Attainment Plan
for the
Sheboygan County, Wisconsin
2015 Ozone National Ambient Air Quality Standard
Moderate Nonattainment Area

Sheboygan County (Partial)

DRAFT FOR PUBLIC REVIEW

Developed By:
The Wisconsin Department of Natural Resources

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WISCONSIN
DEPT. OF NATURAL RESOURCES

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List of Acronyms

AEI	WDNR's air emissions inventory
CAA	Clean Air Act
CAIR	Clean Air Interstate Rule
CART	Classification and regression tree
CBL	Convective boundary layer
CSAPR	Cross-State Air Pollution Rule
CTG	Control techniques guideline
EGU	Electric generating unit
EPA	U.S. Environmental Protection Agency
FID	Facility identification number
I/M	Vehicle inspection and maintenance (emissions testing)
ICI	Industrial, commercial and institutional emissions sources
LADCO	Lake Michigan Air Directors Consortium
MOVES	EPA's Motor Vehicle Emission Simulator model
MPO	Metropolitan planning organization
MVEB	Motor vehicle emissions budget
NAAQS	National Ambient Air Quality Standard
NAICS	North American Industrial Classification System
NEI	National Emissions Inventory
NESHAP	National Emission Standards for Hazardous Air Pollutants
NOx	Nitrogen oxides (NO and NO_2)
NNSR	Nonattainment New Source Review (permitting program)
ppb	Parts per billion
ppm	Parts per million
RACM	Reasonably available control measures
RACT	Reasonably available control technology
RFP	Reasonable further progress
RTP	Regional transportation plan
SIP	State implementation plan
TIP	Transportation improvement program
tposd	Tons per ozone season day
tposwd	Tons per ozone season weekday
VMT	Vehicle miles traveled
VOC	Volatile organic compounds
WDNR	Wisconsin Department of Natural Resources
WDOT	Wisconsin Department of Transportation

1. INTRODUCTION

The Wisconsin Department of Natural Resources (WDNR) has prepared this attainment plan to fulfill the Clean Air Act (CAA) state implementation plan (SIP) requirements for the Sheboygan County, Wisconsin moderate nonattainment area for the 2015 ozone National Ambient Air Quality Standard (NAAQS). This document was developed in accordance with the U.S. Environmental Protection Agency (EPA)'s implementation rule for the 2015 ozone NAAQS (83 FR 62998) and other applicable guidance and requirements. It covers all required moderate-area attainment plan elements for the 2015 ozone NAAQS as they apply to this nonattainment area.

1.1. Clean Air Act Requirements

The CAA requires an area not meeting a NAAQS for a specified criteria pollutant to develop or revise its SIP to expeditiously attain and maintain the NAAQS in that nonattainment area. For moderate nonattainment areas, these SIP requirements are:

1) An attainment plan (required under CAA section 182(b)).
2) Reasonably Available Control Technology (RACT) for volatile organic compounds (VOCs) and nitrogen oxides (NOx) (CAA section 182(b)(2)).
3) Reasonably Available Control Measures (RACM) (CAA section 172(c)(1)).
4) Reasonable Further Progress (RFP) reductions in VOC and/or NOx emissions in the area (CAA sections 172(c)(2) and 182(b)(1)).
5) Contingency measures to be implemented in the event of failure to attain the standard (CAA section 172(c)(9)).
6) A vehicle inspection and maintenance (I/M) program, as applicable (CAA section 181(b)(4)).
7) NOx and VOC emission offsets at a ratio of 1.15 to 1 for major source permits (CAA section 182(b)(5)).

This plan addresses the first six of these requirements for the Sheboygan County 2015 ozone NAAQS nonattainment area. Wisconsin has an approved Nonattainment New Source Review (NNSR) permitting program that fulfills the seventh requirement.[1] Where existing state rules implementing these requirements exist, by this submittal the WDNR certifies them as meeting the requirements for Moderate nonattainment areas for this NAAQS.

1.2. The Sheboygan County 2015 Ozone NAAQS Nonattainment Area

Nonattainment History

Historically, exceedances of the federal ozone standards have been recorded along the lakeshore of Lake Michigan, including in Sheboygan County. All or parts of Sheboygan County have been designated nonattainment for previous ozone NAAQS, but have subsequently been either redesignated to attainment of, or found to be attaining, each of these standards (Table 1.1).

[1] The EPA approved Wisconsin's NNSR SIP submittal for the 2015 ozone NAAQS on Jan. 19, 2022 (87 FR 2719).

Table 1.1. Sheboygan County ozone NAAQS nonattainment history.

NAAQS	1979	1997		2008		2015
Level	0.12 ppm	0.08 ppm		0.075 ppm		0.070 ppm
Averaging Period	1 hour	8 hour		8 hour		8 hour
Nonattainment Area	Sheboygan County	Inland Sheboygan County[a]	Shoreline Sheboygan County[a]	Inland Sheboygan County[a]	Shoreline Sheboygan County[a]	Sheboygan County (partial)[c]
Most Recent Classification	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Redesignated to Attainment	8/26/1996 (61 FR 43668)	NAAQS revoked[b]	NAAQS revoked[b]	7/10/2020 (85 FR 41400)	7/10/2020 (85 FR 41405)	TBD

[a] The EPA originally designated all of Sheboygan County as nonattainment for both the 1997 and 2008 ozone NAAQS. The EPA split the county into two separate nonattainment areas on July 15, 2019 (84 FR 33699).
[b] EPA finalized a determination of attainment for the Sheboygan County 1997 ozone NAAQS nonattainment area on Mar. 1, 2011 (76 FR 11080). However, the area was not officially redesignated to attainment before the NAAQS was revoked in 2015.
[c] Area is geographically identical to the 1997 and 2008 ozone NAAQS Shoreline Sheboygan County areas.

2015 Ozone NAAQS

In October 2015, the EPA finalized a revision to the 8-hour ozone NAAQS (80 FR 65291). The 2015 ozone NAAQS (0.070 parts per million; ppm) is more stringent than the previous 2008 ozone NAAQS (0.075 ppm). On June 4, 2018, the EPA published a final rulemaking that designated part of Sheboygan County as marginal nonattainment for the 2015 ozone NAAQS (83 FR 25776).

On June 14, 2021, in response to a July 10, 2020, decision by the D.C. Circuit Court, the EPA published a final rule revising the 2015 ozone NAAQS designations for 13 counties, including Sheboygan County (86 FR 31438). As part of this action, the EPA revised and expanded the Sheboygan County nonattainment area.[2] This revised designation was effective July 14, 2021. This area retained the marginal classification and attainment date of August 3, 2021 of the original nonattainment area.

Since the Sheboygan County nonattainment area did not attain the 2015 ozone NAAQS by its marginal area deadline, on October 7, 2022 the EPA reclassified the area from marginal to moderate nonattainment and set a new attainment date of August 3, 2024 (87 FR 60897). The WDNR has developed this submittal to fulfill moderate attainment planning requirements for this area as required by Sections 172(c) and 182(c)(2) of the CAA.

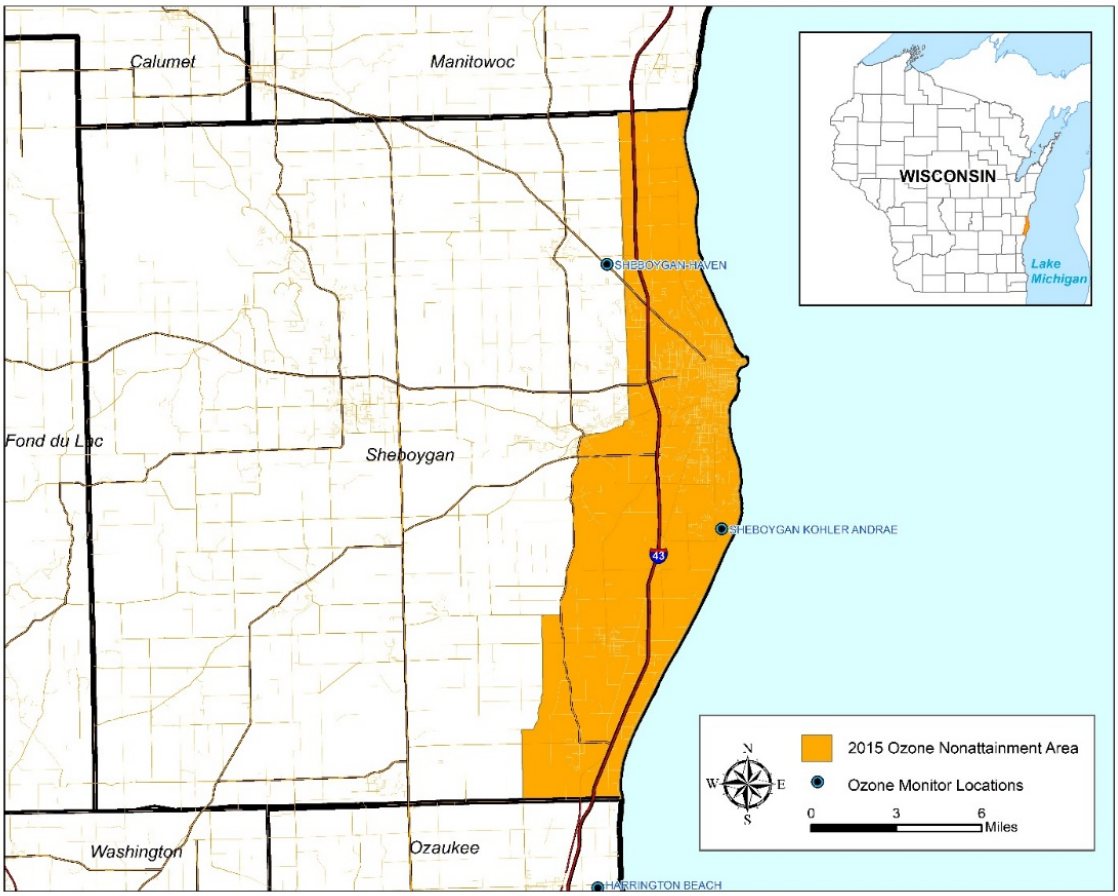
[2] The expanded area is geographically identical to the 1997 and 2008 ozone NAAQS Shoreline Sheboygan County areas. As such, it is occasionally referred to as the 2015 "Shoreline Sheboygan County" area, although that is not its official EPA designation.

Description of the Nonattainment Area

The Sheboygan County 2015 ozone NAAQS nonattainment area consists of the portion of the county extending approximately two to three miles inland from the Lake Michigan shoreline. The nonattainment area includes the roadways that separate the nonattainment area from the rest of Sheboygan County (Figure 1.1).[3]

The Sheboygan County 2015 ozone NAAQS nonattainment area constitutes about 12 percent of the county's total land area. Sheboygan County's population was 118,034 in 2020 and was projected to decrease by 0.2 percent between 2020 and 2023.[4] Almost half of the residents live in the largest city, Sheboygan, which is located within the nonattainment area.

Figure 1.1. Map of the Sheboygan County, Wisconsin, 2015 ozone NAAQS nonattainment area, with locations of ozone monitors shown.



[3] The western boundary of the nonattainment area is formed by the following roadways (from north to south): Highway 43, Wilson Lima Road, Minderhaud Road, County Road KK/Town Line Road, N 10th Street, County Road A S/Center Avenue, Gibbons Road, Hoftiezer Road, Highway 32, Palmer Road/Smies Road/Palmer Road, Amsterdam Road/County Road RR, Termaat Road.

[4] https://www.census.gov/quickfacts/fact/table/sheboygancountywisconsin,wi,US/PST120217.

1.3. Overview of this Attainment Plan

The remainder of this attainment plan SIP submittal is structured as follows:

Section 2 provides the conceptual model for ozone formation in the Lake Michigan region, including the nonattainment area. This section describes how synoptic-scale and mesoscale meteorology combine to create high ozone along the Wisconsin lakeshore under certain conditions, which complicates state efforts to address nonattainment.

Section 3 presents base and future year inventories for the nonattainment area and describes how these inventories show that the state has met its requirements for reasonable future progress. This section also describes how permanent and enforceable emissions reduction measures have reduced ozone precursor emissions.

Section 4 summarizes the attainment modeling that was completed in support of this plan, as required by the CAA.

Section 5 presents air quality information and weight of evidence support. This includes analysis of trends in ozone and ozone precursor emissions, as well as meteorologically adjusted trends in ozone concentrations. This section also demonstrates the important roles that transport, meteorology and chemistry play in determining ozone concentrations in the nonattainment area.

Section 6 describes how the state has addressed all other moderate nonattainment area SIP requirements. These requirements include transportation conformity, RACT programs for NOx and VOCs, RACM, a vehicle I/M program, and contingency measures.

Section 7 describes how the WDNR complied with the applicable public participation requirements.

Section 8 summarizes the conclusions of this submittal.

Collectively, this plan contains or otherwise addresses all moderate-area requirements required under the Clean Air Act for this nonattainment area.

2. OZONE DYNAMICS ALONG THE WISCONSIN LAKESHORE

2.1. Introduction

While ozone concentrations in the region have decreased dramatically due to implementation of an array of measures controlling emissions of ozone precursors, many states around Lake Michigan have areas that are in nonattainment of the 2015 ozone NAAQS. This discussion describes the complex dynamics that cause elevated ozone concentrations in the upper Midwest. These dynamics have been extensively studied for over three decades and are well documented.[5]

Wisconsin's lakeshore monitors most frequently measure ozone concentrations exceeding the ozone NAAQS from late May through early August. Ozone concentrations peak in the late spring and early summer because of the abundance of sunlight and heat, both of which drive ozone formation. In addition, strong land-lake temperature gradients in late spring and early summer drive lake breeze circulations, which contribute to high ozone concentrations, as discussed below.

The region's persistent ozone problems have been shown to be due to the unique meteorology of the Lake Michigan area. This meteorology causes transport of significant amounts of ozone and emissions of ozone precursors from upwind sources to lakeshore counties in Wisconsin and neighboring states. Two types of meteorological patterns have been shown to affect ozone concentrations in the region:

1) Synoptic scale meteorology[6] transports high concentrations of ozone and ozone precursors northward from source regions to the south and southeast.

2) Mesoscale meteorology[6] (via land-lake breeze circulation patterns) carries precursors over the lake, where they react to form ozone. Winds then shift to move the high ozone air onshore.

2.2. The Role of Synoptic-Scale Meteorology on High Ozone Days

Research has shown that high pressure systems can generate meteorological conditions favorable to elevated ozone as they move through the region from west to east during late May - early September. These systems are typified by hazy, sunny skies with generally weak, clockwise-rotating winds and relatively shallow mixing such that pollution concentrations are not diluted by mixing. These weather conditions contribute to the buildup of considerable amounts of ozone precursors and facilitate formation of ozone via photochemical reactions.

The location of surface high pressure systems is an important driver of ozone transport into the region. Research has shown that ozone episodes are generally associated with high pressure systems over the eastern U.S. that transport pollutants and precursors from the south and east

[5] This discussion uses some historical data to illustrate the science being described; however, the findings discussed in this section all still apply, as they have been extensively studied and documented over several decades.
[6] Synoptic-scale meteorology refers to weather features of 24-48 hours' duration, whereas mesoscale meteorology refers to weather patterns of shorter duration.

into the region.[7,8] One study estimated that 50% of Wisconsin's ozone exceedance days during 1980-1988 under the 1-hour ozone NAAQS occurred when the center of a high pressure system was situated southeast of the area (i.e., Ohio and east thereof).[9] Under these circumstances, high ozone concentrations in the Lake Michigan region may result when polluted air from high emissions regions such as the Ohio River Valley is transported northward along the western side of a high pressure system.[10] In addition, while emissions from the heavily industrialized Chicago and Milwaukee areas have decreased dramatically in recent decades, sources in these large metropolitan areas still generate significant ozone precursor emissions. Pollution from sources in these areas can add to the pool of pollution transported into the region.[7]

Figure 2.1 shows the synoptic scale weather pattern for one such episode, along with the resulting patterns in ozone concentrations. On this day, a high pressure system was located to the southeast, centered over Virginia. Southeasterly to southerly winds on the western side of this system carried pollutants from the Ohio River Valley to Lake Michigan. This episode shows a common pattern for ozone distributions on episode days: ozone concentrations were lowest in the regions with the highest emissions (in central Chicago and extending into northwestern Indiana) and the highest in rural coastal areas far downwind. During such classic transport episodes, peak ozone concentrations move northward over the course of the day. For example, on the day shown in Figure 2.2, ozone peaked at Wisconsin's southern Chiwaukee Prairie monitor between 11 a.m. and 1 p.m., at the Kohler Andrae monitor midway up the coast between 2 p.m. and 4 p.m., and at the northern Newport monitor between 4 p.m. and 6 p.m.

2.3. The Role of Mesoscale Meteorology on High Ozone Days

The synoptic meteorological conditions often work in combination with unique lake-induced mesoscale meteorological features to produce the highest ozone concentrations in this region. Wisconsin's ozone nonattainment areas are located along Lake Michigan. With a surface area of approximately 22,400 square miles, Lake Michigan acts as a huge heat sink during the warm months. Figure 2.2 highlights the considerable difference between the over-land air temperatures (measured at Racine, Wisconsin) and over-water air temperatures (measured at a buoy in southern Lake Michigan) during a 5-day ozone episode in June 2002. The strong daytime temperature contrast between the warm land and cold lake can lead to the formation of a thermally driven circulation cell called the lake breeze, which runs approximately perpendicular to the Lake Michigan shoreline (Figure 2.3). As this figure shows, the lake breeze is generally preceded by an early morning land breeze, driven by relatively warm temperatures over the lake. The land breeze can carry ozone precursors emitted from urban areas, primarily Chicago, out over the lake, where they can react to form ozone. The onshore flow of the lake breeze

[7] Dye, T.S., P.T. Roberts, and M.E. Korc, 1995: Observations of transport processes for ozone and ozone precursors during the 1991 Lake Michigan Ozone Study. J. App. Meteor, 34: 1877-1889.
[8] Hanna, S.R., and J.C. Chang, 1995: Relations between meteorology and ozone in the Lake Michigan region. J. Applied Meteorology, 34: 670-678.
[9] Haney, J.L., S.G. Douglas, L.R. Chinkin, D.R. Souten, C.S. Burton, and P.T. Roberts, 1989: Ozone Air Quality Scoping Study for the Lower Lake Michigan Air Quality Region, SAI report #SYSAPP-89/101, prepared for the EPA, August, 197 pp.
[10] For example, Ragland, K. and P. Samson, 1977: Ozone and visibility reduction in the Midwest: evidence for large-scale transport. J. Applied Meteorology, 16: 1101–1106.

circulation then transports elevated ozone from over the lake onshore into southeastern Wisconsin.

Figure 2.1. Surface synoptic weather map for 6 a.m. CST (left) and MDA8 ozone concentrations (right) for the Lake Michigan region for June 19, 2016.

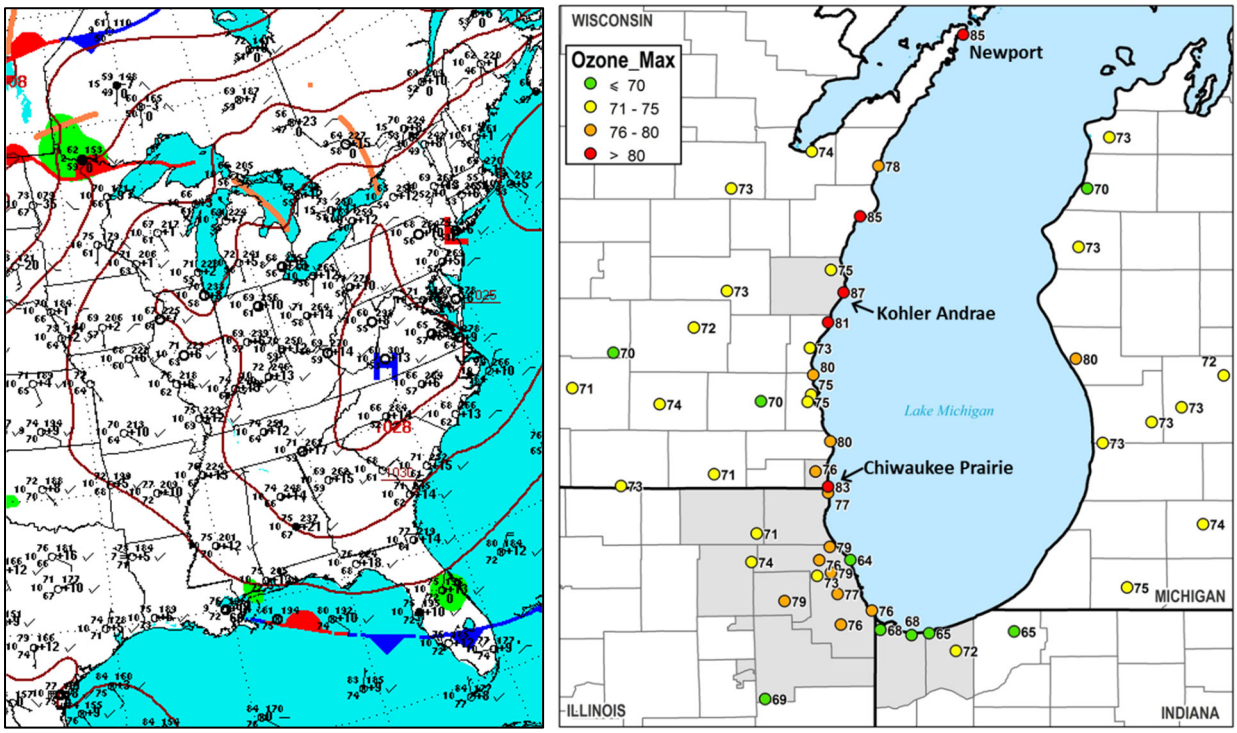


Figure 2.2. Hourly surface air temperatures at Racine, WI and the South Lake Michigan Buoy during June 20-25, 2002.

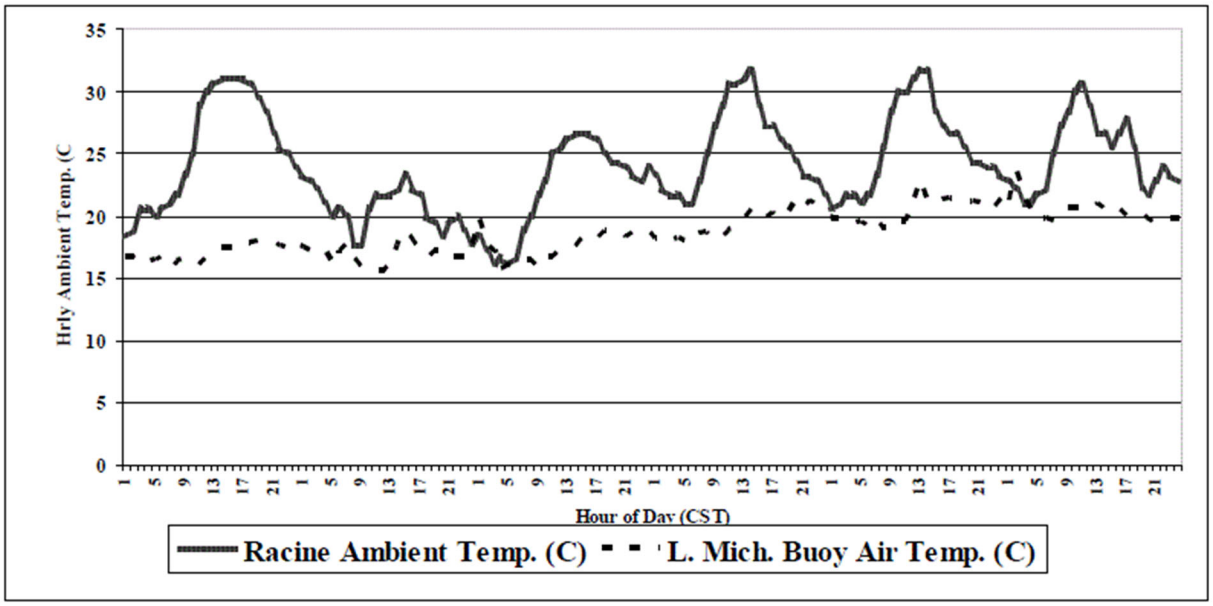
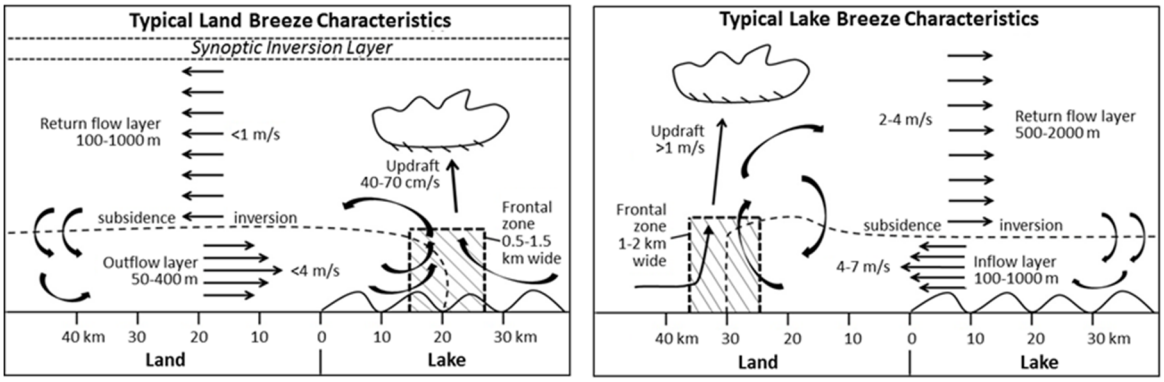


Figure 2.3. Diagrams of the early morning land breeze (left) and late morning/afternoon lake breeze circulations (right) responsible for enhanced ozone production along the Lake Michigan shoreline. Modified from Foley et al., 2011.[11]



2.4. Conceptual Model for Ozone Formation in the Lake Michigan Region

Synoptic and mesoscale meteorological patterns together drive ozone formation in the region, as described in a conceptual model in Dye et al. (1995).[7] Dye et al. (1995) described this model with the following series of inter-related steps. This discussion focuses on the conditions impacting Wisconsin's shoreline:

1) A shallow but stable conduction inversion exists just above the relatively cold lake surface. During the early morning hours the land breeze and general offshore flow (i.e., southerly to west-southwesterly winds) transport ozone and fresh precursor emissions into the stable air in the conduction layer over Lake Michigan. A primary source region is the Chicago area, located at the southern edge of the lake.

2) By midmorning a sharp horizontal temperature gradient forms along the shoreline between the cold lake air and the increasingly warmer air over the land. This gradient effectively "cuts off" air in the conduction layer from additional injections of shore-emitted precursors. Strong stability in the conduction layer limits dispersion, creating high concentrations of ozone precursors, which can react in this layer.

3) By midmorning, the developing convective boundary layer (CBL) grows and the resulting convection mixes ozone vertically, where it combines with ozone transported from sources outside the region. Ozone concentrations in this air are lower due to the dilutive effects of convective mixing. As this air is transported lakeward, it is forced to flow up and over the conduction layer.

4) The ozone-rich air in both layers is transported northward over Lake Michigan by the prevailing winds. When a lake breeze is present, it produces southerly to south-

[11] Foley, T. , E. A. Betterton, P.E. R. Jacko, and J. Hillery, 2011: Lake Michigan air quality: The 1994-2003 LADCO Aircraft Project (LAP), Atmos. Env., 45: 3192-3202.

southeasterly winds along the western shore of Lake Michigan. This wind pattern transports the ozone originating from sources in the south to downwind receptor regions in eastern Wisconsin. On occasion, areas north of Ozaukee County experience elevated ozone levels as a southerly wind intercepts the shoreline where it extends into Lake Michigan.

5) When the ozone-laden air flows onshore in the downwind receptor regions, air with the highest ozone concentrations, located in the lowest 300 m, mixes down to the surface first. This causes the highest ozone concentrations to be found along the shoreline. Eventually, air from higher altitudes mixes down to the surface further inland, but ozone concentrations in this air are lower. This air mass is the remnant of the ozone-diluted CBL air that flowed up and over the conduction layer during the mid-morning hours.

This complex meteorology leads to the high ozone concentrations and persistent nonattainment issues faced by the counties along the Lake Michigan shoreline. The impact of this meteorology on the transport of ozone, NOx, and VOCs to the Sheboygan County area is discussed in more detail in Section 5.

3. EMISSIONS INVENTORIES AND DEMONSTRATION OF REASONABLE FURTHER PROGRESS

3.1. Introduction

Sections 172(c)(2) and 182(b)(1) of the CAA require states with ozone nonattainment areas classified as moderate or higher to submit plans that show reasonable further progress (RFP) towards attaining the NAAQS. The EPA's SIP requirements rule for the 2015 ozone NAAQS defines RFP for moderate nonattainment areas as a demonstration that there has been at least a 15% emission reduction between the base year (2017) and the attainment year (2023).[12] Because the Sheboygan County nonattainment area has a previously approved 15% VOC rate of progress (ROP) plan (61 FR 11735), the 15% reduction requirement for the 2015 NAAQS can be satisfied with any combination of NOx and VOC reductions. These reductions may come from any SIP-approved or federally promulgated measures implemented after the base year.

Table 3.1 provides a summary of the emission inventories for NOx and VOCs for the Sheboygan County 2015 ozone NAAQS nonattainment area. Sections 3.2 and 3.3 present the emission inventories by emissions sector (i.e., point, area, onroad and nonroad) for this area for the base and projected years. These sections also include the supporting methodology used to develop the inventories. Sections 3.4 and 3.5 describe how the state has met its RFP and contingency emissions reduction requirements for the nonattainment area. Section 3.6 covers the enforceable control measures that led to the reductions in NOx and VOC emissions.

Table 3.1. Reduction in Sheboygan County nonattainment area NOx and VOC emissions, 2017-2024. Figures in tons per ozone season day.

Pollutant	2017	2023	2024	2017-2023 change	2023-2024 change*
NOx	10.05	6.94	6.87	-31%	-1%
VOC	6.55	5.68	5.67	-13%	0%
Total	**16.60**	**12.62**	**12.55**	**-24%**	**0%**

*The % change from 2023 to 2024 was calculated relative to 2017 emissions.

3.2. 2017 Base Year Inventory

The base year (2017) portion of the RFP requirement is a compilation of all anthropogenic sources of NOx and VOCs for an average ozone season day in 2017, incorporating all control programs in place at that time. The WDNR followed the EPA's requirements and guidance to prepare a comprehensive statewide emission inventory of NOx and VOC emissions for 2017. Appendix 1 includes a discussion of the methodology used to estimate sector-specific emissions for 2017 (shown in Table 3.2).

[12] EPA Final Rule: Implementation of the 2015 National Ambient Air Quality Standard for Ozone: Nonattainment Area State Implementation Plan Requirements (December 6, 2018; 83 FR 62998).

Table 3.2. Sheboygan County nonattainment area NOx and VOC emissions for base year 2017. Figures in tons per ozone season day.

Pollutant	Point EGU	Point Non-EGU	Area	Onroad	Nonroad	ERCs	Total
NOx	5.97	0.08	1.25	1.64	1.11	-	**10.05**
VOC	0.35	0.16	4.73	0.65	0.66	-	**6.55**

3.3. 2023 & 2024 Projected Inventories

The WDNR developed emissions information to satisfy requirements to submit an attainment year (2023) inventory for NOx and VOCs. Appendix 2 includes information on sector-specific emissions projection methodology. The same approaches were used to project emissions for 2024, which was used to assess attainment contingency requirements. Tables 3.3 and 3.4 show the projected NOx and VOC emissions (in tposd) in 2023 and 2024 by sector.

Table 3.3. Sheboygan County nonattainment area NOx and VOC emissions for attainment year 2023. Figures in tons per ozone season day.

Pollutant	Point EGU	Point Non-EGU	Area	Onroad	Nonroad	ERCs	Total
NOx	4.24	0.08	0.86	0.95	0.81	-	**6.94**
VOC	0.18	0.10	4.27	0.56	0.57	-	**5.68**

Table 3.4. Sheboygan County nonattainment area NOx and VOC emissions for contingency year 2024. Figures in tons per ozone season day.

Pollutant	Point EGU	Point Non-EGU	Area	Onroad	Nonroad	ERCs	Total
NOx	4.24	0.08	0.87	0.89	0.79	-	**6.87**
VOC	0.18	0.10	4.27	0.56	0.56	-	**5.67**

3.4. Demonstration of Reasonable Further Progress

Because the Sheboygan County 2015 ozone NAAQS nonattainment area already met the 15% VOC rate of progress requirement when addressing a prior ozone NAAQS, the required 15% RFP reduction for this plan can come from any combination of NOx and VOC reductions occurring between 2017 and 2023.

The WDNR compared actual emissions from 2017 to emission estimates from the projected attainment year (2023) for the Sheboygan County 2015 ozone NAAQS nonattainment area, as shown in Tables 3.5 and 3.6 and Figure 3.1. NOx emissions are projected to decrease by 31% (3.11 tposd) between 2017 and 2023. The largest reductions in NOx for the 2017–2023 period are projected from the point source EGU sector (1.74 tposd), followed by the onroad mobile sector (0.69 tposd). VOC emissions are projected to decrease by 13% (0.87 tposd) over this same

time period. The largest VOC reductions are from the area source sector (0.46 tposd) followed by the point source EGU sector (0.17 tposd).

Overall, the combined reduction in NOx and VOC emissions between the base year (2017) and the projected attainment year (2023) is 24%. This reduction exceeds the required 15% RFP reduction, thereby satisfying RFP requirements for this area.

Table 3.5. Sheboygan County nonattainment area NOx emissions by source type. Figures in tons per ozone season day.

Sector	2017	2023	2024	2017-2023 change*	2023-2024 change*
Point - EGU	5.97	4.24	4.24	-29%	0%
Point - Non-EGU	0.08	0.08	0.08	0%	0%
Area	1.25	0.86	0.87	-31%	1%
Onroad	1.64	0.95	0.89	-42%	-4%
Nonroad	1.11	0.81	0.79	-27%	-2%
ERCs	-	-	-	-	-
TOTAL	**10.05**	**6.94**	**6.87**	**-31%**	**-1%**

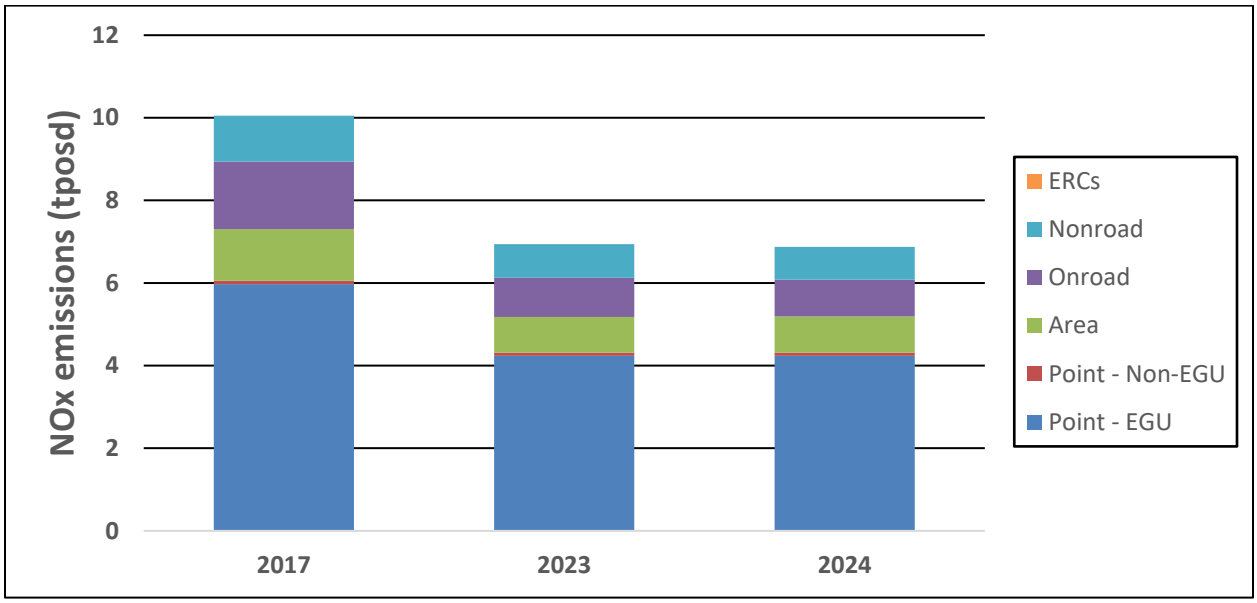
*The percent changes from 2017-2023 and 2023-2024 were calculated relative to 2017 emissions.

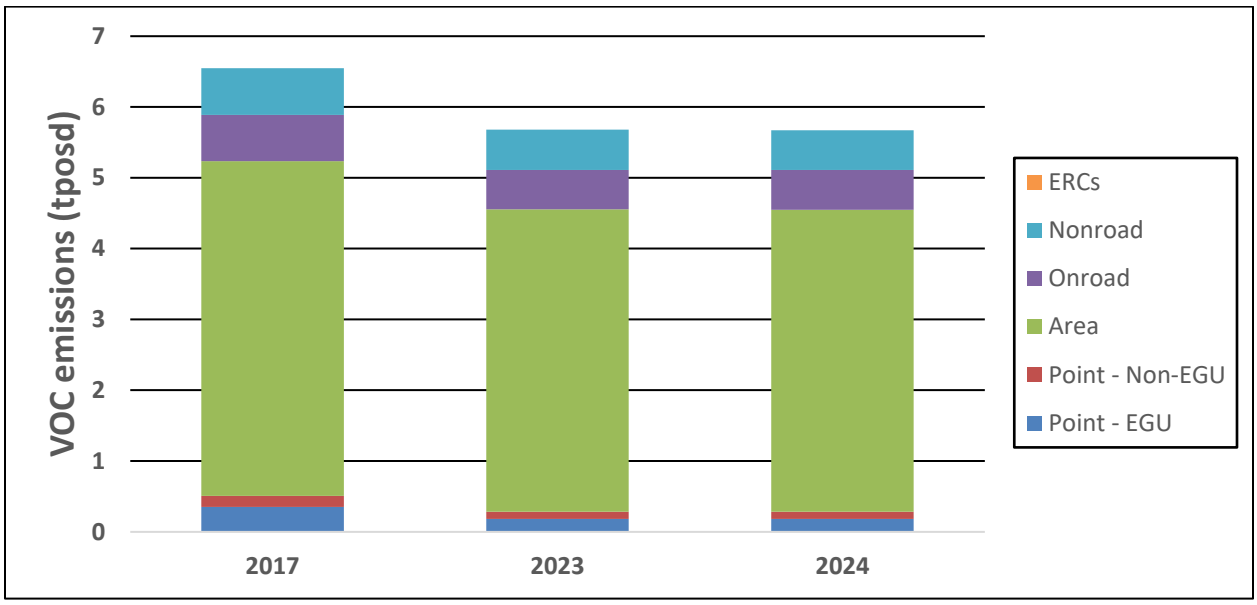
Table 3.6. Sheboygan County nonattainment area VOC emissions by source type. Figures in tons per ozone season day.

Sector	2017	2023	2024	2017-2023 change*	2023-2024 change*
Point - EGU	0.35	0.18	0.18	-49%	0%
Point - Non-EGU	0.16	0.10	0.10	-38%	0%
Area	4.73	4.27	4.27	-10%	0%
Onroad	0.65	0.56	0.56	-14%	0%
Nonroad	0.66	0.57	0.56	-14%	-1%
ERCs	-	-	-	-	-
TOTAL	**6.55**	**5.68**	**5.67**	**-13%**	**0%**

*The percent changes from 2017-2023 and 2023-2024 were calculated relative to 2017 emissions.

Figure 3.1. Sheboygan County nonattainment area NOx and VOC emissions by source type.





3.5. Demonstration of Contingency Reduction

The state must also include contingency measures representing one year of emissions reduction progress, generally equivalent to an additional 3% reduction, but which can very depending on circumstances. These measures must be implemented within one year of an area failing to attain the NAAQS by its attainment date (in this case, 2024). This requirement is discussed further in Section 6.7.

Tables 3.5 and 3.6 show that, from 2023 to 2024, NOx emissions are projected to decrease an additional 1%, while VOC emissions decrease less than 1%. Overall, NOx and VOC emissions

are expected to decrease by a less than 1% combined from 2023 to 2024. While this figure is less than the 3% recommended by the EPA, given the extraordinarily low amount of total emissions from all sources in this area (under 13 tons per day), this small additional reduction is reasonable and expected.

Further, these contingency emission reductions are due to permanent and enforceable control measures enacted within the nonattainment area on point, area, and mobile source NOx and VOC emissions described in detail in Section 3.6, below.

