class I areas subject to the Regional Haze Rule within their borders, the DNR updated Tables 7 and 8 to use average visibility on the most visually impaired days as it would be more relevant for assessing progress than average visibility when compared to reasonable progress goals (RPGs). This update did not change any conclusions.

2. In the draft provided for FLM review, Table 2 included data for years 2016, 2019, 2023, and 2028. Figure 1 represented the same information for 2016 through 2023. The NPS recommended including emission data from each of the years shown in Figure 1.

   Response: Table 2 was originally drafted to be consistent with Table 10 of *Wisconsin Regional Haze State Implementation Plan for the Second Implementation Period* and EPA guidance. The table was updated to include all years from 2016 to 2023 and 2028 modeled values for transparency.

3. The NPS asked the DNR to clarify the concluding sentence of Section 3.4 which read, "The emission reduction trends from these point sources are expected to continue to contribute to improved visibility at the affected Class I areas." The NPS recommended identifying anticipated future emission reductions to support this statement.

Response: In the highlighted sentence, the DNR was referencing the historical trend of decreasing emissions and not future emission reductions. The DNR revised the statement to provide clarity.

Bush, Savannah M - DNR

From: Allen, Tim <tim_allen@fws.gov>
Sent: Wednesday, May 21, 2025 8:53 AM
To: Denk, Brianna J -DNR; Patricia_F_Brewer@nps.gov; Prosperi, Alexia - FS, WI
Cc: Loftus, Jonathan P - DNR; Bush, Savannah M - DNR; Langman, Michael; Liu, Alisa
Subject: Re: [EXTERNAL] For FLM review: Draft Wisconsin Round 2 Regional Haze Progress Report

Hi Brianna,

Thank you for the notification.

Tim Allen

From: Denk, Brianna J -DNR <briannaj.denk@wisconsin.gov>
Sent: Tuesday, May 20, 2025 4:47 PM
To: Patricia_F_Brewer@nps.gov <Patricia_F_Brewer@nps.gov>; Allen, Tim <tim_allen@fws.gov>; Prosperi, Alexia - FS, WI <alexia.prosperi@usda.gov>
Cc: Loftus, Jonathan P - DNR <Jonathan.Loftus@wisconsin.gov>; Bush, Savannah M - DNR <savannahm.bush@wisconsin.gov>; Langman, Michael <langman.michael@epa.gov>; Liu, Alisa <liu.alisa@epa.gov>
Subject: [EXTERNAL] For FLM review: Draft Wisconsin Round 2 Regional Haze Progress Report

Patricia, Tim, and Alexia:

Attached for your review is a preliminary draft of Wisconsin's round 2 regional haze progress report. This notification formally starts the required 60-day review process for the Federal Land Managers required under 40 CFR Part 51.308(i)(2). Wisconsin intends notice this report for public comment in late summer. Please direct your comments regarding this report to Savannah Bush at savannahm.bush@wisconsin.gov.

I believe the three of you are the appropriate contacts for this review, but if we missed someone or assignments have changed recently, please reach out with updated contacts. I look forward to receiving your feedback on our draft. Thank you for your continued cooperation in meeting the requirements of the regional haze program, and don't hesitate to contact me if you have any questions.

Thanks,

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Brianna Denk

Air Quality Planning and Standards Section Manager- Bureau of Air Management
Wisconsin Department of Natural Resources
Phone: (608) 267-5284
Cell: (608) 220-0247
briannaj.denk@wisconsin.gov


dnr.wi.gov


Bush, Savannah M - DNR

From: Prosperi, Alexia - FS, WI <Alexia.Prosperi@usda.gov>
Sent: Monday, July 14, 2025 3:01 PM
To: Bush, Savannah M - DNR
Cc: Loftus, Jonathan P - DNR; Denk, Brianna J -DNR; Peters, Melanie; Shepherd, Don; Gries, James - FS, WI; Hall, Thomas - FS, MN; Allen, Tim
Subject: FW: [External Email]For FLM review: Draft Wisconsin Round 2 Regional Haze Progress Report

Follow Up Flag: Follow up
Flag Status: Completed

Hi Savannah

Thank you for sharing Wisconsin's Round 2 Regional Haze Progress Report for FLM review. The Forest Service applauds the reductions in visibility-impairing pollutants that have occurred in the state throughout the last few years. At this time, we do not have any comments on the progress report.

We look forward to working with you again in future regional haze efforts.

