Technical Support Document:

Chapter 11
Intended Round 4 Area Designation for the 2010 1-Hour SO_2 Primary National Ambient Air Quality Standard for Wisconsin

1. Summary

Pursuant to section 107(d) of the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA, we, or us) must designate areas as either "nonattainment," "attainment," or "unclassifiable" for the 2010 1-hour sulfur dioxide (SO_2) primary national ambient air quality standard (NAAQS) (2010 SO_2 NAAQS). The CAA defines a nonattainment area as an area that does not meet the NAAQS or that contributes to a nearby area that does not meet the NAAQS. An attainment area is defined by the CAA as any area that meets the NAAQS and does not contribute to a nearby area that does not meet the NAAQS. Unclassifiable areas are defined by the CAA as those that cannot be classified on the basis of available information as meeting or not meeting the NAAQS. See CAA section 107(d)(1)(A)(i)-(iii).

In this action, EPA defines a nonattainment area as an area that, based on available information including (but not limited to) monitoring data and/or appropriate modeling analyses, EPA has determined either: (1) does not meet the 2010 SO_2 NAAQS, or (2) contributes to ambient air quality in a nearby area that does not meet the NAAQS. An attainment/unclassifiable area is defined as an area that, based on available information including (but not limited to) appropriate monitoring data and/or modeling analyses, EPA has determined meets the NAAQS and does not likely contribute to ambient air quality in a nearby area that does not meet the NAAQS. An unclassifiable area is defined as an area for which the available information does not allow EPA to determine whether the area meets the definition of a nonattainment area or the definition of an attainment/unclassifiable area.

EPA is under a December 31, 2020, deadline to designate all remaining undesignated areas as required by the U.S. District Court for the Northern District of California.[1] This deadline is the final of three deadlines established by the court for EPA to complete area designations for the 2010 SO_2 NAAQS. The remaining undesignated areas are: 1) those areas which, under the court order, did not meet the criteria that required designation in Round 2 and also were not required to be designated in Round 3 due to installation and operation of a new SO_2 monitoring network by January 2017 in the area meeting EPA's specifications referenced in EPA's SO_2 Data Requirements Rule (DRR)[2], and 2) those areas which EPA has not otherwise previously designated for the 2010 SO_2 NAAQS. EPA previously issued guidance on how to appropriately and sufficiently monitor ambient air quality in the "SO_2 NAAQS Designations Source-Oriented Monitoring Technical Assistance Document" (SO_2 NAAQS Designations Monitoring TAD).[3]

[1] *Sierra Club v. McCarthy*, No. 3-13-cv-3953 (SI) (N.D. Cal. Mar. 2, 2015).
[2] *See* 80 FR 51052 (August 21, 2015), codified at 40 CFR part 51 subpart BB.
[3] https://www.epa.gov/sites/production/files/2016-04/documents/so2monitoringtad.pdf

In previous final actions, EPA has issued designations for the 2010 SO_2 NAAQS for most areas of the country.[4] We are referring to the set of designations being finalized by the deadline of December 31, 2020, as "Round 4" or the final round of the designations process for the 2010 SO_2 NAAQS. After these Round 4 designations are completed, there will be no remaining undesignated areas for the 2010 SO_2 NAAQS.

This technical support document (TSD) addresses designations for all remaining undesignated areas in Wisconsin for the 2010 SO_2 NAAQS. Areas with monitored violations of the NAAQS are explicitly evaluated in this TSD.

Wisconsin submitted its first recommendation regarding designations for the 2010 1-hour SO_2 primary NAAQS on May 26, 2011.[5] Based on data obtained from the Kaukauna SO_2 air quality monitor, the state submitted updated air quality information and an updated designation recommendation on May 1, 2020 to address more recent air quality monitoring data for the Kaukauna SO_2 air quality monitor that was installed pursuant the DRR. On July 17, 2020, Wisconsin submitted a revised updated designation recommendation. In our intended designations, we have considered all the submissions from the state, except where a later submission indicates that it replaces an element of an earlier submission.

Table 1 identifies EPA's intended Round 4 designation and the area in Wisconsin to which it would apply. It also lists Wisconsin's current recommendation. EPA intends to designate these areas by December 31, 2020, through an assessment and characterization of air quality based primarily on ambient monitoring data, including data from existing and new EPA-approved monitors that have collected data from January 2017 forward, pursuant to the DRR; however, other available evidence and supporting information, such as air dispersion modeling in certain situations, may also be considered.[6]

[4] Most areas of the U.S. were previously designated in actions published on August 5, 2013 (78 FR 47191), July 12, 2016 (81 FR 45039), December 13, 2016 (81 FR 89870), January 9, 2018 (83 FR 1098) and April 5, 2018 (83 FR 14597). EPA is not reopening these previous designation actions in this current Round 4 of designations under the 2010 SO_2 NAAQS, except where specifically discussed.

[5] Letter from Scott Walker, Governor of Wisconsin, to Susan Hedman, US EPA Region 5 Administrator, regarding Wisconsin's Designation Recommendations for the 1-Hour Sulfur Dioxide (SO_2) National Ambient Air Quality Standard, dated May 26, 2011 https://www.epa.gov/sites/production/files/2016-03/documents/wi-rec.pdf

[6] Detailed SO_2 monitor information may be found in either the 2016 or 2017 ambient monitoring network plans, or associated addenda.

Table 1. Summary of EPA's Intended Designations and the Designation Recommendations by Wisconsin

Area/County	Wisconsin's Recommended Area Definition	Wisconsin's Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
Outagamie County	Outagamie County except Oneida Tribal Lands and Noncontiguous Seymour Township Areas	Nonattainment	Outagamie County except Oneida Township (which includes Oneida Reservation), Oneida Off-Reservation Trust Land, and Noncontiguous Portions of Seymour Township Adjoining Oneida Nation Tribal Lands	Nonattainment
Oneida Tribal Lands and Noncontiguous Seymour Township Areas			Oneida Township (which includes Oneida Reservation), Oneida Off-Reservation Trust Land, and Noncontiguous Portions of Seymour Township Adjoining Oneida Nation Tribal Lands	Attainment / Unclassifiable

Areas that EPA previously designated in Round 1 (*see* 78 FR 47191), Round 2 (*see* 81 FR 45039 and 81 FR 89870), and Round 3 (*see* 83 FR 1098 and 83 FR 14597) are not affected by the designations in Round 4 unless otherwise noted.

2. General Approach and Schedule

An updated designations guidance document was issued by EPA through a September 5, 2019, memorandum from Peter Tsirigotis, Director, U.S. EPA, Office of Air Quality Planning and Standards, to Regional Air Division Directors, U.S. EPA Regions 1-10.[7] To better reflect the Round 4 designations process, this memorandum supplements, where necessary, prior designations guidance documents on area designations for the 2010 primary SO_2 NAAQS issued on March 24, 2011, March 20, 2015, and July 22, 2016. This memorandum identifies factors that EPA intends to evaluate in determining whether areas are in violation of the 2010 SO_2 NAAQS. The document also contains the factors that EPA intends to evaluate in determining the boundaries for all remaining areas in the country. These factors include: 1) air quality characterization via ambient monitoring and/or dispersion modeling results; 2) emissions-related data; 3) meteorology; 4) geography and topography; and 5) jurisdictional boundaries.