3.6. Control Strategies for Ozone Precursor Emissions

This section documents the permanent and enforceable control measures that reduced NOx and VOC emissions in the Sheboygan County 2015 ozone NAAQS nonattainment area. Many of the control measures have been implemented under programs that began before 2017.[13] These measures will continue to contribute to emissions reductions that will support attainment of the NAAQS in this area. However, this discussion highlights those control measures and emission reductions that have occurred since 2017. Other federal control programs reducing emissions in both the larger nonattainment area and transport regions are also discussed.

3.6.1. Point Source Control Measures

NOx Reasonably Available Control Measures (RACM) and Reasonably Available Control Technology (RACT)

Wisconsin implemented RACM for NOx sources in the state's nonattainment areas for the 1997 ozone NAAQS. This area included the Sheboygan County 2015 ozone NAAQS nonattainment area. The NOx RACM requirements are codified under ss. NR 428.01 to 428.12, Wis. Adm. Code, and apply to new and existing NOx emissions units located in southeastern Wisconsin. Section NR 428.04, Wis. Adm. Code, lists NOx performance standards for the NOx emissions units that are constructed or modified after February 1, 2001, and have design capacities greater than the capacity thresholds listed in this provision. Section NR 428.05 includes NOx performance standards for NOx emissions units constructed on or before February 1, 2001, that exceed the provision's capacity threshold. All emissions units subject to this section are required to install continuous emissions monitoring equipment to demonstrate compliance with the NOx emissions limit specified in this rule.

Wisconsin has also implemented RACT for major NOx sources in nonattainment areas in southeastern Wisconsin to meet requirements for the 1997 ozone NAAQS. This area is inclusive of the Sheboygan County 2015 ozone NAAQS nonattainment area. Section 6.2 includes details about Wisconsin's NOx RACT program.

In 2023 there were 536 tons of NOx from EGUs, and 158 tons of NOx from other (non-EGU) emission units in the Sheboygan County 2015 ozone NAAQS nonattainment area (Table 3.7). Annual point source NOx emissions have decreased in the nonattainment area by 85% since 2008 and 60% since 2017. These reductions are the result of abovementioned NOx RACT and

[13] Section 5.3 shows emission trends extending back to 2002, with reductions over that period due in part to these control measures.

RACM programs, as well as federal emissions standards (e.g., new source performance standards), consent decrees, and NNSR permitting.

Table 3.7. NOx emissions and requirements for point sources in the Sheboygan County nonattainment area, 2008-2023

Facility	Emissions/ Number of Units	2008	2017	2023	Change 2017 – 2023	Permanent and Enforceable Control Measures
Alliant – Edgewater: Boilers B23, B24 and B25	Annual NOx Emissions (TPY)	4,503	1,571	536	-66%	Boiler B23: retired in 2015 Boiler B24: retired in 2018 Boiler B25: 0.07 lb/mmBTU (May 2013)
Other NOx Emissions Units	Annual NOx Emissions (TPY)	167	161	158	-2%	-NOx RACM -Emissions units become subject to NOx RACT if facilities exceed major source threshold
	Number of Units	93	90	80	-	
Total NOx Emissions (TPY)		4,670	1,731	694	-60%	

Federal NOx Transport Rules

EGUs in 23 states east of the Mississippi, including Wisconsin, have been subject to a series of federal ozone transport rules since 2009. These rules have included the Clean Air Interstate Rule, the Cross State Air Pollution Rule (CSAPR), the CSAPR Update Rule and the Revised CSAPR Update Rule. These rules have reduced NOx emissions in and around the Sheboygan County 2015 ozone NAAQS nonattainment area.

Beginning January 1, 2009, EGUs in 22 states (including Wisconsin) became subject to ozone season NOx emission budgets under CAIR. CAIR addressed CAA transport requirements for the 1997 ozone NAAQS. For the three states contributing most to the Sheboygan County 2015 ozone NAAQS nonattainment area ozone concentrations (Illinois, Indiana, and Wisconsin), CAIR resulted in a 35% reduction of total EGU NOx emissions across the three states during the ozone season over the 2009-2014 period (Table 3.8).

Starting with the 2015 ozone season, CSAPR replaced CAIR to reduce interstate NOx transport relative to the 1997 ozone NAAQS. CSAPR implemented NOx budgets for the impacted states in two phases. Phase I limited NOx emissions in 2015 and 2016.

The EPA published the CSAPR Update (81 FR 74504) in 2016 to address NOx transport affecting the attainment and maintenance of the 2008 ozone NAAQS (79 FR 16436). The CSAPR Update established Phase II NOx budgets starting with the 2017 ozone season. On April 30, 2021, the EPA promulgated the Revised CSAPR Update rule in order to fully address 21 states' outstanding interstate pollution transport obligations for the 2008 ozone NAAQS (86

FR23054). This rule further reduced EGU NOx emissions in 12 states starting in the 2021 ozone season. For the three-state area of Illinois, Indiana, and Wisconsin, these CSAPR rules (CSAPR, CSAPR Update and Revised CSAPR Update) resulted in a 39% reduction of total EGU NOx emissions across the three states during the ozone season over the 2014-2017 period, and a 54% reduction over the 2017-2023 period (Table 3.8).

On June 5, 2023, the EPA published the Good Neighbor Plan (GNP) to address 23 states' interstate pollution transport obligations for the 2015 ozone NAAQS (88 FR 36654). On February 16, 2024, the EPA proposed a supplemental rule to address transport requirements for an additional five states (89 FR 12703). These rules are intended to reduce EGU NOx emissions in starting in the 2023 ozone season and reduce non-EGU NOx emissions in many states starting in the 2026 ozone season. Implementation of the GNP is currently stayed and no emissions reductions from any EPA transport rule for the 2015 NAAQS are reflected in this attainment plan.

Table 3.8. EGU NOx emissions under the CAIR and CSAPR programs in Illinois, Indiana, and Wisconsin.

State	Ozone Season NOx Emissions (Tons)				Percent Reduction		
	2008	2014	2017	2023	2008-2014	2014-2017	2017-2023
Illinois	31,106	18,489	13,039	5,365	41%	29%	59%
Indiana	53,016	40,247	20,396	8,694	24%	49%	57%
Wisconsin	19,951	9,087	8,103	5,198	55%	11%	36%
Total	**104,073**	**67,823**	**41,538**	**19,257**	**35%**	**39%**	**54%**

Source: EPA Clean Air Markets Program Data (CAMPD), database of reported emissions, for 2008-2023 ozone season emissions.

Point Source VOC Control Measures

In 2023, non-combustion processes accounted for the majority (79%) of total VOC emissions in the Sheboygan County 2015 ozone NAAQS nonattainment area (Table 3.9). Examples of non-combustion processes include printing, coating, painting, and storage tank emissions. Combustion processes related to boilers, process heaters, and reciprocating engines, accounted for the remaining 21% of the area's VOC emissions in 2023.

Sources of VOC emissions in the Sheboygan County 2015 ozone NAAQS nonattainment area are subject to source-specific NESHAP requirements and/or VOC RACT rules, as applicable.[14]

[14] Non-combustion and combustion processes are subject to either major source or area source NESHAP emission requirements based on size thresholds. The applicability of requirements and exemptions for each process has not been determined for purposes of this assessment. Natural gas-fired boilers and processes at area sources are not subject to NESHAP requirements.

Table 3.9. Process-level VOC emissions from the Sheboygan County nonattainment area in 2023.

	Combustion Processes	Non-Combustion Processes	Total
Tons (2023)	50	192	242
Percent of total	21%	79%	-

VOC RACT Rules

Non-combustion activities or processes in the Sheboygan County 2015 ozone NAAQS nonattainment area are subject to Wisconsin VOC RACT rules. Section 6.3 includes details about VOC RACT program implementation in this nonattainment area.

Federal NESHAP Rules

Several federal NESHAP rules have been implemented to control hazardous pollutants. These rules include requirements to control hazardous organic pollutants through ensuring complete combustion of fuels or implementing requirements for emissions of total hydrocarbons. Under either approach, the rules act to reduce total VOC emitted by the affected sources. These NESHAP rules apply to both major and area source facilities. Major sources are those facilities emitting more than 10 tons per year of a single hazardous air pollutant or more than 25 tons per year of all hazardous air pollutants in total. Area sources are those facilities that emit less than the major source thresholds for hazardous air pollutants.

NESHAP requirements apply to sources within the Sheboygan County 2015 ozone NAAQS nonattainment area but also apply nationally, thereby reducing the transport of VOC emissions into the nonattainment area. The NESHAP rules that may have contributed to reductions in point source VOC emissions include:

- *Major Source ICI Boiler and Process Heater NESHAP* – On March 21, 2011, the EPA promulgated the "National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters" under part 63 subpart DDDDD. This NESHAP requires all boilers and process heaters, including natural gas fired units, at major source facilities to perform an initial energy assessment and perform periodic tune-ups by January 31, 2016. This action is intended to ensure complete combustion.

- *Area Source (non-major point sources) ICI Boiler and Process Heater NESHAP* – On March 21, 2011, the EPA promulgated the "National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers" under part 63 subpart JJJJJJ. This NESHAP requires solid fuel and oil fuel fired boilers operated by sources that are below the major source threshold to begin periodic combustion tuning by March 21, 2014.

- *Internal Combustion Engine Rules* – The EPA has promulgated three rules which limit the total amount of hydrocarbon emissions from internal combustion engines - the "National Emission Standards for Hazardous Pollutants for Reciprocating Internal

Combustion Engines" (RICE MACT) was promulgated on June 15, 2004 under Part 63, subpart ZZZZ and revised in January 2008 and March 2010, with the two revisions impacting additional RICE units; the "Standards of Performance for Stationary Spark Ignition Internal Combustion Engines" promulgated on January 18, 2008 under Part 60, subpart JJJJ; and "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines promulgated on July 11, 2006 under Part 60, subpart IIII. These rules implement hydrocarbon emission limitations prior to and after 2011 based on compliance dates. These rules also act to continuously reduce emissions as existing stationary engines are replaced by new, cleaner-burning engines.

3.6.2. Area Source Control Measures

As noted for point sources, Wisconsin has implemented VOC RACT rules under chs. NR 420 through 423, Wis. Adm. Code, that are aligned with the EPA's CTGs. Wisconsin has also adopted VOC limits for source categories not covered by CTGs throughout chs. NR 419 through 424, Wis. Adm. Code. In addition, VOC emissions standards for consumer and commercial products also limited VOC emissions from area sources, as did NESHAPs for gasoline distribution (Stage I vapor recovery requirements) and area source ICI boilers.

Wisconsin previously had a Stage 2 vehicle refueling vapor recovery program in place. However, this program was removed from Wisconsin's ozone SIP on November 4, 2013 (78 FR 65875) because the equipment was found to defeat onboard vapor recovery systems for some new vehicles.

There are also 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 was implemented prior to 2017 and will continue to reduce VOCs emitted from this sector. Two other federal rules, the NESHAPs for gasoline distribution (Stage I vapor recovery requirements) and area source ICI boilers, also control area source VOC emissions associated with fuel storage and transfer activities.

3.6.3. Onroad Source Control Measures

Both NOx and VOC emissions from onroad mobile sources are substantially controlled through federal new vehicle emissions standards programs and fuel standards. Although initial compliance dates in many cases were prior to 2017, these regulations have continued to reduce area-wide emissions as fleets turn over to newer vehicles. These programs apply nationally and have reduced emissions both within the Sheboygan County 2015 ozone NAAQS nonattainment area and contributing ozone precursor transport areas. The federal programs contributing to attainment of the 2015 ozone NAAQS include those listed in Table 3.10.

The EPA has recently finalized a series of updated mobile source rules that will further reduce emissions from this sector. However, since those reductions will occur in the future and after the moderate attainment date for this NAAQS, no emissions reductions from those and other mobile source programs (e.g., from the Inflation Reduction Act) implemented after 2023 are reflected in this attainment plan.

Table 3.10. Federal onroad mobile source regulations contributing to attainment.

Onroad Control Program	Pollutants	Model Year[1]	Regulation
Passenger vehicles, SUVs, and light duty trucks – emissions and fuel standards	VOC & NOx	2004 – 2009+ (Tier 2) 2017+ (Tier 3)	40 CFR Part 85 & 86
Light-duty trucks and medium duty passenger vehicle – evaporative standards	VOC	2004 – 2010	40 CFR Part 86
Heavy-duty highway compression engines	VOC & NOx	2007+	40 CFR Part 86
Heavy-duty spark ignition engines	VOC & NOx	2005 – 2008+	40 CFR Part 86
Motorcycles	VOC & NOx	2006 – 2010 (Tier 1 & 2)	40 CFR Part 86
Mobile Source Air Toxics – fuel formulation, passenger vehicle emissions, and portable container emissions	Organic Toxics & VOC	2009 - 2015[2]	40 CFR Part 59, 80, 85, & 86
Light duty vehicle corporate average fuel economy (CAFE) standards	Fuel efficiency (VOC and NOx)	2012-2016 & 2017-2025	40 CFR Part 600

[1] The range in model years affected can reflect phasing of requirements based on engine size or initial years for replacing earlier tier requirements.
[2] The range in model years reflects phased implementation of fuel, passenger vehicle, and portable container emissions requirements as well as the phasing by vehicle size and type.

Wisconsin's enhanced I/M program also limits on-road VOC and NOx emissions from onroad sources and is required within the Sheboygan County 2015 ozone NAAQS nonattainment area. Section 6.5 contains a complete description of the I/M program.

3.6.4. Nonroad Source Control Measures

VOC and NOx emitted by nonroad mobile sources are significantly controlled via federal standards for new engines. These programs therefore reduce ozone precursor emissions generated within the Sheboygan County 2015 ozone NAAQS nonattainment area and in the broader regional areas contributing to ozone transport. Table 3.11 lists the nonroad source categories and applicable federal regulations. The nonroad regulations continue to slowly lower average unit and total sector emissions as equipment fleets are replaced each year (approximately 20 years for complete fleet turnover) pulling the highest emitting equipment out of circulation or substantially reducing its use. 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 VOC and NOx emission limits.

Table 3.11. Federal nonroad mobile source regulations contributing to attainment.

Nonroad Control Program	Pollutants	Model Year[1]	Regulation
Aircraft	HC & NOx	2000 – 2005+	40 CFR Part 87
Compression Ignition[2]	NMHC & NOx	2000 – 2015+ (Tier 4)	40 CFR Part 89 & 1039
Large Spark Ignition	HC & NOx	2007+	40 CFR Part 1048
Locomotive Engines	HC & NOx	2012 – 2014 (Tier 3) 2015+ (Tier 4)	40 CFR Part 1033
Marine Compression Ignition	HC & NOx	2012 – 2018	40 CFR Part 1042
Marine Spark Ignition	HC & NOx	2010+	40 CFR Part 1045
Recreational Vehicle[3]	HC & NOx	2006 – 2012 (Tier 1 – 3) (phasing dependent on vehicle type)	40 CFR Part 1051
Small Spark Ignition Engine[4] < 19d Kw – emission standards	HC & NOx	2005 – 2012 (Tier 2 & 3)	

HC – Hydrocarbon (VOCs)
NMHC – Non-Methane Hydrocarbon (VOCs)
[1] The range in model years affected can reflect phasing of requirements based on engine size or initial years for replacing earlier tier requirements.
[2] Compression ignition applies to diesel non-road compression engines including engines operated in construction, agricultural, and mining equipment.
[3] Recreational vehicles include snowmobiles, off-road motorcycles, and ATVs
[4] Small spark ignition engines include engines operated in lawn and hand-held equipment.

4. ATTAINMENT MODELING

Section 182(j) of the CAA requires that photochemical grid modeling be used to demonstrate attainment in multistate ozone nonattainment areas. In this plan, the WDNR is including modeling conducted by the Lake Michigan Air Directors Consortium (LADCO) to satisfy this requirement for the Sheboygan County 2015 ozone NAAQS moderate nonattainment area.

4.1. Overview

In 2022 LADCO completed air quality modeling to support the development of attainment demonstration SIPs for 2015 ozone NAAQS moderate nonattainment areas for its member states. The resulting technical support document (TSD) includes an ozone trends analysis, air quality modeling platform description, base and future year emissions summary, chemical transport modeling evaluation, attainment testing, and source apportionment analysis. The TSD is included as Appendix 9 to this document. This section summarizes the methods and results of that analysis.[15]

LADCO's modeling used the Comprehensive Air Quality Model with Extensions (CAMx) v7.10. Because the attainment deadline occurs during the 2024 ozone season, the effective year for attainment is the 2023 ozone season. Therefore, LADCO selected 2023 as the projection year for this modeling effort. LADCO used 2016 as the base modeling year from which it projected air quality for 2023.

The modeling's 2023 ozone air quality and attainment forecasts were based on meteorology modeling that was optimized for conditions in the Great Lakes Basin. LADCO used the EPA's 2016fh_16j emissions modeling platform data (2016v1), and other CAMx modeling platform inputs released by the EPA in September 2019 for this application. LADCO replaced the EGU emissions in the EPA 2016fh_16j platform with 2023 EGU forecasts estimated with the ERTAC EGU Tool version 16.2 beta. ERTAC EGU 16.2 beta integrated state-reported information on EGU operations and forecasts as of September 2021. Overall, both the NOx and VOC ozone season emissions are projected to decrease in 2023 relative to 2016 in all LADCO states, including Wisconsin.

LADCO's modeling differs from contemporaneous EPA ozone modeling[16] in that LADCO relies upon different emissions data and, especially, a photochemical modeling configuration optimized to best reflect ground-level ozone formation in the Great Lakes region. However, the LADCO and EPA modeling efforts are consistent in their core respects and give similar results. The LADCO TSD includes a full model performance evaluation and a discussion of the differences between the EPA and LADCO modeling.

[15] All technical files associated with this modeling are publicly available on LADCO's website: https://www.ladco.org/technical/ladco-internal/ladco-projects/ladco-2015-o3-naaqs-moderate-area-sip-technical-support-document/.

[16] See, for example, modeling completed by the EPA for both the proposed and final Good Neighbor Plan rule for the 2015 ozone NAAQS (2016v2 and 2016v3 platform modeling), available at: https://www.epa.gov/Cross-State-Air-Pollution/good-neighbor-plan-2015-ozone-naaqs.

4.2. Modeling Results

An attainment demonstration based on air quality modeling is used to determine whether identified emission reduction measures are enough to reduce projected pollutant concentrations to a level that meets the NAAQS by the statutory deadline established by the EPA.

LADCO estimated 2023 design values using version 1.6 of the Software for Modeled Attainment Test Community Edition (SMAT-CE) using the EPA's recommended approach and guidance.[17] This software computes the fractional changes, or relative response factors, of ozone concentrations at each monitor location based on a comparison of the modeled air quality in the base and future years. Meteorological conditions are assumed to be unchanged for the base and projection years. Modeled relative reduction factors are then applied to a weighted baseline 2017 design value, which is determined by averaging three successive three-year design values centered on 2017 (i.e., 2015-2017, 2016-2018, 2017-2019). The resulting estimates of design values in 2023 can then be compared to the level of the NAAQS to assess attainment.

Table 4.1 gives the results of this modeling for the attainment year of 2023 for the Sheboygan Kohler-Andrae monitor, the only ozone monitor in the Sheboygan County 2015 ozone NAAQS nonattainment area.

Table 4.1. Modeled 2023 ozone design values in the Sheboygan County 2015 ozone NAAQS nonattainment area.*

Site #	Monitor name	County	Modeled 2023 design value (ppb)
551170006	Sheboygan - Kohler Andrae	Sheboygan	75.1

* From LADCO's modeling TSD for the 2015 ozone standard, Table 6-1 ("2023 DVF Average" values), as well as LADCO's attainment test results, which can be found on LADCO's website (https://www.ladco.org/wp-content/uploads/Projects/Ozone/ModerateTSD/LADCO_2016bcc2_2023_O3_DVs_25May2022.xlsx). Design values are average 2023 values calculated from the LADCO 4-km CAMx modeling with water cells included in the 3x3 matrix surrounding each monitor. The TSD contains a complete explanation of results.

As will be discussed in Section 5, the area's actual design values in 2023 exceeded the NAAQS (Table 5.1). The WDNR has included additional information in Section 5 describing how ozone-causing emissions continue to decrease in Wisconsin but, due to emissions transported from out of state, the Sheboygan area has not yet attained the standard.

[17] See https://www3.epa.gov/ttn/scram/guidance/guide/O3-PM-RH-Modeling_Guidance-2018.pdf. As discussed in Section 5, a design value is the three-year average of the annual fourth highest 8-hour averaged daily ozone value.

5. AIR QUALITY AND WEIGHT OF EVIDENCE ANALYSES

5.1. Introduction

The EPA recommends that states submit supplemental analyses in support of any attainment plan. These analyses are intended to provide additional support for the required modeled attainment assessment. Such supplemental analyses are part of a "weight of evidence" showing that an area will attain a standard. This section presents trends in ambient ozone and ozone precursor concentrations and forms the core of such a showing relative to the Sheboygan County 2015 ozone NAAQS nonattainment area.

Ozone concentrations in Sheboygan County are largely determined by a number of factors that are outside of the state's control. Crucially, nearly all the ozone at Sheboygan comes from transported ozone and ozone precursors originating in upwind states. Wisconsin sources that impact the area are already well-controlled and contribute very little to the elevated ozone concentrations. Modeling conducted by both LADCO and the EPA confirms that Wisconsin has limited ability to further reduce ozone concentrations in this area.

5.2. Air Quality Data and Trends

5.2.1. Trends in Monitored Ozone Concentrations

Section 110(a)(2)(B) of the CAA requires a monitoring strategy for measuring, characterizing, and reporting ozone concentrations in the ambient air. The WDNR maintains a comprehensive network of air quality monitors throughout the state with the primary objective of being able to determine compliance with NAAQS.[18] Wisconsin conducts seasonal monitoring of ambient ozone concentrations from April 1 through October 15.[19]

The current ozone monitoring network in Sheboygan County is depicted in Figure 1.1. There are two monitors measuring ozone concentrations in the county, with one monitor (Sheboygan Kohler-Andrae) located in the Sheboygan County 2015 ozone NAAQS nonattainment area.[20] The Kohler-Andrae monitor is used to determine compliance with the ozone NAAQS for this area.

An exceedance of an 8-hour ozone NAAQS occurs when a monitor measures ozone concentrations above the standard. A violation occurs when the three-year average of the annual fourth highest 8-hour averaged daily ozone level is greater than a standard. This three-year average is termed the "design value" for the monitor. The design value for a nonattainment area is derived from the monitor with the highest design value.

Table 5.1 shows ozone ambient air quality monitoring data for the Kohler Andrae monitor for the last six years, concluding with the most recent 2021-2023 design value period. This data shows

[18] The latest state air quality monitoring network plan can be found at: https://dnr.wisconsin.gov/topic/AirQuality/Monitor.html.
[19] Except for Kenosha County, which monitors ozone from March 1 through October 31 to align with monitoring requirements applicable to the tristate Chicago nonattainment area.
[20] The Sheboygan Haven monitor is located further west in the county and outside of the nonattainment area. Data from that monitor is not further discussed in this attainment plan.

that the area continues to experience nonattainment levels, even if design values have decreased about 5% since the 2016-2018 period.

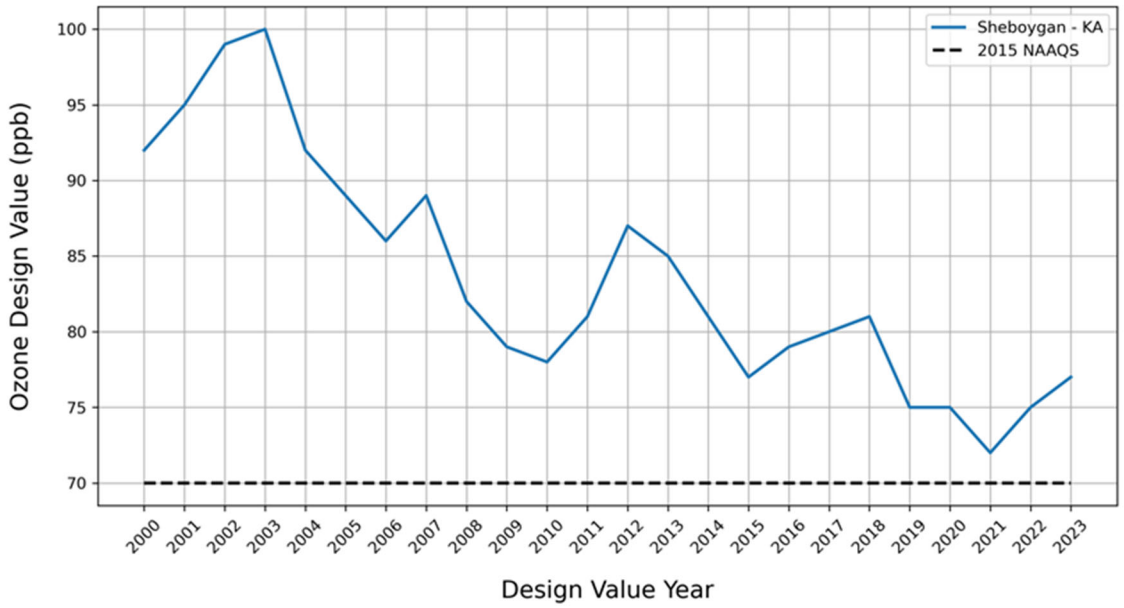
Table 5.1. Monitored ozone design values in the Sheboygan County 2015 ozone NAAQS nonattainment area, 2016-2023.

Site #	Monitor name	Design value (ppb)					
		2016-18	2017-19	2018-20	2019-21	2020-22	2021-23
551170006	Sheboygan Kohler-Andrae	81	75	75	72	75	77

This decline in recent monitored ozone values is consistent with the long term trends at this location, which show a significant decrease since 2000 (Figure 5.1). Design values have decreased from well over 90 ppb before 2004 to as low as 72 ppb in 2021. The largest reductions occurred during the early years of this period, with the design value decreasing 22 ppb from 2003 to 2010. While ozone values continue to decline, smaller reductions have been observed in more recent years.

Meteorological variability significantly affects ozone concentrations and can obscure trends over shorter time periods. For example, 2012 had an extremely hot summer with a high frequency of elevated ozone concentrations, while 2008, 2009 and 2015 were relatively cool summers with a lower frequency of elevated ozone concentrations. The next two sections discuss the impact of meteorology on ozone concentrations and describe how ozone concentrations in this area have decreased even when adjusted for meteorology.

Figure 5.1. Trends in ozone design values for the Sheboygan Kohler-Andrae monitor.

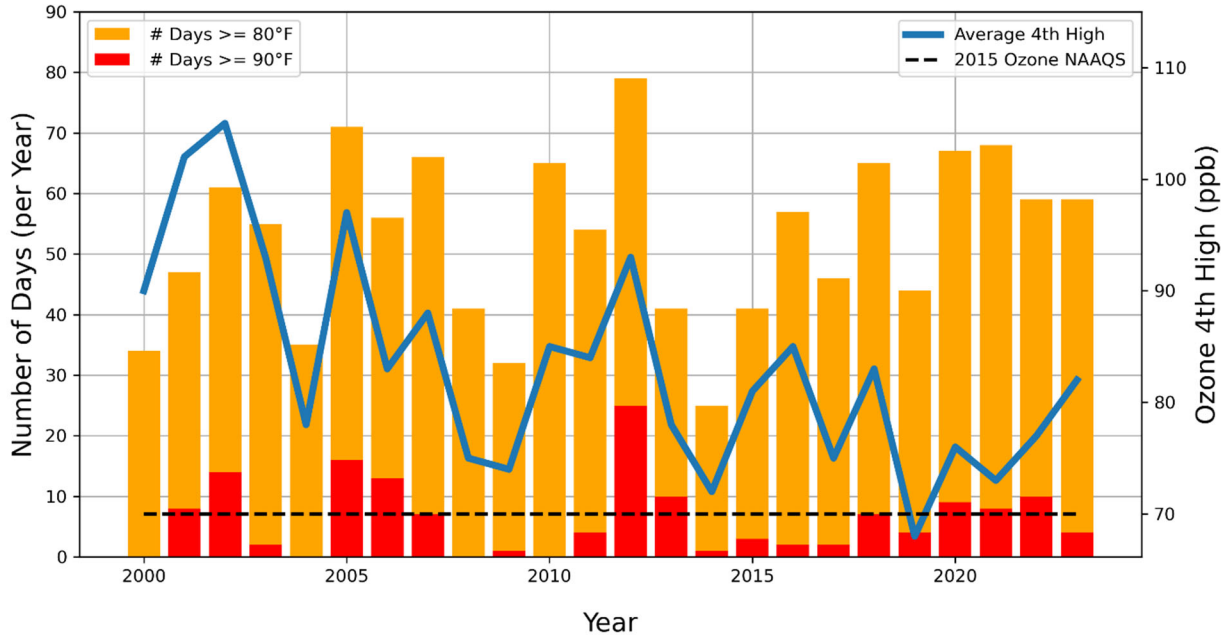


5.2.2. Influence of Temperature on Ozone Concentrations

Temperature is an important and well-known driver of ozone formation, with more ozone being produced at high temperatures than at low temperatures. Figure 5.2 compares annual fourth high MDA8 concentration averages across the Sheboygan County 2015 ozone NAAQS nonattainment area with temperature measurements at the Sheboygan County Memorial Airport. The count of days in which maximum temperatures reached 80–90+°F indicate how often extreme temperatures occurred each year.

The correlations between ozone concentrations and elevated temperature are shown in Figure 5.2. While the highest ozone concentrations occurred in years with the highest temperatures, the amount of ozone produced for a given temperature level has decreased over time. For example, comparison of the years 2002, 2012, and 2021 shows that the average fourth high MDA8 value steadily decreased across decades, even in these years with many hot days. These reductions are presumably due to reduced emissions of ozone precursors, analyzed further in the following section.

Figure 5.2. Comparison of Sheboygan County ozone values to temperature (2000-2021). Average annual fourth high maximum daily 8-hour average (MDA8) ozone concentrations plotted with the number of days with temperatures above 80 °F and 90 °F at Sheboygan County Memorial Airport.[21]



5.2.3. Ozone Trends Adjusted for Meteorology

Because of the large effect of meteorology, particularly temperature, on ozone concentrations, meteorologically driven variability in ozone concentrations often obscures trends in ozone due to

[21] Climatological data is from the Midwestern Regional Climate Center "cli-MATE" database (https://mrcc.purdue.edu/CLIMATE/).

factors such as permanently reduced rates of precursor emissions. For this reason, it is important to adjust ozone concentrations for meteorology to examine trends in ozone concentrations due to precursor emission reductions and other factors. The following analysis shows that ozone concentrations in the Sheboygan County 2015 ozone NAAQS nonattainment area are continuing to decrease even after accounting for the impacts of meteorology.

LADCO CART Analysis

Classification and Regression Tree (CART) analysis allows ozone concentrations on days with similar meteorological conditions to be compared. This analysis partially controls for the influence of year-to-year meteorological variability on ozone concentrations. A CART analysis produces average ozone concentrations for several different classes of days (determined by meteorology) for each year being assessed. This analysis therefore allows examination of average ozone concentration trends over long periods resulting from non-meteorological factors, including permanent and enforceable reductions in emissions of ozone precursors impacting the area of interest.

In 2021, LADCO completed a CART analysis for regional nonattainment and maintenance areas to assess changes in ozone concentrations under different meteorological conditions from 2006-2020 (note that this timeframe incorporates a period predating the 2015 standard).[22]

Results for Sheboygan County

From the LADCO CART analysis, Figure 5.3 shows average ozone concentrations for the five sets of meteorological conditions ("nodes") that resulted in the highest ozone concentrations at the Sheboygan Kohler-Andrae monitor.

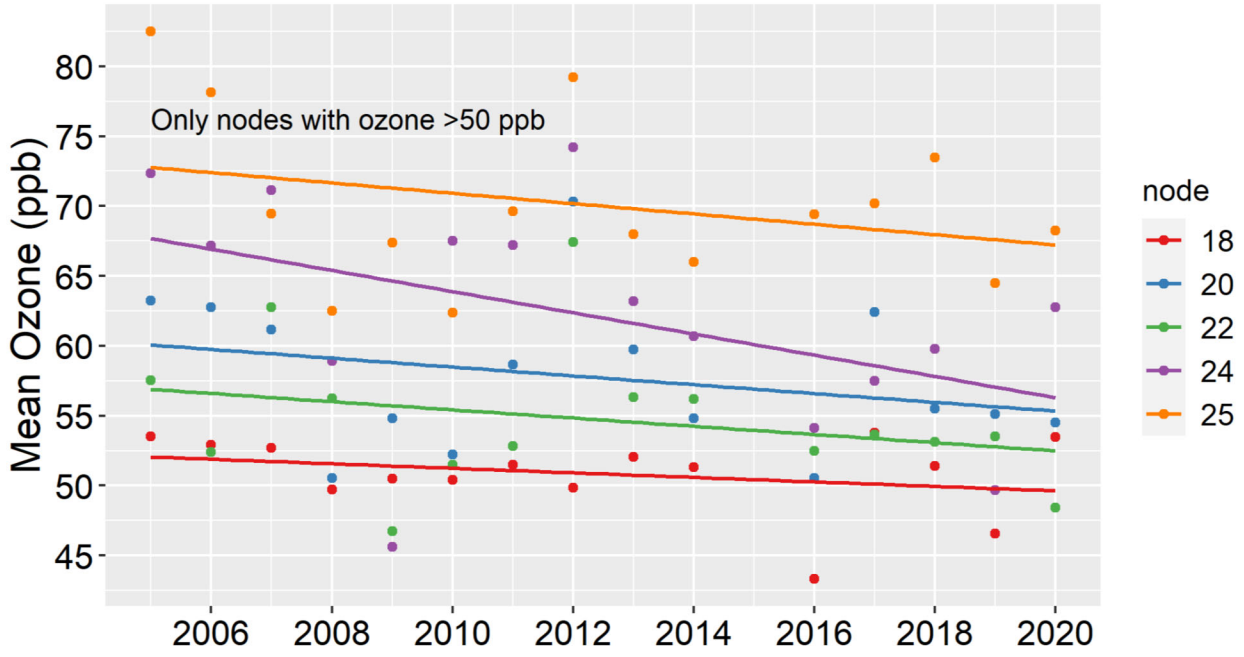
The data shown for each node are the average ozone concentrations on all days sharing a particular set of meteorological conditions.[23] This analysis shows that high-ozone days at this monitor generally are associated with southerly winds and transport as well as hot temperatures. Southerly transport-related parameters are the most important variables, along with atmospheric pressure and precipitation. Mean ozone concentrations in all of the high-ozone nodes have decreased from 2005 to 2020.

Critically, this analysis shows that average ozone concentrations decreased under all assessed meteorological conditions over this period. This suggests that the observed, long-term decreases in average ozone concentrations on days when meteorology favors ozone production are due, at least in part, to permanent and enforceable reductions in ozone precursors.

[22] LADCO. Classification and Regression Tree (CART) Analysis for LADCO Ozone Nonattainment Areas Memorandum (October 2021) available at: https://www.ladco.org/wp-content/uploads/Projects/Ozone/LADCO_O3_CART-Analysis_27Oct2021-FINAL-with-Appendices.pdf.

[23] For example, Node 25 in Figure 5.3 shows the average ozone concentrations for days characterized by southernly transport, maximum temperatures above 75 °F, average southerly winds greater than 3.2 m/s and average morning temperatures above 75 °F.

Figure 5.3. CART analysis results for the Sheboygan Kohler-Andrae monitor (2005-2020). Data points show the average ozone concentration for days sharing certain meteorological conditions ("nodes"). Node criteria are described below the figure. Only meteorological nodes with an average ozone concentration above 50 ppb are shown.[24]



Node 25	Node 24	Node 20	Node 22	Node 18
72 ppb O_3	64 ppb O_3	58 ppb O_3	55 ppb O_3	51 ppb O_3
24-hr southerly transport (>37 km)	24-hr southerly transport (>37 km)	24-hr southerly transport (>37 km)	24-hr southerly transport (>37 km)	24-hr southerly transport (>37 km)
Southerly winds >3.2 m/s	Southerly winds >3.2 m/s	Southerly winds <3.2 m/s	Southerly winds >3.2 m/s	Southerly winds <3.2 m/s
Maximum Temp >75 °F	Maximum Temp >75 °F	Maximum Temp >80 °F	Maximum Temp <75 °F	Maximum Temp <80 °F
AM Temp >75 °F	AM Temp <75 °F			Wind direction from <123° (easterly)

5.3. Emissions Data and Trends

Ozone is formed from the reaction of NOx and VOCs in the presence of sunlight. Ozone formation involves a number of different reactions. Partly because of the interactions between these different reactions, rates of ozone formation often respond non-linearly to reductions in ozone precursor concentrations. For example, under some circumstances, ozone formation may be NOx-limited, such that reductions in NOx emission cause reductions in ozone concentrations. Conversely, in some cases ozone formation may be VOC-limited, in which case additional VOC reductions will lower ozone.

[24] Taken from LADCO's 2021 CART analysis memorandum, Appendix 8.

Ozone formation in most of the Midwest is currently understood to be NOx-limited.[25] The primary exception to this is in large urban centers (such as Chicago and parts of Milwaukee), where the ozone chemistry is such that ozone formation is limited by the concentrations of VOCs. Because of this complex chemistry and its impacts on specific geographic areas, approaches to decreasing ozone concentrations in the region have historically relied on reductions in both NOx and VOC emissions.

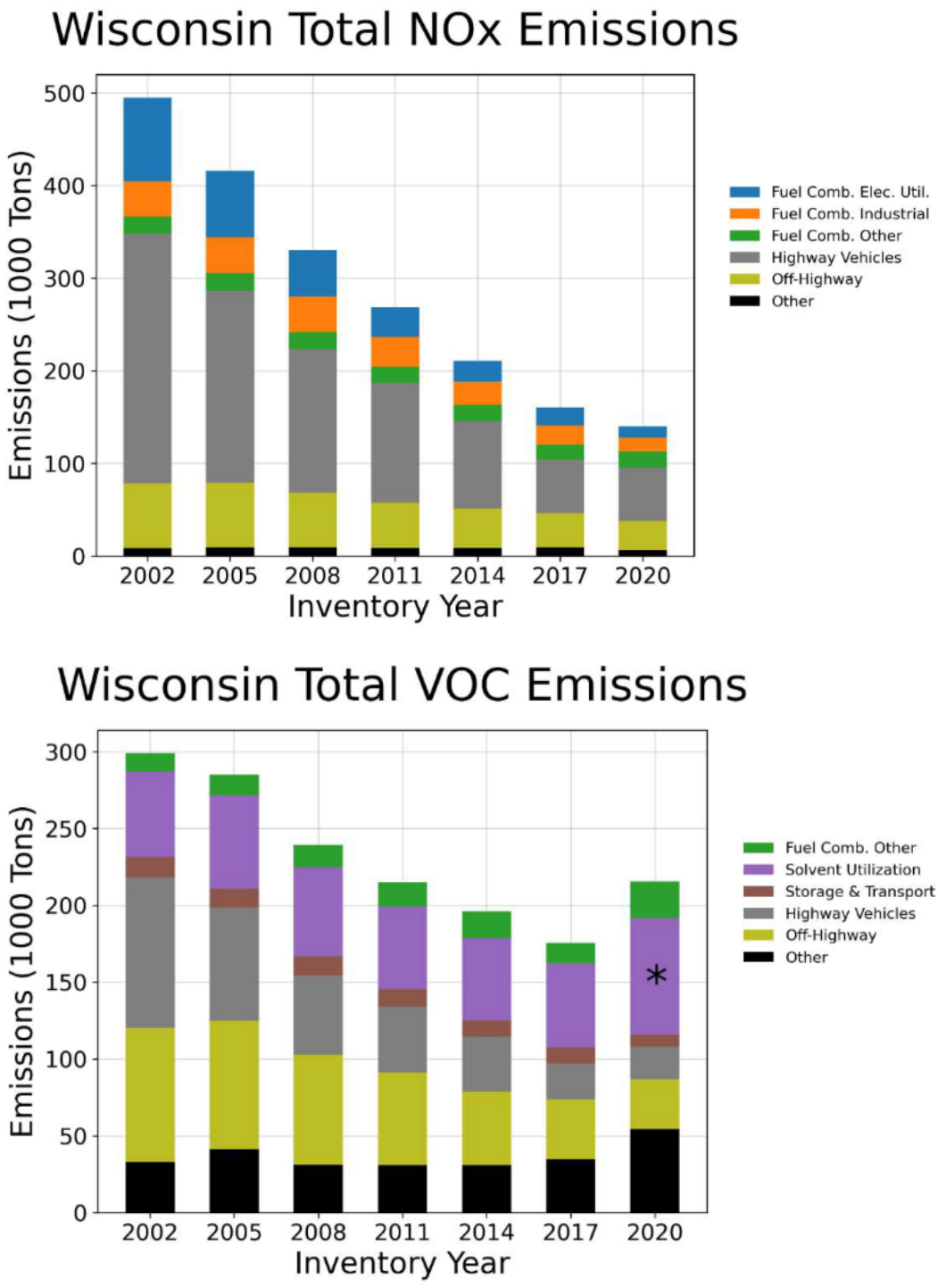
NOx consists of nitric oxide (NO) and nitrogen dioxide (NO_2). Most NOx is emitted as NO, which reacts fairly rapidly in the atmosphere to form NO_2, which has a longer lifetime in the atmosphere and can be transported longer distances. VOCs are a complex mixture of hundreds of different types of organic compounds, including compounds that contain only carbon and hydrogen ("hydrocarbons") and compounds that also include oxygen, nitrogen, sulfur and/or other elements. Some VOCs are emitted directly by anthropogenic sources, including benzene and toluene, whereas others are emitted directly by biogenic sources, such as isoprene. In addition to direct emissions, VOCs are formed in the atmosphere from reaction of other VOCs. These "secondary VOCs" include formaldehyde and acetaldehyde, which are important "carbonyl" compounds.[26]

Emissions of both NOx and VOCs from Wisconsin sources have decreased significantly in the last few decades (Figure 5.4). Total NOx emissions decreased 72% from 2002 through 2020, with the greatest reductions coming from highway vehicles and fuel combustion at electric utilities. VOC emissions decreased approximately 28% over this same period. Note that the apparent increase in VOC emissions in 2020 is due to significant changes in the EPA's inventory methodology. Specifically, the EPA added agricultural silage emissions to the inventory for the first time, a source category that was unaccounted for in previous versions of the NEI. Had this category been included in the earlier inventories, the statewide decrease in VOCs since 2002 would be significantly greater.