Thanks,
Alexia

Alexia Prosperi
Air Resource Specialist
Forest Service
Eastern Region
p: 414-308-8669
alexia.prosperi@usda.gov
626 E. Wisconsin Ave
Milwaukee, WI 53202

From: Denk, Brianna J -DNR <briannaj.denk@wisconsin.gov>
Sent: Tuesday, May 20, 2025 5:48 PM
To: Patricia_F_Brewer@nps.gov; Allen, Tim <tim_allen@fws.gov>; Prosperi, Alexia - FS, WI <Alexia.Prosperi@usda.gov>
Cc: Loftus, Jonathan P - DNR <Jonathan.Loftus@wisconsin.gov>; Bush, Savannah M - DNR <savannahm.bush@wisconsin.gov>; Langman, Michael <langman.michael@epa.gov>; Liu, Alisa <liu.alisa@epa.gov>
Subject: [External Email]For FLM review: Draft Wisconsin Round 2 Regional Haze Progress Report

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I believe the three of you are the appropriate contacts for this review, but if we missed someone or assignments have changed recently, please reach out with updated contacts. I look forward to receiving your feedback on our draft. Thank you for your continued cooperation in meeting the requirements of the regional haze program, and don't hesitate to contact me if you have any questions.

Thanks,

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Brianna Denk
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From: Peters, Melanie <Melanie_Peters@nps.gov>
Sent: Thursday, July 17, 2025 5:12 PM
To: Denk, Brianna J -DNR; Bush, Savannah M - DNR; Loftus, Jonathan P - DNR
Cc: Shepherd, Don; Prosperi, Alexia - FS, WI; Salazer, Holly; Allen, Tim; Foss, Kelsey; Hatten, Charles (he/him/his)
Subject: NPS/WI Regional Haze Progress Report Consultation

Hello Brianna,

Thank you for the Federal Land Manager (FLM) regional haze consultation opportunity on the draft Wisconsin Regional Haze Second Implementation Period Progress Report. Staff from the National Park Service (NPS) held a consultation call with Wisconsin Department of Natural Resources (DNR) staff on July 9, 2025. Staff from the U.S. Forest Service and the Environmental Protection Agency (EPA), Region 5, also attended. This email documents NPS conclusions and recommendations on the progress report and serves as our formal regional haze consultation, as required by 40 CFR 51.308(i)(2).

Overall, the NPS commends the Wisconsin DNR for developing a well written, clearly organized progress report. In the report, Wisconsin DNR documents implementation of their second round State Implementation Plan (SIP) which the EPA approved in November of 2024. This includes implementation of the Wisconsin long-term strategy for achieving reasonable progress which required in-place emission limits, averaging periods, monitoring and record keeping requirements, and compliance deadlines associated with regulations and permitting requirements for Wisconsin's emission sources. The draft progress report provides evidence that most of the anticipated emission reductions have occurred and that Wisconsin emission levels are generally on track with projected emission reductions. In addition, the progress report details Wisconsin EGU shutdown and conversion updates including plans to delay several anticipated shutdowns and convert additional EGUs to natural gas firing.

In section 3.6, *Assessment of Current Strategy*, the NPS recommends updates to include an assessment of most impaired days instead of (or in addition to) annual mean visibility. The most impaired days metric focuses on human-caused haze and is the most relevant data measure for assessing progress toward the regional haze rule goal of no human caused visibility impairment in Class I areas. Regional haze progress report requirements (40 C.F.R. 51.308 (g.3.i-iii)) specifically require reporting the:

- current visibility conditions for the most impaired and clearest days,
- difference between current visibility conditions for the most impaired and clearest days and baseline visibility conditions, and
- change in visibility impairment for the most impaired and clearest days over the period since the period addressed in the most recent plan.

Most impaired days statistics for all Class I areas are available through the FLM Environmental Database (FED) website, Air Quality Related Values (AQRV) - Express Tools.

In addition, the following editorial suggestions are offered to improve the progress report:

- Section 3.2: Table 2 currently omits data for 2017, 2020, and 2022 which are shown in Figure 1. The NPS recommends including emission data from each of the years shown in Figure 1 in Table 2 for completeness and transparency.
- Section 3.4 concludes by stating: *The emission reduction trends from these point sources are expected to continue to contribute to improved visibility at the affected Class I areas.* The NPS recommends identifying anticipated future emission reductions to support this statement. Is Wisconsin DNR referring to the EGU shutdown and conversion updates highlighted in Table 6? If so, please clarify for the reader.

Thank you again for the opportunity to consult on this progress report. We look forward to continuing our collaborative work with Wisconsin DNR to improve and protect air quality and visibility in NPS Class I areas. If you have any questions or would like to talk through any regional haze topics, please feel free to reach out.

Best,

Melanie

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