In EPA's September 2019 memorandum, we note that Round 4 area designations will be based primarily on ambient monitoring data, including data from existing and new EPA-approved monitors that have collected data at least from January 2017 forward, pursuant to the DRR. In addition, EPA may evaluate air dispersion modeling submitted by state air agencies for two specific circumstances. First, states may submit air dispersion modeling to support the geographic extent of a nonattainment boundary. Second, states may submit air dispersion modeling to demonstrate that new federally enforceable SO_2 emissions limits provide for attainment of the NAAQS and represent a more accurate characterization of current air quality at the time of designation than does monitoring of past air quality.

This TSD is organized such that there is a section for Wisconsin for which air quality monitoring data indicate a violation of the 2010 SO_2 NAAQS. When modeling information is available, it is evaluated in the context of that section. EPA does not plan to revise this intended designation TSD after consideration of state and public comment on our intended designation. A separate final TSD will be prepared as necessary to document how we have addressed such comments in the final designations.

The following are definitions of important terms used in this document:

1) 2010 SO_2 NAAQS – The primary NAAQS for SO_2 promulgated in 2010. This NAAQS is 75 ppb, based on the 3-year average of the 99th percentile of the annual distribution of daily maximum 1-hour average concentrations. See 40 CFR 50.17.
2) Design Value - a statistic computed according to the data handling procedures of the NAAQS (in 40 CFR part 50 Appendix T) that, by comparison to the level of the NAAQS, indicates whether the area is violating the 2010 SO_2 NAAQS.
3) Intended designated nonattainment area – an area that, based on available information including (but not limited to) monitoring data and/or appropriate modeling analyses, EPA intends to determine either: (1) does not meet the 2010 SO_2 NAAQS, or (2) contributes to ambient air quality in a nearby area that does not meet the NAAQS.
4) Intended designated attainment/unclassifiable area – an area that, based on available information including (but not limited to) appropriate monitoring data and/or appropriate modeling analyses, EPA intends to has determine meets the 2010 SO_2 NAAQS and does

[7] https://www.epa.gov/sites/production/files/2019-09/documents/round_4_so2_designations_memo_09-05-2019_final.pdf

not likely contribute to ambient air quality in a nearby area that does not meet the NAAQS.

5) Intended designated unclassifiable area – an area for which the available information does not allow EPA to determine whether the area meets the definition of a nonattainment area or the definition of an attainment/unclassifiable area.
6) Modeled violation – a modeled design value impact above the 2010 SO_2 NAAQS demonstrated by air dispersion modeling.
7) Recommended attainment area – an area that a state, territory, or tribe has recommended that EPA designate as attainment.
8) Recommended nonattainment area – an area that a state, territory, or tribe has recommended that EPA designate as nonattainment.
9) Recommended unclassifiable area – an area that a state, territory, or tribe has recommended that EPA designate as unclassifiable.
10) Recommended attainment/unclassifiable (or unclassifiable/attainment) area – an area that a state, territory, or tribe has recommended that EPA designate as attainment/unclassifiable (or unclassifiable/attainment).
11) Violating monitor – an ambient air monitor meeting 40 CFR parts 50, 53, and 58 requirements whose valid design value exceeds 75 ppb, based on data analysis conducted in accordance with Appendix T of 40 CFR part 50.
12) We, our, and us – these refer to EPA.

3. Technical Analysis for the Outagamie County Area

3.1. Introduction

EPA must designate the Outagamie County, Wisconsin area by December 31, 2020, because the area has not been previously designated and Wisconsin installed and began operating a new EPA-approved SO_2 monitor pursuant to the DRR beginning in January 2017. This section presents all the available air quality information for the portion of Outagamie County that includes the following SO_2 source around which the DRR required the state to characterize air quality:

- The Ahlstrom-Munksjö NA Specialty Solutions, LLC – Kaukauna (formerly Expera Specialty Solutions, LLC – Kaukauna) facility emits 2,000 tons or more of SO_2 annually. Specifically, Ahlstrom-Munksjö NA Specialty Solutions, LLC – Kaukauna emitted 7,619 tons of SO_2 in 2014.[8] This source meets the DRR criteria and thus is on the SO_2 DRR Source list, and Wisconsin has chosen to characterize it via monitoring.

As seen in Figure 1 below, the Ahlstrom-Munksjö NA Specialty Solutions, LLC – Kaukauna facility is located at 600 Thilmany Rd, Kaukauna in Outagamie County, Wisconsin. This source is located approximately 0.95 kilometers south southwest of the Kaukauna SO_2 air quality monitor listed in Table 2 below as located at 601 Plank Road in Kaukauna. Figure 1 below depicts the tribal lands located within the boundaries of Outagamie County, consisting of a portion of the Oneida Reservation in Oneida Township, as well as a parcel of Oneida Off-Reservation Trust Land in Seymour Township. Based on the data in the TRIBES service ArcGIS, which uses the official list of federally recognized tribes managed by the Bureau of Indian Affairs, the boundaries of the portion of Oneida Reservation that is within Outagamie County appear to be coterminous with the boundaries of Oneida Township in Outagamie County.[9,10] The Oneida Reservation spans both Outagamie County and neighboring Brown County. Previously, EPA designated Oneida Reservation in Brown County as attainment/unclassifiable when Brown County itself was designated attainment/unclassifiable.[11] 83 Fed. Reg. 1169 (January 9, 2018).

As shown by the inset in Figure 1, the Oneida Reservation and Off-Reservation Trust Land isolate two small pockets of nontribal land in Seymour Township within Outagamie County that adjoin tribal lands. One parcel is sandwiched between the east side of Oneida Reservation and the Outagamie County line. A second parcel is sandwiched between the west side of Oneida Reservation, the Oneida Off-Reservation Trust Land, and the Outagamie County line.