[25] For examples, see the LADCO NOx/VOC Ozone Sensitivity contract reports.
Task 1: https://widnr.widen.net/s/pprfxr5v5f/am_ladcotask1finalreport_20200930, Tasks 2 & 3: https://widnr.widen.net/s/xcfnfxmk8x/am_ladcotasks3and4finalreport_20201020

[26] Carbonyl compounds contain a carbon-oxygen double bond.

Figure 5.4. Wisconsin statewide annual NOx (top) and VOC (bottom) emissions by sector (2002-2020). Data from the EPA's National Emissions Inventory (NEI).[27]



* This apparent increase in emissions is due to a methodology change (see text).

[27] Data is from https://www.epa.gov/air-emissions-inventories/air-pollutant-emissions-trends-data.

5.4. Influence of Transport on Ozone Levels

The most important factor driving high ozone concentrations in Wisconsin's ozone nonattainment areas is the transport of ozone and ozone precursors from upwind areas. This section describes recent analyses of ozone transport and its impact on the Sheboygan County 2015 ozone NAAQS nonattainment area. The transport of ozone and ozone precursors from areas outside Wisconsin significantly limits the state's ability to reduce high ozone concentrations within this nonattainment area.

5.4.1. LADCO modeling results

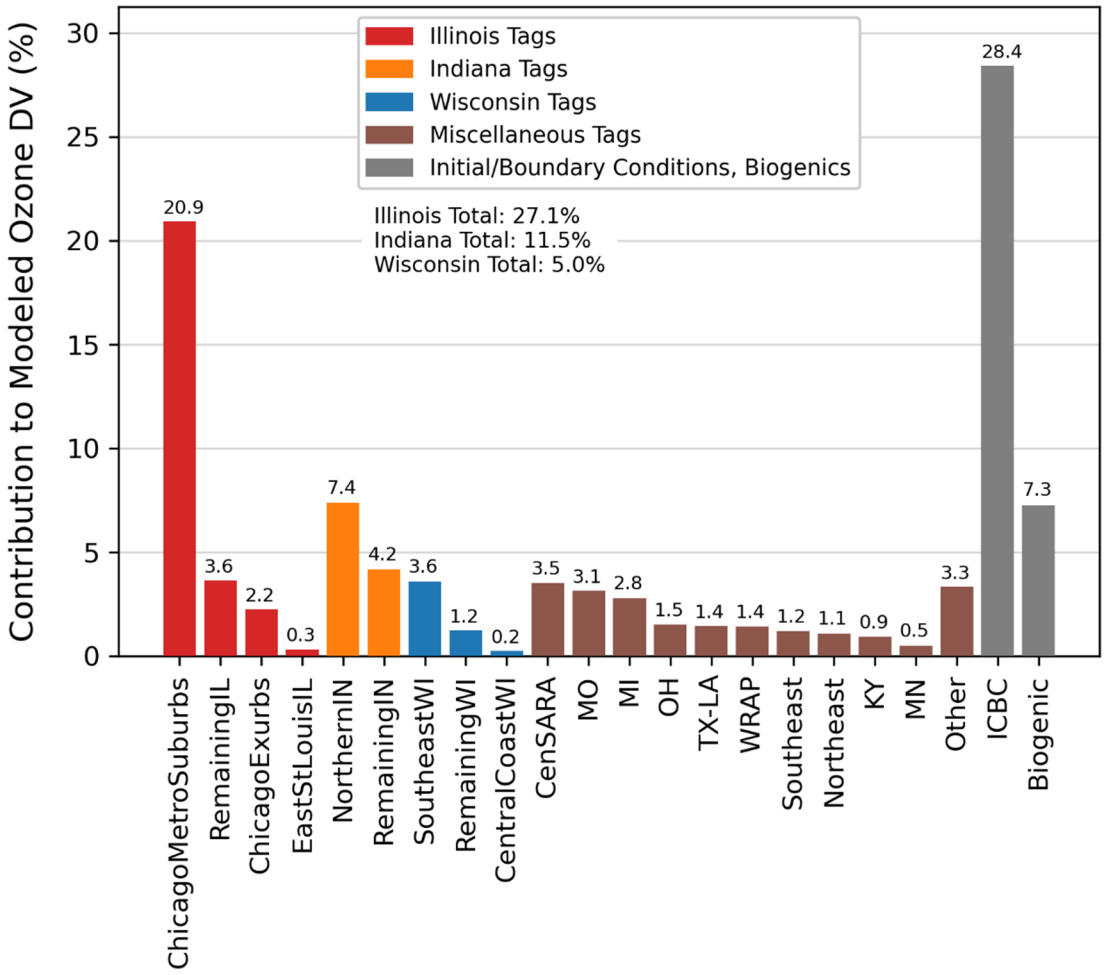
As described in Section 4, LADCO conducted photochemical modeling to support 2015 ozone NAAQS attainment planning for its member states. As part of this effort, LADCO used the CAMx Anthropogenic Precursor Culpability Assessment (APCA) tool to calculate emissions tracers for identifying upwind sources of ozone precursors at downwind monitoring sites. This allowed the model to quantify the impacts of inventory sectors and geographic source regions on ozone concentrations at specific monitor locations. These results are included in the files available on the LADCO 2015 ozone modeling website.[28]

These source apportionment results allow one to identify the origins the ozone measured in the Sheboygan County 2015 ozone NAAQS nonattainment area. As shown in Figure 5.5, Wisconsin sources contribute about 5% of the total ozone recorded at the Kohler-Andrae monitor, with "central coast Wisconsin," which includes Sheboygan County, only contributing 0.2%.

In contrast, other, upwind states together contributed nearly 60% of the ozone. Of these states, Illinois and Indiana were the largest state contributors, being responsible for 27% and 11% of Sheboygan's ozone, respectively. This result is consistent with results for other monitors along the Wisconsin lakeshore, all of which are dominated by transported emissions from outside Wisconsin, with Illinois and Indiana being the largest out-of-state contributors. These results are further confirmed the EPA photochemical modeling results, discussed next.

[28] https://www.ladco.org/technical/ladco-internal/ladco-projects/ladco-2015-o3-naaqs-moderate-area-sip-technical-support-document/. Data for individual receptors are available from this file: https://www.ladco.org/wp-content/uploads/Projects/Ozone/ModerateTSD/LADCO_2016_APCA_Tracers_27July2022.xlsx.

Figure 5.5. LADCO source apportionment results for the Sheboygan Kohler-Andrae monitor.[29]



[29] Total emissions from IL, IN and WI are obtained from summing the "sub-state" results in the figure. "SoutheastWI" is Kenosha, Racine, Milwaukee, Washington, Waukesha and Ozaukee counties. "CentralCoastWI" is Sheboygan, Manitowoc and Kewaunee counties. "RemainingWI" is the rest of WI. "CenSARA" is IA, KS, NE, OK, AR. "WRAP" is WA, OR, CA, NV, ID, MT, WY, UT, AZ, NM, CO, ND, SD. "Southeast" is FL, MS, AL, GA, SC, NC, TN, VA, WV. "Northeast" is CT, ME, MA, NH, NJ, NY, RI, VT, PA, MD, DE, DC. "ICBC" is initial/boundary conditions (including emissions from outside the U.S.). "Biogenic" is emissions from biogenic sources. Graphic by WDNR from LADCO modeling data.

5.4.2. EPA modeling results

For its 2015 ozone NAAQS transport rule (the Good Neighbor Plan), the EPA also conducted photochemical modeling, which included state source apportionment results.[30] This modeling was used by EPA to determine which upwind states are responsible for ozone measured in downwind state nonattainment and maintenance areas. Consistent with LADCO's modeling, the EPA found that the ozone along Wisconsin's lakeshore is significantly influenced by upwind state emissions.

Specific to the Sheboygan County 2015 ozone NAAQS nonattainment area, the EPA's modeling found that Wisconsin sources are responsible for about 10% of the ozone at the Kohler-Andrae monitor, with other states responsible for 48% (with Illinois responsible for 19% and Indiana 12%). The EPA also identified Ohio, Texas, Missouri, and Michigan as states contributing significantly to the Sheboygan County area. About 42% of ozone at the Kohler Andrae monitor was due to non-state emissions, such as international and biogenic sources.

The difference in results between the EPA and LADCO modeling are due to the use of different emissions platforms, model configurations, analysis years, and other factors; however, both efforts are consistent in that they conclude that Wisconsin emissions contribute very little to the ozone measured in the Sheboygan County 2015 ozone NAAQS nonattainment area, especially relative to other, upwind states. They both highlight that Wisconsin has little to no ability to reduce ozone values in this area further through unilateral action.

5.5. Conclusion

These analyses show that monitored ozone concentrations in the area have decreased since 2000. When adjusted to account for meteorological variability, ozone concentrations for equivalent meteorological conditions also show a decrease. Emissions of NOx and VOCs from Wisconsin have decreased from 2002 through 2020. A critical limitation to attainment planning is that the area remains highly impacted by transport of out-of-state ozone and ozone precursors; this limits the state's ability to independently drive ozone values lower and attain the NAAQS.

[30] The EPA's air quality modeling technical support document and data files are available at: https://www.epa.gov/csapr/good-neighbor-plan-2015-ozone-naaqs. Data cited in this discussion is for analysis year 2023 from the 2016v3 modeling conducted by the EPA for the final Good Neighbor Plan. The EPA's 2016v2 modeling, used to support the draft Good Neighbor Plan, produced similar results.

6. OTHER MODERATE AREA SIP REQUIREMENTS

6.1. Reasonably Available Control Technology (RACT) Program for NOx

Wisconsin's NOx RACT program was first adopted by the state in July 2007 as codified under subchapter IV of ch. NR 428 (s. NR 428.20 to 428.26), Wis. Adm. Code. The program was approved by the EPA into the SIP in October 2009 (75 FR 64155). This program was established to fulfill NOx RACT requirements for southeast Wisconsin counties (including Sheboygan County) designated moderate nonattainment for the 1997 ozone NAAQS.

The WDNR has determined that Wisconsin's current NOx RACT program fulfills RACT requirements under the 2015 ozone NAAQS. The basis for this determination is:

1) In moderate ozone nonattainment areas, Wisconsin's NOx RACT program applies to major sources with a potential-to-emit of 100 tons per year and thus meets the necessary applicability requirements.

2) A review of control technology indicates that a new assessment of control technology conducted for the 2015 ozone NAAQS would not change the determination of RACT under Wisconsin's existing program.

Details supporting this finding are described below.

6.1.1. Major Source Applicability

To ensure consistency with the CAA, ch. NR 428, Wis. Adm. Code, was revised in March 2022 so that the level of an area's ozone nonattainment classification determines the major source emission threshold in the area. The EPA set applicability of RACT for facilities in moderate ozone nonattainment areas at a NOx emissions threshold of 100 tons per year (TPY) or more based on a facility's PTE[31]. Under Wisconsin's revised NOx RACT rule, the applicability threshold for NOx emissions sources in the Sheboygan County 2015 ozone nonattainment area is 100 TPY (s. NR 428.20, Wis. Adm. Code).

6.1.2. Control Technology Assessment

The 2015 ozone implementation rule provides that states can show that existing NOx RACT programs fulfill requirements for the 2015 ozone NAAQS.[32] The EPA states this demonstration should be based on a review of RACT control technologies for conditions in 2015. If this review indicates there would be no incremental difference in control technologies between the existing program and the updated assessment, the existing program can be certified as meeting RACT under the 2015 ozone NAAQS. Even in the case that an updated RACT could result in additional emission reductions, the EPA indicates that such an action would likely not be cost-effective, stating:

[31] EPA, 1988, *Issues Relating to VOC Regulation Cutpoints, Deficiencies, and Deviations, Clarification to Appendix D of November 24, 1987 Federal Register,* May 25, 1988.
[32] EPA, 2015, *Implementation of the 2008 National Ambient Air Quality Standards for Ozone: Requirements for State Implementation Plans*, 80 FR 12279, March 6, 2015.

> *"In cases where controls were applied due to the 1-hour or 1997 NAAQS ozone RACT requirement, we expect any incremental emissions reductions from the application of a second round of RACT controls may be small and, therefore, the cost for advancing that small additional increment of reduction may not be reasonable."*

The WDNR relied on this provision from the 2008 ozone NAAQS implementation rule to show that Wisconsin's existing NOx RACT programs also fulfill requirements for the 2015 NAAQS.[33] This demonstration should then be based on a review of RACT control technologies for conditions in 2015. Wisconsin's NOx RACT program was first implemented in 2007 based on an assessment of the control technologies and cost information available at that time. The WDNR expects little, if any, change in the assessment of RACT control technology between 2007 and 2015, since the RACT assessments would be based on essentially the same information.

To verify this conclusion, the WDNR reviewed the current Wisconsin RACT requirements that could apply for emission units operating in the Sheboygan County 2015 ozone NAAQS nonattainment area in 2015. The RACT source categories and applicable control technologies are presented in Table 6.1. The WDNR's review showed that two coal-fired boilers operating at the Edgewater power plant fall into the RACT source category of coal-fired boilers greater than 1,000 mmBtu/hr. These power plant boilers accounted for 90% of NO_x emissions in the Sheboygan County nonattainment area in 2015.

After reviewing the identified source categories and applicable control technologies, the WDNR has concluded there would be no change in RACT if an updated assessment of control technology were performed based on 2015 information. Thus, based on equivalency in major source applicability and RACT control technology, the WDNR concludes that Wisconsin's current NOx RACT program under ss. NR 428.20 to 25 fulfills 2015 ozone NAAQS moderate-area RACT requirements.

Table 6.1. Control technologies required under Wisconsin's NOx RACT program.

Source Category	RACT Control Technology
Coal-fired boilers > 1,000 mmBtu/hr	SCR
Rich Burn IC engines > 500 hp	NSCR 80 – 90% Control
Simple cycle combustion turbines	DLN
Asphalt plants > 65 mmBtu/hr	LNB
Natural gas-fired boiler > 100 mmBtu/hr	LNB/OFA/GR
Natural gas-fired process heaters > 100 mmBtu/hr	LNB
Natural gas-fired furnaces > 75 mmBtu/hr	LNB/OFA/GR

SCR = Selective Catalytic Reduction, NSCR = nonselective catalytic reduction, DLNB, = Dry Low NOx Burner, LNB = Low NOx Burner, OFA = Overfire Air, GR = Gas Recirculation

[33] The 2015 ozone implementation rule references the 2008 ozone implementation rule for how air agencies can provide for RACT in their nonattainment SIPs (see 83 FR 63007).

6.2. Reasonably Available Control Technology (RACT) Program for VOCs

Section 182(b)(2) of the CAA requires states with moderate nonattainment areas to implement VOC RACT under section 172(c)(1). Wisconsin's VOC RACT requirements are codified under chapters NR 419 through 425, Wis. Adm. Code. A summary of Wisconsin's VOC rules is included in Appendix 8. No additional measures are reasonably available that will advance the attainment date.

The EPA periodically issues Control Techniques Guidelines (CTGs) to establish VOC RACT requirements for specific source categories, and WDNR has incorporated most of those CTGs into Wisconsin's VOC rules. Five CTGs have not been incorporated. Appendix 8 contains negative declarations for these five CTGs to certify that Wisconsin has determined that there are no identified sources in the Sheboygan County 2015 ozone NAAQS nonattainment area that meet the applicability criteria of these CTGs.

Given these negative declarations, Wisconsin's VOC RACT rules found in chapters NR 419 through 425, Wis. Adm. Code, satisfy Wisconsin's obligations under Section 182(b)(2) of the CAA for the Sheboygan County 2015 ozone NAAQS nonattainment area.

6.3. Evaluation of Reasonably Available Control Measures (RACM)

CAA Section 172(c)(1) requires that states implement any reasonably available control measures necessary for attainment of the NAAQS. As described in 40 CFR 51.1108(d), any control measures needed for attainment must be implemented by the beginning of the attainment year ozone season, which in this case is 2023 (to support the August 3, 2024, moderate attainment date). With this submittal, Wisconsin is demonstrating that attainment will be achieved by this date and therefore no additional control measures are required for attainment purposes.

However, additional control measures are required if it can advance the attainment date by a year or more. This means that any measures advancing the attainment date by a year would have needed to be in place for the 2022 ozone season (for Sheboygan County, that season is April 1 through October 15, 2022). Given the timing of this submittal, it is not possible to implement any new measures during that period that could advance attainment by one year. Accordingly, RACM requirements are satisfied for the Sheboygan County 2015 ozone NAAQS nonattainment area.

6.4. Transportation Conformity

Transportation conformity is required by section 176(c) of the CAA (42 U.S.C. 7506(c)). Conformity to a SIP means that transportation activities will not produce new air quality violations, worsen existing violations, or delay timely attainment of the NAAQS (CAA 176(c)(1)(B)).

The EPA's conformity rule in 40 CFR part 93 requires that transportation plans, programs and projects conform to SIPs and establish the criteria and procedures for determining whether they conform. The conformity rule generally requires a demonstration that emissions from the Regional Transportation Plan (RTP) and the Transportation Improvement Program (TIP) are consistent with the motor vehicle emissions budget (MVEB) contained in the control strategy

SIP revision or maintenance plan (40 CFR 93.101, 93.118. and 93.124). A MVEB is defined as "that portion of the total allowable emissions defined in the submitted or approved control strategy implementation plan revision or maintenance plan for a certain date for the purpose of meeting reasonable further progress milestones or demonstrating attainment or maintenance of the NAAQS, for any criteria pollutant or its precursors, allocated to highway and transit vehicle use and emissions" (40 CFR 93.101). The WDNR is submitting MVEBs for the Sheboygan County 2015 ozone NAAQS nonattainment area in this attainment plan.

6.4.1. Motor Vehicle Emissions Modeling

The MVEBs were developed using the latest version of the EPA's MOtor Vehicle Emission Simulator (MOVES) model, MOVES4.0.1, and a travel demand model. The MOVES4.0.1 model derives estimates of hot summer day emissions for ozone precursors of NOx and VOCs. Numerous variables can affect these emissions, especially the size of the vehicle fleet (the number of vehicles on the road), the fleet's age, the distribution of vehicle types, and the vehicle miles of travel. The transportation information is derived from the travel demand model. Appendix 7 contains key data used to develop inputs to MOVES4.0.1.[34]

6.4.2. Motor Vehicle Emissions Budgets

Table 6.2 shows the MVEBs developed by the WDNR for the Sheboygan County 2015 ozone NAAQS nonattainment area for the years 2023 and 2024. These budgets are identical to the corresponding projected emissions inventories presented in section 3. They include a margin of safety to account for uncertainties in future mobile source emissions. 40 CFR 93.101 defines this safety margin as the amount by which the total projected emissions from all sources of a given pollutant are less than the total emissions that would satisfy the applicable requirement for RFP, attainment, or maintenance. To provide a safety margin, the WDNR increased the emissions calculated by MOVES4.0.1 by 15% for 2023 and 2024 for the Sheboygan 2015 ozone NAAQS area.

Table 6.2. Motor vehicle emissions budgets for the Sheboygan 2015 ozone NAAQS area for 2023 and 2024.

Year	Emissions (tons per hot summer day)	
	VOC	NO_x
2023	0.56	0.95
2024	0.56	0.89

6.5. Motor Vehicle Inspection and Maintenance (I/M) Program

The purpose of motor vehicle I/M programs is to reduce emissions from in-use motor vehicles in need of repairs and thereby contribute to state and local efforts to improve air quality and attain the NAAQS. Wisconsin's I/M program has been in operation since 1984. It was originally

[34] The complete set of inputs to MOVES4.0.1 is too lengthy to include in this document. However, electronic copies of the inputs can be obtained from the WDNR upon request.

implemented in accordance with the 1977 CAA Amendments and operated in the six counties of Kenosha, Milwaukee, Ozaukee, Racine, Washington, and Waukesha. Sheboygan County was added to the program in July 1993, resulting in a seven-county program area that has remained to the present. Vehicles were originally tested by measuring tailpipe emissions using a steady-state idle test. Tampering inspections were added in 1989.

The 1990 CAA Amendments set additional requirements for I/M programs. For moderate areas, a "basic" program was required under section 182(b)(4). For serious or worse areas, an "enhanced" program was required under section 182(c)(3). The EPA's requirements for basic and enhanced I/M programs are found in 40 CFR part 51, subpart S.

Wisconsin's I/M program transitioned to an enhanced program in December 1995. The major enhancement involved adding new test procedures to more effectively identify high-emitting vehicles. These new test procedures included a transient emissions test in which tailpipe emissions were measured while the vehicle was driven on a dynamometer (a treadmill-type device). Improving repairs and public convenience were also major focuses of the enhancement effort.

Since July 2001, all model year (MY) 1996 and later cars and light trucks have been inspected by scanning the vehicle's computerized second-generation on-board diagnostic (OBDII) system instead of measuring tailpipe emissions. As of July 2008, the program dropped tailpipe testing entirely and has inspected all vehicles by scanning the OBDII system. This change was the result of statutory changes in the State's 2007-2009 biennial budget which exempted model years of vehicles not federally required to be equipped with the OBDII technology (MY 1995 and earlier cars and light trucks and MY 2006 and earlier heavy trucks). To help offset the emissions reductions lost from exempting the pre-OBDII vehicles, the program increased the testable fleet for MYs 2007 and later by adding gasoline-powered vehicles between 10,001 to 14,000 pounds gross vehicle weight rating (GVWR) and diesel-powered vehicles of all weights up to 14,000 pounds GVWR.

The EPA fully approved Wisconsin's enhanced I/M program on August 16, 2001 (66 FR 42949), including the program's legal authority and administrative requirements in the Wisconsin Statutes and Wisconsin Administrative Code. On June 7, 2012, the WDNR submitted a SIP revision to the EPA covering all the changes to the program since the EPA approved the program in 2001. This submittal included a demonstration under section 110(l) of the CAA addressing emission reductions associated with the program changes. The EPA approved this SIP revision on September 19, 2013 (78 FR 57501).

A modeled demonstration confirming that Wisconsin's current I/M program continues to meet the enhanced I/M program performance standard was completed in 2021 as part of the state's redesignation request for the Kenosha County (partial) 2008 ozone nonattainment area. The EPA approved this demonstration on April 11, 2022 (87 FR 21027).

Wisconsin's I/M program is jointly administered by the WDNR and the Wisconsin Department of Transportation. Legal authority and administrative requirements for the Wisconsin I/M program are found in sections 110.20 and 285.30 of the Wisconsin Statutes and Chapters NR 485 and Trans 131 of the Wisconsin Administrative Code.

6.6. Section 110(l) Noninterference Requirements

When revising rules and regulations in the SIP, the state is responsible for demonstrating that such a change will not interfere with any applicable requirement concerning attainment and reasonable further progress, or any other applicable CAA requirements for any of the criteria pollutants. This attainment plan does not remove or relax any control programs or requirements currently approved in the SIP. Therefore, all requirements related to section 110(l) noninterference are fulfilled. The WDNR has the legal authority and necessary resources to actively enforce any violations of its rules or permit provisions. Removal of any control program from the SIP will be subject to a public hearing process, a demonstration of noninterference, and approval by the EPA.

6.7. Section 172(c)(9) Contingency Measures

Contingency measures required by CAA section 172(c)(9) are fully adopted rules or measures that can take effect without further action by the state or the EPA upon failure to meet milestones (like RFP) or attain by the attainment deadline. The purpose of contingency measures is to provide continued emissions reductions while the SIP is being revised to meet the missed milestone or attainment date. Reductions are to be achieved as soon as possible but should generally occur within one year of the triggering event. Contingency measures must be in excess of what is needed to meet any other nonattainment plan requirement in the CAA, such as RACT/RACM, RFP, and attainment modeling.[35]

Since the attainment year for this area is 2023, the WDNR has evaluated contingency measure reductions that would occur by 2024. The 2015 ozone NAAQS SIP requirements rule states that contingency measures should provide one year's worth of emissions reductions, which generally equates to 3% of the baseline emissions inventory, but could vary based on specific circumstances.

As described in Section 3.3, the WDNR has identified and quantified permanent and enforceable NOx and VOC emissions reductions in the nonattainment area that decease emissions further from 2023 to 2024. These reductions are based on a wide range of point, area, and mobile source rules that are permanent, enforceable, and in excess of those otherwise needed to meet attainment planning requirements in 2023 (Section 3.6). These rules are fully adopted and need no further action by the state or the EPA in order to take effect. The CAA contingency measure requirements for this area are therefore satisfied.

[35] The EPA described how states are to address contingency measure requirements for the 2015 ozone NAAQS in its final SIP requirements rule for the NAAQS (83 FR 62998). In response to several court decisions on this topic, on March 17, 2023 the EPA released new draft guidance on this requirement, which would alter how contingency measures could be addressed by states (see 88 FR 17571). This guidance remains draft as of the date of this submittal.

7. PUBLIC PARTICIPATION

To comply with section 110(a)(2) of the CAA, on December 16, 2024, the WDNR published a notice of availability for this proposed SIP revision on its website, making this document available for public comment through January 17, 2025. This notice also provided notification that the WDNR would hold a public hearing on this proposed SIP revision on January 16, 2025. The WDNR will respond to any public comments received on this draft in the final SIP it submits to the EPA.

8. CONCLUSION

This plan is submitted to fulfill the CAA moderate-area attainment requirements for the Sheboygan County 2015 ozone NAAQS nonattainment area. Analyses of air quality data confirm that ozone concentrations and ozone precursor emissions have decreased in both the nonattainment area and the state and are projected to continue to decrease in the future. The area has met the required RFP emission reductions due to an array of permanent and enforceable emissions control measures, and has satisfied all other moderate area nonattainment area requirements required under Sections 172 and 182 of the CAA.

APPENDIX 1

2017 Emission Inventories Methodology

1. Introduction

This appendix provides additional information for the sector-specific nitrogen oxides (NOx) and volatile organic compounds (VOC) tons per ozone season day (tposd) emission estimates in the Wisconsin Department of Natural Resources (WDNR) Attainment Plan for the Sheboygan County, WI 2015 Ozone NAAQS Moderate Nonattainment Area.

2. Emissions Calculation Methodologies

2.1. Point Sources

Point sources are industrial, commercial or institutional stationary facilities which are normally located in permanent sites, and which emit specific air pollutants in great enough quantities to warrant individual quantification. To better enable detailed control evaluations, the point source emission inventories include all reporting sources at that facility regardless of the magnitude of reported emissions. For this attainment demonstration, portable point sources, such as asphalt plants and rock crushers, were reported under nonpoint sources to be consistent with other states. The 2017 point source emission inventory was created using annually reported point source emissions, the EPA's Clean Air Markets Division (CAMD) database and approved EPA techniques for emissions calculation (e.g., emission factors).

Whenever feasible, federal, state and local controls were factored into the emission calculations. Emissions were estimated by collecting process-level information from each facility that qualifies for inclusion into the state's point source database. In Wisconsin, this information is normally collected from facilities using web-based software and subsequently loaded into the point source database. Process, boiler, fugitive, and tank emissions are typically calculated using throughput information multiplied by an emission factor for that process. Emission factor sources included mass balance, stack testing, continuous emissions monitors, engineering judgment and EPA's WebFIRE database.[1] Missing data elements such as Source Classification Codes (SCC), North American Industrial Classification System (NAICS) codes and seasonal throughput percentages were added into the state's point source database. Process level confidential data were removed while retaining any associated emissions.

There is one electric generating unit (EGU) point source facility located in the Sheboygan County 2015 ozone NAAQS nonattainment area, the Alliant Energy Edgewater power plant. Appendix 3 provides the detailed methodology used to calculate EGU ozone season day emissions.

The 2017 emissions inventory for non-EGU point sources were tabulated using the emissions data reported annually by each facility operator to the WDNR's air emissions inventory (AEI) system. The AEI calculates emissions for each individual emissions unit or process line by multiplying fuel or process throughput by the appropriate emission factor that is derived from mass balance analysis, stack testing, continuous emissions monitoring, engineering analysis, or

[1] WebFIRE is EPA's online emissions factor repository, retrieval, and development tool, found online at: https://www.epa.gov/electronic-reporting-air-emissions/webfire.

EPA's WebFIRE database. Appendix 4 provides a list of non-EGU point source emissions by facility identification number (FID) and facility name for 2017.

The following procedure was used to determine an average day's emissions for a typical ozone season work weekday for non-EGU point sources. The WDNR obtained the quarterly operation schedule and the normal operating days per week information for each facility as collected by the WDNR AEI. The WDNR used emissions from the third quarter of the calendar year (i.e., July 1 to September 30) to represent the typical ozone season day emissions for these sources. The equation below was then used to calculate the emissions from typical ozone season days for each emission unit and process line. The emissions from each unit/process line at a facility were then summed to arrive at the total tons per ozone season day emissions for that facility.

$$EM = (Annual \times Third\ Quarter\ Percentage)/(DPW \times N_{weeks})$$

Where:

EM = Typical ozone season day emissions in tons per day
Annual = Annual emissions of VOC or NOx in tons
Third Quarter Percentage = the percentage of time that the unit is in operation for the third quarter of the calendar year, compared to the total time the unit is in operation for the entire calendar year, as reported to the WDNR
DPW = Days per week the facility operates, as reported to the WDNR
N_{weeks} = Number of weeks (13) from July 1 to September 30

This equation inherently accounts for ozone season work weekday emissions being higher if a facility only operates during the work week (i.e., five days) instead of the entire week (i.e., seven days), consistent with EPA guidance. This method is also consistent with that used by WDNR in its 2017 baseline emissions inventory for 2015 ozone NAAQS nonattainment areas.

2.2. Nonpoint (Area) Sources

Nonpoint sources are stationary sources that are too small and/or too numerous to be tracked individually in the point source inventory. These sources include commercial/institutional, industrial and residential sources such as gasoline stations, dry cleaners, consumer and commercial products, industrial solvent use, auto refinishing and wood combustion. The nonpoint inventory quantifies these emissions collectively.

For the 2017 nonattainment year, nonpoint source emissions inventory estimates were based on the 2017 National Emissions Inventory (NEI), except for agriculture silage, selected categories of solvent utilization and the Stage II refueling category, as described below. The selected solvent utilization categories were graphic arts and miscellaneous non-industrial consumer and commercial categories with source classification code (SCC) 246xxxxxxx except agricultural pesticide application. The selected categories of consumer and commercial solvent utilization were graphic arts, personal care, household, automotive aftermarket, coatings and related, FIFRA related and miscellaneous products, adhesive and sealants, cutback and emulsified asphalt, hot and warm mix asphalt paving, volatile chemical products such as lighter fluids, fire starter and other fuels. For agricultural silage and these selected categories of solvent utilization,

the 2017 nonpoint source emissions estimates were adjusted by back calculations based on the data from 2020 NEI and 2022 version 1 emissions modeling platform. Emission calculation methodologies used in developing 2017 nonpoint emissions inventory are available in the EPA's 2017 NEI Technical Support Document (TSD).[2]

The WDNR updated EPA nonpoint emissions estimates for stationary nonpoint sources for the following sectors: fuel combustion for the industrial, commercial and institutional (ICI) sectors; degreasing; dry-cleaning; graphic arts; and most of the solvent utilization for industrial surface coating categories except industrial maintenance, traffic markings and other special purpose categories. The WDNR adopted EPA nonpoint estimates for commercial cooking, solvent utilization for non-industrial surface coating, miscellaneous non-industrial consumer and commercial solvent utilization, residential and commercial portable fuel containers, bulk gasoline terminals and gas stations, waste disposal categories, and miscellaneous non-industrial not elsewhere classified (NEC) categories.

For the WDNR-updated nonpoint fuel combustion sectors, the EPA provided a SCC cross-walk between nonpoint and corresponding point source SCCs. These adjustments were made by subtracting the activity assigned for point sources from the total activity to estimate the adjusted nonpoint source activity. Energy consumption of these sectors for Wisconsin was obtained from the U.S. Department of Energy (DOE)'s Energy Information Administration (EIA). This survey data is the source of activity data for ICI fuel combustion. EIA's State Energy Data System (SEDS) data, as reported in EIA's most recent State Energy Consumption Estimates report, was used to determine total consumption for most fuel oil and kerosene.[3]

To update emission estimates for most of the solvent utilization for industrial surface coating categories, business pattern data from the U.S. Census Bureau's employment and county were used.[4]

To obtain area source emissions for the portion of Sheboygan County located in the 2015 ozone NAAQS nonattainment area, emission estimates from the entire county were allocated to the partial county based on population data. The county's population for 2017 was estimated by interpolating between 2015 and 2020 population data from the Wisconsin Department of Administration. The partial county population was identified based on the relative population of the Minor Civil Divisions (MCDs) in the nonattainment area as compared to the entire county. Using this methodology, for 2017, 59% of the county's population was estimated to live in the nonattainment area. Appendix 5 includes a table of area source emissions by source category.

Gasoline Service Stations, Stage II: Total Refueling

The WDNR estimated emissions from vehicle refueling at gasoline stations (Stage II refueling) using the EPA's MOVES4.0.1 model using the same inputs used for onroad modeling.

[2] https://www.epa.gov/sites/production/files/2020-04/documents/nei2017_tsd_full_30apr2020.pdf.
[3] https://www.eia.gov/state/seds/sep_use/notes/use_print.pdf.
[4] https://www.census.gov/programs-surveys/cbp/data.html.

Beginning in the 1990s, a Stage II vapor recovery program (vapor recovery nozzles at gas pumps) was in effect in nine Wisconsin counties, including the entire Sheboygan County 2015 ozone NAAQS nonattainment area. This program was effective in reducing refueling emissions in older vehicles, but was redundant or even counter-productive in reducing emissions for newer vehicles, because the newer vehicles controlled refueling emissions through on-board refueling vapor recovery (ORVR) systems.[5] Wisconsin submitted a state implementation plan (SIP) revision removing Stage II requirements, which the EPA approved in November 2013. By 2017, most gasoline stations in the nine Wisconsin counties had removed or decommissioned their Stage II vapor recovery systems. To reflect this, the WDNR input zero emissions reductions from a Stage II program in its MOVES runs for year 2017.

Since the MOVES modeling for onroad emissions used ozone season weekday (oswd) travel activity, whereas the nonpoint emissions are based on the average of all seven days of the week (osd), the WDNR used travel data developed by the Wisconsin Department of Transportation (WDOT) to adjust the MOVES oswd output emissions for Stage II refueling to osd emissions, based on the ratio of average day (weekdays and weekends) to weekday travel during the ozone season. The WDNR-calculated adjustment factor for the Sheboygan County nonattainment area was 0.9501 for 2017.

2.3. Onroad Mobile Sources

Onroad mobile sources are motorized mobile equipment that are primarily used on public roadways. Examples of onroad mobile sources are cars, trucks, buses and road motorcycles. The emissions reported in this document were estimated using the MOtor Vehicle Emission Simulator (MOVES), the EPA's recommended mobile source model. The model was run in inventory mode. The version used was MOVES4.0.1, the most recent version of the model, released in January 2024. All estimates were made in accordance with the following EPA technical guidance:

- MOVES4 Technical Guidance: Using MOVES to Prepare Emission Inventories for State Implementation Plans and Transportation Conformity (94 pp, August 2023, EPA-420-B-23-011).

The onroad mobile NOx and VOC emissions for the Sheboygan County 2015 ozone NAAQS nonattainment area for 2017 (as well as the 2023 and 2024 projections) are presented in Appendix 7, separated by source type (vehicle class), fuel type and road type. Tables summarizing vehicle activity data are presented in Appendix 7 after the emissions tables.[6]

2.3.1. Transportation Data

The modeling inputs to MOVES include detailed transportation data (e.g., vehicle-miles of travel by vehicle class, road class and hour of day, and average speed distributions), requiring support

[5] The federally required phase in for ORVR systems started with model year 1998 and was required for all light-duty vehicles by model year 2006.
[6] The complete set of inputs to MOVES4.0.1 is too lengthy to include in this document. However, electronic copies of the input files can be obtained from WDNR upon request.

from the state agency responsible for transportation data in Sheboygan County, the Wisconsin Department of Transportation. The WDOT maintains transportation network inventory data for the state. The WDOT has developed and validated travel simulation models to estimate and forecast vehicle miles of travel (VMT) and average speed distributions for the state, including detailed data for both all of Sheboygan County and the Sheboygan County 2015 ozone NAAQS nonattainment area.

The WDOT provided to the WDNR its most recent transportation modeling data for both the entire county and the nonattainment area on July 3, 2024. Data were provided for 2010 (base year) and 2045 (projection year). (Data for intermediate years can be obtained by linear interpolation.) For each of these years, the data include average weekday VMT, vehicle-hours of travel (VHT) and average speed. These data were further broken down into 14 five-mph speed bins within 13 roadway classes within two general vehicle classes. For these data "weekday" includes only the three middle weekdays (Tuesday, Wednesday and Thursday).

The 14 speed bins are: 0-5 mph, 5-10 mph, etc., continuing through 60-65 mph and 65+ mph.

The 13 roadway classes are:

- Interstate
- Freeway
- Ramp
- Expressway
- Urban Principal Arterial
- Urban Minor Arterial
- Urban Collector
- Urban Local
- Rural Principal Arterial
- Rural Minor Arterial
- Rural Major Collector
- Rural Minor Collector
- Rural Local

The two general vehicle classes are: Auto and Truck

Besides WDOT transportation modeling data, the WDNR utilized the following additional WDOT transportation data in developing inputs to MOVES:

- WDOT official VMT estimates posted at the WDOT webpage.[7] In addition, the WDOT provided spreadsheets to the WDNR which expand these posted estimates by breaking down each of the official county VMT estimates into roadway classes.

- Statewide day-of-week and month-of-year VMT adjustment factors developed by the WDOT and provided to the WDNR by the Southeastern Wisconsin Regional Planning Commission (SEWRPC) for the ten-year period of 2008 through 2017.

[7] http://wisconsindot.gov/Pages/projects/data-plan/veh-miles/default.aspx

2.3.2. Descriptions of MOVES Modeling Inputs

The MOVES modeling inputs are described in the following 10 subsections.

2.3.2.1. Vehicle-Miles of Travel (VMT)

A summary of the procedures the WDNR used to obtain ozone season weekday VMT estimates for input to MOVES follows.

- **Factors to Convert Annual Average Daily VMT (AADT) to Ozone Season Weekday VMT:** As specified in the EPA technical guidance, the onroad inventories for ozone SIPs should be based on ozone season *weekday* VMT, where "weekday" includes all five of the weekdays. Following historical practice, the WDNR defined "ozone season" for the mobile sector as the months of June, July and August. Using the WDOT day-of-week and month-of-year statewide VMT adjustment factors, the SEWRPC and the WDNR developed adjustment factors to convert from the AADT (annual VMT divided by 365) to ozone season weekday VMT (see Table A1.1). For the year 2017 (as well as for the 2023 and 2024 projections), adjustment factors were developed from the WDOT data averaged over the 10-year-period of 2008 to 2017.

  Table A1.1. Factors to Convert AADT to Ozone Season Weekday VMT.

MOVES Roadway Type	Years 2017, 2023 and 2024
Rural Restricted	1.1528
Rural Unrestricted	1.1494
Urban Restricted	1.1551
Urban Unrestricted	1.1536

- **Estimation of Ozone Season Weekday VMT in the Sheboygan County 2015 Ozone NAAQS Nonattainment Area:** The WDOT's travel demand model does not provide full VMT coverage. For example, local travel is under-represented. Thus, the WDNR adjusted the WDOT-modeled VMT to match the WDOT's official posted AADT [8]. A summary of the WDOT-provided VMTs and the resulting WDNR-estimated ozone season weekday VMTs is shown in Table A1.2. The WDOT has previously agreed with these WDNR adjustment methods.

[8] http://wisconsindot.gov/Pages/projects/data-plan/veh-miles/default.aspx

Table A1.2. VMTs for Sheboygan County and the Sheboygan County 2015 Ozone NAAQS Nonattainment Area.

WDOT Model Functional Class	Year 2017						
	Full Sheboygan County					Sheboygan County Nonattainment Area	
	(a) WDOT-Modeled Weekday (Tu-Th)	(b) WDOT Official Posted AADT	(c) Factor to Ozone Season Weekday	(d) WDOT Official Posted AADT (Adjusted to Ozone Season Weekday) (b)*(c)	(e) Factor for WDOT-Modeled to Ozone Season Weekday (d)/(a)	(f) WDOT-Modeled Weekday (Tu-Th)	(g) WDNR-Estimated Ozone Season Weekday (Mo-Fr) (e)*(f)
Interstate	596,533	682,022	1.1537	786,877	1.3191	596,390	**786,688**
Other Freeway	0	0		0		0	**0**
Ramp	43,144	39,362	1.1538	45,416	1.0526	33,494	**35,257**
Expressway	383,634	200,225	1.1546	231,174	0.6026	20,384	**12,283**
Urban - Principal Arterial	165,707	225,370	1.1536	259,987	1.5690	138,180	**216,798**
Urban - Minor Arterial	185,973	363,378	1.1536	419,193	2.2541	155,485	**350,471**
Urban - Collector	113,858	195,555	1.1536	225,592	1.9813	96,464	**191,128**
Urban - Local	15,190	120,908	1.1536	139,479	9.1826	14,330	**131,584**
Rural - Principal Arterial	217,896	352,906	1.1494	405,628	1.8616	48,773	**90,795**
Rural - Minor Arterial	349,629	199,537	1.1494	229,346	0.6560	58,140	**38,138**
Rural - Major Collector	269,567	328,247	1.1494	377,285	1.3996	54,536	**76,329**
Rural - Minor Collector	129,059	106,578	1.1494	122,500	0.9492	12,099	**11,484**
Rural - Local	40,098	131,182	1.1494	150,780	3.7603	14,705	**55,295**
Total	2,510,289	2,945,270	1.1521	3,393,257		1,242,981	**1,996,250**

- **2017 Ozone Season Weekday VMT:** The WDOT-modeled VMT for an average weekday (Tuesday – Thursday) for the year 2017 is 1,242,981 for the Sheboygan County 2015 ozone NAAQS nonattainment area (interpolated between 2010 and 2045). After adjusting to ozone season weekday and to official WDOT VMT estimates, this value becomes 1,996,250.

- **Allocation of VMT to the 13 Vehicle Classes in MOVES:** The WDOT provided VMT data for two general vehicle classes (Auto and Truck[9]). The MOVES model calculates emissions for 13 vehicle classes as shown in Table A1.3. The WDNR used the MOVES4.0.1 default vehicle class distributions to further break down the VMT into the 13 MOVES classes. Table A1.3 shows the final VMT by vehicle class values the WDNR used in MOVES4.0.1.

[9] This truck class includes buses, but not passenger trucks or light commercial trucks.

Table A1.3. Ozone Season Weekday VMT Input into MOVES4.0.1.

MOVES Vehicle Class	Year 2017
Motorcycles	17,998
Passenger Cars	773,602
Passenger Trucks	932,377
Light Commercial Trucks	90,638
Other Buses	5,172
Transit Buses	1,930
School Buses	2,449
Refuse Trucks	737
Single Unit Short-haul Trucks	55,251
Single Unit Long-haul Trucks	3,635
Motor Homes	3,408
Combination Short-haul Trucks	38,509
Combination Long-haul Trucks	70,544
TOTAL	**1,996,250**

2.3.2.2. VMT by Hour of Day

The WDNR used the MOVES4.0.1 default hourly VMT distributions for Sheboygan County for the years 2017 (as well as for the 2023 and 2024 projections).

2.3.2.3. Vehicle Population

The WDNR estimated vehicle populations for each vehicle class by dividing ozone season weekday VMT by the MOVES4.0.1 default for average daily travel per vehicle on a July weekday. Table A1.4 shows the final vehicle population values the WDNR inputted into MOVES4.0.1.

Table A1.4. Vehicle Populations Input into MOVES4.0.1.

MOVES Vehicle Class	Year 2017
Motorcycles	1,748
Passenger Cars	22,355
Passenger Trucks	25,871
Light Commercial Trucks	2,413
Other Buses	59
Transit Buses	20
School Buses	83
Refuse Trucks	12
Single Unit Short-haul Trucks	1,379
Single Unit Long-haul Trucks	60
Motor Homes	200
Combination Short-haul Trucks	307
Combination Long-haul Trucks	244
TOTAL	**54,752**

2.3.2.4. Vehicle Age Distribution

Using two datasets provided by the WDOT listing all vehicles registered in Wisconsin, the first providing registrations as of January 2018 and the second providing registrations as of November 2021, the WDNR calculated vehicle age distributions for those two periods and used those distributions to backcast a distribution to July 2017. The WDNR did these calculations in the year 2022. The WDNR calculated age distributions for all 13 MOVES vehicle classes except the two long-haul truck classes (MOVES classes 53 and 62), for which the WDNR used the MOVES3 default distributions. The WDNR calculated two July 2017 distributions: one for the seven-county vehicle inspection and maintenance (I/M) program region (Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha counties) and the other for the remaining 65 Wisconsin counties. Since the Sheboygan County 2015 ozone NAAQS nonattainment area is entirely within the I/M program region, the WDNR used the seven-county distribution for modeling the nonattainment area.

Table A1.4 presents the resulting average vehicle ages for July 2017.

Table A1.4. Average Vehicle Ages (years old).

MOVES Vehicle Class	July 2017
11 - Motorcycle	13.9
21 - Passenger Car	9.6
31 - Passenger Truck	7.8
32 - Light Commercial Truck	10.6
41 - Other Bus	11.5
42 - Transit Bus	13.8
43 - School Bus	7.8
51 - Refuse Truck	11.0
52 - Single Unit Short-haul Truck	11.3
53 - Single Unit Long-haul Truck	12.0
54 - Motor Home	15.5
61 - Combination Short-haul Truck	13.8
62 - Combination Long-haul Truck	10.5

2.3.2.5. Road Type Distribution

MOVES requires that VMT for each of the 13 source types be allocated to the following four roadway classes:

- Rural – Restricted Access
- Rural – Unrestricted Access
- Urban – Restricted Access
- Urban – Unrestricted Access

The WDNR calculated road type distributions for the Sheboygan County nonattainment area from the transportation modeling data provided by the WDOT (described in section 2.3.1).

A detailed breakdown of VMT by roadway class by MOVES source type is provided in Appendix 7. The proportion of heavy-duty truck travel is significantly higher on restricted access roadways than on unrestricted access roadways.

2.3.2.6. Average Speed Distribution

For each of the four MOVES roadway classes, the WDNR adjusted the 14-bin speed distribution obtained from the WDOT to the 16-bin speed distribution required by the MOVES model.[10] This adjustment was based on the average speeds within the WDOT bins.[11] The resulting distributions of VHT by average trip speed are provided in Appendix 7.

2.3.2.7. Fuel Supply, Formulation and Usage Fraction

The MOVES4.0.1 defaults currently provide the best available fuel data and therefore were used.

2.3.2.8. Alternate Vehicle Fuel and Technology (AVFT) Fractions

A required input for the MOVES model is the fraction of vehicles that are designed to run on each of the following fuel types:

- Gasoline
- Diesel
- 85% Ethanol blends (E-85)
- Compressed Natural Gas (CNG)
- Battery electric
- Fuel cell electric,

where these fractions are individually specified for each model year within each of the 13 MOVES vehicle classes. These fractions sum to 1 for each model year of each vehicle class.

The WDNR developed a table of AVFT fractions by retrieving data from a listing, provided by the WDOT, of all vehicles registered in Wisconsin as of July 2024. The WDOT registration database included a field for fuel type. The AVFT table the WDNR developed covers the seven-county vehicle inspection and maintenance (I/M) program region (Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha counties).

A detailed breakdown of vehicle population and VMT by fuel type is included in Appendix 7.

2.3.2.9. Vehicle Inspection and Maintenance Program

[10] These 16 bins are: 0-2.5 mph, 2.5-7.5 mph, 7.5-12.5 mph, etc., continuing through 67.5-72.5 mph and 72.5+ mph. In comparison to the WDOT 14 bins, the MOVES bins include both slower and faster average speeds and are offset from the WDOT bins by 2.5 mph.

[11] For example, if the WDOT 30-35 mph bin has 1000 VHT at an average speed of 34 mph and the WDOT 35-40 mph bin has 1500 VHT at an average speed of 38 mph, then the VHT for the MOVES bin of 32.5-37.5 mph would equal: 1000 VHT * (34 mph – 30 mph)/(35 mph – 30 mph) + 1500 VHT * (40 mph – 38 mph)/(40 mph – 35 mph) = 800 VHT + 600 VHT = 1400 VHT.

The entire Sheboygan County 2015 ozone NAAQS nonattainment area is within the seven-county southeastern Wisconsin vehicle inspection program (I/M program) region. On-Board Diagnostic (OBD) checks were assumed for most model year 1996 and newer passenger cars, passenger trucks and light commercial trucks.

2.3.2.10. Meteorology Data

Temperatures conducive to peak ozone formation were assumed for the ozone season weekday modeling. To ensure consistent emission estimates over time, the WDNR has consistently used the same minimum and maximum temperatures for onroad modeling for ozone SIPs since the early 1990s. The temperatures were developed from an analysis of peak ozone days and have minimum/maximum values of 65/93 degrees Fahrenheit for the Sheboygan County 2015 ozone NAAQS nonattainment area.

2.4. Nonroad Mobile Sources

Nonroad mobile sources are motorized mobile equipment and other small and large engines that are primarily used off public roadways. Examples of nonroad mobile sources include commercial marine vessels, construction equipment, lawn and garden equipment, locomotives and agricultural equipment.

For purposes of inventory calculation, nonroad mobile sources are divided into two major groups:

- Commercial Marine, Aircraft and Rail Locomotive (MAR)
- All other nonroad categories

Nonroad categories other than MAR include:

- Recreational vehicles
- Construction equipment
- Industrial equipment
- Lawn and garden equipment
- Agricultural equipment
- Commercial equipment
- Logging equipment
- Underground mining equipment
- Oil field equipment
- Pleasure craft
- Railway maintenance equipment

A detailed listing of the nonroad emissions for each of the over 200 nonroad source subcategories, which include both the MAR and non-MAR groups, is presented in Appendix 6.

2.4.1. Non-MAR Sources

The 2017 nonroad emissions for the non-MAR categories were developed using the nonroad component of the EPA's MOVES4.0.1 model.

The only change the WDNR made to the MOVES4.0.1 nonroad defaults was an updated monthly distribution of agricultural activity, developed by the Lake Michigan Air Directors Consortium (LADCO) for Wisconsin and other Midwest states. The EPA also used these updated distributions for each Midwest state for the 2016 emission modeling platform and the 2017 and 2020 NEIs.

The model was run for Sheboygan County for the months of June, July and August, using the same hot ozone season day temperatures used for the onroad modeling.[12] The countywide hot ozone season day emissions were then calculated by dividing the total emissions over these three months by 92 (the number of days in the three months).

The WDNR then allocated the countywide hot ozone season day emissions to the portion of the county within the nonattainment area based on surrogates such as population, land area and water area, depending on the category, as described below in section 2.4.3

2.4.2. MAR Sources

To estimate emissions for commercial marine vessels, aircraft, and rail locomotive the WDNR first obtained *annual* 2017 emissions from EPA's 2017 NEI[13]. Then the WDNR divided these emissions by 365 to estimate ozone season day emissions. Finally, the WDNR allocated the countywide emissions to the portion of the county within the nonattainment area, as described in section 2.4.3.

[12] The nonroad component of MOVES does not model areas smaller than full counties.
[13] https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data

2.4.3. Allocation of Sheboygan County Emissions to the Sheboygan County 2015 Ozone NAAQS Nonattainment Area

The Sheboygan County 2015 ozone NAAQS nonattainment area comprises only part of the full county, thereby requiring surrogates to estimate the proportion of countywide emissions in the nonattainment area. Given the wide range of nonroad mobile sources, several surrogates were employed. They are described below.

2.4.3.1. Land Area

Using the WDOT official county map[14] for Sheboygan County, the WDNR calculated that the land area within the Sheboygan County 2015 ozone NAAQS nonattainment area comprises 17% of the total county land area.

The nonroad categories allocated to the Sheboygan County 2015 ozone NAAQS nonattainment area based on land area are **agriculture**, **logging**, **oilfields**, **recreational**, and **underground mining**. It should be noted that the nonattainment area has no emissions from oilfields or underground mining.

2.4.3.2. Population

As described in section 2.2 (Nonpoint (Area) Sources), the percentage of the Sheboygan County population estimated to live in the Sheboygan County 2015 ozone NAAQS nonattainment area is 59% for 2017.

The nonroad categories allocated to the nonattainment area based on this population percentage are **commercial**, **construction**, **industrial**, and **lawn & garden**.

2.4.3.3. Water Area

Inland Water Area (excluding Lake Michigan)

The WDNR estimated, using the WDOT official county map[15] for Sheboygan County, that the inland water area within the Sheboygan County 2015 ozone NAAQS nonattainment area comprises 0% of the total county inland water area.

Inland Water Area Combined with Lake Michigan Water Area

Sheboygan County also has water area along the Lake Michigan shoreline, of which all (100%) is in the nonattainment area. To estimate the combined percentage of water area within the nonattainment area for Sheboygan County, the WDNR used the above inland water area percentage for the nonattainment area (0%) as well as water area data from two tables in the MOVES4.0.1 nonroad data files: WI WIB.ALO, which provides the water area in each

[14] https://wisconsindot.gov/Pages/travel/road/hwy-maps/county-maps/default.aspx
[15] https://wisconsindot.gov/Pages/travel/road/hwy-maps/county-maps/default.aspx

Wisconsin county applicable to pleasure craft having inboard engines, and WI WOB.ALO, which provides water area in each Wisconsin county applicable to pleasure craft having outboard engines. The difference between these two tables is that WI WIB.ALO includes water area along the Lake Michigan shore as well as inland water area, while WI WOB.ALO only includes the inland water area.

For Sheboygan County, WI WIB.ALO has 145 square kilometers of water area and WI WOB.ALO has 28 square kilometers of water area. The 145 square kilometer value for inboard engines contains Lake Michigan waters (117 square kilometers) and 28 square kilometers of water from several inland lakes. The 28 square kilometer value for outboard engines contains only the water from the inland lakes. Thus, for pleasure craft with inboard engines (117*100.0% + 28*0%)/145= 81% of the associated water area is in the Sheboygan County 2015 ozone NAAQS nonattainment area and for pleasure craft with outboard engines (28*0%)/28 = 0% of the associated water area is in the nonattainment area.

Final Allocation Percentages

The nonroad category allocated to the nonattainment area based on water area is **pleasure craft**. For pleasure craft with inboard engines, the percentage of full county emissions allocated to the Sheboygan County 2015 ozone NAAQS nonattainment area is 81%. And for pleasure craft with outboard engines, the percentage of full county emissions allocated to the nonattainment area is 0%.

2.4.3.4. Lake Michigan Shoreline

Sheboygan County has water area along the Lake Michigan shoreline, of which all (100%) is in the nonattainment area. The nonroad category allocated to the nonattainment area based on Lake Michigan shoreline is **commercial marine**, since all commercial marine emissions attributable to Sheboygan County come from vessels traveling on Lake Michigan past the county. Sheboygan County does not have any ports, inland lakes or inland rivers with commercial marine activity.

2.4.3.5. Airport Location

The WDNR obtained countywide annual aircraft emissions for Sheboygan County from the EPA's 2022 Emissions Modeling Platform, version 1[16]. These summaries include the longitude and latitude of the airport associated with the emissions, allowing one to determine which of the airports are in the nonattainment area. Only one airport was listed for Sheboygan County, Sheboygan County Memorial International Airport, which is located outside of the nonattainment area.

Thus, **aircraft** emissions in the nonattainment area are 0% of the total countywide aircraft emissions.

[16] https://www.epa.gov/air-emissions-modeling/2022v1-emissions-modeling-platform

2.4.3.6. Railroad Track Miles

The WDNR estimated, using the WDOT official county map[17] for Sheboygan County, the number of railroad track miles in the full Sheboygan County and in the nonattainment portion of the county as follows:

- 65 total miles, with 29 miles (45%) in the nonattainment area

The WDNR used this percentage to allocate both **rail locomotive** and **railroad maintenance** emissions to the nonattainment area.

[17] https://wisconsindot.gov/Pages/travel/road/hwy-maps/county-maps/default.aspx

APPENDIX 2

2023 and 2024 Emissions Projections Methodology

This appendix provides information for the sector-specific NOx and VOC tons per ozone season day (tposd) emission estimates for the Wisconsin Department of Natural Resources (WDNR) Attainment Plan for the Sheboygan County, WI 2015 Ozone NAAQS Moderate Nonattainment Area. As part of this demonstration, WDNR is providing a projection of emissions for 2023 and 2024.

1. EGU Inventory Methodology for 2023 and 2024

See Appendix 3 for the projection methodology related to electric generating units (EGUs).

2. Non-EGU Point Source Inventory Methodology for 2023 and 2024

Non-EGU point source emissions are projected for 2023 by using 2023 reported emissions. Emissions are projected for 2024 by applying a growth factor of 1.0 to the 2023 inventory. A list of sources with the 2023 and 2024 emissions is provided in Appendix 4.

3. Area Source Inventory Methodology for 2023 and 2024

EPA's 2022 Emissions Modeling Platform, Version 1 includes base year 2022.[1] Emissions for 2023 and 2024 were estimated by extrapolating EPA's 2017 and 2020 NEIs and 2022 base year emissions from EPA's 2022 Emissions Modeling Platform. Year 2023 area source emissions were sourced primarily from the 2022 Emissions Modeling Platform, Version 1, which incorporates area source emissions based on the 2020 NEI nonpoint inventory for both anthropogenic and biogenic emissions.

Methodologies used to develop 2022 emissions modeling platform projection data are available in the EPA's 2022 Version 1 document.[2] According to this document, the 2022 Version 1 nonpoint solvent emissions, except asphalt paving, are projected from the 2020NEI, including state submitted emissions. Using 2021 data, a SCC-specific ratio was derived and applied to 2020NEI emissions. This ensures state-submitted emissions magnitudes are preserved. For asphalt paving, 2020NEI emissions are carried forward. Due to methodology changes for some solvent utilization categories and introducing a new category of agriculture silage for 2020NEI, 2023 and 2024 projections for a number of individual SCCs that fall under "246xxxxxxx" (solvent utilization) showed a significant increase between 2017 and the projection years. To be conservative, WDNR used the projection years estimates based on 2020NEI to back calculate 2017 emissions for these SCCs. The WDNR also projected emissions from vehicle refueling at gasoline stations (Stage II refueling) using EPA's MOVES4.0.1 model with the same inputs used for the onroad modeling, as explained below.

For the Stage II refueling emissions, as was done for 2017, the WDNR adjusted weekday emissions to average day (weekdays and weekends) emissions, based on the ratio of average day to weekday travel, resulting in an adjustment factor of 0.9506 for both 2023 and 2024. Also, as

[1] https://www.epa.gov/air-emissions-modeling/2022v1-emissions-modeling-platform
[2] https://gaftp.epa.gov/Air/emismod/2022/v1/2022v1_emissions_docn.pdf

was done for 2017, no Stage II vapor recovery program was modeled for 2023 and 2024. Owing to most vehicles now having their own vapor recovery system, Stage II controls at the pump are largely redundant or even counter-productive. Wisconsin submitted a SIP revision removing Stage II requirements, and the EPA approved the revision in November 2013. Even without a Stage II program, emissions from Stage II refueling decreased by about 25% from 2017 to 2024, owing to the larger percentage of vehicles with onboard vapor recovery.

To obtain area source emissions for the portion of Sheboygan County located in the 2015 ozone NAAQS nonattainment area, emission estimates from the entire county were allocated to the partial county based on population data. The partial county population was identified based on the relative population of the Minor Civil Divisions (MCDs) in the nonattainment area as compared to the entire county. Using this methodology, for both 2023 and 2024, 59% of the county's population was estimated to live in the nonattainment area. Appendix 5 includes a table of area source emissions by source category.

4. Onroad Inventory Methodology for 2023 and 2024

As was done for the 2017 emissions, projected onroad emissions for 2023 and 2024 were developed using the MOVES4.0.1 model. Unless otherwise stated in this section, the methodology the WDNR used for 2023 and 2024 is identical to the methodology the WDNR used for year 2017, as described in Appendix 1, section 2.3.

The WDNR grew vehicle-miles of travel (VMT) from 2017 using the same growth rates provided in the transportation modeling data provided to WDNR by the Wisconsin Department of Transportation (WDOT). The WDOT data provide separate growth rates for the combined light-duty classes ("Autos") and the combined heavy-duty classes ("Trucks"). After growing the VMT for these two general classes, WDNR allocated the VMT to the MOVES sub-classes based on the MOVES4.0.1 default VMT splits by vehicle class for Sheboygan County for 2023 and 2024. Table A2.1 shows the resulting ozone season weekday VMT.

Table A2.1. Ozone Season Weekday VMT Input into MOVES4.0.1.

MOVES Vehicle Class	Year		
	2017	**2023**	**2024**
Motorcycles	17,998	19,323	19,497
Passenger Cars	773,602	677,654	664,472
Passenger Trucks	932,377	1,111,104	1,138,992
Light Commercial Trucks	90,638	108,471	110,579
Other Buses	5,172	5,037	5,097
Transit Buses	1,930	1,685	1,691
School Buses	2,449	2,360	2,390
Refuse Trucks	737	643	646
Single Unit Short-haul Trucks	55,251	61,777	62,460
Single Unit Long-haul Trucks	3,635	4,124	4,179
Motor Homes	3,408	3,452	3,489
Combination Short-haul Trucks	38,509	39,915	40,658
Combination Long-haul Trucks	70,544	75,360	75,864
TOTAL	**1,996,250**	**2,110,904**	**2,130,013**

The total ozone season weekday VMT increases by 5.74% from 2017 to 2023 and increases a further 0.91% from 2023 to 2024. In terms of annual VMT growth rates, these rates are 0.94% from 2017 to 2023 and 0.91% from 2023 to 2024.

The vehicle populations for each of the years are shown in Table A2.2.

Table A2.2. Vehicle Populations Input into MOVES4.0.1.

MOVES Vehicle Class	Year		
	2017	2023	2024
Motorcycles	1,748	2,058	2,070
Passenger Cars	22,355	20,361	19,999
Passenger Trucks	25,871	30,993	31,744
Light Commercial Trucks	2,413	2,885	2,954
Other Buses	59	63	65
Transit Buses	20	19	20
School Buses	83	86	89
Refuse Trucks	12	11	11
Single Unit Short-haul Trucks	1,379	1,621	1,683
Single Unit Long-haul Trucks	60	71	74
Motor Homes	200	221	229
Combination Short-haul Trucks	307	333	341
Combination Long-haul Trucks	244	259	266
TOTAL	**54,752**	**58,982**	**59,545**

The total vehicle population increases by 7.73% from 2017 to 2023 and increases by a further 0.95% from 2023 to 2024. In terms of annual population growth rates, these rates are 1.25% from 2017 to 2023 and 0.95% from 2023 to 2024.

Using a dataset provided by the Wisconsin Department of Transportation (WDOT) listing all vehicles registered in Wisconsin as of July 2024, the WDNR calculated vehicle age distributions for all 13 MOVES vehicle classes except the two long-haul truck classes (MOVES classes 53 and 62), for which the WDNR used the MOVES4 default distributions. The distribution calculated by the WDNR covered the seven southeastern Wisconsin counties in the vehicle inspection and maintenance program region (Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha counties). The WDNR used this distribution for calendar year 2024. To approximate a distribution for calendar year 2023, the WDNR adjusted the 2024 distribution by removing the age fraction for model year 2024 for each vehicle class and then normalized the remaining age fractions for each vehicle class so that they would sum to 1. Table A2.3 presents the resulting average vehicle ages for all three inventory years.

Table A2.3. Average Vehicle Ages (years old).

MOVES Vehicle Class	Year		
	2017	2023	2024
11 - Motorcycle	13.9	15.1	15.6
21 - Passenger Car	9.6	10.9	11.7
31 - Passenger Truck	7.8	7.4	8.0
32 - Light Commercial Truck	10.6	9.6	10.2
41 - Other Bus	11.5	13.4	13.3
42 - Transit Bus	13.8	13.7	14.2
43 - School Bus	7.8	7.1	7.7
51 - Refuse Truck	11.0	18.8	19.2
52 - Single Unit Short-haul Truck	11.3	10.6	11.0
53 - Single Unit Long-haul Truck	12.0	12.9	12.9
54 - Motor Home	15.5	14.5	14.8
61 - Combination Short-haul Truck	13.8	13.2	13.4
62 - Combination Long-haul Truck	10.5	10.6	10.7

Emissions for 2023 and 2024 were increased by a 15% safety margin, as agreed through the interagency transportation conformity consultative process.

The motor vehicle inspection and maintenance (I/M) program remained in effect for 2023 and 2024.

Detailed listing of the projected onroad emissions and activity data are provided in Appendix 7.

5. Nonroad Inventory Methodology for 2023 and 2024

Unless otherwise stated in this section, the methodology for determining 2023 and 2024 projected nonroad emissions is identical to the methodology used to determine the 2017 estimates, as described in Appendix 1, section 2.4.

For all source categories except commercial marine, aircraft and rail locomotive (MAR), the nonroad component of the MOVES4.0.1 model was run for Sheboygan County at hot ozone season day temperatures. As was done for 2017, the only change made to the MOVES4.0.1 nonroad defaults was an updated monthly distribution of agricultural activity, developed by the Lake Michigan Air Directors Consortium (LADCO). The MOVES4.0.1 model's default growth projections were assumed.

For the MAR categories, the WDNR obtained emissions for year 2022 from the EPA's 2022 Emissions Modeling Platform, Version 1[3]. Then, to project emissions to years 2023 and 2024, WDNR linearly extrapolated from the year 2017 emissions (documented in Appendix 1, section 2.4) and the year 2022 modeling platform emissions, with the constraint that if the 2022 emissions were less than the 2017 emissions, the 2023 and 2024 emissions were set equal to the

[3] https://www.epa.gov/air-emissions-modeling/2022v1-emissions-modeling-platform

2022 emissions. The intent of this constraint is to avoid an underestimation of 2023 and 2024 emissions.

In allocating emissions to the Sheboygan County 2015 ozone NAAQS nonattainment area, the same adjustment factors used for 2017 were also used for 2023 and 2024.

Detailed listings of the projected nonroad emissions for over 200 subcategories are provided in Appendix 6.

APPENDIX 3

EGU Point Source Emissions for 2017, 2023 and 2024

This appendix provides the methodology for electric generating unit (EGU) sector NOx and VOC tons per ozone season day (tposd) emission estimates found in sections 3.2 and 3.3 of the Wisconsin Department of Natural Resources (WDNR) Attainment Plan for the Sheboygan County, WI 2015 Ozone NAAQS Moderate Nonattainment Area.

Alliant Energy has one point-source facility with EGUs located in the Sheboygan County 2015 ozone NAAQS nonattainment area, the Edgewater coal-fired power plant.

1. 2017 Emissions

The 2017 NOx emissions, emission rates and fuel consumption for the generating units at these facilities were derived from data reported by the utility to EPA's Clean Air Markets Program Data (CAMPD) database. The WDNR used the ozone season (i.e., May 1 through September 30) day with the 99th percentile highest heat input for each unit during the ozone season to represent ozone season day operations during the 2017 ozone season. Using this 99th percentile value provides a conservative, but reasonable, representation of maximum ozone season day operation. The ozone season day emissions were then calculated by multiplying the maximum ozone season day heat inputs in 2017 by the average emission rates for the 2017 ozone season. The NOx emission rates were derived from the CAMPD emissions data for the 2017 ozone season. This base data and the resulting tposd emissions are provided in Table A3.1. The total NOx emissions were 5.97 tposd in 2017.

The 2017 VOC ozone season day emissions are also derived by multiplying the maximum day heat inputs by average VOC emission rates. The base data used in the calculation and the resulting emissions are provided in Table A3.1. In this case, however, VOC emissions are not monitored by continuous emissions monitors and reported to the CAMPD database, as is done for NOx. Therefore, the VOC emission rates were derived by dividing the annual VOC emissions reported to the WDNR Air Emissions Inventory system by the annual heat input reported to the CAMPD database for 2017. The data applied to derive the VOC emission rates are shown in Table A3.2. Multiplying these VOC emission rates by the maximum day heat inputs resulted in 0.35 tposd of VOC in 2017.

Note: emissions from non-electric generating emission units at the plants (i.e., units other than the coal boilers) are not included because they are insignificant (less than 5 tons per year) compared to the EGU emissions.

Table A3.1. Ozone Season Day Operation and Emissions in 2017 for EGUs.

Variable	Unit Number	
	B24	**B25**
Ozone Season Day Heat Input (mmBtu)[1]	63,979	95,271
NOx Rate (lbs/mmBtu)[2]	0.137	0.033
NOx (tposd)	4.38	1.59
NOx Control	SNCR	SCR
VOC Rate (lbs/mmBtu)[3]	0.0062	0.0032
VOC (tposd)	0.199	0.153

SCR = Selective catalytic reduction; SNCR = Selective non-catalytic reduction
[1] Heat input is for the day with the 99th percentile highest heat input during the 2017 ozone season. "Ozone Season" is defined here as May 1 through September 30.
[2] Emission rate derived from the EPA CAMPD ozone season NOx emissions and heat input.
[3] Calculated in Table A3.2.

Table A3.2. EGU VOC Annual Emissions and Emission Rates in 2017.

Variable	Unit Number	
	B24	**B25**
Annual VOC (tons)[1]	0.199	0.153
Annual Heat Input (mmBtu)[2]	16,770,170	25,224,079
VOC Rate (lbs/mmBtu)	0.0062	0.0032

[1] Emissions reported to the WDNR Air Emissions Inventory.
[2] Heat input reported to the EPA CAMPD database.

2. 2023 and 2024 Emissions

Following the same methodology used to calculate 2017 emissions, the WDNR estimated ozone season day emissions in 2023 for the Sheboygan nonattainment area EGUs by multiplying the maximum daily heat input by the average ozone season emission rate. The data used in this calculation and resulting emissions are summarized in Table A3.3.

The Edgewater power plant retired boiler B24 before the start of the 2023 ozone season, therefore that unit has an ozone season day heat input value of "0" for that period. The NOx and VOC tposd emissions from the Edgewater power plant for 2024 are based on the 2023 tposd emissions and using no growth factor from 2023 to 2024.

Based on the information in Tables A3.3 and A3.4, the total emissions from the Edgewater power plant are calculated to be 4.24 tposd for NOx and 0.18 tposd for VOC for 2023 and 2024.

Table A3.3. Ozone Season Day Operation and Emissions in 2023 and 2024 for EGUs.

Variable	Unit Number	
	B24	**B25**
Ozone Season Day Heat Input (mmBtu)[1]	0	108,505
NOx Rate (lbs/mmBtu)[2]	-	0.064
NOx (tposd)	0	4.24
NOx Control	0	SCR
VOC Rate (lbs/mmBtu)[3]	-	0.0033
VOC (tposd)	0	0.181

SCR = Selective catalytic reduction

[1] Heat input is for the day with the highest 99th percentile daily value for the 2023 ozone season. "Ozone Season" is defined here as May 1 through September 30.

[2] Emission rate derived from the EPA CAMPD ozone season NOx emissions and heat input for 2023.

[3] Calculated in Table A3.4.

Table A3.4. EGU VOC Annual Emissions and Emission Rates in 2023 and 2024.

Variable	Unit Number	
	B24	**B25**
Annual VOC (tons)[1]	0	0.181
Annual Heat Input (mmBtu)[2]	0	21,817,056
VOC Rate (lbs/mmBtu)	-	0.0033

[1] Emissions reported to the WDNR Air Emissions Inventory.
[2] Heat input reported to the EPA CAMPD database.

3. Summary of EGU Point Source Emissions

Based on the information above, the total ozone season day emissions from the sources with EGUs located in the Sheboygan 2015 ozone NAAQS nonattainment area are summarized in Table A3.5.

Table A3.5. Total 2017, 2023, and 2024 Emissions from EGUs.

Facility Name (FID #)	Pollutant	2017 (tposd)	2023 (tposd)	2024 (tposd)
Edgewater (460033090)	NOx	5.97	4.24	4.24
	VOC	0.352	0.181	0.181

APPENDIX 4

Non-EGU Point Source Emissions for 2017, 2023 and 2024

This appendix provides a list of the Sheboygan County, WI 2015 ozone NAAQS nonattainment area non-electric generating unit (non-EGU) point source tons per ozone season day (tposd) emissions by facility identification number (FID) and facility name for 2017, 2023 and 2024. The sums of NOx and VOC emissions from these facilities were used for the non-EGU sector NOx and VOC tposd emission estimates found in sections 3.2 (Baseline Year Inventory) and 3.3 (Attainment Year Inventories) of the Wisconsin Department of Natural Resources (WDNR) Attainment Plan for the Sheboygan County, WI 2015 Ozone NAAQS Moderate Nonattainment Area.

Table A4.1. 2017 Point Non-EGU Emissions for the Sheboygan County, WI 2015 Ozone NAAQS Nonattainment Area[1,2]

FID	Facility Name	NAICS	Pollutant	2017 (tposd)	2017 (tons)
460006360	SHEBOYGAN WASTEWATER TREATMENT PLANT	221320	NOx	0.00	1.71
460012740	OLD WISCONSIN SAUSAGE CO PLANT 2	311612	NOx	0.00	2.46
460023520	MANNING LIGHTING INC	332321	NOx	0.00	0.39
460023740	LAKESHORE DISPLAY CO INC	321999	NOx	0.00	0.01
460027810	ALDRICH CHEMICAL COMPANY, LLC (dba MilliporeSigma)	325199	NOx	0.00	8.51
460029570	NEMSCHOFF CHAIRS INC.	337127	NOx	0.00	0.85
460032870	KOHLER CO - METALS PROCESSING COMPLEX	332999	NOx	0.02	37.34
460034740	PLASTICS ENGINEERING CO N 15TH ST PLANT	325211	NOx	0.01	12.29
460034960	AUSTIN GRAY IRON FOUNDRY	331511	NOx	0.00	0.19
460035180	THE VOLLRATH COMPANY LLC	332999	NOx	0.00	4.72
460035730	WILLMAN INDUSTRIES	331511	NOx	0.00	2.56
460038700	Discovery Energy LLC	335311	NOx	0.01	19.88
460041230	NEMAK USA INC - TAYLOR DRIVE	331314	NOx	0.00	0.07
460041670	Hexion Inc	325211	NOx	0.01	19.36
460106570	AMERICAN EXCELSIOR	326150	NOx	0.00	0.24
460141330	NEMAK GATEWAY PLANT	331314	NOx	0.02	39.61
460145840	SAFCO PRODUCTS CO	337211	NOx	0.00	0.86
460147820	KOHLER COMPANY - VITREOUS PLANT	327110	NOx	0.00	7.00
460147930	KOHLER CO-ENGINE PLANT	333618	NOx	0.00	2.05
460006360	SHEBOYGAN WASTEWATER TREATMENT PLANT	221320	VOC	0.00	0.79
460012740	OLD WISCONSIN SAUSAGE CO PLANT 2	311612	VOC	0.00	1.95
460022530	SHEBOYGAN PAPERBOX CO	322211	VOC	0.02	30.92
460023520	MANNING LIGHTING INC	332321	VOC	0.00	0.05
460023740	LAKESHORE DISPLAY CO INC	321999	VOC	0.01	10.31
460027480	PSCO Kieffer	339950	VOC	0.00	4.86
460027810	ALDRICH CHEMICAL COMPANY, LLC (dba MilliporeSigma)	325199	VOC	0.00	6.40
460029570	NEMSCHOFF CHAIRS INC.	337127	VOC	0.01	15.73
460032870	KOHLER CO - METALS PROCESSING COMPLEX	332999	VOC	0.03	57.93
460034740	PLASTICS ENGINEERING CO N 15TH ST PLANT	325211	VOC	0.00	4.05
460034960	AUSTIN GRAY IRON FOUNDRY	331511	VOC	0.00	2.49
460035180	THE VOLLRATH COMPANY LLC	332999	VOC	0.00	0.26
460035730	WILLMAN INDUSTRIES	331511	VOC	0.01	14.67
460038700	Discovery Energy LLC	335311	VOC	0.00	9.43
460038810	SHEBOYGAN PAINT CO	325510	VOC	0.02	41.30

FID	Facility Name	NAICS	Pollutant	2017 (tposd)	2017 (tons)
460041230	NEMAK USA INC - TAYLOR DRIVE	331314	VOC	0.00	8.88
460041670	Hexion Inc	325211	VOC	0.02	33.37
460106570	AMERICAN EXCELSIOR	326150	VOC	0.00	5.58
460130440	SACO AEI POLYMERS	325991	VOC	0.00	6.61
460141330	NEMAK GATEWAY PLANT	331314	VOC	0.01	10.07
460145840	SAFCO PRODUCTS CO	337211	VOC	0.01	22.62
460147820	KOHLER COMPANY - VITREOUS PLANT	327110	VOC	0.00	0.41
460147930	KOHLER CO-ENGINE PLANT	333618	VOC	0.01	14.62
460169600	FRANZEN GRAPHICS AND SUN GRAPHICS MEDIA	323111	VOC	0.00	7.13
Total			**NOx**	**0.08**	**160.08**
			VOC	**0.16**	**310.44**

[1] Tons per ozone season day (tposd) emissions were calculated by the WDNR AEI using the 3rd quarter operation information.
[2] According to Wisconsin Administrative Code Chapter NR 438.03(a), facilities that emit less than 3 tons of VOC or less than 5 tons of NOx per year are not required to submit annual emission inventory reports. Sources that chose not to report NOx and/or VOC for a certain year are thus listed as "Not Reporting" for that year.