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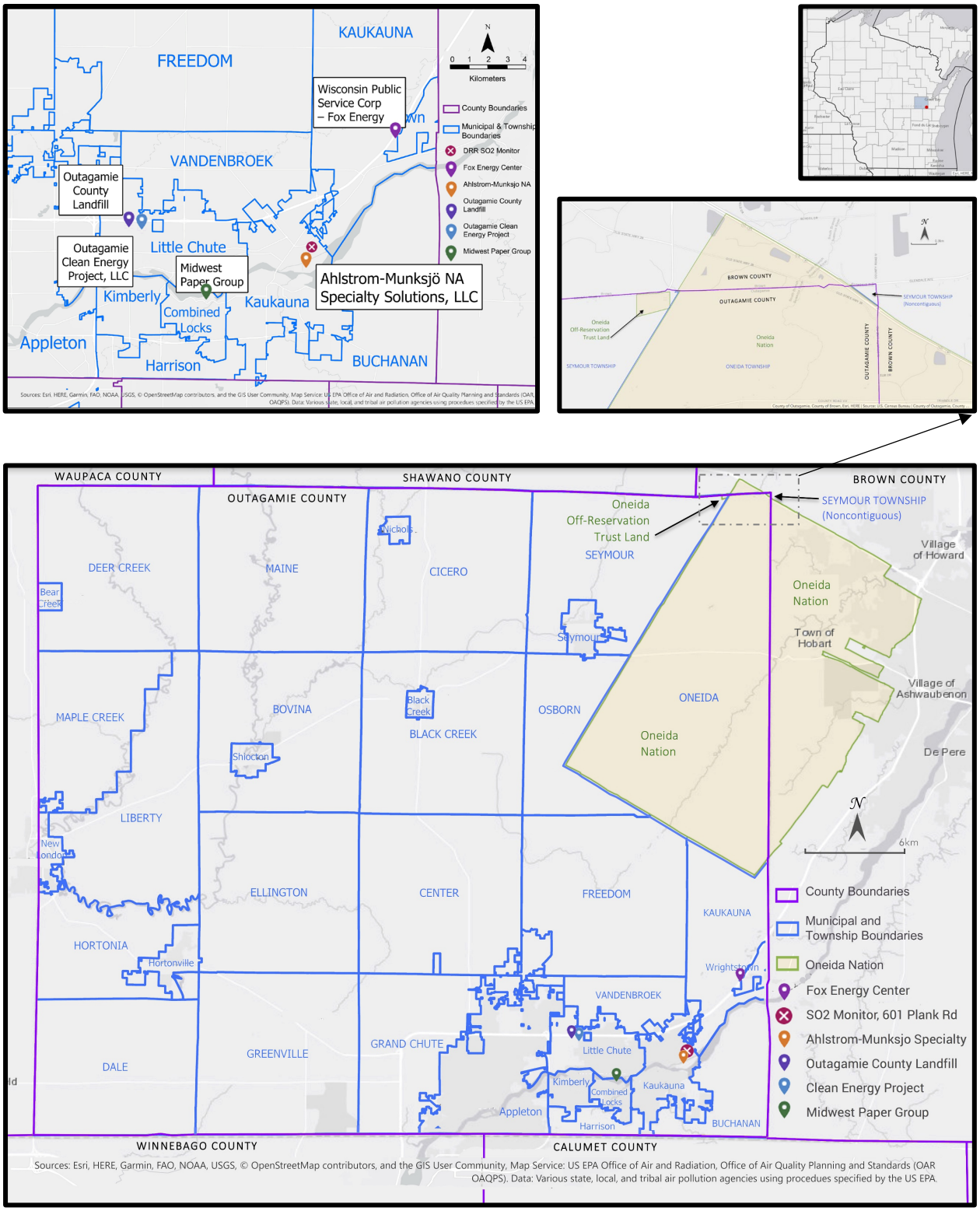
[8] 2009 – 2018 SO_2 Emissions by Facility; https://dnr.wi.gov/topic/AirEmissions/Historical.html
[9] "Adoption of TRIBES Services", Memo from Vaughn Noga, EPA dated June 2, 2020.
[10] https://www.epa.gov/data-standards/tribal-identifier-data-standard#file-150427spell
[11] Wisconsin SO2 Round 3 Designations, August 22, 2017. Technical Support Document, Chapter 44, page 3. https://www.epa.gov/sites/production/files/2017-08/documents/wi-epa-resp3.pdf; https://www.epa.gov/sites/production/files/2017-08/documents/45_wi_so2_rd3-final_0.pdf

Figure 1. Maps of the Outagamie County, Wisconsin Areas Addressing Ahlstrom-Munksjö NA Specialty Solutions, LLC – Kaukauna Facility



In its May 1, 2020, updated recommendation letter, Wisconsin recommended that the entire Outagamie County be designated as nonattainment for the 2010 SO_2 NAAQS, based on monitored air quality from 2017-2019.[12]

EPA did not receive a designation recommendation from Oneida Nation. While tribes are not obligated to participate in the designation process, EPA has invited tribes to do so by expressing their intent to follow the same process for tribes as for states to the extent practicable pursuant to section 301(d) of the CAA and the Tribal Authority Rule (40 CFR Part 49). If a state or tribe does not submit a recommendation for designation, EPA will designate the areas as it deems appropriate.[13] 83 Fed. Reg. 1100 (January 9, 2018).

On July 17, 2020, Wisconsin revised its updated recommendation to remove the Oneida Reservation portion located in Outagamie County from the recommended nonattainment area so that it would not be split between counties and could be designated as attainment/unclassifiable.[14]

EPA understands that Wisconsin's intent is to exclude tribal lands from the nonattainment area, including Oneida Reservation and Oneida Off-Reservation Trust Land. To avoid creating isolated pockets of nonattainment areas, EPA understands Wisconsin's intent is to also exclude from the nonattainment area the two noncontiguous portions of Seymour Township adjoining Oneida Nation Tribal Lands. EPA intends to designate Oneida Township (which includes Oneida Reservation), Oneida Off-Reservation Trust Land, and the two noncontiguous portions of Seymour Township adjoining Oneida Nation Tribal Lands as attainment/unclassifiable. EPA intends to designate the remainder of Outagamie County as nonattainment for the 2010 SO_2 NAAQS based upon currently available monitoring information for the 2017-2019 period.

3.2. Air Quality Monitoring Data for the Outagamie County Area

EPA considered design values for the air quality monitor in the Outagamie County area by assessing the most recent 3 consecutive years (i.e., 2017-2019) of quality-assured, certified ambient air quality data in the EPA Air Quality System (AQS) using data from Federal Reference Method and Federal Equivalent Method monitors that are sited and operated in accordance with 40 CFR parts 50 and 58.[15] Procedures for using monitored air quality data to determine whether a violation has occurred are given in 40 CFR part 50 Appendix T, as revised

[12] Wisconsin's "Updated Recommendation for Round 4 Designations for the 2010 1-hour Sulfur Dioxide (SO_2) Primary National Ambient Air Quality Standard (NAAQS)" dated May 1, 2020, letter from Preston D. Cole, WDNR Secretary to Kurt Thiede, USEPA – Region 5.

[13] "Area Designations for the 2010 Revised Primary Sulfur Dioxide National Ambient Air Quality Standards," Memo to Regional Air Division Directors, Regions I-X, from Stephen D. Page, dated March 23, 2011. (March 24, 2011 Memo on SO2 Area Designations at 2)
https://www3.epa.gov/ttn/naaqs/aqmguide/collection/cp2/20110324_page_so2_designations_guidance.pdf

[14] "Updated Designation Recommendation for Outagamie County for the 2010 1-hour Sulfur Dioxide (SO2) Primary Nation Ambient Air Quality Standard (NAAQS)" dated July 17, 2020, letter from Beth Vier, Deputy Secretary, Wisconsin DNR to Kurt Thiede, USEPA – Region 5.