Table A4.2. 2023 and 2024 Point Non-EGU Emissions for the Sheboygan County, WI 2015 Ozone NAAQS Nonattainment Area[1,2]

FID	Facility Name	NAICS	Pollutant	2023 (tposd)	2024 (tposd)	2023 (tons)	2024 (tons)
460008230	GEORGIA PACIFIC CORRUGATED LLC	322211	NOx	0.00	0.00	4.28	4.28
460012740	OLD WISCONSIN SAUSAGE CO PLANT 2	311612	NOx	0.00	0.00	2.62	2.62
460023740	LAKESHORE DISPLAY CO INC	321999	NOx	0.00	0.00	0.17	0.17
460027810	ALDRICH CHEMICAL COMPANY, LLC (dba MilliporeSigma)	325199	NOx	0.00	0.00	9.82	9.82
460029570	NEMSCHOFF CHAIRS INC.	337127	NOx	0.00	0.00	0.37	0.37
460032870	KOHLER CO - METALS PROCESSING COMPLEX	332999	NOx	0.02	0.02	32.77	32.77
460034740	PLASTICS ENGINEERING CO N 15TH ST PLANT	325211	NOx	0.00	0.00	8.43	8.43
460034960	AUSTIN GRAY IRON FOUNDRY	331511	NOx	0.00	0.00	0.26	0.26
460035180	THE VOLLRATH COMPANY LLC	332999	NOx	0.00	0.00	4.60	4.60
460035730	WILLMAN INDUSTRIES	331511	NOx	0.00	0.00	2.58	2.58
460036060	HTT Inc	332119	NOx	0.00	0.00	0.61	0.61
460038700	Discovery Energy LLC	335311	NOx	0.02	0.02	33.19	33.19
460039580	WATRY INDUSTRIES	331524	NOx	0.00	0.00	6.42	6.42
460041230	NEMAK USA INC - TAYLOR DRIVE	331314	NOx	0.00	0.00	8.42	8.42
460041670	Hexion Inc	325211	NOx	0.01	0.01	17.98	17.98
460106570	AMERICAN EXCELSIOR	326150	NOx	0.00	0.00	0.27	0.27
460141330	NEMAK GATEWAY PLANT	331314	NOx	0.01	0.01	18.83	18.83
460147820	KOHLER COMPANY - VITREOUS PLANT	327110	NOx	0.00	0.00	1.58	1.58
460147930	KOHLER CO-ENGINE PLANT	333618	NOx	0.00	0.00	4.44	4.44
460008230	GEORGIA PACIFIC CORRUGATED LLC	322211	VOC	0.00	0.00	2.99	2.99
460012740	OLD WISCONSIN SAUSAGE CO PLANT 2	311612	VOC	0.00	0.00	2.32	2.32
460023740	LAKESHORE DISPLAY CO INC	321999	VOC	0.00	0.00	7.51	7.51
460027810	ALDRICH CHEMICAL COMPANY, LLC (dba MilliporeSigma)	325199	VOC	0.00	0.00	4.10	4.10
460029570	NEMSCHOFF CHAIRS INC.	337127	VOC	0.00	0.00	7.72	7.72
460032870	KOHLER CO - METALS PROCESSING COMPLEX	332999	VOC	0.03	0.03	63.47	63.47
460034740	PLASTICS ENGINEERING CO N 15TH ST PLANT	325211	VOC	0.00	0.00	2.89	2.89
460034960	AUSTIN GRAY IRON FOUNDRY	331511	VOC	0.00	0.00	2.01	2.01
460035180	THE VOLLRATH COMPANY LLC	332999	VOC	0.00	0.00	0.25	0.25
460035730	WILLMAN INDUSTRIES	331511	VOC	0.01	0.01	13.94	13.94
460036060	HTT Inc	332119	VOC	0.00	0.00	3.89	3.89
460038700	Discovery Energy LLC	335311	VOC	0.00	0.00	8.54	8.54
460038810	SHEBOYGAN PAINT CO	325510	VOC	0.01	0.01	27.41	27.41
460039580	WATRY INDUSTRIES	331524	VOC	0.00	0.00	0.18	0.18

FID	Facility Name	NAICS	Pollutant	2023 (tposd)	2024 (tposd)	2023 (tons)	2024 (tons)
460041230	NEMAK USA INC - TAYLOR DRIVE	331314	VOC	0.00	0.00	9.03	9.03
460041670	Hexion Inc	325211	VOC	0.01	0.01	18.88	18.88
460106570	AMERICAN EXCELSIOR	326150	VOC	0.00	0.00	5.63	5.63
460130440	SACO AEI POLYMERS	325991	VOC	0.00	0.00	9.18	9.18
460141330	NEMAK GATEWAY PLANT	331314	VOC	0.01	0.01	11.53	11.53
460147820	KOHLER COMPANY - VITREOUS PLANT	327110	VOC	0.00	0.00	0.48	0.48
460147930	KOHLER CO-ENGINE PLANT	333618	VOC	0.00	0.00	3.49	3.49
Total			**NOx**	**0.08**	**0.08**	**157.61**	**157.61**
			VOC	**0.10**	**0.10**	**205.43**	**205.43**

[1] Tons per ozone season day (tposd) emissions for 2023 were calculated by the WDNR AEI using the 3rd quarter operation information. 2024 emission estimates are based on assuming no growth from 2023 emissions.

[2] According to Wisconsin Administrative Code Chapter NR 438.03(a), facilities that emit less than 3 tons of VOC or less than 5 tons of NOx per year are not required to submit annual emission inventory reports. Sources that chose not to report NOx and/or VOC for a certain year are thus listed as "Not Reporting" for that year.

APPENDIX 5

Area Source Emissions for 2017, 2023 and 2024

This appendix provides a list of the Sheboygan County, WI 2015 ozone NAAQS nonattainment area nonpoint source tons per ozone season day (tposd) emissions by county and source classification code (SCC) for 2017, 2023 and 2024. The sums of NOx and VOC emissions from these nonpoint sources were used for the nonpoint sector NOx and VOC tposd emission estimates found in sections 3.2 (Baseline Year Inventory) and 3.3 (Attainment Year Inventories) of the Wisconsin Department of Natural Resources (WDNR) Attainment Plan for the Sheboygan County, WI 2015 Ozone NAAQS Moderate Nonattainment Area.

fips code	County	Pollutant	SCC	2017 (tposd)	2023 (tposd)	2024 (tposd)
55117	Sheboygan	NOx	2102001000	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	NOx	2102002000	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	NOx	2102004001	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	NOx	2102004002	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	NOx	2102005000	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	NOx	2102006000	3.70E-01	4.82E-02	4.80E-02
55117	Sheboygan	NOx	2102007000	4.13E-03	2.44E-03	2.18E-03
55117	Sheboygan	NOx	2102008000	2.29E-01	2.08E-01	2.02E-01
55117	Sheboygan	NOx	2102011000	1.33E-04	4.59E-05	3.29E-05
55117	Sheboygan	NOx	2103001000	1.38E-05	1.69E-06	1.69E-06
55117	Sheboygan	NOx	2103002000	1.85E-03	2.27E-04	2.27E-04
55117	Sheboygan	NOx	2103004001	8.14E-04	9.85E-04	1.02E-03
55117	Sheboygan	NOx	2103004002	1.29E-03	1.57E-03	1.62E-03
55117	Sheboygan	NOx	2103005000	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	NOx	2103006000	1.25E-01	1.20E-01	1.21E-01
55117	Sheboygan	NOx	2103007000	6.64E-03	1.48E-02	1.62E-02
55117	Sheboygan	NOx	2103008000	7.80E-03	1.32E-02	1.40E-02
55117	Sheboygan	NOx	2103011000	6.07E-05	1.76E-05	1.16E-05
55117	Sheboygan	NOx	2104001000	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	NOx	2104002000	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	NOx	2104004000	7.39E-03	7.76E-03	7.90E-03
55117	Sheboygan	NOx	2104006000	2.27E-01	2.59E-01	2.64E-01
55117	Sheboygan	NOx	2104007000	2.18E-02	6.70E-02	7.37E-02
55117	Sheboygan	NOx	2104008100	4.79E-03	8.92E-03	9.48E-03
55117	Sheboygan	NOx	2104008210	2.92E-04	5.43E-04	5.78E-04
55117	Sheboygan	NOx	2104008220	7.76E-04	1.45E-03	1.54E-03
55117	Sheboygan	NOx	2104008230	4.53E-04	1.18E-03	1.28E-03
55117	Sheboygan	NOx	2104008310	2.13E-03	3.96E-03	4.21E-03
55117	Sheboygan	NOx	2104008320	5.66E-03	1.05E-02	1.12E-02
55117	Sheboygan	NOx	2104008330	3.30E-03	8.61E-03	9.35E-03
55117	Sheboygan	NOx	2104008400	2.93E-03	4.67E-03	4.91E-03
55117	Sheboygan	NOx	2104008510	2.04E-03	4.14E-03	4.43E-03
55117	Sheboygan	NOx	2104008530	4.31E-03	6.20E-04	6.19E-04

fips code	County	Pollutant	SCC	2017 (tposd)	2023 (tposd)	2024 (tposd)
55117	Sheboygan	NOx	2104008610	2.21E-03	4.48E-03	4.79E-03
55117	Sheboygan	NOx	2104008620	1.41E-03	2.86E-03	3.06E-03
55117	Sheboygan	NOx	2104008630	1.16E-04	2.36E-04	2.53E-04
55117	Sheboygan	NOx	2104008700	4.86E-03	5.82E-03	5.94E-03
55117	Sheboygan	NOx	2104009000	1.57E-04	1.53E-04	1.51E-04
55117	Sheboygan	NOx	2104011000	1.40E-04	8.30E-05	7.33E-05
55117	Sheboygan	NOx	2280002201	4.41E-02	0.00E+00	0.00E+00
55117	Sheboygan	NOx	2280002202	1.29E-02	0.00E+00	0.00E+00
55117	Sheboygan	NOx	2280002203	7.53E-02	0.00E+00	0.00E+00
55117	Sheboygan	NOx	2280002204	7.56E-03	0.00E+00	0.00E+00
55117	Sheboygan	NOx	2285002006	1.11E-02	5.15E-03	4.30E-03
55117	Sheboygan	NOx	2285002007	2.72E-02	2.62E-02	2.61E-02
55117	Sheboygan	NOx	2610000100	3.12E-04	3.09E-04	3.07E-04
55117	Sheboygan	NOx	2610000400	3.12E-04	2.30E-04	2.18E-04
55117	Sheboygan	NOx	2610000500	1.14E-02	1.24E-02	1.26E-02
55117	Sheboygan	NOx	2610030000	1.58E-02	1.57E-02	1.56E-02
55117	Sheboygan	NOx	2801500000	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	NOx	2810001002	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	NOx	2810025000	1.25E-03	1.20E-03	1.19E-03
55117	Sheboygan	NOx	2810060100	1.57E-04	2.28E-04	2.38E-04
55117	Sheboygan	NOx	2810060200	3.30E-08	3.26E-08	3.25E-08
55117	Sheboygan	NOx	2811015002	4.44E-03	0.00E+00	0.00E+00
55117	Sheboygan	NOx	2811020002	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2102001000	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2102002000	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2102004001	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2102004002	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2102005000	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2102006000	2.03E-02	2.65E-03	2.64E-03
55117	Sheboygan	VOC	2102007000	1.51E-04	8.92E-05	7.97E-05
55117	Sheboygan	VOC	2102008000	1.77E-02	1.60E-02	1.56E-02
55117	Sheboygan	VOC	2102011000	1.31E-06	4.52E-07	3.24E-07
55117	Sheboygan	VOC	2103001000	4.59E-07	5.63E-08	5.62E-08
55117	Sheboygan	VOC	2103002000	8.43E-06	1.03E-06	1.03E-06
55117	Sheboygan	VOC	2103004001	1.38E-05	1.67E-05	1.73E-05
55117	Sheboygan	VOC	2103004002	9.00E-05	1.09E-04	1.13E-04
55117	Sheboygan	VOC	2103005000	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2103006000	6.90E-03	6.61E-03	6.63E-03
55117	Sheboygan	VOC	2103007000	2.43E-04	5.43E-04	5.91E-04
55117	Sheboygan	VOC	2103008000	6.03E-04	1.02E-03	1.08E-03

fips code	County	Pollutant	SCC	2017 (tposd)	2023 (tposd)	2024 (tposd)
55117	Sheboygan	VOC	2103011000	1.03E-06	3.00E-07	1.97E-07
55117	Sheboygan	VOC	2104001000	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2104002000	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2104004000	2.93E-04	3.08E-04	3.13E-04
55117	Sheboygan	VOC	2104006000	1.33E-02	1.51E-02	1.54E-02
55117	Sheboygan	VOC	2104007000	8.48E-04	2.61E-03	2.87E-03
55117	Sheboygan	VOC	2104008100	3.48E-02	6.48E-02	6.89E-02
55117	Sheboygan	VOC	2104008210	5.52E-03	1.03E-02	1.09E-02
55117	Sheboygan	VOC	2104008220	4.08E-03	1.07E-02	1.17E-02
55117	Sheboygan	VOC	2104008230	3.39E-03	8.85E-03	9.61E-03
55117	Sheboygan	VOC	2104008310	4.03E-02	7.50E-02	7.98E-02
55117	Sheboygan	VOC	2104008320	2.98E-02	7.83E-02	8.50E-02
55117	Sheboygan	VOC	2104008330	2.48E-02	6.46E-02	7.01E-02
55117	Sheboygan	VOC	2104008400	1.69E-03	2.70E-03	2.84E-03
55117	Sheboygan	VOC	2104008510	1.33E-02	2.69E-02	2.88E-02
55117	Sheboygan	VOC	2104008530	2.49E-03	3.59E-04	3.58E-04
55117	Sheboygan	VOC	2104008610	7.44E-02	1.51E-01	1.62E-01
55117	Sheboygan	VOC	2104008620	4.75E-02	9.65E-02	1.03E-01
55117	Sheboygan	VOC	2104008630	6.74E-05	1.37E-04	1.46E-04
55117	Sheboygan	VOC	2104008700	3.53E-02	4.23E-02	4.32E-02
55117	Sheboygan	VOC	2104009000	8.10E-04	7.87E-04	7.79E-04
55117	Sheboygan	VOC	2104011000	5.44E-06	3.23E-06	2.85E-06
55118	Sheboygan	VOC	2201000062	1.26E-01	9.35E-02	9.51E-02
55117	Sheboygan	VOC	2280002201	1.31E-03	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2280002202	3.76E-04	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2280002203	3.26E-03	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2280002204	3.25E-04	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2285002006	5.10E-04	1.87E-04	1.40E-04
55117	Sheboygan	VOC	2285002007	1.26E-03	1.26E-03	1.26E-03
55117	Sheboygan	VOC	2302002100	2.18E-03	2.57E-03	2.62E-03
55117	Sheboygan	VOC	2302002200	5.73E-03	7.91E-03	8.20E-03
55117	Sheboygan	VOC	2302003000	1.41E-03	1.55E-03	1.57E-03
55117	Sheboygan	VOC	2302003100	7.72E-04	1.03E-03	1.07E-03
55117	Sheboygan	VOC	2302003200	4.70E-05	5.88E-05	6.04E-05
55117	Sheboygan	VOC	2401001000	2.19E-01	1.30E-01	1.17E-01
55117	Sheboygan	VOC	2401005000	5.08E-02	1.19E-02	6.15E-03
55117	Sheboygan	VOC	2401008000	3.74E-02	2.19E-02	1.96E-02
55117	Sheboygan	VOC	2401015000	1.03E-02	2.03E-03	2.03E-03
55117	Sheboygan	VOC	2401020000	1.83E-01	1.60E-02	1.59E-02
55117	Sheboygan	VOC	2401025000	7.98E-02	7.49E-02	7.28E-02

fips code	County	Pollutant	SCC	2017 (tposd)	2023 (tposd)	2024 (tposd)
55117	Sheboygan	VOC	2401055000	9.71E-03	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2401070000	7.15E-03	1.25E-03	1.25E-03
55117	Sheboygan	VOC	2401090000	3.92E-02	1.98E-02	1.65E-02
55117	Sheboygan	VOC	2401100000	3.38E-02	4.51E-02	4.68E-02
55117	Sheboygan	VOC	2401200000	5.45E-04	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2415000000	2.41E-01	4.01E-02	4.00E-02
55117	Sheboygan	VOC	2420000000	3.28E-04	1.97E-04	1.77E-04
55117	Sheboygan	VOC	2425000000	2.11E-01	1.87E-01	1.82E-01
55117	Sheboygan	VOC	2460030999	3.70E-03	3.72E-03	3.71E-03
55117	Sheboygan	VOC	2460100000	2.72E-01	2.56E-01	2.53E-01
55117	Sheboygan	VOC	2460200000	2.39E-01	1.60E-01	1.47E-01
55117	Sheboygan	VOC	2460400000	3.12E-02	2.26E-02	2.11E-02
55117	Sheboygan	VOC	2460500000	2.85E-01	2.44E-01	2.36E-01
55117	Sheboygan	VOC	2460600000	1.22E-01	2.14E-01	2.29E-01
55117	Sheboygan	VOC	2460800000	4.99E-03	9.87E-03	1.07E-02
55117	Sheboygan	VOC	2460900000	3.70E-03	3.72E-03	3.71E-03
55117	Sheboygan	VOC	2461021000	2.11E-01	2.12E-01	2.12E-01
55117	Sheboygan	VOC	2461022000	2.57E-01	2.58E-01	2.58E-01
55117	Sheboygan	VOC	2461025100	7.57E-02	7.61E-02	7.59E-02
55117	Sheboygan	VOC	2461025200	6.81E-03	6.84E-03	6.83E-03
55117	Sheboygan	VOC	2461850000	6.33E-02	5.57E-02	5.48E-02
55117	Sheboygan	VOC	2501011011	4.80E-03	2.45E-03	2.10E-03
55117	Sheboygan	VOC	2501011012	5.39E-03	2.75E-03	2.36E-03
55117	Sheboygan	VOC	2501011013	6.87E-03	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2501011014	1.00E-03	5.12E-04	4.38E-04
55117	Sheboygan	VOC	2501011015	1.90E-04	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2501012011	2.10E-04	1.90E-04	1.87E-04
55117	Sheboygan	VOC	2501012012	1.72E-04	1.56E-04	1.53E-04
55117	Sheboygan	VOC	2501012013	9.37E-03	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2501012014	2.89E-03	2.62E-03	2.57E-03
55117	Sheboygan	VOC	2501012015	3.65E-04	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2501050120	9.00E-02	2.64E-02	1.71E-02
55117	Sheboygan	VOC	2501055120	5.18E-05	4.97E-05	4.95E-05
55117	Sheboygan	VOC	2501060051	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2501060052	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2501060053	3.57E-02	2.75E-02	2.64E-02
55117	Sheboygan	VOC	2501060201	4.08E-02	2.78E-02	2.59E-02
55117	Sheboygan	VOC	2501080050	3.44E-02	4.40E-02	4.56E-02
55117	Sheboygan	VOC	2501080100	4.94E-05	6.03E-05	6.22E-05
55117	Sheboygan	VOC	2505030120	2.67E-03	1.82E-03	1.69E-03

fips code	County	Pollutant	SCC	2017 (tposd)	2023 (tposd)	2024 (tposd)
55117	Sheboygan	VOC	2505040120	5.34E-02	4.92E-02	4.87E-02
55117	Sheboygan	VOC	2610000100	1.41E-03	1.39E-03	1.39E-03
55117	Sheboygan	VOC	2610000400	1.41E-03	8.07E-04	7.15E-04
55117	Sheboygan	VOC	2610000500	3.22E-02	3.51E-02	3.55E-02
55117	Sheboygan	VOC	2610030000	1.65E-02	1.63E-02	1.63E-02
55117	Sheboygan	VOC	2630020000	0.00E+00	4.10E-03	4.69E-03
55117	Sheboygan	VOC	2680003000	3.69E-02	3.38E-02	3.32E-02
55117	Sheboygan	VOC	2801500000	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2802004001	5.47E-01	5.50E-01	5.48E-01
55117	Sheboygan	VOC	2802004002	4.10E-02	4.12E-02	4.11E-02
55117	Sheboygan	VOC	2802004003	3.99E-01	4.01E-01	4.00E-01
55117	Sheboygan	VOC	2805002000	5.20E-03	7.50E-02	8.84E-02
55117	Sheboygan	VOC	2805007100	8.62E-05	2.53E-03	2.89E-03
55117	Sheboygan	VOC	2805009100	5.68E-05	1.07E-05	1.07E-05
55117	Sheboygan	VOC	2805010100	6.43E-05	2.08E-06	2.07E-06
55117	Sheboygan	VOC	2805018000	9.55E-02	5.93E-02	5.14E-02
55117	Sheboygan	VOC	2805025000	9.59E-04	4.21E-04	2.72E-04
55117	Sheboygan	VOC	2805035000	2.67E-03	1.29E-03	1.10E-03
55117	Sheboygan	VOC	2805040000	6.71E-04	2.48E-04	1.80E-04
55117	Sheboygan	VOC	2805045000	5.36E-04	9.84E-05	3.55E-05
55117	Sheboygan	VOC	2810001002	0.00E+00	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2810025000	3.32E-03	3.26E-03	3.25E-03
55117	Sheboygan	VOC	2810060100	1.32E-05	1.91E-05	2.00E-05
55117	Sheboygan	VOC	2810060200	2.77E-09	2.74E-09	2.73E-09
55117	Sheboygan	VOC	2811015002	3.59E-02	0.00E+00	0.00E+00
55117	Sheboygan	VOC	2811020002	0.00E+00	0.00E+00	0.00E+00
TOTAL			**NOx**	**1.25**	**0.86**	**0.87**
			VOC	**4.73**	**4.27**	**4.27**

APPENDIX 6

Nonroad Emissions for 2017, 2023 and 2024

This appendix provides detailed listings of the estimated nonroad emissions for over 200 subcategories for Sheboygan County as well as the portion of the county comprising the Sheboygan County, WI 2015 ozone NAAQS nonattainment area. These estimated emissions are provided for nitrogen oxides (NOx) and volatile organic compounds (VOC) for the years 2017, 2023 and 2024. The sums of NOx and VOC emissions within the nonattainment area were used for the nonroad sector NOx and VOC tons per ozone season day (tposd) emission estimates in Section 3 of the Wisconsin Department of Natural Resources (WDNR) Attainment Plan for the Sheboygan County, WI 2015 Ozone NAAQS Moderate Nonattainment Area.

These inventories are based on three primary sources of data:

MOVES model estimates[1]
EPA's MOVES4.0.1 model was used for most source categories, with exceptions listed below.

EPA's 2017 National Emissions Inventory (NEI)[2]
Emissions for year 2017 for commercial marine, aircraft and rail locomotive were derived from EPA's 2017 NEI.

EPA's 2022 Emissions Modeling Platform: version 1[3]
Emissions for years 2023 and 2024 for commercial marine, aircraft and rail locomotive were developed from the base year 2022 emissions in the 2022 platform, version 1.

[1] https://www.epa.gov/moves/latest-version-motor-vehicle-emission-simulator-moves.
[2] https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data
[3] 2022v1 webpage

Table A6.1. 2017 Nonroad NOx and VOC Emissions: tons per ozone season day (tposd)
Sheboygan County and the Sheboygan County 2015 Ozone NAAQS Nonattainment Area (NAA)

SCC	Segment Description	SCC Description	Emis-sions from	Sheboygan Co. 2017 Emissions		% in NAA		Allocate by	Sheb. Co. NAA 2017 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2260001010	Recreational	2-Stroke Motorcycles: Off-Road	MOVES	0.0016	0.1558	17.0%	17.0%	land area	0.0003	0.0265
2260001020	Recreational	Snowmobiles	MOVES	0.0000	0.0252	17.0%	17.0%	land area	0.0000	0.0043
2260001030	Recreational	2-Stroke All Terrain Vehicles	MOVES	0.0008	0.0422	17.0%	17.0%	land area	0.0001	0.0072
2260001060	Recreational	2-Stroke Specialty Vehicle Carts	MOVES	0.0006	0.0032	17.0%	17.0%	land area	0.0001	0.0005
2260002006	Construction	2-Stroke Tampers/Rammers	MOVES	0.0002	0.0063	59.0%	59.0%	population	0.0001	0.0037
2260002009	Construction	2-Stroke Plate Compactors	MOVES	0.0000	0.0002	59.0%	59.0%	population	0.0000	0.0001
2260002021	Construction	2-Stroke Paving Equipment	MOVES	0.0000	0.0003	59.0%	59.0%	population	0.0000	0.0002
2260002027	Construction	2-Stroke Signal Boards	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2260002039	Construction	2-Stroke Concrete/Industrial Saws	MOVES	0.0004	0.0159	59.0%	59.0%	population	0.0002	0.0094
2260002054	Construction	2-Stroke Crushing/Proc. Equipment	MOVES	0.0000	0.0001	59.0%	59.0%	population	0.0000	0.0000
2260003030	Industrial	2-Stroke Sweepers/Scrubbers	MOVES	0.0000	0.0006	59.0%	59.0%	population	0.0000	0.0003
2260003040	Industrial	2-Stroke Other General Industrial Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2260004015	Lawn/Garden	2-Stroke Rotary Tillers < 6 HP (Residential)	MOVES	0.0000	0.0012	59.0%	59.0%	population	0.0000	0.0007
2260004016	Lawn/Garden	2-Stroke Rotary Tillers < 6 HP (Commercial)	MOVES	0.0001	0.0031	59.0%	59.0%	population	0.0001	0.0018
2260004020	Lawn/Garden	2-Stroke Chain Saws < 6 HP (Residential)	MOVES	0.0003	0.0108	59.0%	59.0%	population	0.0002	0.0064
2260004021	Lawn/Garden	2-Stroke Chain Saws < 6 HP (Commercial)	MOVES	0.0008	0.0349	59.0%	59.0%	population	0.0005	0.0206
2260004025	Lawn/Garden	2-Stroke Trimmers/Edgers/Brush Cutters (Res.)	MOVES	0.0009	0.0230	59.0%	59.0%	population	0.0005	0.0135
2260004026	Lawn/Garden	2-Stroke Trimmers/Edgers/Brush Cutters (Com.)	MOVES	0.0014	0.0351	59.0%	59.0%	population	0.0008	0.0207
2260004030	Lawn/Garden	2-Stroke Leafblowers/Vacuums (Residential)	MOVES	0.0005	0.0161	59.0%	59.0%	population	0.0003	0.0095
2260004031	Lawn/Garden	2-Stroke Leafblowers/Vacuums (Commercial)	MOVES	0.0013	0.0352	59.0%	59.0%	population	0.0007	0.0208
2260004035	Lawn/Garden	2-Stroke Snowblowers (Residential)	MOVES	0.0000	0.0017	59.0%	59.0%	population	0.0000	0.0010
2260004036	Lawn/Garden	2-Stroke Snowblowers (Commercial)	MOVES	0.0000	0.0001	59.0%	59.0%	population	0.0000	0.0001
2260004071	Lawn/Garden	2-Stroke Commercial Turf Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2260005035	Agriculture	2-Stroke Sprayers	MOVES	0.0000	0.0003	17.0%	17.0%	land area	0.0000	0.0001
2260006005	Commercial	2-Stroke Light Commercial Generator Set	MOVES	0.0000	0.0009	59.0%	59.0%	population	0.0000	0.0005
2260006010	Commercial	2-Stroke Light Commercial Pumps	MOVES	0.0002	0.0062	59.0%	59.0%	population	0.0001	0.0037
2260006015	Commercial	2-Stroke Light Commercial Air Compressors	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2260006035	Commercial	2-Stroke Hydro Power Units	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2260007005	Logging	2-Stroke Logging Equipment Chain Saws > 6 HP	MOVES	0.0000	0.0003	17.0%	17.0%	land area	0.0000	0.0000
2265001010	Recreational	4-Stroke Motorcycles: Off-Road	MOVES	0.0009	0.0080	17.0%	17.0%	land area	0.0002	0.0014
2265001030	Recreational	4-Stroke All Terrain Vehicles	MOVES	0.0069	0.0834	17.0%	17.0%	land area	0.0012	0.0142
2265001050	Recreational	4-Stroke Golf Carts	MOVES	0.0079	0.0281	17.0%	17.0%	land area	0.0013	0.0048
2265001060	Recreational	4-Stroke Specialty Vehicle Carts	MOVES	0.0009	0.0034	17.0%	17.0%	land area	0.0001	0.0006
2265002003	Construction	4-Stroke Asphalt Pavers	MOVES	0.0001	0.0003	59.0%	59.0%	population	0.0001	0.0002
2265002006	Construction	4-Stroke Tampers/Rammers	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2265002009	Construction	4-Stroke Plate Compactors	MOVES	0.0002	0.0008	59.0%	59.0%	population	0.0001	0.0005

SCC	Segment Description	SCC Description	Emis-sions from	Sheboygan Co. 2017 Emissions		% in NAA		Allocate by	Sheb. Co. NAA 2017 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2265002015	Construction	4-Stroke Rollers	MOVES	0.0002	0.0006	59.0%	59.0%	population	0.0001	0.0003
2265002021	Construction	4-Stroke Paving Equipment	MOVES	0.0004	0.0018	59.0%	59.0%	population	0.0002	0.0010
2265002024	Construction	4-Stroke Surfacing Equipment	MOVES	0.0002	0.0006	59.0%	59.0%	population	0.0001	0.0004
2265002027	Construction	4-Stroke Signal Boards	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2265002030	Construction	4-Stroke Trenchers	MOVES	0.0004	0.0011	59.0%	59.0%	population	0.0002	0.0006
2265002033	Construction	4-Stroke Bore/Drill Rigs	MOVES	0.0002	0.0006	59.0%	59.0%	population	0.0001	0.0004
2265002039	Construction	4-Stroke Concrete/Industrial Saws	MOVES	0.0007	0.0023	59.0%	59.0%	population	0.0004	0.0013
2265002042	Construction	4-Stroke Cement & Mortar Mixers	MOVES	0.0004	0.0025	59.0%	59.0%	population	0.0002	0.0015
2265002045	Construction	4-Stroke Cranes	MOVES	0.0001	0.0001	59.0%	59.0%	population	0.0000	0.0000
2265002054	Construction	4-Stroke Crushing/Proc. Equipment	MOVES	0.0001	0.0002	59.0%	59.0%	population	0.0000	0.0001
2265002057	Construction	4-Stroke Rough Terrain Forklifts	MOVES	0.0001	0.0001	59.0%	59.0%	population	0.0000	0.0000
2265002060	Construction	4-Stroke Rubber Tire Loaders	MOVES	0.0001	0.0001	59.0%	59.0%	population	0.0001	0.0000
2265002066	Construction	4-Stroke Tractors/Loaders/Backhoes	MOVES	0.0002	0.0007	59.0%	59.0%	population	0.0001	0.0004
2265002072	Construction	4-Stroke Skid Steer Loaders	MOVES	0.0003	0.0005	59.0%	59.0%	population	0.0002	0.0003
2265002078	Construction	4-Stroke Dumpers/Tenders	MOVES	0.0001	0.0004	59.0%	59.0%	population	0.0000	0.0002
2265002081	Construction	4-Stroke Other Construction Equipment	MOVES	0.0001	0.0001	59.0%	59.0%	population	0.0001	0.0001
2265003010	Industrial	4-Stroke Aerial Lifts	MOVES	0.0039	0.0056	59.0%	59.0%	population	0.0023	0.0033
2265003020	Industrial	4-Stroke Forklifts	MOVES	0.0070	0.0051	59.0%	59.0%	population	0.0041	0.0030
2265003030	Industrial	4-Stroke Sweepers/Scrubbers	MOVES	0.0015	0.0032	59.0%	59.0%	population	0.0009	0.0019
2265003040	Industrial	4-Stroke Other General Industrial Equipment	MOVES	0.0030	0.0118	59.0%	59.0%	population	0.0018	0.0070
2265003050	Industrial	4-Stroke Other Material Handling Equipment	MOVES	0.0002	0.0004	59.0%	59.0%	population	0.0001	0.0002
2265003060	Industrial	4-Stroke Industrial AC/Refrigeration	MOVES	0.0000	0.0001	59.0%	59.0%	population	0.0000	0.0000
2265003070	Industrial	4-Stroke Terminal Tractors	MOVES	0.0005	0.0004	59.0%	59.0%	population	0.0003	0.0002
2265004010	Lawn/Garden	4-Stroke Lawn mowers (Residential)	MOVES	0.0060	0.0604	59.0%	59.0%	population	0.0036	0.0357
2265004011	Lawn/Garden	4-Stroke Lawn mowers (Commercial)	MOVES	0.0029	0.0186	59.0%	59.0%	population	0.0017	0.0110
2265004015	Lawn/Garden	4-Stroke Rotary Tillers < 6 HP (Residential)	MOVES	0.0005	0.0052	59.0%	59.0%	population	0.0003	0.0031
2265004016	Lawn/Garden	4-Stroke Rotary Tillers < 6 HP (Commercial)	MOVES	0.0016	0.0114	59.0%	59.0%	population	0.0009	0.0068
2265004025	Lawn/Garden	4-Stroke Trimmers/Edgers/Brush Cutters (Res.)	MOVES	0.0000	0.0004	59.0%	59.0%	population	0.0000	0.0002
2265004026	Lawn/Garden	4-Stroke Trimmers/Edgers/Brush Cutters (Com.)	MOVES	0.0001	0.0005	59.0%	59.0%	population	0.0000	0.0003
2265004030	Lawn/Garden	4-Stroke Leafblowers/Vacuums (Residential)	MOVES	0.0001	0.0006	59.0%	59.0%	population	0.0000	0.0003
2265004031	Lawn/Garden	4-Stroke Leafblowers/Vacuums (Commercial)	MOVES	0.0031	0.0118	59.0%	59.0%	population	0.0018	0.0070
2265004035	Lawn/Garden	4-Stroke Snowblowers (Residential)	MOVES	0.0000	0.0040	59.0%	59.0%	population	0.0000	0.0024
2265004036	Lawn/Garden	4-Stroke Snowblowers (Commercial)	MOVES	0.0000	0.0004	59.0%	59.0%	population	0.0000	0.0002
2265004040	Lawn/Garden	4-Stroke Rear Engine Riding Mowers (Res.)	MOVES	0.0013	0.0097	59.0%	59.0%	population	0.0007	0.0057
2265004041	Lawn/Garden	4-Stroke Rear Engine Riding Mowers (Comm.)	MOVES	0.0003	0.0012	59.0%	59.0%	population	0.0002	0.0007
2265004046	Lawn/Garden	4-Stroke Front Mowers (Commercial)	MOVES	0.0005	0.0019	59.0%	59.0%	population	0.0003	0.0011
2265004051	Lawn/Garden	4-Stroke Shredders < 6 HP (Commercial)	MOVES	0.0002	0.0014	59.0%	59.0%	population	0.0001	0.0008
2265004055	Lawn/Garden	4-Stroke Lawn & Garden Tractors (Residential)	MOVES	0.0170	0.0945	59.0%	59.0%	population	0.0100	0.0558
2265004056	Lawn/Garden	4-Stroke Lawn & Garden Tractors (Commercial)	MOVES	0.0044	0.0154	59.0%	59.0%	population	0.0026	0.0091
2265004066	Lawn/Garden	4-Stroke Chippers/Stump Grinders (Comm.)	MOVES	0.0007	0.0017	59.0%	59.0%	population	0.0004	0.0010

SCC	Segment Description	SCC Description	Emissions from	Sheboygan Co. 2017 Emissions		% in NAA		Allocate by	Sheb. Co. NAA 2017 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2265004071	Lawn/Garden	4-Stroke Commercial Turf Equipment (Comm.)	MOVES	0.0142	0.0462	59.0%	59.0%	population	0.0084	0.0273
2265004075	Lawn/Garden	4-Stroke Other Lawn & Garden Equip. (Res.)	MOVES	0.0007	0.0050	59.0%	59.0%	population	0.0004	0.0029
2265004076	Lawn/Garden	4-Stroke Other Lawn & Garden Equip. (Com.)	MOVES	0.0006	0.0039	59.0%	59.0%	population	0.0003	0.0023
2265005010	Agriculture	4-Stroke 2-Wheel Tractors	MOVES	0.0000	0.0001	17.0%	17.0%	land area	0.0000	0.0000
2265005015	Agriculture	4-Stroke Agricultural Tractors	MOVES	0.0001	0.0001	17.0%	17.0%	land area	0.0000	0.0000
2265005020	Agriculture	4-Stroke Combines	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2265005025	Agriculture	4-Stroke Balers	MOVES	0.0007	0.0014	17.0%	17.0%	land area	0.0001	0.0002
2265005030	Agriculture	4-Stroke Agricultural Mowers	MOVES	0.0000	0.0001	17.0%	17.0%	land area	0.0000	0.0000
2265005035	Agriculture	4-Stroke Sprayers	MOVES	0.0009	0.0023	17.0%	17.0%	land area	0.0001	0.0004
2265005040	Agriculture	4-Stroke Tillers > 5 HP	MOVES	0.0014	0.0077	17.0%	17.0%	land area	0.0002	0.0013
2265005045	Agriculture	4-Stroke Swathers	MOVES	0.0011	0.0017	17.0%	17.0%	land area	0.0002	0.0003
2265005055	Agriculture	4-Stroke Other Agricultural Equipment	MOVES	0.0013	0.0014	17.0%	17.0%	land area	0.0002	0.0002
2265005060	Agriculture	4-Stroke Irrigation Sets	MOVES	0.0001	0.0001	17.0%	17.0%	land area	0.0000	0.0000
2265006005	Commercial	4-Stroke Light Commercial Generator Set	MOVES	0.0055	0.0331	59.0%	59.0%	population	0.0032	0.0195
2265006010	Commercial	4-Stroke Light Commercial Pumps	MOVES	0.0014	0.0059	59.0%	59.0%	population	0.0008	0.0035
2265006015	Commercial	4-Stroke Light Commercial Air Compressors	MOVES	0.0007	0.0023	59.0%	59.0%	population	0.0004	0.0014
2265006025	Commercial	4-Stroke Light Commercial Welders	MOVES	0.0015	0.0051	59.0%	59.0%	population	0.0009	0.0030
2265006030	Commercial	4-Stroke Light Commercial Pressure Wash	MOVES	0.0022	0.0120	59.0%	59.0%	population	0.0013	0.0071
2265006035	Commercial	4-Stroke Hydro Power Units	MOVES	0.0001	0.0004	59.0%	59.0%	population	0.0001	0.0002
2265007010	Logging	4-Stroke Logging Equipment Shredders > 6 HP	MOVES	0.0000	0.0001	17.0%	17.0%	land area	0.0000	0.0000
2265007015	Logging	4-Stroke Logging Equipment Skidders	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2267001060	Recreational	LPG Specialty Vehicle Carts	MOVES	0.0002	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2267002003	Construction	LPG Asphalt Pavers	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002015	Construction	LPG Rollers	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002021	Construction	LPG Paving Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002024	Construction	LPG Surfacing Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002030	Construction	LPG Trenchers	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0001	0.0000
2267002033	Construction	LPG Bore/Drill Rigs	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0001	0.0000
2267002039	Construction	LPG Concrete/Industrial Saws	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002045	Construction	LPG Cranes	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002054	Construction	LPG Crushing/Proc. Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002057	Construction	LPG Rough Terrain Forklifts	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002060	Construction	LPG Rubber Tire Loaders	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0001	0.0000
2267002066	Construction	LPG Tractors/Loaders/Backhoes	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002072	Construction	LPG Skid Steer Loaders	MOVES	0.0003	0.0001	59.0%	59.0%	population	0.0002	0.0000
2267002081	Construction	LPG Other Construction Equipment	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0001	0.0000
2267003010	Industrial	LPG Aerial Lifts	MOVES	0.0035	0.0007	59.0%	59.0%	population	0.0021	0.0004
2267003020	Industrial	LPG Forklifts	MOVES	0.1129	0.0167	59.0%	59.0%	population	0.0666	0.0099
2267003030	Industrial	LPG Sweepers/Scrubbers	MOVES	0.0008	0.0001	59.0%	59.0%	population	0.0005	0.0001
2267003040	Industrial	LPG Other General Industrial Equipment	MOVES	0.0002	0.0000	59.0%	59.0%	population	0.0001	0.0000