[15] SO_2 air quality data are available from EPA's website at https://www.epa.gov/outdoor-air-quality-data. SO_2 air quality design values are available at https://www.epa.gov/air-trends/air-quality-design-values.

in the 2010 SO_2 NAAQS rulemaking. The 2010 1-hour SO_2 NAAQS is met when the design value is 75 ppb or less. Whenever several monitors are located in an area, the design value for the area is determined by the monitor with the highest valid design value. The presence of one or more violating monitors (i.e., monitors with design values greater than 75 ppb) in a geographic area forms the basis for designating that area as nonattainment. The remaining factors, described in the next section, are then used as the technical basis for determining the spatial extent of the designated nonattainment area surrounding the violating monitor.

We reviewed SO_2 air quality monitoring data from EPA's Air Trends website[16], including the design values calculated for the Kaukauna SO_2 air quality monitor for the most recent 3-year period. Table 2 contains the 2017-2019 design values for the area of analysis.

Table 2. 2010 SO_2 NAAQS Design Values for the Outagamie County Area

AQS Site ID	Monitor Location	2017 99th Percentile (ppb)	2018 99th Percentile (ppb)	2019 99th Percentile (ppb)	2017-2019 Design Value (ppb)
55-087-0015	601 Plank Road, Kaukauna, Wisconsin Latitude: 44.289283, Longitude: -88.252186	89.5	107.8	32.3	**77**

Data collected at this monitor indicate that the 2017-2019 design value representative of the Outagamie County area is 77 ppb. This figure exceeds the 2010 SO_2 NAAQS, which is met at a monitoring site when the 3-year average of the annual 99th percentile of daily maximum 1-hour average concentrations does not exceed 75 ppb. The quality-assured and certified monitoring data for the 99th percentile is complete for four quarters in each of the three years 2017, 2018, and 2019. The design value was calculated according to the data handling procedures in 40 CFR part 50 Appendix T, and is valid for comparison to the NAAQS. With a design value of 77 ppb, the Outagamie County monitor shows a violation of the 2010 SO_2 NAAQS of 75 ppb for 2017-2019. Therefore, at least a portion of the area must be designated nonattainment because of the violating monitor

3.3. Intended Designation Boundary Determination

EPA must designate as nonattainment any area that violates the NAAQS and any nearby area that contributes to ambient air quality in the violating area. Outagamie County shows a violation of the 2010 SO_2 NAAQS based on data collected between 2017 and 2019, and, therefore, some area around the violating monitor must be designated nonattainment. In this section, we consider the appropriate geographical extent of the nonattainment area.

[16] EPA's Air Trends Website http://www.epa.gov/airtrends/values.html

A nonattainment area should contain the area violating the NAAQS (e.g., the area around a violating monitor or encompassing modeled violations), as well as any nearby areas (e.g., counties or portions thereof) that contain emissions sources contributing to ambient air quality in the violating area. (*See* CAA section 107(d)(l)(A)(i)). Accordingly, although EPA considers county boundaries as the analytical starting point for determining SO_2 nonattainment areas, an evaluation of five factors for each area may be considered in determining the geographic scope of a nonattainment boundary.

Thus, boundaries are evaluated on five factors: 1) ambient air quality data or dispersion modeling results; 2) emissions-related data; 3) meteorology; 4) geography and topography; and 5) jurisdictional boundaries, as well as other relevant available information. While the factors are presented individually, they are not independent. Instead, the five-factor analysis process carefully considers their interconnections and the dependence of each factor on one or more of the others.

Wisconsin submitted an analysis of all of these five factors to support the geographic scope of its recommended boundary. EPA has supplemented information from the state, where appropriate.

3.3.1. Factor 1: Ambient Air Quality Data and Dispersion Modeling Results

Ambient air quality data are discussed in the previous section. Wisconsin did not provide any source-oriented modeling to assess the geographic extent of the source impacts that are causing the monitored NAAQS violations in the Outagamie County area. There is no air quality dispersion modeling information available to EPA at this time, so we intend to use the additional analysis factors, described below, to support the intended boundary determinations.

3.3.2. Factor 2: Emissions-Related Data

Wisconsin provided information on annual emissions data for point sources in the Outagamie County area. Specifically, Wisconsin identified the following nearby SO_2 sources in Outagamie County that emit less than 2,000 tons of SO_2 annually and are not on the SO_2 DRR Source list.

- Outagamie County Landfill (FID 445012370)
- Appleton Property Ventures, LLC (D.B.A. Midwest Paper Group) (FID 445031290)
- Wisconsin Public Service Corporation – Fox Energy Center (FID 445159110)
- Outagamie Clean Energy Project LLC (FID 445172420).

As seen in Figure 1 above, the Ahlstrom-Munksjö NA Specialty Solutions, LLC – Kaukauna facility is located at 600 Thilmany Rd, Kaukauna in Outagamie County, Wisconsin. This source is located approximately 0.95 kilometers south southwest of the Kaukauna SO_2 air quality monitor listed in Table 2 below as located at 601 Plank Road in Kaukauna. The other listed SO_2 sources in Outagamie County are located west, southwest, and northeast of the Kaukauna SO_2 air quality monitor. At a distance of 6.8 kilometers west is the Outagamie County Landfill located

on US-41 in Appleton. Outagamie Clean Energy Project, LLC located at 1313 Holland Road in Appleton is 6.6 kilometers west of the Kaukauna SO_2 air quality monitor. At 4.4 kilometers southwest is Midwest Paper Group located at 540 Prospect Street in Combined Locks. Approximately 5.4 kilometers northeast of the Kaukauna SO_2 air quality monitor, the Wisconsin Public Service Corporation – Fox Energy Center is located at 310 East Frontage Road in Kaukauna.

Table 3 shows the most recent 3 years of emissions data for these facilities as provided by Wisconsin.