SCC	Segment Description	SCC Description	Emis-sions from	Sheboygan Co. 2017 Emissions		% in NAA		Allocate by	Sheb. Co. NAA 2017 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2267003050	Industrial	LPG Other Material Handling Equipment	MOVES	0.0002	0.0000	59.0%	59.0%	population	0.0001	0.0000
2267003070	Industrial	LPG Terminal Tractors	MOVES	0.0004	0.0001	59.0%	59.0%	population	0.0003	0.0000
2267004066	Lawn/Garden	LPG Chippers/Stump Grinders (Commercial)	MOVES	0.0003	0.0000	59.0%	59.0%	population	0.0002	0.0000
2267005055	Agriculture	LPG Other Agricultural Equipment	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2267005060	Agriculture	LPG Irrigation Sets	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2267006005	Commercial	LPG Light Commercial Generator Sets	MOVES	0.0027	0.0005	59.0%	59.0%	population	0.0016	0.0003
2267006010	Commercial	LPG Light Commercial Pumps	MOVES	0.0003	0.0001	59.0%	59.0%	population	0.0002	0.0000
2267006015	Commercial	LPG Light Commercial Air Compressors	MOVES	0.0002	0.0000	59.0%	59.0%	population	0.0001	0.0000
2267006025	Commercial	LPG Light Commercial Welders	MOVES	0.0003	0.0001	59.0%	59.0%	population	0.0002	0.0000
2267006030	Commercial	LPG Light Commercial Pressure Washers	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267006035	Commercial	LPG Hydro Power Units	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268002081	Construction	CNG Other Construction Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268003020	Industrial	CNG Forklifts	MOVES	0.0091	0.0048	59.0%	59.0%	population	0.0054	0.0028
2268003030	Industrial	CNG Sweepers/Scrubbers	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268003040	Industrial	CNG Other General Industrial Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268003060	Industrial	CNG AC/Refrigeration	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268003070	Industrial	CNG Terminal Tractors	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268005055	Agriculture	CNG Other Agricultural Equipment	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2268005060	Agriculture	CNG Irrigation Sets	MOVES	0.0003	0.0001	17.0%	17.0%	land area	0.0000	0.0000
2268006005	Commercial	CNG Light Commercial Generator Sets	MOVES	0.0011	0.0006	59.0%	59.0%	population	0.0006	0.0004
2268006010	Commercial	CNG Light Commercial Pumps	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268006015	Commercial	CNG Light Commercial Air Compressors	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268006020	Commercial	CNG Light Commercial Gas Compressors	MOVES	0.0005	0.0002	59.0%	59.0%	population	0.0003	0.0001
2270001060	Recreational	Diesel Specialty Vehicle Carts	MOVES	0.0022	0.0005	17.0%	17.0%	land area	0.0004	0.0001
2270002003	Construction	Diesel Pavers	MOVES	0.0047	0.0003	59.0%	59.0%	population	0.0028	0.0002
2270002006	Construction	Diesel Tampers/Rammers (unused)	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2270002009	Construction	Diesel Plate Compactors	MOVES	0.0003	0.0000	59.0%	59.0%	population	0.0002	0.0000
2270002015	Construction	Diesel Rollers	MOVES	0.0133	0.0008	59.0%	59.0%	population	0.0078	0.0005
2270002018	Construction	Diesel Scrapers	MOVES	0.0119	0.0006	59.0%	59.0%	population	0.0070	0.0004
2270002021	Construction	Diesel Paving Equipment	MOVES	0.0009	0.0001	59.0%	59.0%	population	0.0005	0.0000
2270002024	Construction	Diesel Surfacing Equipment	MOVES	0.0008	0.0001	59.0%	59.0%	population	0.0005	0.0000
2270002027	Construction	Diesel Signal Boards	MOVES	0.0025	0.0002	59.0%	59.0%	population	0.0015	0.0001
2270002030	Construction	Diesel Trenchers	MOVES	0.0088	0.0007	59.0%	59.0%	population	0.0052	0.0004
2270002033	Construction	Diesel Bore/Drill Rigs	MOVES	0.0120	0.0009	59.0%	59.0%	population	0.0071	0.0005
2270002036	Construction	Diesel Excavators	MOVES	0.0393	0.0020	59.0%	59.0%	population	0.0232	0.0012
2270002039	Construction	Diesel Concrete/Industrial Saws	MOVES	0.0006	0.0001	59.0%	59.0%	population	0.0004	0.0000
2270002042	Construction	Diesel Cement & Mortar Mixers	MOVES	0.0005	0.0001	59.0%	59.0%	population	0.0003	0.0000
2270002045	Construction	Diesel Cranes	MOVES	0.0133	0.0007	59.0%	59.0%	population	0.0078	0.0004
2270002048	Construction	Diesel Graders	MOVES	0.0091	0.0005	59.0%	59.0%	population	0.0054	0.0003
2270002051	Construction	Diesel Off-highway Trucks	MOVES	0.0481	0.0020	59.0%	59.0%	population	0.0284	0.0012

SCC	Segment Description	SCC Description	Emis-sions from	Sheboygan Co. 2017 Emissions		% in NAA		Allocate by	Sheb. Co. NAA 2017 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2270002054	Construction	Diesel Crushing/Proc. Equipment	MOVES	0.0029	0.0002	59.0%	59.0%	population	0.0017	0.0001
2270002057	Construction	Diesel Rough Terrain Forklifts	MOVES	0.0190	0.0013	59.0%	59.0%	population	0.0112	0.0008
2270002060	Construction	Diesel Rubber Tire Loaders	MOVES	0.0658	0.0036	59.0%	59.0%	population	0.0388	0.0022
2270002066	Construction	Diesel Tractors/Loaders/Backhoes	MOVES	0.0629	0.0117	59.0%	59.0%	population	0.0371	0.0069
2270002069	Construction	Diesel Crawler Tractors	MOVES	0.0484	0.0024	59.0%	59.0%	population	0.0285	0.0014
2270002072	Construction	Diesel Skid Steer Loaders	MOVES	0.0481	0.0109	59.0%	59.0%	population	0.0284	0.0064
2270002075	Construction	Diesel Off-Highway Tractors	MOVES	0.0081	0.0004	59.0%	59.0%	population	0.0048	0.0002
2270002078	Construction	Diesel Dumpers/Tenders	MOVES	0.0002	0.0000	59.0%	59.0%	population	0.0001	0.0000
2270002081	Construction	Diesel Other Construction Equipment	MOVES	0.0085	0.0005	59.0%	59.0%	population	0.0050	0.0003
2270003010	Industrial	Diesel Aerial Lifts	MOVES	0.0082	0.0019	59.0%	59.0%	population	0.0049	0.0011
2270003020	Industrial	Diesel Forklifts	MOVES	0.0494	0.0021	59.0%	59.0%	population	0.0292	0.0012
2270003030	Industrial	Diesel Sweepers/Scrubbers	MOVES	0.0252	0.0015	59.0%	59.0%	population	0.0148	0.0009
2270003040	Industrial	Diesel Other General Industrial Equipment	MOVES	0.0316	0.0022	59.0%	59.0%	population	0.0186	0.0013
2270003050	Industrial	Diesel Other Material Handling Equipment	MOVES	0.0020	0.0003	59.0%	59.0%	population	0.0012	0.0002
2270003060	Industrial	Diesel AC/Refrigeration	MOVES	0.0302	0.0018	59.0%	59.0%	population	0.0178	0.0011
2270003070	Industrial	Diesel Terminal Tractors	MOVES	0.0231	0.0012	59.0%	59.0%	population	0.0136	0.0007
2270004031	Lawn/Garden	Diesel Leafblowers/Vacuums (Commercial)	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2270004036	Lawn/Garden	Diesel Snowblowers (Commercial)	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2270004046	Lawn/Garden	Diesel Front Mowers (Commercial)	MOVES	0.0086	0.0009	59.0%	59.0%	population	0.0051	0.0005
2270004056	Lawn/Garden	Diesel Lawn & Garden Tractors (Commercial)	MOVES	0.0017	0.0002	59.0%	59.0%	population	0.0010	0.0001
2270004066	Lawn/Garden	Diesel Chippers/Stump Grinders (Commercial)	MOVES	0.0132	0.0011	59.0%	59.0%	population	0.0078	0.0007
2270004071	Lawn/Garden	Diesel Commercial Turf Equipment (Comm.)	MOVES	0.0010	0.0001	59.0%	59.0%	population	0.0006	0.0000
2270004076	Lawn/Garden	Diesel Other Lawn & Garden Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2270005010	Agriculture	Diesel 2-Wheel Tractors	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2270005015	Agriculture	Diesel Agricultural Tractors	MOVES	0.2123	0.0170	17.0%	17.0%	land area	0.0361	0.0029
2270005020	Agriculture	Diesel Combines	MOVES	0.0323	0.0026	17.0%	17.0%	land area	0.0055	0.0004
2270005025	Agriculture	Diesel Balers	MOVES	0.0002	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2270005030	Agriculture	Diesel Agricultural Mowers	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2270005035	Agriculture	Diesel Sprayers	MOVES	0.0026	0.0003	17.0%	17.0%	land area	0.0004	0.0000
2270005040	Agriculture	Diesel Tillers > 6 HP	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2270005045	Agriculture	Diesel Swathers	MOVES	0.0023	0.0003	17.0%	17.0%	land area	0.0004	0.0000
2270005055	Agriculture	Diesel Other Agricultural Equipment	MOVES	0.0056	0.0005	17.0%	17.0%	land area	0.0010	0.0001
2270005060	Agriculture	Diesel Irrigation Sets	MOVES	0.0019	0.0001	17.0%	17.0%	land area	0.0003	0.0000
2270006005	Commercial	Diesel Light Commercial Generator Sets	MOVES	0.0167	0.0018	59.0%	59.0%	population	0.0099	0.0010
2270006010	Commercial	Diesel Light Commercial Pumps	MOVES	0.0040	0.0004	59.0%	59.0%	population	0.0023	0.0002
2270006015	Commercial	Diesel Light Commercial Air Compressors	MOVES	0.0079	0.0006	59.0%	59.0%	population	0.0047	0.0004
2270006025	Commercial	Diesel Light Commercial Welders	MOVES	0.0052	0.0012	59.0%	59.0%	population	0.0031	0.0007
2270006030	Commercial	Diesel Light Commercial Pressure Washer	MOVES	0.0006	0.0001	59.0%	59.0%	population	0.0003	0.0000
2270006035	Commercial	Diesel Hydro Power Units	MOVES	0.0004	0.0000	59.0%	59.0%	population	0.0002	0.0000
2270007015	Logging	Diesel Logging Equip Fell/Bunch/Skidders	MOVES	0.0007	0.0000	17.0%	17.0%	land area	0.0001	0.0000

SCC	Segment Description	SCC Description	Emis-sions from	Sheboygan Co. 2017 Emissions		% in NAA		Allocate by	Sheb. Co. NAA 2017 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2275000000	Airport	All Airport	2017NEI	0.0164	0.0192	0.0%	0.0%	airport location	0.0000	0.0000
2280002x01/2	Comm. Mar.	CM Vessels, Diesel, C1&C2	2017NEI	0.1360	0.0040	100.0%	100.0%	Lk. Mich. Shoreline	0.1360	0.0040
2280002x03/4	Comm. Mar.	CM Vessels, Diesel, C3	2017NEI	0.1024	0.0042	100.0%	100.0%	Lk. Mich. Shoreline	0.1024	0.0042
2282005010	Pleasure Craft	2-Stroke Outboards	MOVES	0.0466	0.3138	0.0%	0.0%	water area	0.0000	0.0000
2282005015	Pleasure Craft	2-Stroke Personal Watercraft	MOVES	0.0207	0.0546	81.0%	81.0%	water area	0.0168	0.0442
2282010005	Pleasure Craft	4-Stroke Inboards	MOVES	0.1530	0.1745	81.0%	81.0%	water area	0.1239	0.1413
2282020005	Pleasure Craft	Diesel Inboards	MOVES	0.1431	0.0073	81.0%	81.0%	water area	0.1159	0.0059
2282020010	Pleasure Craft	Diesel Outboards	MOVES	0.0001	0.0000	0.0%	0.0%	water area	0.0000	0.0000
228500200x	Railroad	All Diesel Line Haul Locomotives	2017NEI	0.1014	0.0055	45.0%	45.0%	track miles	0.0456	0.0025
2285002015	Railway Maint.	Diesel Railway Maintenance	MOVES	0.0003	0.0001	45.0%	45.0%	track miles	0.0001	0.0000
2285004015	Railway Maint.	4-Stroke Gasoline Railway Maintenance	MOVES	0.0000	0.0000	45.0%	45.0%	track miles	0.0000	0.0000
2285006015	Railway Maint.	LPG Railway Maintenance	MOVES	0.0000	0.0000	45.0%	45.0%	track miles	0.0000	0.0000
ALL (Total)	**ALL (Total)**	**ALL (Total)**		**1.8902**	**1.6356**	**58.8%**	**40.4%**		**1.1111**	**0.6607**
22xx005xxx	Agriculture	All	MOVES	0.2633	0.0364	17.0%	17.0%	land area	0.0448	0.0062
22750xxxxx	Airport	All	2017NEI	0.0164	0.0192	0.0%	0.0%	airport location	0.0000	0.0000
22xx006xxx	Commercial	All	MOVES	0.0517	0.0714	59.0%	59.0%	population	0.0305	0.0422
2280002xxx	Comm. Mar	All	2017NEI	0.2384	0.0082	100.0%	100.0%	Lk. Mich. Shoreline	0.2384	0.0082
22xx002xxx	Construction	All	MOVES	0.4353	0.0758	59.0%	59.0%	population	0.2568	0.0447
22xx003xxx	Industrial	All	MOVES	0.3129	0.0606	59.0%	59.0%	population	0.1846	0.0358
22xx004xxx	Lawn/Garden	All	MOVES	0.0844	0.4578	59.0%	59.0%	population	0.0498	0.2701
22xx007xxx	Logging	All	MOVES	0.0007	0.0004	17.0%	17.0%	land area	0.0001	0.0001
22820xxxxx	Pleasure Craft	All	MOVES	0.3635	0.5502	70.6%	34.8%	water area	0.2566	0.1915
228500200x	Railroad	All	2017NEI	0.1014	0.0055	45.0%	45.0%	track miles	0.0456	0.0025
228500x015	Railway Maint.	All	MOVES	0.0003	0.0001	45.0%	45.0%	track miles	0.0001	0.0000
22xx001xxx	Recreational	All	MOVES	0.0220	0.3499	17.0%	17.0%	land area	0.0037	0.0595
ALL (Total)	**ALL (Total)**	**ALL (Total)**		**1.8902**	**1.6356**	**58.8%**	**40.4%**		**1.1111**	**0.6607**

Table A6.2. 2023 Nonroad NOx and VOC Emissions: tons per ozone season day (tposd)
Sheboygan County and the Sheboygan County 2015 Ozone NAAQS Nonattainment Area (NAA)

SCC	Segment Description	SCC Description	Emis-sions from	Sheboygan Co. 2023 Emissions		% in NAA		Allocate by	Sheb. Co. NAA 2023 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2260001010	Recreational	2-Stroke Motorcycles: Off-Road	MOVES	0.0017	0.1326	17.0%	17.0%	land area	0.0003	0.0225
2260001020	Recreational	Snowmobiles	MOVES	0.0000	0.0205	17.0%	17.0%	land area	0.0000	0.0035
2260001030	Recreational	2-Stroke All Terrain Vehicles	MOVES	0.0009	0.0162	17.0%	17.0%	land area	0.0002	0.0027
2260001060	Recreational	2-Stroke Specialty Vehicle Carts	MOVES	0.0005	0.0030	17.0%	17.0%	land area	0.0001	0.0005
2260002006	Construction	2-Stroke Tampers/Rammers	MOVES	0.0002	0.0072	59.0%	59.0%	population	0.0001	0.0043
2260002009	Construction	2-Stroke Plate Compactors	MOVES	0.0000	0.0003	59.0%	59.0%	population	0.0000	0.0002
2260002021	Construction	2-Stroke Paving Equipment	MOVES	0.0000	0.0003	59.0%	59.0%	population	0.0000	0.0002
2260002027	Construction	2-Stroke Signal Boards	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2260002039	Construction	2-Stroke Concrete/Industrial Saws	MOVES	0.0005	0.0182	59.0%	59.0%	population	0.0003	0.0107
2260002054	Construction	2-Stroke Crushing/Proc. Equipment	MOVES	0.0000	0.0001	59.0%	59.0%	population	0.0000	0.0000
2260003030	Industrial	2-Stroke Sweepers/Scrubbers	MOVES	0.0000	0.0007	59.0%	59.0%	population	0.0000	0.0004
2260003040	Industrial	2-Stroke Other General Industrial Equipment	MOVES	0.0000	0.0001	59.0%	59.0%	population	0.0000	0.0000
2260004015	Lawn/Garden	2-Stroke Rotary Tillers < 6 HP (Residential)	MOVES	0.0000	0.0011	59.0%	59.0%	population	0.0000	0.0007
2260004016	Lawn/Garden	2-Stroke Rotary Tillers < 6 HP (Commercial)	MOVES	0.0001	0.0031	59.0%	59.0%	population	0.0001	0.0018
2260004020	Lawn/Garden	2-Stroke Chain Saws < 6 HP (Residential)	MOVES	0.0003	0.0107	59.0%	59.0%	population	0.0002	0.0063
2260004021	Lawn/Garden	2-Stroke Chain Saws < 6 HP (Commercial)	MOVES	0.0008	0.0347	59.0%	59.0%	population	0.0005	0.0205
2260004025	Lawn/Garden	2-Stroke Trimmers/Edgers/Brush Cutters (Res.)	MOVES	0.0009	0.0227	59.0%	59.0%	population	0.0005	0.0134
2260004026	Lawn/Garden	2-Stroke Trimmers/Edgers/Brush Cutters (Com.)	MOVES	0.0014	0.0350	59.0%	59.0%	population	0.0008	0.0206
2260004030	Lawn/Garden	2-Stroke Leafblowers/Vacuums (Residential)	MOVES	0.0005	0.0159	59.0%	59.0%	population	0.0003	0.0094
2260004031	Lawn/Garden	2-Stroke Leafblowers/Vacuums (Commercial)	MOVES	0.0013	0.0351	59.0%	59.0%	population	0.0007	0.0207
2260004035	Lawn/Garden	2-Stroke Snowblowers (Residential)	MOVES	0.0000	0.0016	59.0%	59.0%	population	0.0000	0.0009
2260004036	Lawn/Garden	2-Stroke Snowblowers (Commercial)	MOVES	0.0000	0.0001	59.0%	59.0%	population	0.0000	0.0001
2260004071	Lawn/Garden	2-Stroke Commercial Turf Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2260005035	Agriculture	2-Stroke Sprayers	MOVES	0.0000	0.0003	17.0%	17.0%	land area	0.0000	0.0001
2260006005	Commercial	2-Stroke Light Commercial Generator Set	MOVES	0.0000	0.0010	59.0%	59.0%	population	0.0000	0.0006
2260006010	Commercial	2-Stroke Light Commercial Pumps	MOVES	0.0002	0.0069	59.0%	59.0%	population	0.0001	0.0041
2260006015	Commercial	2-Stroke Light Commercial Air Compressors	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2260006035	Commercial	2-Stroke Hydro Power Units	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2260007005	Logging	2-Stroke Logging Equipment Chain Saws > 6 HP	MOVES	0.0000	0.0003	17.0%	17.0%	land area	0.0000	0.0000
2265001010	Recreational	4-Stroke Motorcycles: Off-Road	MOVES	0.0009	0.0073	17.0%	17.0%	land area	0.0002	0.0012
2265001030	Recreational	4-Stroke All Terrain Vehicles	MOVES	0.0063	0.0763	17.0%	17.0%	land area	0.0011	0.0130
2265001050	Recreational	4-Stroke Golf Carts	MOVES	0.0078	0.0280	17.0%	17.0%	land area	0.0013	0.0048
2265001060	Recreational	4-Stroke Specialty Vehicle Carts	MOVES	0.0006	0.0025	17.0%	17.0%	land area	0.0001	0.0004
2265002003	Construction	4-Stroke Asphalt Pavers	MOVES	0.0001	0.0004	59.0%	59.0%	population	0.0001	0.0002
2265002006	Construction	4-Stroke Tampers/Rammers	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2265002009	Construction	4-Stroke Plate Compactors	MOVES	0.0002	0.0009	59.0%	59.0%	population	0.0001	0.0006

SCC	Segment Description	SCC Description	Emis-sions from	Sheboygan Co. 2023 Emissions		% in NAA		Allocate by	Sheb. Co. NAA 2023 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2265002015	Construction	4-Stroke Rollers	MOVES	0.0002	0.0007	59.0%	59.0%	population	0.0001	0.0004
2265002021	Construction	4-Stroke Paving Equipment	MOVES	0.0004	0.0020	59.0%	59.0%	population	0.0002	0.0012
2265002024	Construction	4-Stroke Surfacing Equipment	MOVES	0.0002	0.0007	59.0%	59.0%	population	0.0001	0.0004
2265002027	Construction	4-Stroke Signal Boards	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2265002030	Construction	4-Stroke Trenchers	MOVES	0.0004	0.0012	59.0%	59.0%	population	0.0002	0.0007
2265002033	Construction	4-Stroke Bore/Drill Rigs	MOVES	0.0002	0.0007	59.0%	59.0%	population	0.0001	0.0004
2265002039	Construction	4-Stroke Concrete/Industrial Saws	MOVES	0.0008	0.0026	59.0%	59.0%	population	0.0005	0.0015
2265002042	Construction	4-Stroke Cement & Mortar Mixers	MOVES	0.0004	0.0026	59.0%	59.0%	population	0.0002	0.0015
2265002045	Construction	4-Stroke Cranes	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2265002054	Construction	4-Stroke Crushing/Proc. Equipment	MOVES	0.0001	0.0002	59.0%	59.0%	population	0.0000	0.0001
2265002057	Construction	4-Stroke Rough Terrain Forklifts	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2265002060	Construction	4-Stroke Rubber Tire Loaders	MOVES	0.0001	0.0001	59.0%	59.0%	population	0.0001	0.0000
2265002066	Construction	4-Stroke Tractors/Loaders/Backhoes	MOVES	0.0002	0.0008	59.0%	59.0%	population	0.0001	0.0005
2265002072	Construction	4-Stroke Skid Steer Loaders	MOVES	0.0002	0.0004	59.0%	59.0%	population	0.0001	0.0003
2265002078	Construction	4-Stroke Dumpers/Tenders	MOVES	0.0001	0.0004	59.0%	59.0%	population	0.0000	0.0002
2265002081	Construction	4-Stroke Other Construction Equipment	MOVES	0.0001	0.0001	59.0%	59.0%	population	0.0000	0.0000
2265003010	Industrial	4-Stroke Aerial Lifts	MOVES	0.0028	0.0050	59.0%	59.0%	population	0.0017	0.0029
2265003020	Industrial	4-Stroke Forklifts	MOVES	0.0073	0.0053	59.0%	59.0%	population	0.0043	0.0032
2265003030	Industrial	4-Stroke Sweepers/Scrubbers	MOVES	0.0018	0.0039	59.0%	59.0%	population	0.0010	0.0023
2265003040	Industrial	4-Stroke Other General Industrial Equipment	MOVES	0.0037	0.0147	59.0%	59.0%	population	0.0022	0.0087
2265003050	Industrial	4-Stroke Other Material Handling Equipment	MOVES	0.0002	0.0003	59.0%	59.0%	population	0.0001	0.0002
2265003060	Industrial	4-Stroke Industrial AC/Refrigeration	MOVES	0.0000	0.0001	59.0%	59.0%	population	0.0000	0.0000
2265003070	Industrial	4-Stroke Terminal Tractors	MOVES	0.0007	0.0005	59.0%	59.0%	population	0.0004	0.0003
2265004010	Lawn/Garden	4-Stroke Lawn mowers (Residential)	MOVES	0.0055	0.0517	59.0%	59.0%	population	0.0032	0.0305
2265004011	Lawn/Garden	4-Stroke Lawn mowers (Commercial)	MOVES	0.0029	0.0185	59.0%	59.0%	population	0.0017	0.0109
2265004015	Lawn/Garden	4-Stroke Rotary Tillers < 6 HP (Residential)	MOVES	0.0005	0.0045	59.0%	59.0%	population	0.0003	0.0027
2265004016	Lawn/Garden	4-Stroke Rotary Tillers < 6 HP (Commercial)	MOVES	0.0015	0.0108	59.0%	59.0%	population	0.0009	0.0064
2265004025	Lawn/Garden	4-Stroke Trimmers/Edgers/Brush Cutters (Res.)	MOVES	0.0000	0.0003	59.0%	59.0%	population	0.0000	0.0002
2265004026	Lawn/Garden	4-Stroke Trimmers/Edgers/Brush Cutters (Com.)	MOVES	0.0001	0.0005	59.0%	59.0%	population	0.0000	0.0003
2265004030	Lawn/Garden	4-Stroke Leafblowers/Vacuums (Residential)	MOVES	0.0001	0.0006	59.0%	59.0%	population	0.0000	0.0003
2265004031	Lawn/Garden	4-Stroke Leafblowers/Vacuums (Commercial)	MOVES	0.0027	0.0115	59.0%	59.0%	population	0.0016	0.0068
2265004035	Lawn/Garden	4-Stroke Snowblowers (Residential)	MOVES	0.0000	0.0037	59.0%	59.0%	population	0.0000	0.0022
2265004036	Lawn/Garden	4-Stroke Snowblowers (Commercial)	MOVES	0.0000	0.0003	59.0%	59.0%	population	0.0000	0.0002
2265004040	Lawn/Garden	4-Stroke Rear Engine Riding Mowers (Res.)	MOVES	0.0011	0.0088	59.0%	59.0%	population	0.0007	0.0052
2265004041	Lawn/Garden	4-Stroke Rear Engine Riding Mowers (Comm.)	MOVES	0.0003	0.0012	59.0%	59.0%	population	0.0002	0.0007
2265004046	Lawn/Garden	4-Stroke Front Mowers (Commercial)	MOVES	0.0004	0.0016	59.0%	59.0%	population	0.0002	0.0009
2265004051	Lawn/Garden	4-Stroke Shredders < 6 HP (Commercial)	MOVES	0.0002	0.0013	59.0%	59.0%	population	0.0001	0.0007
2265004055	Lawn/Garden	4-Stroke Lawn & Garden Tractors (Residential)	MOVES	0.0147	0.0868	59.0%	59.0%	population	0.0087	0.0512
2265004056	Lawn/Garden	4-Stroke Lawn & Garden Tractors (Commercial)	MOVES	0.0043	0.0153	59.0%	59.0%	population	0.0026	0.0090
2265004066	Lawn/Garden	4-Stroke Chippers/Stump Grinders (Comm.)	MOVES	0.0007	0.0017	59.0%	59.0%	population	0.0004	0.0010

SCC	Segment Description	SCC Description	Emissions from	Sheboygan Co. 2023 Emissions		% in NAA		Allocate by	Sheb. Co. NAA 2023 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2265004071	Lawn/Garden	4-Stroke Commercial Turf Equipment (Comm.)	MOVES	0.0141	0.0459	59.0%	59.0%	population	0.0083	0.0271
2265004075	Lawn/Garden	4-Stroke Other Lawn & Garden Equip. (Res.)	MOVES	0.0006	0.0041	59.0%	59.0%	population	0.0003	0.0024
2265004076	Lawn/Garden	4-Stroke Other Lawn & Garden Equip. (Com.)	MOVES	0.0005	0.0032	59.0%	59.0%	population	0.0003	0.0019
2265005010	Agriculture	4-Stroke 2-Wheel Tractors	MOVES	0.0000	0.0001	17.0%	17.0%	land area	0.0000	0.0000
2265005015	Agriculture	4-Stroke Agricultural Tractors	MOVES	0.0001	0.0001	17.0%	17.0%	land area	0.0000	0.0000
2265005020	Agriculture	4-Stroke Combines	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2265005025	Agriculture	4-Stroke Balers	MOVES	0.0005	0.0009	17.0%	17.0%	land area	0.0001	0.0002
2265005030	Agriculture	4-Stroke Agricultural Mowers	MOVES	0.0000	0.0001	17.0%	17.0%	land area	0.0000	0.0000
2265005035	Agriculture	4-Stroke Sprayers	MOVES	0.0006	0.0018	17.0%	17.0%	land area	0.0001	0.0003
2265005040	Agriculture	4-Stroke Tillers > 5 HP	MOVES	0.0011	0.0052	17.0%	17.0%	land area	0.0002	0.0009
2265005045	Agriculture	4-Stroke Swathers	MOVES	0.0007	0.0011	17.0%	17.0%	land area	0.0001	0.0002
2265005055	Agriculture	4-Stroke Other Agricultural Equipment	MOVES	0.0008	0.0010	17.0%	17.0%	land area	0.0001	0.0002
2265005060	Agriculture	4-Stroke Irrigation Sets	MOVES	0.0001	0.0001	17.0%	17.0%	land area	0.0000	0.0000
2265006005	Commercial	4-Stroke Light Commercial Generator Set	MOVES	0.0053	0.0332	59.0%	59.0%	population	0.0031	0.0196
2265006010	Commercial	4-Stroke Light Commercial Pumps	MOVES	0.0014	0.0064	59.0%	59.0%	population	0.0008	0.0037
2265006015	Commercial	4-Stroke Light Commercial Air Compressors	MOVES	0.0007	0.0025	59.0%	59.0%	population	0.0004	0.0015
2265006025	Commercial	4-Stroke Light Commercial Welders	MOVES	0.0015	0.0055	59.0%	59.0%	population	0.0009	0.0033
2265006030	Commercial	4-Stroke Light Commercial Pressure Wash	MOVES	0.0024	0.0130	59.0%	59.0%	population	0.0014	0.0077
2265006035	Commercial	4-Stroke Hydro Power Units	MOVES	0.0001	0.0004	59.0%	59.0%	population	0.0001	0.0003
2265007010	Logging	4-Stroke Logging Equipment Shredders > 6 HP	MOVES	0.0000	0.0001	17.0%	17.0%	land area	0.0000	0.0000
2265007015	Logging	4-Stroke Logging Equipment Skidders	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2267001060	Recreational	LPG Specialty Vehicle Carts	MOVES	0.0001	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2267002003	Construction	LPG Asphalt Pavers	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002015	Construction	LPG Rollers	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002021	Construction	LPG Paving Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002024	Construction	LPG Surfacing Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002030	Construction	LPG Trenchers	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002033	Construction	LPG Bore/Drill Rigs	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0001	0.0000
2267002039	Construction	LPG Concrete/Industrial Saws	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002045	Construction	LPG Cranes	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002054	Construction	LPG Crushing/Proc. Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002057	Construction	LPG Rough Terrain Forklifts	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002060	Construction	LPG Rubber Tire Loaders	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002066	Construction	LPG Tractors/Loaders/Backhoes	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002072	Construction	LPG Skid Steer Loaders	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0001	0.0000
2267002081	Construction	LPG Other Construction Equipment	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267003010	Industrial	LPG Aerial Lifts	MOVES	0.0021	0.0004	59.0%	59.0%	population	0.0013	0.0002
2267003020	Industrial	LPG Forklifts	MOVES	0.1131	0.0132	59.0%	59.0%	population	0.0667	0.0078
2267003030	Industrial	LPG Sweepers/Scrubbers	MOVES	0.0009	0.0001	59.0%	59.0%	population	0.0005	0.0001
2267003040	Industrial	LPG Other General Industrial Equipment	MOVES	0.0003	0.0000	59.0%	59.0%	population	0.0002	0.0000

SCC	Segment Description	SCC Description	Emis-sions from	Sheboygan Co. 2023 Emissions		% in NAA		Allocate by	Sheb. Co. NAA 2023 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2267003050	Industrial	LPG Other Material Handling Equipment	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0001	0.0000
2267003070	Industrial	LPG Terminal Tractors	MOVES	0.0005	0.0001	59.0%	59.0%	population	0.0003	0.0000
2267004066	Lawn/Garden	LPG Chippers/Stump Grinders (Commercial)	MOVES	0.0003	0.0000	59.0%	59.0%	population	0.0001	0.0000
2267005055	Agriculture	LPG Other Agricultural Equipment	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2267005060	Agriculture	LPG Irrigation Sets	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2267006005	Commercial	LPG Light Commercial Generator Sets	MOVES	0.0017	0.0003	59.0%	59.0%	population	0.0010	0.0002
2267006010	Commercial	LPG Light Commercial Pumps	MOVES	0.0002	0.0000	59.0%	59.0%	population	0.0001	0.0000
2267006015	Commercial	LPG Light Commercial Air Compressors	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0001	0.0000
2267006025	Commercial	LPG Light Commercial Welders	MOVES	0.0002	0.0000	59.0%	59.0%	population	0.0001	0.0000
2267006030	Commercial	LPG Light Commercial Pressure Washers	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267006035	Commercial	LPG Hydro Power Units	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268002081	Construction	CNG Other Construction Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268003020	Industrial	CNG Forklifts	MOVES	0.0092	0.0039	59.0%	59.0%	population	0.0054	0.0023
2268003030	Industrial	CNG Sweepers/Scrubbers	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268003040	Industrial	CNG Other General Industrial Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268003060	Industrial	CNG AC/Refrigeration	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268003070	Industrial	CNG Terminal Tractors	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268005055	Agriculture	CNG Other Agricultural Equipment	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2268005060	Agriculture	CNG Irrigation Sets	MOVES	0.0002	0.0001	17.0%	17.0%	land area	0.0000	0.0000
2268006005	Commercial	CNG Light Commercial Generator Sets	MOVES	0.0007	0.0004	59.0%	59.0%	population	0.0004	0.0002
2268006010	Commercial	CNG Light Commercial Pumps	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268006015	Commercial	CNG Light Commercial Air Compressors	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268006020	Commercial	CNG Light Commercial Gas Compressors	MOVES	0.0005	0.0002	59.0%	59.0%	population	0.0003	0.0001
2270001060	Recreational	Diesel Specialty Vehicle Carts	MOVES	0.0016	0.0003	17.0%	17.0%	land area	0.0003	0.0001
2270002003	Construction	Diesel Pavers	MOVES	0.0026	0.0001	59.0%	59.0%	population	0.0016	0.0001
2270002006	Construction	Diesel Tampers/Rammers (unused)	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2270002009	Construction	Diesel Plate Compactors	MOVES	0.0003	0.0000	59.0%	59.0%	population	0.0002	0.0000
2270002015	Construction	Diesel Rollers	MOVES	0.0085	0.0004	59.0%	59.0%	population	0.0050	0.0002
2270002018	Construction	Diesel Scrapers	MOVES	0.0048	0.0003	59.0%	59.0%	population	0.0028	0.0002
2270002021	Construction	Diesel Paving Equipment	MOVES	0.0006	0.0000	59.0%	59.0%	population	0.0003	0.0000
2270002024	Construction	Diesel Surfacing Equipment	MOVES	0.0006	0.0000	59.0%	59.0%	population	0.0003	0.0000
2270002027	Construction	Diesel Signal Boards	MOVES	0.0025	0.0002	59.0%	59.0%	population	0.0015	0.0001
2270002030	Construction	Diesel Trenchers	MOVES	0.0066	0.0003	59.0%	59.0%	population	0.0039	0.0002
2270002033	Construction	Diesel Bore/Drill Rigs	MOVES	0.0088	0.0006	59.0%	59.0%	population	0.0052	0.0003
2270002036	Construction	Diesel Excavators	MOVES	0.0151	0.0007	59.0%	59.0%	population	0.0089	0.0004
2270002039	Construction	Diesel Concrete/Industrial Saws	MOVES	0.0005	0.0000	59.0%	59.0%	population	0.0003	0.0000
2270002042	Construction	Diesel Cement & Mortar Mixers	MOVES	0.0004	0.0000	59.0%	59.0%	population	0.0002	0.0000
2270002045	Construction	Diesel Cranes	MOVES	0.0058	0.0003	59.0%	59.0%	population	0.0034	0.0002
2270002048	Construction	Diesel Graders	MOVES	0.0028	0.0002	59.0%	59.0%	population	0.0017	0.0001
2270002051	Construction	Diesel Off-highway Trucks	MOVES	0.0376	0.0009	59.0%	59.0%	population	0.0222	0.0005

SCC	Segment Description	SCC Description	Emis-sions from	Sheboygan Co. 2023 Emissions		% in NAA		Allocate by	Sheb. Co. NAA 2023 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2270002054	Construction	Diesel Crushing/Proc. Equipment	MOVES	0.0016	0.0001	59.0%	59.0%	population	0.0009	0.0000
2270002057	Construction	Diesel Rough Terrain Forklifts	MOVES	0.0126	0.0005	59.0%	59.0%	population	0.0074	0.0003
2270002060	Construction	Diesel Rubber Tire Loaders	MOVES	0.0326	0.0015	59.0%	59.0%	population	0.0192	0.0009
2270002066	Construction	Diesel Tractors/Loaders/Backhoes	MOVES	0.0379	0.0058	59.0%	59.0%	population	0.0224	0.0034
2270002069	Construction	Diesel Crawler Tractors	MOVES	0.0240	0.0010	59.0%	59.0%	population	0.0141	0.0006
2270002072	Construction	Diesel Skid Steer Loaders	MOVES	0.0406	0.0070	59.0%	59.0%	population	0.0239	0.0041
2270002075	Construction	Diesel Off-Highway Tractors	MOVES	0.0051	0.0002	59.0%	59.0%	population	0.0030	0.0001
2270002078	Construction	Diesel Dumpers/Tenders	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0001	0.0000
2270002081	Construction	Diesel Other Construction Equipment	MOVES	0.0044	0.0002	59.0%	59.0%	population	0.0026	0.0001
2270003010	Industrial	Diesel Aerial Lifts	MOVES	0.0074	0.0012	59.0%	59.0%	population	0.0044	0.0007
2270003020	Industrial	Diesel Forklifts	MOVES	0.0359	0.0007	59.0%	59.0%	population	0.0212	0.0004
2270003030	Industrial	Diesel Sweepers/Scrubbers	MOVES	0.0138	0.0006	59.0%	59.0%	population	0.0082	0.0003
2270003040	Industrial	Diesel Other General Industrial Equipment	MOVES	0.0170	0.0009	59.0%	59.0%	population	0.0100	0.0005
2270003050	Industrial	Diesel Other Material Handling Equipment	MOVES	0.0015	0.0002	59.0%	59.0%	population	0.0009	0.0001
2270003060	Industrial	Diesel AC/Refrigeration	MOVES	0.0322	0.0011	59.0%	59.0%	population	0.0190	0.0007
2270003070	Industrial	Diesel Terminal Tractors	MOVES	0.0080	0.0003	59.0%	59.0%	population	0.0047	0.0002
2270004031	Lawn/Garden	Diesel Leafblowers/Vacuums (Commercial)	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2270004036	Lawn/Garden	Diesel Snowblowers (Commercial)	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2270004046	Lawn/Garden	Diesel Front Mowers (Commercial)	MOVES	0.0073	0.0006	59.0%	59.0%	population	0.0043	0.0004
2270004056	Lawn/Garden	Diesel Lawn & Garden Tractors (Commercial)	MOVES	0.0016	0.0001	59.0%	59.0%	population	0.0009	0.0001
2270004066	Lawn/Garden	Diesel Chippers/Stump Grinders (Commercial)	MOVES	0.0096	0.0007	59.0%	59.0%	population	0.0056	0.0004
2270004071	Lawn/Garden	Diesel Commercial Turf Equipment (Comm.)	MOVES	0.0006	0.0000	59.0%	59.0%	population	0.0004	0.0000
2270004076	Lawn/Garden	Diesel Other Lawn & Garden Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2270005010	Agriculture	Diesel 2-Wheel Tractors	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2270005015	Agriculture	Diesel Agricultural Tractors	MOVES	0.1165	0.0077	17.0%	17.0%	land area	0.0198	0.0013
2270005020	Agriculture	Diesel Combines	MOVES	0.0195	0.0015	17.0%	17.0%	land area	0.0033	0.0003
2270005025	Agriculture	Diesel Balers	MOVES	0.0001	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2270005030	Agriculture	Diesel Agricultural Mowers	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2270005035	Agriculture	Diesel Sprayers	MOVES	0.0016	0.0002	17.0%	17.0%	land area	0.0003	0.0000
2270005040	Agriculture	Diesel Tillers > 6 HP	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2270005045	Agriculture	Diesel Swathers	MOVES	0.0014	0.0002	17.0%	17.0%	land area	0.0002	0.0000
2270005055	Agriculture	Diesel Other Agricultural Equipment	MOVES	0.0027	0.0002	17.0%	17.0%	land area	0.0005	0.0000
2270005060	Agriculture	Diesel Irrigation Sets	MOVES	0.0011	0.0001	17.0%	17.0%	land area	0.0002	0.0000
2270006005	Commercial	Diesel Light Commercial Generator Sets	MOVES	0.0135	0.0012	59.0%	59.0%	population	0.0080	0.0007
2270006010	Commercial	Diesel Light Commercial Pumps	MOVES	0.0032	0.0003	59.0%	59.0%	population	0.0019	0.0002
2270006015	Commercial	Diesel Light Commercial Air Compressors	MOVES	0.0054	0.0003	59.0%	59.0%	population	0.0032	0.0002
2270006025	Commercial	Diesel Light Commercial Welders	MOVES	0.0045	0.0007	59.0%	59.0%	population	0.0027	0.0004
2270006030	Commercial	Diesel Light Commercial Pressure Washer	MOVES	0.0004	0.0000	59.0%	59.0%	population	0.0003	0.0000
2270006035	Commercial	Diesel Hydro Power Units	MOVES	0.0003	0.0000	59.0%	59.0%	population	0.0002	0.0000
2270007015	Logging	Diesel Logging Equip Fell/Bunch/Skidders	MOVES	0.0001	0.0000	17.0%	17.0%	land area	0.0000	0.0000