Table 3. SO_2 Emissions of Sources in the Outagamie County, Wisconsin Area

Facility Name	2017 SO_2 Emissions (tons)	2018 SO_2 Emissions (tons)	2019 SO_2 Emissions (tons)
Ahlstrom-Munksjö NA Specialty Solutions, LLC – Kaukauna	5,997.21	6,324.95	4,897.68
Outagamie County Landfill	13.63	8.76	22.88
Appleton Property Ventures, LLC (D.B.A. Midwest Paper Group)	68.36	1.54	2.91
Wisconsin Public Service Corporation – Fox Energy Center	6.02	6.92	8.33
Outagamie Clean Energy Project, LLC	15.54	15.30	14.05
TOTAL	6,100.76	6,357.47	4,945.85

Of the listed sources in Table 3, Wisconsin identified the predominant source in Outagamie County as the Ahlstrom-Munksjö NA Specialty Solutions, LLC – Kaukauna facility, which is the only DRR-listed source in this area. This facility accounted for 98-99% of the total SO_2 annual emissions by weight from all the sources listed in Table 3 with annual emissions totaling 4,897.68 to 6,324.95 tons per year during the 2017-2019 design value period. This facility is less than 0.96 kilometers south southwest of the Kaukauna SO_2 monitor. The other four sources listed in Table 3 emitted between 6 and 69 tons per year during the design value period and are located farther from the Kaukauna SO_2 ambient air quality monitor. All of the sources listed in Table 3 are located within EPA's intended nonattainment area. There are no sources emitting over 1 ton per year of SO_2 in the portions of Outagamie County that EPA intends to designate as attainment/unclassifiable.

3.3.3. Factor 3: Meteorology

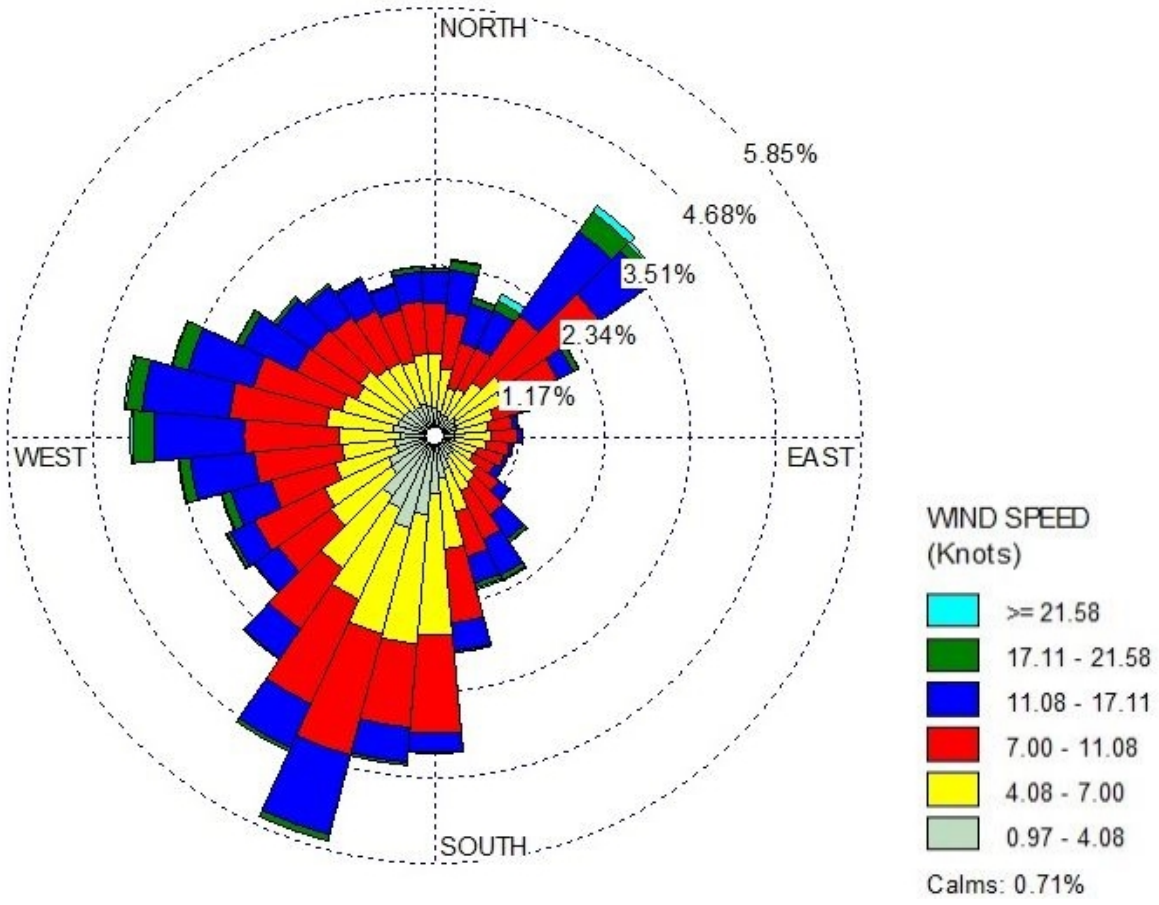
Wisconsin considered the meteorology (e.g., weather and transport patterns) for the Outagamie County area. Specifically, Wisconsin stated there are no specific factors related to weather that need to be considered for designation purposes.

EPA evaluated meteorological data to determine how weather conditions, including wind speed and direction, affect the plumes from sources contributing to the ambient SO_2 concentrations. Figures 2 and 3 below, generated by EPA, depict wind roses covering the 5-year period from 2011 to 2015 and the 3-year design value period from 2017 – 2019. The wind roses depict frequency and magnitude of wind speed and direction. The wind roses show the distribution of wind direction independently from wind speed by dividing the data into 36 or 24 wind directions and six wind speed classes in addition to calm conditions.

As shown in Figure 2, meteorological records for the nearest National Weather Service meteorological station to the Ahlstrom-Munksjö NA Specialty Solutions, LLC – Kaukauna facility at the Austin Straubel International Airport in Green Bay, Brown County, Wisconsin, 26 kilometers away, indicate winds blow predominantly from the southwest. Figure 2 covers the years 2011 – 2015 and was developed with data used by Wisconsin Department of Natural Resources to assist in siting the Kaukauna SO_2 air quality monitor. Figure 3 depicts a wind rose for the design value years of 2017 – 2019 based on meteorological records from a meteorological station that Wisconsin Department of Natural Resources installed alongside the Kaukauna SO_2 air quality monitor location.

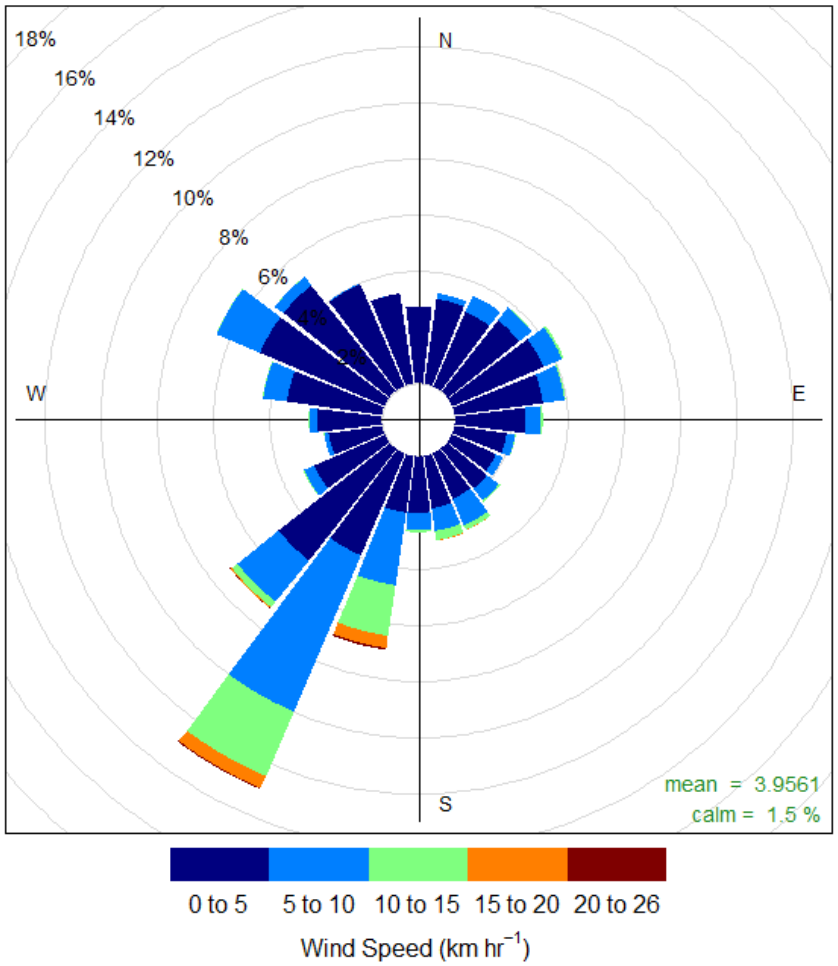
Figures 2 and 3 show that winds blow most prevalently from the southwest. Both Figure 2 and Figure 3 show similar directionality and reasonably represent the climatological winds for the area near the Kaukauna SO_2 air quality monitor and the Ahlstrom-Munksjö NA Specialty Solutions, LLC – Kaukauna facility. Figure 2 shows that during 2011 – 2015, the wind blew from the southwest 5.8% of the time at speeds of 7.6 – 13 kilometers per hour (4.08 - 7.00 knots) 1.8% of the time. Figure 3 shows that during the design value period 2017 – 2019, the wind blew from the southwest 13% of the time at speeds of 5 – 10 kilometers per hour 6% of the time.

Figure 2: Wind Rose for Brown County, Wisconsin 2011 – 2015



COMMENTS	DATA PERIOD	IMAGE GENERATED BY
Wind Rose is centered on Austin Straubel International Airport, Green Bay, Brown County, Wisconsin. Data provided by National Weather Service Data.	Start Date: 01/01/2011 End Date: 12/31/2015	U.S. EPA, Region 5
	CALM WINDS 0.71%	**SOFTWARE** Lakes Environmental WRPLOT

Figure 3: Wind Rose for Kaukauna SO_2 Monitor Location, Outagamie County, Wisconsin 2017 – 2019



COMMENTS	DATA PERIOD	IMAGE GENERATED BY
Wind Rose is centered on the SO_2 Monitor, 601 Plank Road, Kaukauna, Outagamie County, Wisconsin. Meteorological data was provided by the met station installed at the Kaukauna SO_2 monitoring site.	Start Date: 01/01/2017 End Date: 12/31/2019	U.S. EPA, Region 5
	CALM WINDS 1.5%	**SOFTWARE** R coding language
	AVERAGE WIND SPEED 3.9561 km/hr	

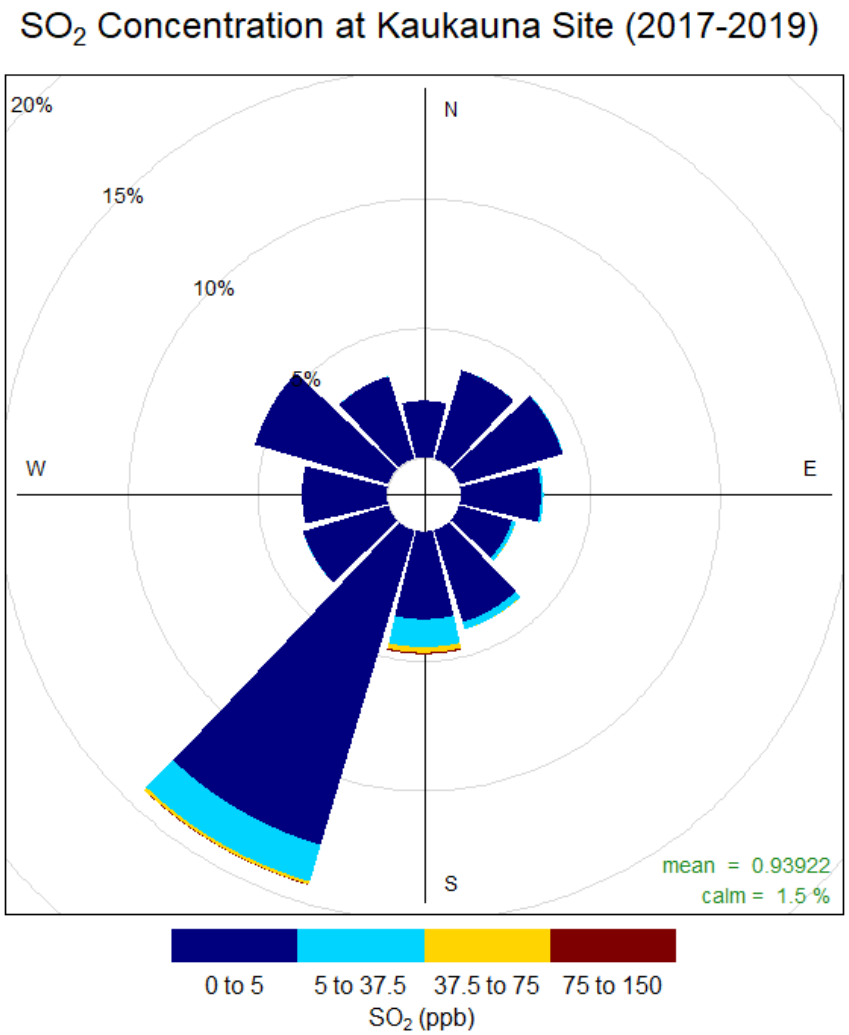
Evidence of source-receptor relationships between specific emissions sources and high SO_2 concentrations at violating monitors is another important factor in determining the appropriate contributing areas and the appropriate extent of EPA's intended nonattainment area. Meteorological records from the Kaukauna SO_2 air quality monitor site indicate winds blow predominantly from southwest.

Figures 4 and 5 below, generated by EPA Region 5, depict a pollution rose and polar plot centered at the Kaukauna SO_2 air quality monitor covering the 3-year design value period from 2017 to 2019. The pollution rose and polar plot were developed using open-source software in the coding language, R. The graphical user interface, RStudio, was used along with the open-source R packages, *openair* and *openairmaps*.[17] Figures 4 and 5 are based on hourly meteorological conditions (i.e., wind speed and direction) from the Kaukauna SO_2 air quality monitor site with corresponding hourly SO_2 concentrations.