SCC	Segment Description	SCC Description	Emis-sions from	Sheboygan Co. 2023 Emissions		% in NAA		Allocate by	Sheb. Co. NAA 2023 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2275000000	Airport	All Airport	2022EMP	0.0171	0.0226	0.0%	0.0%	airport location	0.0000	0.0000
2280002x01/2	Comm. Mar.	CM Vessels, Diesel, C1&C2	2022EMP	0.0949	0.0029	100.0%	100.0%	Lk. Mich. Shoreline	0.0949	0.0029
2280002x03/4	Comm. Mar.	CM Vessels, Diesel, C3	2022EMP	0.0715	0.0030	100.0%	100.0%	Lk. Mich. Shoreline	0.0715	0.0030
2282005010	Pleasure Craft	2-Stroke Outboards	MOVES	0.0488	0.1748	0.0%	0.0%	water area	0.0000	0.0000
2282005015	Pleasure Craft	2-Stroke Personal Watercraft	MOVES	0.0232	0.0302	81.0%	81.0%	water area	0.0188	0.0245
2282010005	Pleasure Craft	4-Stroke Inboards	MOVES	0.1087	0.1380	81.0%	81.0%	water area	0.0880	0.1118
2282020005	Pleasure Craft	Diesel Inboards	MOVES	0.1351	0.0083	81.0%	81.0%	water area	0.1095	0.0067
2282020010	Pleasure Craft	Diesel Outboards	MOVES	0.0001	0.0000	0.0%	0.0%	water area	0.0000	0.0000
228500200x	Railroad	All Diesel Line Haul Locomotives	2022EMP	0.0572	0.0026	45.0%	45.0%	track miles	0.0257	0.0012
2285002015	Railway Maint.	Diesel Railway Maintenance	MOVES	0.0002	0.0000	45.0%	45.0%	track miles	0.0001	0.0000
2285004015	Railway Maint.	4-Stroke Gasoline Railway Maintenance	MOVES	0.0000	0.0000	45.0%	45.0%	track miles	0.0000	0.0000
2285006015	Railway Maint.	LPG Railway Maintenance	MOVES	0.0000	0.0000	45.0%	45.0%	track miles	0.0000	0.0000
ALL (Total)	**ALL (Total)**	**ALL (Total)**		**1.3616**	**1.3103**	**59.7%**	**43.4%**		**0.8127**	**0.5682**
22xx005xxx	Agriculture	All	MOVES	0.1473	0.0208	17.0%	17.0%	land area	0.0250	0.0035
22750xxxxx	Airport	All	2022EMP	0.0171	0.0226	0.0%	0.0%	airport location	0.0000	0.0000
22xx006xxx	Commercial	All	MOVES	0.0425	0.0726	59.0%	59.0%	population	0.0251	0.0428
2280002xxx	Comm. Mar	All	2022EMP	0.1664	0.0059	100.0%	100.0%	Lk. Mich. Shoreline	0.1664	0.0059
22xx002xxx	Construction	All	MOVES	0.2612	0.0604	59.0%	59.0%	population	0.1541	0.0356
22xx003xxx	Industrial	All	MOVES	0.2585	0.0534	59.0%	59.0%	population	0.1525	0.0315
22xx004xxx	Lawn/Garden	All	MOVES	0.0746	0.4337	59.0%	59.0%	population	0.0440	0.2559
22xx007xxx	Logging	All	MOVES	0.0002	0.0003	17.0%	17.0%	land area	0.0000	0.0001
22820xxxxx	Pleasure Craft	All	MOVES	0.3159	0.3513	68.5%	40.7%	water area	0.2162	0.1429
228500200x	Railroad	All	2022EMP	0.0572	0.0026	45.0%	45.0%	track miles	0.0257	0.0012
228500x015	Railway Maint.	All	MOVES	0.0002	0.0001	45.0%	45.0%	track miles	0.0001	0.0000
22xx001xxx	Recreational	All	MOVES	0.0205	0.2866	17.0%	17.0%	land area	0.0035	0.0487
ALL (Total)	**ALL (Total)**	**ALL (Total)**		**1.3616**	**1.3103**	**59.7%**	**43.4%**		**0.8127**	**0.5682**

Table A6.3. 2024 Nonroad NOx and VOC Emissions: tons per ozone season day (tposd)
Sheboygan County and the Sheboygan County 2015 Ozone NAAQS Nonattainment Area (NAA)

SCC	Segment Description	SCC Description	Emis-sions from	Sheboygan Co. 2024 Emissions		% in NAA		Allocate by	Sheb. Co. NAA 2024 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2260001010	Recreational	2-Stroke Motorcycles: Off-Road	MOVES	0.0017	0.1309	17.0%	17.0%	land area	0.0003	0.0223
2260001020	Recreational	Snowmobiles	MOVES	0.0000	0.0202	17.0%	17.0%	land area	0.0000	0.0034
2260001030	Recreational	2-Stroke All Terrain Vehicles	MOVES	0.0009	0.0145	17.0%	17.0%	land area	0.0002	0.0025
2260001060	Recreational	2-Stroke Specialty Vehicle Carts	MOVES	0.0005	0.0029	17.0%	17.0%	land area	0.0001	0.0005
2260002006	Construction	2-Stroke Tampers/Rammers	MOVES	0.0002	0.0073	59.0%	59.0%	population	0.0001	0.0043
2260002009	Construction	2-Stroke Plate Compactors	MOVES	0.0000	0.0003	59.0%	59.0%	population	0.0000	0.0002
2260002021	Construction	2-Stroke Paving Equipment	MOVES	0.0000	0.0003	59.0%	59.0%	population	0.0000	0.0002
2260002027	Construction	2-Stroke Signal Boards	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2260002039	Construction	2-Stroke Concrete/Industrial Saws	MOVES	0.0005	0.0183	59.0%	59.0%	population	0.0003	0.0108
2260002054	Construction	2-Stroke Crushing/Proc. Equipment	MOVES	0.0000	0.0001	59.0%	59.0%	population	0.0000	0.0000
2260003030	Industrial	2-Stroke Sweepers/Scrubbers	MOVES	0.0000	0.0007	59.0%	59.0%	population	0.0000	0.0004
2260003040	Industrial	2-Stroke Other General Industrial Equipment	MOVES	0.0000	0.0001	59.0%	59.0%	population	0.0000	0.0000
2260004015	Lawn/Garden	2-Stroke Rotary Tillers < 6 HP (Residential)	MOVES	0.0000	0.0011	59.0%	59.0%	population	0.0000	0.0007
2260004016	Lawn/Garden	2-Stroke Rotary Tillers < 6 HP (Commercial)	MOVES	0.0001	0.0031	59.0%	59.0%	population	0.0001	0.0018
2260004020	Lawn/Garden	2-Stroke Chain Saws < 6 HP (Residential)	MOVES	0.0003	0.0107	59.0%	59.0%	population	0.0002	0.0063
2260004021	Lawn/Garden	2-Stroke Chain Saws < 6 HP (Commercial)	MOVES	0.0008	0.0347	59.0%	59.0%	population	0.0005	0.0205
2260004025	Lawn/Garden	2-Stroke Trimmers/Edgers/Brush Cutters (Res.)	MOVES	0.0009	0.0226	59.0%	59.0%	population	0.0005	0.0134
2260004026	Lawn/Garden	2-Stroke Trimmers/Edgers/Brush Cutters (Com.)	MOVES	0.0014	0.0349	59.0%	59.0%	population	0.0008	0.0206
2260004030	Lawn/Garden	2-Stroke Leafblowers/Vacuums (Residential)	MOVES	0.0005	0.0159	59.0%	59.0%	population	0.0003	0.0094
2260004031	Lawn/Garden	2-Stroke Leafblowers/Vacuums (Commercial)	MOVES	0.0013	0.0350	59.0%	59.0%	population	0.0007	0.0207
2260004035	Lawn/Garden	2-Stroke Snowblowers (Residential)	MOVES	0.0000	0.0016	59.0%	59.0%	population	0.0000	0.0009
2260004036	Lawn/Garden	2-Stroke Snowblowers (Commercial)	MOVES	0.0000	0.0001	59.0%	59.0%	population	0.0000	0.0001
2260004071	Lawn/Garden	2-Stroke Commercial Turf Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2260005035	Agriculture	2-Stroke Sprayers	MOVES	0.0000	0.0003	17.0%	17.0%	land area	0.0000	0.0001
2260006005	Commercial	2-Stroke Light Commercial Generator Set	MOVES	0.0000	0.0010	59.0%	59.0%	population	0.0000	0.0006
2260006010	Commercial	2-Stroke Light Commercial Pumps	MOVES	0.0003	0.0070	59.0%	59.0%	population	0.0001	0.0041
2260006015	Commercial	2-Stroke Light Commercial Air Compressors	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2260006035	Commercial	2-Stroke Hydro Power Units	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2260007005	Logging	2-Stroke Logging Equipment Chain Saws > 6 HP	MOVES	0.0000	0.0003	17.0%	17.0%	land area	0.0000	0.0000
2265001010	Recreational	4-Stroke Motorcycles: Off-Road	MOVES	0.0009	0.0072	17.0%	17.0%	land area	0.0002	0.0012
2265001030	Recreational	4-Stroke All Terrain Vehicles	MOVES	0.0062	0.0757	17.0%	17.0%	land area	0.0011	0.0129
2265001050	Recreational	4-Stroke Golf Carts	MOVES	0.0078	0.0279	17.0%	17.0%	land area	0.0013	0.0047
2265001060	Recreational	4-Stroke Specialty Vehicle Carts	MOVES	0.0006	0.0024	17.0%	17.0%	land area	0.0001	0.0004
2265002003	Construction	4-Stroke Asphalt Pavers	MOVES	0.0001	0.0004	59.0%	59.0%	population	0.0001	0.0002
2265002006	Construction	4-Stroke Tampers/Rammers	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2265002009	Construction	4-Stroke Plate Compactors	MOVES	0.0002	0.0009	59.0%	59.0%	population	0.0001	0.0006

SCC	Segment Description	SCC Description	Emis-sions from	Sheboygan Co. 2024 Emissions		% in NAA		Allocate by	Sheb. Co. NAA 2024 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2265002015	Construction	4-Stroke Rollers	MOVES	0.0002	0.0007	59.0%	59.0%	population	0.0001	0.0004
2265002021	Construction	4-Stroke Paving Equipment	MOVES	0.0004	0.0020	59.0%	59.0%	population	0.0002	0.0012
2265002024	Construction	4-Stroke Surfacing Equipment	MOVES	0.0002	0.0007	59.0%	59.0%	population	0.0001	0.0004
2265002027	Construction	4-Stroke Signal Boards	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2265002030	Construction	4-Stroke Trenchers	MOVES	0.0004	0.0012	59.0%	59.0%	population	0.0002	0.0007
2265002033	Construction	4-Stroke Bore/Drill Rigs	MOVES	0.0002	0.0007	59.0%	59.0%	population	0.0001	0.0004
2265002039	Construction	4-Stroke Concrete/Industrial Saws	MOVES	0.0008	0.0026	59.0%	59.0%	population	0.0005	0.0015
2265002042	Construction	4-Stroke Cement & Mortar Mixers	MOVES	0.0004	0.0026	59.0%	59.0%	population	0.0002	0.0015
2265002045	Construction	4-Stroke Cranes	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2265002054	Construction	4-Stroke Crushing/Proc. Equipment	MOVES	0.0001	0.0002	59.0%	59.0%	population	0.0000	0.0001
2265002057	Construction	4-Stroke Rough Terrain Forklifts	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2265002060	Construction	4-Stroke Rubber Tire Loaders	MOVES	0.0001	0.0001	59.0%	59.0%	population	0.0001	0.0000
2265002066	Construction	4-Stroke Tractors/Loaders/Backhoes	MOVES	0.0002	0.0008	59.0%	59.0%	population	0.0001	0.0005
2265002072	Construction	4-Stroke Skid Steer Loaders	MOVES	0.0002	0.0004	59.0%	59.0%	population	0.0001	0.0003
2265002078	Construction	4-Stroke Dumpers/Tenders	MOVES	0.0001	0.0004	59.0%	59.0%	population	0.0000	0.0002
2265002081	Construction	4-Stroke Other Construction Equipment	MOVES	0.0001	0.0001	59.0%	59.0%	population	0.0000	0.0000
2265003010	Industrial	4-Stroke Aerial Lifts	MOVES	0.0027	0.0049	59.0%	59.0%	population	0.0016	0.0029
2265003020	Industrial	4-Stroke Forklifts	MOVES	0.0076	0.0055	59.0%	59.0%	population	0.0045	0.0033
2265003030	Industrial	4-Stroke Sweepers/Scrubbers	MOVES	0.0018	0.0040	59.0%	59.0%	population	0.0011	0.0024
2265003040	Industrial	4-Stroke Other General Industrial Equipment	MOVES	0.0038	0.0153	59.0%	59.0%	population	0.0022	0.0090
2265003050	Industrial	4-Stroke Other Material Handling Equipment	MOVES	0.0002	0.0004	59.0%	59.0%	population	0.0001	0.0002
2265003060	Industrial	4-Stroke Industrial AC/Refrigeration	MOVES	0.0000	0.0001	59.0%	59.0%	population	0.0000	0.0000
2265003070	Industrial	4-Stroke Terminal Tractors	MOVES	0.0007	0.0005	59.0%	59.0%	population	0.0004	0.0003
2265004010	Lawn/Garden	4-Stroke Lawn mowers (Residential)	MOVES	0.0055	0.0516	59.0%	59.0%	population	0.0032	0.0304
2265004011	Lawn/Garden	4-Stroke Lawn mowers (Commercial)	MOVES	0.0029	0.0185	59.0%	59.0%	population	0.0017	0.0109
2265004015	Lawn/Garden	4-Stroke Rotary Tillers < 6 HP (Residential)	MOVES	0.0005	0.0045	59.0%	59.0%	population	0.0003	0.0027
2265004016	Lawn/Garden	4-Stroke Rotary Tillers < 6 HP (Commercial)	MOVES	0.0015	0.0108	59.0%	59.0%	population	0.0009	0.0063
2265004025	Lawn/Garden	4-Stroke Trimmers/Edgers/Brush Cutters (Res.)	MOVES	0.0000	0.0003	59.0%	59.0%	population	0.0000	0.0002
2265004026	Lawn/Garden	4-Stroke Trimmers/Edgers/Brush Cutters (Com.)	MOVES	0.0001	0.0005	59.0%	59.0%	population	0.0000	0.0003
2265004030	Lawn/Garden	4-Stroke Leafblowers/Vacuums (Residential)	MOVES	0.0001	0.0006	59.0%	59.0%	population	0.0000	0.0003
2265004031	Lawn/Garden	4-Stroke Leafblowers/Vacuums (Commercial)	MOVES	0.0027	0.0115	59.0%	59.0%	population	0.0016	0.0068
2265004035	Lawn/Garden	4-Stroke Snowblowers (Residential)	MOVES	0.0000	0.0037	59.0%	59.0%	population	0.0000	0.0022
2265004036	Lawn/Garden	4-Stroke Snowblowers (Commercial)	MOVES	0.0000	0.0003	59.0%	59.0%	population	0.0000	0.0002
2265004040	Lawn/Garden	4-Stroke Rear Engine Riding Mowers (Res.)	MOVES	0.0011	0.0088	59.0%	59.0%	population	0.0006	0.0052
2265004041	Lawn/Garden	4-Stroke Rear Engine Riding Mowers (Comm.)	MOVES	0.0003	0.0012	59.0%	59.0%	population	0.0002	0.0007
2265004046	Lawn/Garden	4-Stroke Front Mowers (Commercial)	MOVES	0.0004	0.0015	59.0%	59.0%	population	0.0002	0.0009
2265004051	Lawn/Garden	4-Stroke Shredders < 6 HP (Commercial)	MOVES	0.0002	0.0013	59.0%	59.0%	population	0.0001	0.0007
2265004055	Lawn/Garden	4-Stroke Lawn & Garden Tractors (Residential)	MOVES	0.0147	0.0865	59.0%	59.0%	population	0.0087	0.0511
2265004056	Lawn/Garden	4-Stroke Lawn & Garden Tractors (Commercial)	MOVES	0.0043	0.0153	59.0%	59.0%	population	0.0026	0.0090
2265004066	Lawn/Garden	4-Stroke Chippers/Stump Grinders (Comm.)	MOVES	0.0007	0.0017	59.0%	59.0%	population	0.0004	0.0010

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				NOx	VOC	NOx	VOC		NOx	VOC
2265004071	Lawn/Garden	4-Stroke Commercial Turf Equipment (Comm.)	MOVES	0.0140	0.0458	59.0%	59.0%	population	0.0083	0.0270
2265004075	Lawn/Garden	4-Stroke Other Lawn & Garden Equip. (Res.)	MOVES	0.0005	0.0040	59.0%	59.0%	population	0.0003	0.0024
2265004076	Lawn/Garden	4-Stroke Other Lawn & Garden Equip. (Com.)	MOVES	0.0004	0.0032	59.0%	59.0%	population	0.0003	0.0019
2265005010	Agriculture	4-Stroke 2-Wheel Tractors	MOVES	0.0000	0.0001	17.0%	17.0%	land area	0.0000	0.0000
2265005015	Agriculture	4-Stroke Agricultural Tractors	MOVES	0.0001	0.0001	17.0%	17.0%	land area	0.0000	0.0000
2265005020	Agriculture	4-Stroke Combines	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2265005025	Agriculture	4-Stroke Balers	MOVES	0.0004	0.0008	17.0%	17.0%	land area	0.0001	0.0001
2265005030	Agriculture	4-Stroke Agricultural Mowers	MOVES	0.0000	0.0001	17.0%	17.0%	land area	0.0000	0.0000
2265005035	Agriculture	4-Stroke Sprayers	MOVES	0.0006	0.0017	17.0%	17.0%	land area	0.0001	0.0003
2265005040	Agriculture	4-Stroke Tillers > 5 HP	MOVES	0.0010	0.0049	17.0%	17.0%	land area	0.0002	0.0008
2265005045	Agriculture	4-Stroke Swathers	MOVES	0.0007	0.0010	17.0%	17.0%	land area	0.0001	0.0002
2265005055	Agriculture	4-Stroke Other Agricultural Equipment	MOVES	0.0007	0.0009	17.0%	17.0%	land area	0.0001	0.0002
2265005060	Agriculture	4-Stroke Irrigation Sets	MOVES	0.0001	0.0001	17.0%	17.0%	land area	0.0000	0.0000
2265006005	Commercial	4-Stroke Light Commercial Generator Set	MOVES	0.0053	0.0336	59.0%	59.0%	population	0.0031	0.0198
2265006010	Commercial	4-Stroke Light Commercial Pumps	MOVES	0.0014	0.0064	59.0%	59.0%	population	0.0008	0.0038
2265006015	Commercial	4-Stroke Light Commercial Air Compressors	MOVES	0.0007	0.0026	59.0%	59.0%	population	0.0004	0.0015
2265006025	Commercial	4-Stroke Light Commercial Welders	MOVES	0.0015	0.0056	59.0%	59.0%	population	0.0009	0.0033
2265006030	Commercial	4-Stroke Light Commercial Pressure Wash	MOVES	0.0024	0.0133	59.0%	59.0%	population	0.0014	0.0078
2265006035	Commercial	4-Stroke Hydro Power Units	MOVES	0.0001	0.0005	59.0%	59.0%	population	0.0001	0.0003
2265007010	Logging	4-Stroke Logging Equipment Shredders > 6 HP	MOVES	0.0000	0.0001	17.0%	17.0%	land area	0.0000	0.0000
2265007015	Logging	4-Stroke Logging Equipment Skidders	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2267001060	Recreational	LPG Specialty Vehicle Carts	MOVES	0.0001	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2267002003	Construction	LPG Asphalt Pavers	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002015	Construction	LPG Rollers	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002021	Construction	LPG Paving Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002024	Construction	LPG Surfacing Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002030	Construction	LPG Trenchers	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002033	Construction	LPG Bore/Drill Rigs	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0001	0.0000
2267002039	Construction	LPG Concrete/Industrial Saws	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002045	Construction	LPG Cranes	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002054	Construction	LPG Crushing/Proc. Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002057	Construction	LPG Rough Terrain Forklifts	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002060	Construction	LPG Rubber Tire Loaders	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002066	Construction	LPG Tractors/Loaders/Backhoes	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267002072	Construction	LPG Skid Steer Loaders	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0001	0.0000
2267002081	Construction	LPG Other Construction Equipment	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267003010	Industrial	LPG Aerial Lifts	MOVES	0.0020	0.0003	59.0%	59.0%	population	0.0012	0.0002
2267003020	Industrial	LPG Forklifts	MOVES	0.1171	0.0137	59.0%	59.0%	population	0.0691	0.0081
2267003030	Industrial	LPG Sweepers/Scrubbers	MOVES	0.0009	0.0001	59.0%	59.0%	population	0.0005	0.0001
2267003040	Industrial	LPG Other General Industrial Equipment	MOVES	0.0003	0.0000	59.0%	59.0%	population	0.0002	0.0000

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				NOx	VOC	NOx	VOC		NOx	VOC
2267003050	Industrial	LPG Other Material Handling Equipment	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0001	0.0000
2267003070	Industrial	LPG Terminal Tractors	MOVES	0.0006	0.0001	59.0%	59.0%	population	0.0003	0.0000
2267004066	Lawn/Garden	LPG Chippers/Stump Grinders (Commercial)	MOVES	0.0003	0.0000	59.0%	59.0%	population	0.0001	0.0000
2267005055	Agriculture	LPG Other Agricultural Equipment	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2267005060	Agriculture	LPG Irrigation Sets	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2267006005	Commercial	LPG Light Commercial Generator Sets	MOVES	0.0016	0.0002	59.0%	59.0%	population	0.0009	0.0001
2267006010	Commercial	LPG Light Commercial Pumps	MOVES	0.0002	0.0000	59.0%	59.0%	population	0.0001	0.0000
2267006015	Commercial	LPG Light Commercial Air Compressors	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0001	0.0000
2267006025	Commercial	LPG Light Commercial Welders	MOVES	0.0002	0.0000	59.0%	59.0%	population	0.0001	0.0000
2267006030	Commercial	LPG Light Commercial Pressure Washers	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2267006035	Commercial	LPG Hydro Power Units	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268002081	Construction	CNG Other Construction Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268003020	Industrial	CNG Forklifts	MOVES	0.0095	0.0041	59.0%	59.0%	population	0.0056	0.0024
2268003030	Industrial	CNG Sweepers/Scrubbers	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268003040	Industrial	CNG Other General Industrial Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268003060	Industrial	CNG AC/Refrigeration	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268003070	Industrial	CNG Terminal Tractors	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268005055	Agriculture	CNG Other Agricultural Equipment	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2268005060	Agriculture	CNG Irrigation Sets	MOVES	0.0002	0.0001	17.0%	17.0%	land area	0.0000	0.0000
2268006005	Commercial	CNG Light Commercial Generator Sets	MOVES	0.0006	0.0004	59.0%	59.0%	population	0.0004	0.0002
2268006010	Commercial	CNG Light Commercial Pumps	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268006015	Commercial	CNG Light Commercial Air Compressors	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2268006020	Commercial	CNG Light Commercial Gas Compressors	MOVES	0.0005	0.0003	59.0%	59.0%	population	0.0003	0.0001
2270001060	Recreational	Diesel Specialty Vehicle Carts	MOVES	0.0015	0.0003	17.0%	17.0%	land area	0.0003	0.0001
2270002003	Construction	Diesel Pavers	MOVES	0.0023	0.0001	59.0%	59.0%	population	0.0014	0.0001
2270002006	Construction	Diesel Tampers/Rammers (unused)	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2270002009	Construction	Diesel Plate Compactors	MOVES	0.0003	0.0000	59.0%	59.0%	population	0.0002	0.0000
2270002015	Construction	Diesel Rollers	MOVES	0.0077	0.0003	59.0%	59.0%	population	0.0045	0.0002
2270002018	Construction	Diesel Scrapers	MOVES	0.0042	0.0002	59.0%	59.0%	population	0.0025	0.0001
2270002021	Construction	Diesel Paving Equipment	MOVES	0.0006	0.0000	59.0%	59.0%	population	0.0003	0.0000
2270002024	Construction	Diesel Surfacing Equipment	MOVES	0.0005	0.0000	59.0%	59.0%	population	0.0003	0.0000
2270002027	Construction	Diesel Signal Boards	MOVES	0.0025	0.0002	59.0%	59.0%	population	0.0015	0.0001
2270002030	Construction	Diesel Trenchers	MOVES	0.0064	0.0003	59.0%	59.0%	population	0.0038	0.0002
2270002033	Construction	Diesel Bore/Drill Rigs	MOVES	0.0082	0.0005	59.0%	59.0%	population	0.0048	0.0003
2270002036	Construction	Diesel Excavators	MOVES	0.0131	0.0006	59.0%	59.0%	population	0.0077	0.0004
2270002039	Construction	Diesel Concrete/Industrial Saws	MOVES	0.0005	0.0000	59.0%	59.0%	population	0.0003	0.0000
2270002042	Construction	Diesel Cement & Mortar Mixers	MOVES	0.0004	0.0000	59.0%	59.0%	population	0.0002	0.0000
2270002045	Construction	Diesel Cranes	MOVES	0.0049	0.0003	59.0%	59.0%	population	0.0029	0.0001
2270002048	Construction	Diesel Graders	MOVES	0.0024	0.0001	59.0%	59.0%	population	0.0014	0.0001
2270002051	Construction	Diesel Off-highway Trucks	MOVES	0.0367	0.0008	59.0%	59.0%	population	0.0217	0.0005

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				NOx	VOC	NOx	VOC		NOx	VOC
2270002054	Construction	Diesel Crushing/Proc. Equipment	MOVES	0.0015	0.0001	59.0%	59.0%	population	0.0009	0.0000
2270002057	Construction	Diesel Rough Terrain Forklifts	MOVES	0.0115	0.0005	59.0%	59.0%	population	0.0068	0.0003
2270002060	Construction	Diesel Rubber Tire Loaders	MOVES	0.0291	0.0013	59.0%	59.0%	population	0.0171	0.0008
2270002066	Construction	Diesel Tractors/Loaders/Backhoes	MOVES	0.0331	0.0047	59.0%	59.0%	population	0.0195	0.0028
2270002069	Construction	Diesel Crawler Tractors	MOVES	0.0220	0.0009	59.0%	59.0%	population	0.0130	0.0005
2270002072	Construction	Diesel Skid Steer Loaders	MOVES	0.0393	0.0065	59.0%	59.0%	population	0.0232	0.0039
2270002075	Construction	Diesel Off-Highway Tractors	MOVES	0.0049	0.0002	59.0%	59.0%	population	0.0029	0.0001
2270002078	Construction	Diesel Dumpers/Tenders	MOVES	0.0001	0.0000	59.0%	59.0%	population	0.0001	0.0000
2270002081	Construction	Diesel Other Construction Equipment	MOVES	0.0037	0.0002	59.0%	59.0%	population	0.0022	0.0001
2270003010	Industrial	Diesel Aerial Lifts	MOVES	0.0073	0.0011	59.0%	59.0%	population	0.0043	0.0007
2270003020	Industrial	Diesel Forklifts	MOVES	0.0367	0.0007	59.0%	59.0%	population	0.0216	0.0004
2270003030	Industrial	Diesel Sweepers/Scrubbers	MOVES	0.0130	0.0005	59.0%	59.0%	population	0.0077	0.0003
2270003040	Industrial	Diesel Other General Industrial Equipment	MOVES	0.0155	0.0008	59.0%	59.0%	population	0.0091	0.0005
2270003050	Industrial	Diesel Other Material Handling Equipment	MOVES	0.0014	0.0002	59.0%	59.0%	population	0.0008	0.0001
2270003060	Industrial	Diesel AC/Refrigeration	MOVES	0.0332	0.0011	59.0%	59.0%	population	0.0196	0.0007
2270003070	Industrial	Diesel Terminal Tractors	MOVES	0.0075	0.0003	59.0%	59.0%	population	0.0044	0.0002
2270004031	Lawn/Garden	Diesel Leafblowers/Vacuums (Commercial)	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2270004036	Lawn/Garden	Diesel Snowblowers (Commercial)	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2270004046	Lawn/Garden	Diesel Front Mowers (Commercial)	MOVES	0.0071	0.0006	59.0%	59.0%	population	0.0042	0.0003
2270004056	Lawn/Garden	Diesel Lawn & Garden Tractors (Commercial)	MOVES	0.0016	0.0001	59.0%	59.0%	population	0.0009	0.0001
2270004066	Lawn/Garden	Diesel Chippers/Stump Grinders (Commercial)	MOVES	0.0090	0.0007	59.0%	59.0%	population	0.0053	0.0004
2270004071	Lawn/Garden	Diesel Commercial Turf Equipment (Comm.)	MOVES	0.0006	0.0000	59.0%	59.0%	population	0.0004	0.0000
2270004076	Lawn/Garden	Diesel Other Lawn & Garden Equipment	MOVES	0.0000	0.0000	59.0%	59.0%	population	0.0000	0.0000
2270005010	Agriculture	Diesel 2-Wheel Tractors	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2270005015	Agriculture	Diesel Agricultural Tractors	MOVES	0.1053	0.0068	17.0%	17.0%	land area	0.0179	0.0012
2270005020	Agriculture	Diesel Combines	MOVES	0.0175	0.0014	17.0%	17.0%	land area	0.0030	0.0002
2270005025	Agriculture	Diesel Balers	MOVES	0.0001	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2270005030	Agriculture	Diesel Agricultural Mowers	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2270005035	Agriculture	Diesel Sprayers	MOVES	0.0014	0.0001	17.0%	17.0%	land area	0.0002	0.0000
2270005040	Agriculture	Diesel Tillers > 6 HP	MOVES	0.0000	0.0000	17.0%	17.0%	land area	0.0000	0.0000
2270005045	Agriculture	Diesel Swathers	MOVES	0.0013	0.0001	17.0%	17.0%	land area	0.0002	0.0000
2270005055	Agriculture	Diesel Other Agricultural Equipment	MOVES	0.0024	0.0002	17.0%	17.0%	land area	0.0004	0.0000
2270005060	Agriculture	Diesel Irrigation Sets	MOVES	0.0011	0.0001	17.0%	17.0%	land area	0.0002	0.0000
2270006005	Commercial	Diesel Light Commercial Generator Sets	MOVES	0.0131	0.0011	59.0%	59.0%	population	0.0077	0.0007
2270006010	Commercial	Diesel Light Commercial Pumps	MOVES	0.0031	0.0003	59.0%	59.0%	population	0.0018	0.0002
2270006015	Commercial	Diesel Light Commercial Air Compressors	MOVES	0.0051	0.0002	59.0%	59.0%	population	0.0030	0.0001
2270006025	Commercial	Diesel Light Commercial Welders	MOVES	0.0044	0.0006	59.0%	59.0%	population	0.0026	0.0004
2270006030	Commercial	Diesel Light Commercial Pressure Washer	MOVES	0.0004	0.0000	59.0%	59.0%	population	0.0003	0.0000
2270006035	Commercial	Diesel Hydro Power Units	MOVES	0.0002	0.0000	59.0%	59.0%	population	0.0001	0.0000
2270007015	Logging	Diesel Logging Equip Fell/Bunch/Skidders	MOVES	0.0001	0.0000	17.0%	17.0%	land area	0.0000	0.0000

SCC	Segment Description	SCC Description	Emis-sions from	Sheboygan Co. 2024 Emissions		% in NAA		Allocate by	Sheb. Co. NAA 2024 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2275000000	Airport	All Airport	2022EMP	0.0172	0.0232	0.0%	0.0%	airport location	0.0000	0.0000
2280002x01/2	Comm. Mar.	CM Vessels, Diesel, C1&C2	2022EMP	0.0949	0.0029	100.0%	100.0%	Lk. Mich. Shoreline	0.0949	0.0029
2280002x03/4	Comm. Mar.	CM Vessels, Diesel, C3	2022EMP	0.0715	0.0030	100.0%	100.0%	Lk. Mich. Shoreline	0.0715	0.0030
2282005010	Pleasure Craft	2-Stroke Outboards	MOVES	0.0491	0.1608	0.0%	0.0%	water area	0.0000	0.0000
2282005015	Pleasure Craft	2-Stroke Personal Watercraft	MOVES	0.0233	0.0293	81.0%	81.0%	water area	0.0189	0.0237
2282010005	Pleasure Craft	4-Stroke Inboards	MOVES	0.1009	0.1324	81.0%	81.0%	water area	0.0818	0.1072
2282020005	Pleasure Craft	Diesel Inboards	MOVES	0.1341	0.0085	81.0%	81.0%	water area	0.1086	0.0069
2282020010	Pleasure Craft	Diesel Outboards	MOVES	0.0001	0.0000	0.0%	0.0%	water area	0.0000	0.0000
228500200x	Railroad	All Diesel Line Haul Locomotives	2022EMP	0.0572	0.0026	45.0%	45.0%	track miles	0.0257	0.0012
2285002015	Railway Maint.	Diesel Railway Maintenance	MOVES	0.0002	0.0000	45.0%	45.0%	track miles	0.0001	0.0000
2285004015	Railway Maint.	4-Stroke Gasoline Railway Maintenance	MOVES	0.0000	0.0000	45.0%	45.0%	track miles	0.0000	0.0000
2285006015	Railway Maint.	LPG Railway Maintenance	MOVES	0.0000	0.0000	45.0%	45.0%	track miles	0.0000	0.0000
ALL (Total)	**ALL (Total)**	**ALL (Total)**		**1.3200**	**1.2829**	**60.0%**	**43.7%**		**0.7922**	**0.5612**
22xx005xxx	Agriculture	All	MOVES	0.1330	0.0190	17.0%	17.0%	land area	0.0226	0.0032
22750xxxxx	Airport	All	2022EMP	0.0172	0.0232	0.0%	0.0%	airport location	0.0000	0.0000
22xx006xxx	Commercial	All	MOVES	0.0415	0.0733	59.0%	59.0%	population	0.0245	0.0433
2280002xxx	Comm. Mar	All	2022EMP	0.1664	0.0059	100.0%	100.0%	Lk. Mich. Shoreline	0.1664	0.0059
22xx002xxx	Construction	All	MOVES	0.2408	0.0581	59.0%	59.0%	population	0.1421	0.0343
22xx003xxx	Industrial	All	MOVES	0.2620	0.0546	59.0%	59.0%	population	0.1546	0.0322
22xx004xxx	Lawn/Garden	All	MOVES	0.0737	0.4328	59.0%	59.0%	population	0.0435	0.2553
22xx007xxx	Logging	All	MOVES	0.0001	0.0003	17.0%	17.0%	land area	0.0000	0.0001
22820xxxxx	Pleasure Craft	All	MOVES	0.3076	0.3309	68.0%	41.6%	water area	0.2093	0.1378
228500200x	Railroad	All	2022EMP	0.0572	0.0026	45.0%	45.0%	track miles	0.0257	0.0012
228500x015	Railway Maint.	All	MOVES	0.0002	0.0001	45.0%	45.0%	track miles	0.0001	0.0000
22xx001xxx	Recreational	All	MOVES	0.0203	0.2822	17.0%	17.0%	land area	0.0035	0.0480
ALL (Total)	**ALL (Total)**	**ALL (Total)**		**1.3200**	**1.2829**	**60.0%**	**43.7%**		**0.7922**	**0.5612**

APPENDIX 7

Onroad Emissions for 2017, 2023 and 2024

This appendix provides detailed listings of onroad tons per ozone season weekday (tposwd) emissions and activity data by source type, fuel type and road type for the Sheboygan County, WI 2015 ozone NAAQS nonattainment area for the years 2017, 2023 and 2024. The sums of nitrogen oxides (NOx) and volatile organic compounds (VOC) emissions from these onroad categories were used for the onroad sector NOx and VOC tposwd emissions estimates in Section 3 of the Wisconsin Department of Natural Resources (WDNR) Attainment Plan for the Sheboygan County, WI 2015 Ozone NAAQS Moderate Nonattainment Area.

EPA's MOVES4.0.1[1] model was used to estimate these emissions.

[1] https://www.epa.gov/moves/latest-version-motor-vehicle-emission-simulator-moves.

Table A7.1. 2017 Onroad NOx and VOC Emissions, tons per ozone season weekday (tposwd), for the Sheboygan County 2015 Ozone NAAQS Nonattainment Area (NAA).