As shown in Figure 4, the pollution rose illustrates the frequency distribution of wind direction correlated with SO_2 concentrations. The pollution rose is divided into 12 wind directions and four concentration ranges. SO_2 concentrations are based on the mean daily readings from the Kaukauna SO_2 air quality monitor during the design value period from 2017 – 2019.[18] Figure 4 shows that approximately 5% of the winds are from the south and 14% of winds are from the southwest, with 2% of winds from both south and southwest directions between 5 and 37.5 ppb and less than 1% between 37.5 and 75 ppb.

[17] Carslaw DC, Ropkins K (2012). "openair – An R Package for air quality data analysis." Environmental Modeling & Software, 27-28(0), 52-61. ISSN 1364-8152, doi: 10.1016/j.envsoft.2011.09.008.
[18] EPA AirData Air Quality Monitors, Daily Data for 2017, 2018, 2019 https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=5f239fd3e72f424f98ef3d5def547eb5&extent=-146.2334,13.1913,-46.3896,56.5319

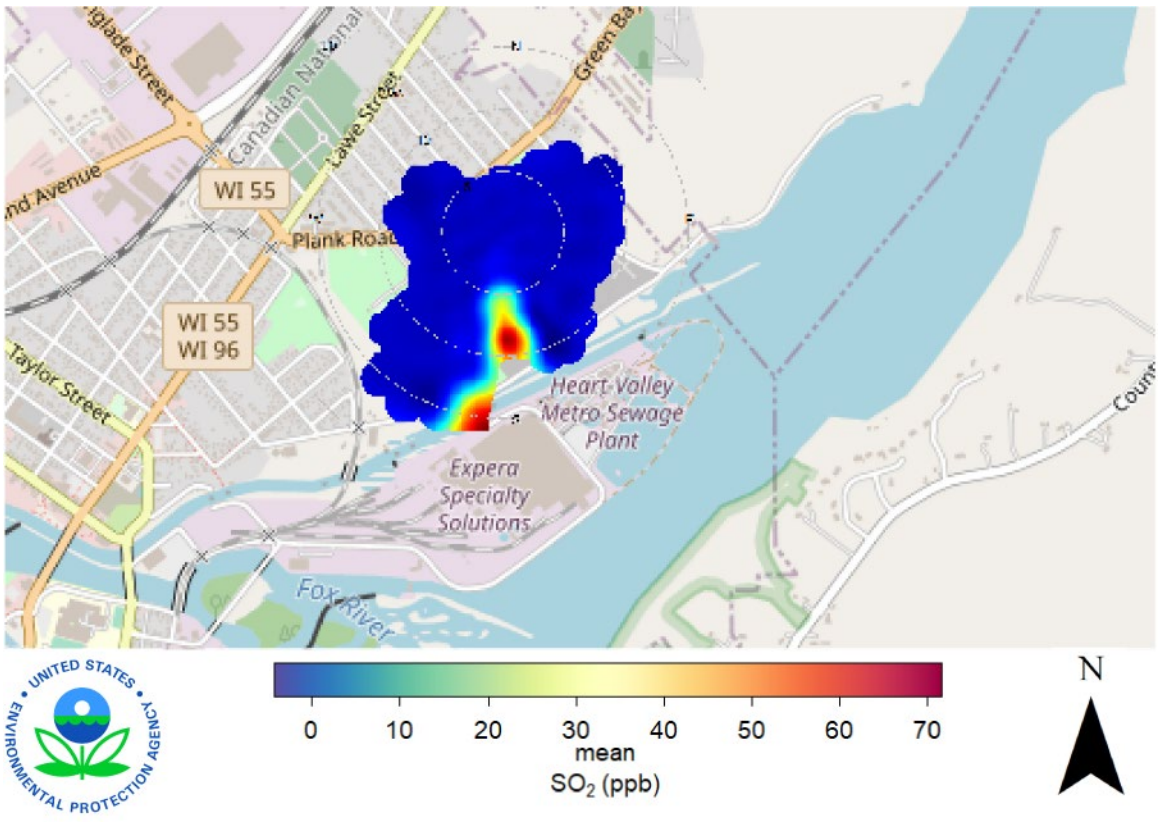
Figure 4: Pollution Rose for SO_2 Mean Concentrations from Air Monitor, 601 Plank Rd, Kaukauna, Outagamie County, Wisconsin



COMMENTS	DATA PERIOD	IMAGE GENERATED BY
Pollution Rose is centered on the SO_2 Monitor, 601 Plank Road, Kaukauna, Outagamie County, Wisconsin. Meteorological data was provided by the meteorological station installed at the Kaukauna SO_2 monitoring site.	Start Date: 01/01/2017 End Date: 12/31/2019 **CALM WINDS** 1.5%	U.S. EPA, Region 5 **SOFTWARE** R coding language

Figure 5 is a polar plot superimposed on a map of the local area around the Kaukauna SO_2 air quality monitor. Polar plots are used to visualize mean pollutant concentrations across an area that vary by wind speed and wind direction. Superimposing a polar plot on a map is useful in exploring sources of atmospheric pollutants. As shown in Figure 5, the polar plot demonstrates that the majority of SO_2 detected at the Kaukauna SO_2 air quality monitor is coming from the south, is distributed according to the concentration color palette, and does not reach into Oneida Township or Oneida Reservation further north.

Figure 5: Polar Plot and Map of SO_2 Mean Concentrations from Air Monitor, 601 Plank Rd, Kaukauna, Outagamie County, Wisconsin



COMMENTS	DATA PERIOD	IMAGE GENERATED BY
Polar Plot is centered on the SO_2 Monitor, 601 Plank Road, Kaukauna, Outagamie County, Wisconsin. Meteorological data was provided by the meteorological station installed at the Kaukauna SO_2 monitoring site.	Start Date: 01/01/2017 End Date: 12/31/2019	U.S. EPA, Region 5 **SOFTWARE** R coding language

For this area, winds can be from any direction. Therefore, sources in all directions can have some potential contribution. However, the wind roses in Figures 2 and 3 demonstrate the prevalent wind direction is from the southwest. The Ahlstrom-Munksjö NA Specialty Solutions, LLC – Kaukauna facility is located approximately 0.95 kilometers south southwest of the SO_2 monitor, and the wind roses in Figures 2 and 3 indicate the facility is generally upwind of the SO_2 monitor. Of the five sources of SO_2 identified in Table 3, Wisconsin identified the predominant source as the Ahlstrom-Munksjö NA Specialty Solutions, LLC – Kaukauna facility. Based on the wind roses in Figures 2 and 3 and the SO_2 concentrations in Figures 4 and 5, the majority of SO_2 detected at the SO_2 monitor is coming from the south southwest, and the Ahlstrom-Munksjö NA Specialty Solutions, LLC – Kaukauna facility is therefore the primary contributor to the violation at the SO_2 monitor. Other sources identified by Wisconsin include the Outagamie County Landfill and Outagamie Clean Energy Project, LLC located approximately 6.8 and 6.6. kilometers west of the SO_2 monitor and Midwest Paper Group located approximately 4.4 kilometers southwest. Wisconsin Public Service – Fox Energy Center is located approximately 5.4 kilometers northeast of the Kaukauna air quality SO_2 monitor.

3.3.4. Factor 4: Geography and Topography

Wisconsin considered the geography and topography of the Outagamie County area. Wisconsin examined the physical features of the land that may affect the distribution of emissions and may help define nonattainment area boundaries.

Outagamie County does not have any geographical or topographical barriers significantly limiting air pollution transport within its airshed. The terrain in Outagamie County is generally flat, descending in elevation from around 800 feet above sea level in the northwestern portion of the county to around 650 feet above sea level in the southeastern portion of the county near Kaukauna and the Fox River.[19] Wisconsin noted that there are no specific physical features that need to be considered for designation purposes. There are no mountain ranges, basins, or other physical features that may affect the distribution of emissions that would define area boundaries.

3.3.5. Factor 5: Jurisdictional Boundaries

Wisconsin considered the jurisdictional boundaries to establish the geographic extent of the violating area. EPA considers existing jurisdictional boundaries for the purposes of providing a clearly defined legal boundary for carrying out the air quality planning and enforcement functions for the area. Our goal is to base designations on clearly defined legal boundaries that align with existing administrative boundaries when reasonable. Existing jurisdictional boundaries used to define a nonattainment area must encompass the area that has been identified as meeting the nonattainment definition.

For this designation, EPA understands that Wisconsin is recommending the use of county, tribal, and township jurisdictional boundaries for designating the nonattainment area such that it does

[19] Elevation of Outagamie County, Wisconsin, USA. Worldwide Elevation Map Finder Sunset Sunrise Times Lookup. https://elevation.maplogs.com/poi/outagamie_county_wi_usa.20431.html

not include Oneida Reservation, Oneida Township, Oneida Off-Reservation Trust Land, or the two noncontiguous portions of Seymour Township adjoining Oneida Nation Tribal Lands.

3.4. Other Information Relevant to the Designation of the Outagamie County Area

EPA did not receive additional information relevant to the designation of this area.

3.5. EPA's Assessment of the Available Information for the Outagamie County Area

A monitor in the Outagamie County area is violating the NAAQS based on the 2017-2019 design value. EPA evaluated the five factors and all available information to determine the geographic extent of the violating area.

Based on this violation, EPA understands that Wisconsin's intent is to recommend Outagamie County be designated as a nonattainment area except Oneida Township (which includes Oneida Reservation), Oneida Off-Reservation Trust Land, and noncontiguous portions of Seymour Township adjoining Oneida Nation Tribal Lands. Considering the extent of the violation and the locations of the violating monitor and likely contributing emissions source, the boundary recommended by Wisconsin appropriately captures the area of nonattainment.

The violating monitor is likely not representative of the air quality in the tribal lands based on distance from and the size of the likely contributing emission source, which is over 12 kilometers away at its closest point. Specifically, there are no sources emitting greater than 1 ton per year of SO_2 in the Oneida Reservation portion of Outagamie County. Therefore, EPA intends to designate Oneida Township (including Oneida Reservation), Oneida Off-Reservation Trust Land, and the noncontiguous portions of Seymour Township adjoining Oneida Nation Tribal Lands as attainment/unclassifiable.

Although SO_2 emissions from the Ahlstrom-Munksjö NA Specialty Solutions, LLC – Kaukauna facility in 2017 – 2019 are moderately lower than in 2014, Wisconsin did not indicate any new control strategies had been implemented there. Wisconsin did not provide any additional information on federally enforceable emissions controls that are not reflected in recent inventories but which would require compliance before final designations are issued.

The meteorology shows that the nonattainment boundary recommended by Wisconsin properly includes the source most likely contributing to the violating monitor and the area where the SO_2 concentration in the ambient air violates the 2010 SO_2 NAAQS.

Outagamie County is the only remaining undesignated area in Wisconsin for the 2010 SO_2 NAAQS. By designating the whole county as either nonattainment or attainment/unclassifiable, there are no other remaining areas in the County that EPA intends to designate.

The intended designation areas delineated by jurisdictional boundaries at the county, township and tribal level meet EPA's stated goals to base designations on clearly defined legal boundaries, and to have these boundaries align with existing administrative boundaries when reasonable. The nonattainment boundaries are reasonable as they include the area surrounding the violating monitor, the source most likely contributing to the violating monitor, and are easily recognizable by the public. The intended attainment/unclassifiable boundaries are also reasonable as they create a separate designation for tribal lands to avoid splitting Oneida Reservation into two different designated areas and creating isolated pockets of nonattainment areas.

Wherever boundaries are proposed, EPA would not be determining the boundaries of any area of Indian country in the 40 CFR Part 81 Table, including any area of Indian country located in the larger designation area, and EPA lacks the authority to establish Indian country land status. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

EPA's intended nonattainment area is bounded by Outagamie County line and does not include Oneida Township, Oneida Reservation, Oneida Off-Reservation Trust Land, or the two noncontiguous portions of Seymour Township adjoining Oneida Nation Tribal Lands. EPA believes that our intended nonattainment area, will have clearly defined legal boundaries, and we intend to find these boundaries to be a suitable basis for defining our intended nonattainment area.

Based on the factors discussed above, the EPA believes that the remaining undesignated areas of Outagamie County neither have violations nor contribute to ambient air quality in an area that violates the NAAQS. Specifically, as previously mentioned, there are no sources emitting greater than 1 ton per year of SO_2 located within EPA's intended attainment/unclassifiable area. This includes the tribal areas and the nontribal, noncontiguous portions of Seymour Township that adjoin the tribal areas. Therefore, we intend to designate the remainder of Outagamie County as attainment/unclassifiable.

3.6. Summary of EPA's Intended Designation for the Outagamie County, Wisconsin Area

After careful evaluation of the state's recommendation and supporting information, as well as all available relevant information, EPA intends to designate portions of Outagamie County as either nonattainment or attainment/unclassifiable for the 2010 SO_2 NAAQS. Specifically, the boundaries for the intended nonattainment area are comprised of the jurisdictional boundaries of Outagamie County excepting Oneida Township, Oneida Reservation, Oneida Off-Reservation Trust Land, and noncontiguous portions of Seymour Township adjoining the Oneida Nation Tribal Lands. EPA intends to designate as attainment/unclassifiable Oneida Township, Oneida Reservation, Oneida Off-Reservation Trust Land, and the noncontiguous portions of Seymour Township adjoining Oneida Nation Tribal Lands. Figure 6 shows the boundary of these intended designated areas.

Figure 6. Boundary of the Outagamie County Intended Nonattainment Area and Intended Attainment/Unclassifiable Area