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA Year 2017			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Motorcycle	Gasoline	Off-Network	0.0000	0.0001	0.0262	0.0264
Motorcycle	Gasoline	Rural Restricted	0.0026	0.0028	0.0011	0.0039
Motorcycle	Gasoline	Rural Unrestricted	0.0016	0.0025	0.0016	0.0041
Motorcycle	Gasoline	Urban Restricted	0.0017	0.0018	0.0007	0.0025
Motorcycle	Gasoline	Urban Unrestricted	0.0048	0.0078	0.0050	0.0128
Passenger Car	Gasoline	Off-Network	0.0400	0.0437	0.1457	0.1894
Passenger Car	Gasoline	Rural Restricted	0.0377	0.0079	0.0032	0.0110
Passenger Car	Gasoline	Rural Unrestricted	0.0180	0.0054	0.0034	0.0088
Passenger Car	Gasoline	Urban Restricted	0.0323	0.0067	0.0027	0.0094
Passenger Car	Gasoline	Urban Unrestricted	0.0706	0.0222	0.0142	0.0364
Passenger Car	Diesel	Off-Network	0.0003	0.0004	0.0000	0.0004
Passenger Car	Diesel	Rural Restricted	0.0004	0.0001	0.0000	0.0001
Passenger Car	Diesel	Rural Unrestricted	0.0002	0.0001	0.0000	0.0001
Passenger Car	Diesel	Urban Restricted	0.0003	0.0001	0.0000	0.0001
Passenger Car	Diesel	Urban Unrestricted	0.0007	0.0003	0.0000	0.0003
Passenger Car	Ethanol (E-85)	Off-Network	0.0000	0.0000	0.0000	0.0001
Passenger Car	Ethanol (E-85)	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Ethanol (E-85)	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Ethanol (E-85)	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Ethanol (E-85)	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Passenger Car	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Gasoline	Off-Network	0.0670	0.0543	0.1021	0.1564
Passenger Truck	Gasoline	Rural Restricted	0.0580	0.0086	0.0027	0.0113
Passenger Truck	Gasoline	Rural Unrestricted	0.0294	0.0069	0.0032	0.0101
Passenger Truck	Gasoline	Urban Restricted	0.0364	0.0054	0.0017	0.0071
Passenger Truck	Gasoline	Urban Unrestricted	0.0815	0.0202	0.0094	0.0296
Passenger Truck	Diesel	Off-Network	0.0056	0.0005	0.0000	0.0005
Passenger Truck	Diesel	Rural Restricted	0.0033	0.0005	0.0000	0.0005
Passenger Truck	Diesel	Rural Unrestricted	0.0027	0.0005	0.0000	0.0005
Passenger Truck	Diesel	Urban Restricted	0.0021	0.0003	0.0000	0.0003
Passenger Truck	Diesel	Urban Unrestricted	0.0075	0.0015	0.0000	0.0015
Passenger Truck	Ethanol (E-85)	Off-Network	0.0001	0.0001	0.0002	0.0003
Passenger Truck	Ethanol (E-85)	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Ethanol (E-85)	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Ethanol (E-85)	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Ethanol (E-85)	Urban Unrestricted	0.0001	0.0000	0.0000	0.0000
Passenger Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Gasoline	Off-Network	0.0146	0.0103	0.0148	0.0251
Light Commercial Truck	Gasoline	Rural Restricted	0.0121	0.0019	0.0005	0.0023
Light Commercial Truck	Gasoline	Rural Unrestricted	0.0065	0.0019	0.0005	0.0024
Light Commercial Truck	Gasoline	Urban Restricted	0.0102	0.0016	0.0004	0.0020
Light Commercial Truck	Gasoline	Urban Unrestricted	0.0233	0.0072	0.0019	0.0091

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA Year 2017			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Light Commercial Truck	Diesel	Off-Network	0.0105	0.0009	0.0000	0.0009
Light Commercial Truck	Diesel	Rural Restricted	0.0059	0.0009	0.0000	0.0009
Light Commercial Truck	Diesel	Rural Unrestricted	0.0044	0.0008	0.0000	0.0008
Light Commercial Truck	Diesel	Urban Restricted	0.0050	0.0008	0.0000	0.0008
Light Commercial Truck	Diesel	Urban Unrestricted	0.0158	0.0031	0.0000	0.0031
Light Commercial Truck	Ethanol (E-85)	Off-Network	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Ethanol (E-85)	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Ethanol (E-85)	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Ethanol (E-85)	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Ethanol (E-85)	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Gasoline	Off-Network	0.0009	0.0009	0.0006	0.0015
Other Buses	Gasoline	Rural Restricted	0.0012	0.0003	0.0000	0.0003
Other Buses	Gasoline	Rural Unrestricted	0.0005	0.0002	0.0000	0.0002
Other Buses	Gasoline	Urban Restricted	0.0013	0.0003	0.0000	0.0004
Other Buses	Gasoline	Urban Unrestricted	0.0022	0.0009	0.0001	0.0010
Other Buses	Diesel	Off-Network	0.0016	0.0002	0.0000	0.0002
Other Buses	Diesel	Rural Restricted	0.0040	0.0002	0.0000	0.0002
Other Buses	Diesel	Rural Unrestricted	0.0016	0.0001	0.0000	0.0001
Other Buses	Diesel	Urban Restricted	0.0044	0.0002	0.0000	0.0002
Other Buses	Diesel	Urban Unrestricted	0.0068	0.0004	0.0000	0.0004
Other Buses	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
Other Buses	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Other Buses	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Other Buses	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Gasoline	Off-Network	0.0002	0.0002	0.0001	0.0003
Transit Bus	Gasoline	Rural Restricted	0.0002	0.0001	0.0000	0.0001
Transit Bus	Gasoline	Rural Unrestricted	0.0001	0.0000	0.0000	0.0000
Transit Bus	Gasoline	Urban Restricted	0.0003	0.0001	0.0000	0.0001
Transit Bus	Gasoline	Urban Unrestricted	0.0004	0.0001	0.0000	0.0001
Transit Bus	Diesel	Off-Network	0.0017	0.0002	0.0000	0.0002
Transit Bus	Diesel	Rural Restricted	0.0029	0.0001	0.0000	0.0001
Transit Bus	Diesel	Rural Unrestricted	0.0013	0.0001	0.0000	0.0001
Transit Bus	Diesel	Urban Restricted	0.0040	0.0002	0.0000	0.0002
Transit Bus	Diesel	Urban Unrestricted	0.0057	0.0004	0.0000	0.0004
Transit Bus	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
Transit Bus	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Transit Bus	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA Year 2017			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Transit Bus	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
School Bus	Gasoline	Off-Network	0.0001	0.0001	0.0001	0.0002
School Bus	Gasoline	Rural Restricted	0.0001	0.0000	0.0000	0.0000
School Bus	Gasoline	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
School Bus	Gasoline	Urban Restricted	0.0001	0.0000	0.0000	0.0000
School Bus	Gasoline	Urban Unrestricted	0.0001	0.0001	0.0000	0.0001
School Bus	Diesel	Off-Network	0.0006	0.0001	0.0000	0.0001
School Bus	Diesel	Rural Restricted	0.0014	0.0001	0.0000	0.0001
School Bus	Diesel	Rural Unrestricted	0.0008	0.0001	0.0000	0.0001
School Bus	Diesel	Urban Restricted	0.0013	0.0001	0.0000	0.0001
School Bus	Diesel	Urban Unrestricted	0.0027	0.0003	0.0000	0.0003
School Bus	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
School Bus	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
School Bus	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
School Bus	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
School Bus	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
School Bus	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Gasoline	Off-Network	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Gasoline	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Off-Network	0.0006	0.0001	0.0000	0.0001
Refuse Truck	Diesel	Rural Restricted	0.0012	0.0001	0.0000	0.0001
Refuse Truck	Diesel	Rural Unrestricted	0.0006	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Urban Restricted	0.0014	0.0001	0.0000	0.0001
Refuse Truck	Diesel	Urban Unrestricted	0.0019	0.0002	0.0000	0.0002
Refuse Truck	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
Refuse Truck	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Gasoline	Off-Network	0.0075	0.0046	0.0056	0.0102
Single Unit Short-haul Truck	Gasoline	Rural Restricted	0.0028	0.0006	0.0001	0.0007
Single Unit Short-haul Truck	Gasoline	Rural Unrestricted	0.0014	0.0005	0.0001	0.0006
Single Unit Short-haul Truck	Gasoline	Urban Restricted	0.0031	0.0006	0.0001	0.0007
Single Unit Short-haul Truck	Gasoline	Urban Unrestricted	0.0043	0.0017	0.0002	0.0020
Single Unit Short-haul Truck	Diesel	Off-Network	0.0188	0.0026	0.0000	0.0026
Single Unit Short-haul Truck	Diesel	Rural Restricted	0.0246	0.0019	0.0000	0.0019
Single Unit Short-haul Truck	Diesel	Rural Unrestricted	0.0146	0.0016	0.0000	0.0016
Single Unit Short-haul Truck	Diesel	Urban Restricted	0.0276	0.0021	0.0000	0.0021
Single Unit Short-haul Truck	Diesel	Urban Unrestricted	0.0459	0.0050	0.0000	0.0050
Single Unit Short-haul Truck	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA Year 2017			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Single Unit Short-haul Truck	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Gasoline	Off-Network	0.0000	0.0000	0.0002	0.0003
Single Unit Long-haul Truck	Gasoline	Rural Restricted	0.0001	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Gasoline	Rural Unrestricted	0.0001	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Gasoline	Urban Restricted	0.0002	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Gasoline	Urban Unrestricted	0.0003	0.0001	0.0000	0.0001
Single Unit Long-haul Truck	Diesel	Off-Network	0.0008	0.0001	0.0000	0.0001
Single Unit Long-haul Truck	Diesel	Rural Restricted	0.0014	0.0001	0.0000	0.0001
Single Unit Long-haul Truck	Diesel	Rural Unrestricted	0.0009	0.0001	0.0000	0.0001
Single Unit Long-haul Truck	Diesel	Urban Restricted	0.0016	0.0001	0.0000	0.0001
Single Unit Long-haul Truck	Diesel	Urban Unrestricted	0.0031	0.0003	0.0000	0.0003
Single Unit Long-haul Truck	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Gasoline	Off-Network	0.0004	0.0005	0.0039	0.0044
Motor Home	Gasoline	Rural Restricted	0.0016	0.0003	0.0001	0.0004
Motor Home	Gasoline	Rural Unrestricted	0.0008	0.0003	0.0001	0.0004
Motor Home	Gasoline	Urban Restricted	0.0015	0.0003	0.0001	0.0004
Motor Home	Gasoline	Urban Unrestricted	0.0024	0.0010	0.0002	0.0012
Motor Home	Diesel	Off-Network	0.0000	0.0000	0.0000	0.0000
Motor Home	Diesel	Rural Restricted	0.0017	0.0001	0.0000	0.0001
Motor Home	Diesel	Rural Unrestricted	0.0009	0.0001	0.0000	0.0001
Motor Home	Diesel	Urban Restricted	0.0016	0.0001	0.0000	0.0001
Motor Home	Diesel	Urban Unrestricted	0.0027	0.0004	0.0000	0.0004
Motor Home	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
Motor Home	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Motor Home	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Motor Home	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Gasoline	Off-Network	0.0000	0.0000	0.0001	0.0001
Combination Short-haul Truck	Gasoline	Rural Restricted	0.0001	0.0000	0.0000	0.0000
Combination Short-haul Truck	Gasoline	Rural Unrestricted	0.0001	0.0000	0.0000	0.0000
Combination Short-haul Truck	Gasoline	Urban Restricted	0.0001	0.0000	0.0000	0.0000

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA Year 2017			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Combination Short-haul Truck	Gasoline	Urban Unrestricted	0.0001	0.0000	0.0000	0.0000
Combination Short-haul Truck	Diesel	Off-Network	0.0197	0.0021	0.0000	0.0021
Combination Short-haul Truck	Diesel	Rural Restricted	0.0772	0.0030	0.0000	0.0030
Combination Short-haul Truck	Diesel	Rural Unrestricted	0.0355	0.0020	0.0000	0.0020
Combination Short-haul Truck	Diesel	Urban Restricted	0.0705	0.0027	0.0000	0.0027
Combination Short-haul Truck	Diesel	Urban Unrestricted	0.0735	0.0041	0.0000	0.0041
Combination Short-haul Truck	CNG	Off-Network	0.0002	0.0001	0.0000	0.0001
Combination Short-haul Truck	CNG	Rural Restricted	0.0001	0.0001	0.0000	0.0001
Combination Short-haul Truck	CNG	Rural Unrestricted	0.0001	0.0001	0.0000	0.0001
Combination Short-haul Truck	CNG	Urban Restricted	0.0001	0.0001	0.0000	0.0001
Combination Short-haul Truck	CNG	Urban Unrestricted	0.0002	0.0001	0.0000	0.0001
Combination Short-haul Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Diesel	Off-Network	0.0353	0.0044	0.0000	0.0044
Combination Long-haul Truck	Diesel	Rural Restricted	0.2432	0.0084	0.0000	0.0084
Combination Long-haul Truck	Diesel	Rural Unrestricted	0.0427	0.0019	0.0000	0.0019
Combination Long-haul Truck	Diesel	Urban Restricted	0.1187	0.0041	0.0000	0.0041
Combination Long-haul Truck	Diesel	Urban Unrestricted	0.0775	0.0035	0.0000	0.0035
Combination Long-haul Truck	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**1.6358**	**0.2994**	**0.3527**	**0.6521**
Motorcycle	ALL	ALL	0.0108	0.0150	0.0347	0.0497
Passenger Car	ALL	ALL	0.2005	0.0869	0.1692	0.2561
Passenger Truck	ALL	ALL	0.2938	0.0989	0.1194	0.2182
Light Commercial Truck	ALL	ALL	0.1084	0.0295	0.0181	0.0475
Other Buses	ALL	ALL	0.0246	0.0038	0.0007	0.0045
Transit Bus	ALL	ALL	0.0168	0.0014	0.0001	0.0015
School Bus	ALL	ALL	0.0073	0.0010	0.0001	0.0010
Refuse Truck	ALL	ALL	0.0058	0.0005	0.0000	0.0005
Single Unit Short-haul Truck	ALL	ALL	0.1506	0.0214	0.0060	0.0274
Single Unit Long-haul Truck	ALL	ALL	0.0086	0.0010	0.0003	0.0013
Motor Home	ALL	ALL	0.0137	0.0033	0.0042	0.0075
Combination Short-haul Truck	ALL	ALL	0.2775	0.0144	0.0001	0.0146
Combination Long-haul Truck	ALL	ALL	0.5176	0.0224	0.0000	0.0224
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**1.6358**	**0.2994**	**0.3527**	**0.6521**
ALL	Gasoline	ALL	0.5835	0.2336	0.3524	0.5860
ALL	Diesel	ALL	1.0513	0.0651	0.0000	0.0651
ALL	CNG	ALL	0.0008	0.0006	0.0000	0.0006

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA Year 2017			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
ALL	Ethanol (E-85)	ALL	0.0003	0.0002	0.0003	0.0005
ALL	Electricity	ALL	0.0000	0.0000	0.0000	0.0000
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**1.6358**	**0.2994**	**0.3527**	**0.6521**
ALL	ALL	Off-Network	0.2269	0.1269	0.2995	0.4264
ALL	ALL	Rural Restricted	0.4842	0.0382	0.0077	0.0458
ALL	ALL	Rural Unrestricted	0.1647	0.0253	0.0088	0.0341
ALL	ALL	Urban Restricted	0.3259	0.0280	0.0057	0.0337
ALL	ALL	Urban Unrestricted	0.4341	0.0810	0.0310	0.1120
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**1.6358**	**0.2994**	**0.3527**	**0.6521**

Table A7.2. 2023 Onroad NOx and VOC Emissions, tons per ozone season weekday (tposwd), for the Sheboygan County 2015 Ozone NAAQS Nonattainment Area (NAA).

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA Year 2023			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Motorcycle	Gasoline	Off-Network	0.0000	0.0002	0.0304	0.0306
Motorcycle	Gasoline	Rural Restricted	0.0026	0.0024	0.0012	0.0036
Motorcycle	Gasoline	Rural Unrestricted	0.0019	0.0024	0.0018	0.0042
Motorcycle	Gasoline	Urban Restricted	0.0018	0.0016	0.0008	0.0024
Motorcycle	Gasoline	Urban Unrestricted	0.0049	0.0068	0.0053	0.0121
Passenger Car	Gasoline	Off-Network	0.0240	0.0278	0.1221	0.1499
Passenger Car	Gasoline	Rural Restricted	0.0173	0.0039	0.0026	0.0065
Passenger Car	Gasoline	Rural Unrestricted	0.0094	0.0032	0.0031	0.0063
Passenger Car	Gasoline	Urban Restricted	0.0151	0.0034	0.0023	0.0057
Passenger Car	Gasoline	Urban Unrestricted	0.0334	0.0120	0.0118	0.0238
Passenger Car	Diesel	Off-Network	0.0001	0.0002	0.0000	0.0002
Passenger Car	Diesel	Rural Restricted	0.0001	0.0000	0.0000	0.0000
Passenger Car	Diesel	Rural Unrestricted	0.0001	0.0000	0.0000	0.0000
Passenger Car	Diesel	Urban Restricted	0.0001	0.0000	0.0000	0.0000
Passenger Car	Diesel	Urban Unrestricted	0.0002	0.0001	0.0000	0.0001
Passenger Car	Ethanol (E-85)	Off-Network	0.0000	0.0000	0.0001	0.0001
Passenger Car	Ethanol (E-85)	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Ethanol (E-85)	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Ethanol (E-85)	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Ethanol (E-85)	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Passenger Car	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Gasoline	Off-Network	0.0391	0.0379	0.0903	0.1282
Passenger Truck	Gasoline	Rural Restricted	0.0168	0.0040	0.0024	0.0064
Passenger Truck	Gasoline	Rural Unrestricted	0.0097	0.0033	0.0031	0.0064
Passenger Truck	Gasoline	Urban Restricted	0.0108	0.0026	0.0015	0.0041
Passenger Truck	Gasoline	Urban Unrestricted	0.0243	0.0089	0.0084	0.0172
Passenger Truck	Diesel	Off-Network	0.0021	0.0001	0.0000	0.0001
Passenger Truck	Diesel	Rural Restricted	0.0009	0.0001	0.0000	0.0001
Passenger Truck	Diesel	Rural Unrestricted	0.0008	0.0001	0.0000	0.0001
Passenger Truck	Diesel	Urban Restricted	0.0006	0.0001	0.0000	0.0001
Passenger Truck	Diesel	Urban Unrestricted	0.0022	0.0004	0.0000	0.0004
Passenger Truck	Ethanol (E-85)	Off-Network	0.0001	0.0001	0.0002	0.0003
Passenger Truck	Ethanol (E-85)	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Ethanol (E-85)	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Ethanol (E-85)	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Ethanol (E-85)	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Gasoline	Off-Network	0.0077	0.0062	0.0127	0.0190
Light Commercial Truck	Gasoline	Rural Restricted	0.0046	0.0009	0.0004	0.0012
Light Commercial Truck	Gasoline	Rural Unrestricted	0.0028	0.0010	0.0005	0.0014
Light Commercial Truck	Gasoline	Urban Restricted	0.0039	0.0007	0.0003	0.0011
Light Commercial Truck	Gasoline	Urban Unrestricted	0.0091	0.0033	0.0015	0.0049

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA Year 2023			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Light Commercial Truck	Diesel	Off-Network	0.0060	0.0004	0.0000	0.0004
Light Commercial Truck	Diesel	Rural Restricted	0.0025	0.0004	0.0000	0.0004
Light Commercial Truck	Diesel	Rural Unrestricted	0.0022	0.0004	0.0000	0.0004
Light Commercial Truck	Diesel	Urban Restricted	0.0022	0.0003	0.0000	0.0003
Light Commercial Truck	Diesel	Urban Unrestricted	0.0071	0.0012	0.0000	0.0012
Light Commercial Truck	Ethanol (E-85)	Off-Network	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Ethanol (E-85)	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Ethanol (E-85)	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Ethanol (E-85)	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Ethanol (E-85)	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Gasoline	Off-Network	0.0008	0.0008	0.0006	0.0014
Other Buses	Gasoline	Rural Restricted	0.0006	0.0003	0.0000	0.0004
Other Buses	Gasoline	Rural Unrestricted	0.0003	0.0001	0.0000	0.0002
Other Buses	Gasoline	Urban Restricted	0.0006	0.0004	0.0000	0.0004
Other Buses	Gasoline	Urban Unrestricted	0.0010	0.0006	0.0001	0.0007
Other Buses	Diesel	Off-Network	0.0009	0.0001	0.0000	0.0001
Other Buses	Diesel	Rural Restricted	0.0020	0.0001	0.0000	0.0001
Other Buses	Diesel	Rural Unrestricted	0.0009	0.0001	0.0000	0.0001
Other Buses	Diesel	Urban Restricted	0.0021	0.0001	0.0000	0.0001
Other Buses	Diesel	Urban Unrestricted	0.0035	0.0002	0.0000	0.0002
Other Buses	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
Other Buses	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Other Buses	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Other Buses	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Gasoline	Off-Network	0.0001	0.0001	0.0000	0.0001
Transit Bus	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Gasoline	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Gasoline	Urban Restricted	0.0001	0.0001	0.0000	0.0001
Transit Bus	Gasoline	Urban Unrestricted	0.0001	0.0000	0.0000	0.0001
Transit Bus	Diesel	Off-Network	0.0012	0.0001	0.0000	0.0001
Transit Bus	Diesel	Rural Restricted	0.0018	0.0001	0.0000	0.0001
Transit Bus	Diesel	Rural Unrestricted	0.0009	0.0001	0.0000	0.0001
Transit Bus	Diesel	Urban Restricted	0.0024	0.0001	0.0000	0.0001
Transit Bus	Diesel	Urban Unrestricted	0.0035	0.0002	0.0000	0.0002
Transit Bus	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
Transit Bus	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Transit Bus	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA Year 2023			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Transit Bus	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
School Bus	Gasoline	Off-Network	0.0001	0.0002	0.0001	0.0002
School Bus	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	Gasoline	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
School Bus	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
School Bus	Diesel	Off-Network	0.0005	0.0000	0.0000	0.0000
School Bus	Diesel	Rural Restricted	0.0004	0.0000	0.0000	0.0000
School Bus	Diesel	Rural Unrestricted	0.0003	0.0000	0.0000	0.0000
School Bus	Diesel	Urban Restricted	0.0004	0.0000	0.0000	0.0000
School Bus	Diesel	Urban Unrestricted	0.0010	0.0000	0.0000	0.0000
School Bus	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
School Bus	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
School Bus	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
School Bus	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
School Bus	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
School Bus	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Gasoline	Off-Network	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Gasoline	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Off-Network	0.0006	0.0001	0.0000	0.0001
Refuse Truck	Diesel	Rural Restricted	0.0009	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Rural Unrestricted	0.0005	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Urban Restricted	0.0011	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Urban Unrestricted	0.0014	0.0001	0.0000	0.0001
Refuse Truck	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
Refuse Truck	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Gasoline	Off-Network	0.0065	0.0047	0.0049	0.0096
Single Unit Short-haul Truck	Gasoline	Rural Restricted	0.0008	0.0004	0.0001	0.0004
Single Unit Short-haul Truck	Gasoline	Rural Unrestricted	0.0004	0.0003	0.0001	0.0004
Single Unit Short-haul Truck	Gasoline	Urban Restricted	0.0009	0.0004	0.0001	0.0005
Single Unit Short-haul Truck	Gasoline	Urban Unrestricted	0.0011	0.0009	0.0002	0.0011
Single Unit Short-haul Truck	Diesel	Off-Network	0.0139	0.0009	0.0000	0.0009
Single Unit Short-haul Truck	Diesel	Rural Restricted	0.0091	0.0005	0.0000	0.0005
Single Unit Short-haul Truck	Diesel	Rural Unrestricted	0.0069	0.0005	0.0000	0.0005
Single Unit Short-haul Truck	Diesel	Urban Restricted	0.0102	0.0006	0.0000	0.0006
Single Unit Short-haul Truck	Diesel	Urban Unrestricted	0.0196	0.0014	0.0000	0.0014
Single Unit Short-haul Truck	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA Year 2023			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Single Unit Short-haul Truck	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Gasoline	Off-Network	0.0000	0.0000	0.0003	0.0003
Single Unit Long-haul Truck	Gasoline	Rural Restricted	0.0001	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Gasoline	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Gasoline	Urban Restricted	0.0001	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Gasoline	Urban Unrestricted	0.0001	0.0001	0.0000	0.0001
Single Unit Long-haul Truck	Diesel	Off-Network	0.0006	0.0001	0.0000	0.0001
Single Unit Long-haul Truck	Diesel	Rural Restricted	0.0007	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Diesel	Rural Unrestricted	0.0005	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Diesel	Urban Restricted	0.0008	0.0001	0.0000	0.0001
Single Unit Long-haul Truck	Diesel	Urban Unrestricted	0.0016	0.0001	0.0000	0.0001
Single Unit Long-haul Truck	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Gasoline	Off-Network	0.0003	0.0004	0.0030	0.0034
Motor Home	Gasoline	Rural Restricted	0.0008	0.0002	0.0000	0.0002
Motor Home	Gasoline	Rural Unrestricted	0.0004	0.0002	0.0000	0.0002
Motor Home	Gasoline	Urban Restricted	0.0007	0.0002	0.0000	0.0002
Motor Home	Gasoline	Urban Unrestricted	0.0011	0.0005	0.0001	0.0006
Motor Home	Diesel	Off-Network	0.0001	0.0000	0.0000	0.0000
Motor Home	Diesel	Rural Restricted	0.0010	0.0001	0.0000	0.0001
Motor Home	Diesel	Rural Unrestricted	0.0006	0.0001	0.0000	0.0001
Motor Home	Diesel	Urban Restricted	0.0009	0.0001	0.0000	0.0001
Motor Home	Diesel	Urban Unrestricted	0.0017	0.0002	0.0000	0.0002
Motor Home	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
Motor Home	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Motor Home	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Motor Home	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Gasoline	Off-Network	0.0000	0.0000	0.0001	0.0001
Combination Short-haul Truck	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Gasoline	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA Year 2023			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Combination Short-haul Truck	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Diesel	Off-Network	0.0170	0.0009	0.0000	0.0009
Combination Short-haul Truck	Diesel	Rural Restricted	0.0352	0.0012	0.0000	0.0012
Combination Short-haul Truck	Diesel	Rural Unrestricted	0.0214	0.0008	0.0000	0.0008
Combination Short-haul Truck	Diesel	Urban Restricted	0.0322	0.0011	0.0000	0.0011
Combination Short-haul Truck	Diesel	Urban Unrestricted	0.0398	0.0015	0.0000	0.0015
Combination Short-haul Truck	CNG	Off-Network	0.0004	0.0002	0.0000	0.0002
Combination Short-haul Truck	CNG	Rural Restricted	0.0001	0.0002	0.0000	0.0002
Combination Short-haul Truck	CNG	Rural Unrestricted	0.0001	0.0002	0.0000	0.0002
Combination Short-haul Truck	CNG	Urban Restricted	0.0001	0.0002	0.0000	0.0002
Combination Short-haul Truck	CNG	Urban Unrestricted	0.0003	0.0004	0.0000	0.0004
Combination Short-haul Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Diesel	Off-Network	0.0277	0.0020	0.0000	0.0020
Combination Long-haul Truck	Diesel	Rural Restricted	0.1306	0.0042	0.0000	0.0042
Combination Long-haul Truck	Diesel	Rural Unrestricted	0.0296	0.0010	0.0000	0.0010
Combination Long-haul Truck	Diesel	Urban Restricted	0.0638	0.0020	0.0000	0.0020
Combination Long-haul Truck	Diesel	Urban Unrestricted	0.0484	0.0016	0.0000	0.0016
Combination Long-haul Truck	CNG	Off-Network	0.0001	0.0000	0.0000	0.0000
Combination Long-haul Truck	CNG	Rural Restricted	0.0001	0.0001	0.0000	0.0001
Combination Long-haul Truck	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.8253**	**0.1716**	**0.3128**	**0.4844**
Motorcycle	ALL	ALL	0.0111	0.0135	0.0396	0.0530
Passenger Car	ALL	ALL	0.0998	0.0506	0.1420	0.1926
Passenger Truck	ALL	ALL	0.1076	0.0576	0.1060	0.1636
Light Commercial Truck	ALL	ALL	0.0480	0.0148	0.0154	0.0302
Other Buses	ALL	ALL	0.0128	0.0028	0.0008	0.0036
Transit Bus	ALL	ALL	0.0101	0.0009	0.0001	0.0009
School Bus	ALL	ALL	0.0029	0.0004	0.0001	0.0005
Refuse Truck	ALL	ALL	0.0046	0.0003	0.0000	0.0003
Single Unit Short-haul Truck	ALL	ALL	0.0694	0.0107	0.0052	0.0160
Single Unit Long-haul Truck	ALL	ALL	0.0046	0.0005	0.0003	0.0009
Motor Home	ALL	ALL	0.0075	0.0019	0.0032	0.0051
Combination Short-haul Truck	ALL	ALL	0.1468	0.0066	0.0001	0.0066
Combination Long-haul Truck	ALL	ALL	0.3002	0.0110	0.0000	0.0110
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.8253**	**0.1716**	**0.3128**	**0.4844**
ALL	Gasoline	ALL	0.2563	0.1438	0.3124	0.4562
ALL	Diesel	ALL	0.5674	0.0263	0.0000	0.0263
ALL	CNG	ALL	0.0014	0.0014	0.0000	0.0014

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA Year 2023			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	**Total**
ALL	Ethanol (E-85)	ALL	0.0002	0.0002	0.0004	0.0005
ALL	Electricity	ALL	0.0000	0.0000	0.0000	0.0000
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.8253**	**0.1716**	**0.3128**	**0.4844**
ALL	ALL	Off-Network	0.1502	0.0837	0.2648	0.3485
ALL	ALL	Rural Restricted	0.2289	0.0192	0.0067	0.0260
ALL	ALL	Rural Unrestricted	0.0898	0.0139	0.0087	0.0225
ALL	ALL	Urban Restricted	0.1511	0.0142	0.0051	0.0193
ALL	ALL	Urban Unrestricted	0.2054	0.0406	0.0275	0.0681
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.8253**	**0.1716**	**0.3128**	**0.4844**
Safety Margin			15%			15%
Emissions Budget			**0.9491**			**0.5571**

Table A7.3. 2024 Onroad NOx and VOC Emissions, tons per ozone season weekday (tposwd), for the Sheboygan County 2015 Ozone NAAQS Nonattainment Area (NAA).

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA Year 2024			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Motorcycle	Gasoline	Off-Network	0.0000	0.0002	0.0307	0.0309
Motorcycle	Gasoline	Rural Restricted	0.0027	0.0025	0.0012	0.0037
Motorcycle	Gasoline	Rural Unrestricted	0.0019	0.0025	0.0019	0.0044
Motorcycle	Gasoline	Urban Restricted	0.0018	0.0017	0.0008	0.0025
Motorcycle	Gasoline	Urban Unrestricted	0.0049	0.0070	0.0054	0.0124
Passenger Car	Gasoline	Off-Network	0.0227	0.0275	0.1239	0.1514
Passenger Car	Gasoline	Rural Restricted	0.0140	0.0033	0.0028	0.0061
Passenger Car	Gasoline	Rural Unrestricted	0.0077	0.0026	0.0033	0.0059
Passenger Car	Gasoline	Urban Restricted	0.0123	0.0029	0.0024	0.0053
Passenger Car	Gasoline	Urban Unrestricted	0.0272	0.0094	0.0124	0.0219
Passenger Car	Diesel	Off-Network	0.0001	0.0002	0.0000	0.0002
Passenger Car	Diesel	Rural Restricted	0.0001	0.0000	0.0000	0.0000
Passenger Car	Diesel	Rural Unrestricted	0.0001	0.0000	0.0000	0.0000
Passenger Car	Diesel	Urban Restricted	0.0001	0.0000	0.0000	0.0000
Passenger Car	Diesel	Urban Unrestricted	0.0002	0.0001	0.0000	0.0001
Passenger Car	Ethanol (E-85)	Off-Network	0.0000	0.0000	0.0001	0.0001
Passenger Car	Ethanol (E-85)	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Ethanol (E-85)	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Ethanol (E-85)	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Ethanol (E-85)	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Passenger Car	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Gasoline	Off-Network	0.0393	0.0380	0.0955	0.1335
Passenger Truck	Gasoline	Rural Restricted	0.0163	0.0039	0.0026	0.0065
Passenger Truck	Gasoline	Rural Unrestricted	0.0093	0.0033	0.0034	0.0067
Passenger Truck	Gasoline	Urban Restricted	0.0105	0.0025	0.0017	0.0042
Passenger Truck	Gasoline	Urban Unrestricted	0.0231	0.0085	0.0091	0.0177
Passenger Truck	Diesel	Off-Network	0.0020	0.0001	0.0000	0.0001
Passenger Truck	Diesel	Rural Restricted	0.0008	0.0001	0.0000	0.0001
Passenger Truck	Diesel	Rural Unrestricted	0.0008	0.0001	0.0000	0.0001
Passenger Truck	Diesel	Urban Restricted	0.0005	0.0001	0.0000	0.0001
Passenger Truck	Diesel	Urban Unrestricted	0.0020	0.0003	0.0000	0.0003
Passenger Truck	Ethanol (E-85)	Off-Network	0.0001	0.0001	0.0002	0.0003
Passenger Truck	Ethanol (E-85)	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Ethanol (E-85)	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Ethanol (E-85)	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Ethanol (E-85)	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Gasoline	Off-Network	0.0076	0.0063	0.0130	0.0192
Light Commercial Truck	Gasoline	Rural Restricted	0.0042	0.0008	0.0004	0.0012
Light Commercial Truck	Gasoline	Rural Unrestricted	0.0026	0.0009	0.0005	0.0013
Light Commercial Truck	Gasoline	Urban Restricted	0.0037	0.0007	0.0003	0.0010
Light Commercial Truck	Gasoline	Urban Unrestricted	0.0082	0.0030	0.0016	0.0046

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA Year 2024			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Light Commercial Truck	Diesel	Off-Network	0.0060	0.0004	0.0000	0.0004
Light Commercial Truck	Diesel	Rural Restricted	0.0024	0.0003	0.0000	0.0003
Light Commercial Truck	Diesel	Rural Unrestricted	0.0021	0.0003	0.0000	0.0003
Light Commercial Truck	Diesel	Urban Restricted	0.0021	0.0003	0.0000	0.0003
Light Commercial Truck	Diesel	Urban Unrestricted	0.0069	0.0012	0.0000	0.0012
Light Commercial Truck	Ethanol (E-85)	Off-Network	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Ethanol (E-85)	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Ethanol (E-85)	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Ethanol (E-85)	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Ethanol (E-85)	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Gasoline	Off-Network	0.0008	0.0008	0.0006	0.0014
Other Buses	Gasoline	Rural Restricted	0.0005	0.0003	0.0000	0.0003
Other Buses	Gasoline	Rural Unrestricted	0.0002	0.0001	0.0000	0.0001
Other Buses	Gasoline	Urban Restricted	0.0005	0.0003	0.0000	0.0004
Other Buses	Gasoline	Urban Unrestricted	0.0007	0.0005	0.0001	0.0005
Other Buses	Diesel	Off-Network	0.0010	0.0001	0.0000	0.0001
Other Buses	Diesel	Rural Restricted	0.0021	0.0001	0.0000	0.0001
Other Buses	Diesel	Rural Unrestricted	0.0010	0.0001	0.0000	0.0001
Other Buses	Diesel	Urban Restricted	0.0023	0.0001	0.0000	0.0001
Other Buses	Diesel	Urban Unrestricted	0.0037	0.0002	0.0000	0.0002
Other Buses	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
Other Buses	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Other Buses	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Other Buses	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Gasoline	Off-Network	0.0001	0.0002	0.0002	0.0004
Transit Bus	Gasoline	Rural Restricted	0.0001	0.0001	0.0000	0.0001
Transit Bus	Gasoline	Rural Unrestricted	0.0001	0.0000	0.0000	0.0000
Transit Bus	Gasoline	Urban Restricted	0.0002	0.0001	0.0000	0.0001
Transit Bus	Gasoline	Urban Unrestricted	0.0003	0.0001	0.0000	0.0002
Transit Bus	Diesel	Off-Network	0.0009	0.0001	0.0000	0.0001
Transit Bus	Diesel	Rural Restricted	0.0012	0.0001	0.0000	0.0001
Transit Bus	Diesel	Rural Unrestricted	0.0006	0.0000	0.0000	0.0000
Transit Bus	Diesel	Urban Restricted	0.0016	0.0001	0.0000	0.0001
Transit Bus	Diesel	Urban Unrestricted	0.0025	0.0002	0.0000	0.0002
Transit Bus	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
Transit Bus	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Transit Bus	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA Year 2024			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Transit Bus	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
School Bus	Gasoline	Off-Network	0.0001	0.0002	0.0001	0.0002
School Bus	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	Gasoline	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
School Bus	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
School Bus	Diesel	Off-Network	0.0005	0.0000	0.0000	0.0000
School Bus	Diesel	Rural Restricted	0.0004	0.0000	0.0000	0.0000
School Bus	Diesel	Rural Unrestricted	0.0003	0.0000	0.0000	0.0000
School Bus	Diesel	Urban Restricted	0.0004	0.0000	0.0000	0.0000
School Bus	Diesel	Urban Unrestricted	0.0010	0.0000	0.0000	0.0000
School Bus	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
School Bus	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
School Bus	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
School Bus	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
School Bus	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
School Bus	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Gasoline	Off-Network	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Gasoline	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Off-Network	0.0006	0.0001	0.0000	0.0001
Refuse Truck	Diesel	Rural Restricted	0.0008	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Rural Unrestricted	0.0005	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Urban Restricted	0.0010	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Urban Unrestricted	0.0013	0.0001	0.0000	0.0001
Refuse Truck	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
Refuse Truck	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Gasoline	Off-Network	0.0068	0.0050	0.0051	0.0101
Single Unit Short-haul Truck	Gasoline	Rural Restricted	0.0007	0.0004	0.0001	0.0004
Single Unit Short-haul Truck	Gasoline	Rural Unrestricted	0.0004	0.0003	0.0001	0.0004
Single Unit Short-haul Truck	Gasoline	Urban Restricted	0.0008	0.0004	0.0001	0.0005
Single Unit Short-haul Truck	Gasoline	Urban Unrestricted	0.0010	0.0009	0.0002	0.0011
Single Unit Short-haul Truck	Diesel	Off-Network	0.0138	0.0008	0.0000	0.0008
Single Unit Short-haul Truck	Diesel	Rural Restricted	0.0084	0.0005	0.0000	0.0005
Single Unit Short-haul Truck	Diesel	Rural Unrestricted	0.0066	0.0005	0.0000	0.0005
Single Unit Short-haul Truck	Diesel	Urban Restricted	0.0095	0.0005	0.0000	0.0005
Single Unit Short-haul Truck	Diesel	Urban Unrestricted	0.0184	0.0013	0.0000	0.0013
Single Unit Short-haul Truck	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA Year 2024			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Single Unit Short-haul Truck	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Gasoline	Off-Network	0.0000	0.0000	0.0002	0.0003
Single Unit Long-haul Truck	Gasoline	Rural Restricted	0.0001	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Gasoline	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Gasoline	Urban Restricted	0.0001	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Gasoline	Urban Unrestricted	0.0001	0.0001	0.0000	0.0001
Single Unit Long-haul Truck	Diesel	Off-Network	0.0006	0.0001	0.0000	0.0001
Single Unit Long-haul Truck	Diesel	Rural Restricted	0.0007	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Diesel	Rural Unrestricted	0.0005	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Diesel	Urban Restricted	0.0008	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Diesel	Urban Unrestricted	0.0016	0.0001	0.0000	0.0001
Single Unit Long-haul Truck	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Gasoline	Off-Network	0.0003	0.0004	0.0029	0.0033
Motor Home	Gasoline	Rural Restricted	0.0007	0.0002	0.0000	0.0002
Motor Home	Gasoline	Rural Unrestricted	0.0004	0.0002	0.0000	0.0002
Motor Home	Gasoline	Urban Restricted	0.0007	0.0002	0.0000	0.0002
Motor Home	Gasoline	Urban Unrestricted	0.0010	0.0005	0.0001	0.0006
Motor Home	Diesel	Off-Network	0.0001	0.0000	0.0000	0.0000
Motor Home	Diesel	Rural Restricted	0.0010	0.0001	0.0000	0.0001
Motor Home	Diesel	Rural Unrestricted	0.0006	0.0001	0.0000	0.0001
Motor Home	Diesel	Urban Restricted	0.0009	0.0001	0.0000	0.0001
Motor Home	Diesel	Urban Unrestricted	0.0017	0.0002	0.0000	0.0002
Motor Home	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
Motor Home	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Motor Home	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Motor Home	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Gasoline	Off-Network	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Gasoline	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA Year 2024			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Combination Short-haul Truck	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Diesel	Off-Network	0.0172	0.0008	0.0000	0.0008
Combination Short-haul Truck	Diesel	Rural Restricted	0.0333	0.0011	0.0000	0.0011
Combination Short-haul Truck	Diesel	Rural Unrestricted	0.0210	0.0007	0.0000	0.0007
Combination Short-haul Truck	Diesel	Urban Restricted	0.0305	0.0010	0.0000	0.0010
Combination Short-haul Truck	Diesel	Urban Unrestricted	0.0384	0.0013	0.0000	0.0013
Combination Short-haul Truck	CNG	Off-Network	0.0004	0.0003	0.0000	0.0003
Combination Short-haul Truck	CNG	Rural Restricted	0.0002	0.0002	0.0000	0.0002
Combination Short-haul Truck	CNG	Rural Unrestricted	0.0002	0.0002	0.0000	0.0002
Combination Short-haul Truck	CNG	Urban Restricted	0.0002	0.0002	0.0000	0.0002
Combination Short-haul Truck	CNG	Urban Unrestricted	0.0003	0.0004	0.0000	0.0004
Combination Short-haul Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Diesel	Off-Network	0.0269	0.0018	0.0000	0.0018
Combination Long-haul Truck	Diesel	Rural Restricted	0.1212	0.0037	0.0000	0.0037
Combination Long-haul Truck	Diesel	Rural Unrestricted	0.0287	0.0009	0.0000	0.0009
Combination Long-haul Truck	Diesel	Urban Restricted	0.0592	0.0018	0.0000	0.0018
Combination Long-haul Truck	Diesel	Urban Unrestricted	0.0462	0.0014	0.0000	0.0014
Combination Long-haul Truck	CNG	Off-Network	0.0001	0.0000	0.0000	0.0000
Combination Long-haul Truck	CNG	Rural Restricted	0.0001	0.0001	0.0000	0.0001
Combination Long-haul Truck	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Electricity	Off-Network	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Electricity	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Electricity	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Electricity	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Electricity	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.7770**	**0.1645**	**0.3233**	**0.4878**
Motorcycle	ALL	ALL	0.0113	0.0138	0.0400	0.0538
Passenger Car	ALL	ALL	0.0846	0.0460	0.1450	0.1910
Passenger Truck	ALL	ALL	0.1048	0.0571	0.1126	0.1697
Light Commercial Truck	ALL	ALL	0.0460	0.0141	0.0158	0.0300
Other Buses	ALL	ALL	0.0129	0.0027	0.0007	0.0033
Transit Bus	ALL	ALL	0.0077	0.0009	0.0003	0.0011
School Bus	ALL	ALL	0.0029	0.0004	0.0001	0.0005
Refuse Truck	ALL	ALL	0.0043	0.0003	0.0000	0.0003
Single Unit Short-haul Truck	ALL	ALL	0.0665	0.0106	0.0055	0.0161
Single Unit Long-haul Truck	ALL	ALL	0.0044	0.0005	0.0003	0.0008
Motor Home	ALL	ALL	0.0074	0.0019	0.0031	0.0050
Combination Short-haul Truck	ALL	ALL	0.1418	0.0063	0.0000	0.0064
Combination Long-haul Truck	ALL	ALL	0.2824	0.0099	0.0000	0.0099
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.7770**	**0.1645**	**0.3233**	**0.4878**
ALL	Gasoline	ALL	0.2370	0.1388	0.3230	0.4617
ALL	Diesel	ALL	0.5381	0.0240	0.0000	0.0240
ALL	CNG	ALL	0.0016	0.0016	0.0000	0.0016

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA Year 2024			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	**Total**
ALL	Ethanol (E-85)	ALL	0.0002	0.0002	0.0004	0.0006
ALL	Electricity	ALL	0.0000	0.0000	0.0000	0.0000
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.7770**	**0.1645**	**0.3233**	**0.4878**
ALL	ALL	Off-Network	0.1484	0.0834	0.2725	0.3559
ALL	ALL	Rural Restricted	0.2121	0.0179	0.0071	0.0250
ALL	ALL	Rural Unrestricted	0.0857	0.0130	0.0093	0.0223
ALL	ALL	Urban Restricted	0.1397	0.0132	0.0054	0.0186
ALL	ALL	Urban Unrestricted	0.1910	0.0370	0.0290	0.0660
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.7770**	**0.1645**	**0.3233**	**0.4878**
Safety Margin			15%			15%
Emissions Budget			**0.8935**			**0.5610**

Table A7.4. Vehicle Activity Data Output from the MOVES4.0.1 Model for Years 2017, 2023 and 2024 for the Sheboygan County 2015 Ozone NAAQS Nonattainment Area (NAA).

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA					
			Vehicle Population			Vehicle-Miles of Travel Ozone Season Weekday		
			2017	2023	2024	2017	2023	2024
Motorcycle	Gasoline	Off-Network	1,748	2,058	2,070			
Motorcycle	Gasoline	Rural Restricted				3,874	4,047	4,067
Motorcycle	Gasoline	Rural Unrestricted				2,846	3,329	3,402
Motorcycle	Gasoline	Urban Restricted				2,514	2,688	2,711
Motorcycle	Gasoline	Urban Unrestricted				8,764	9,258	9,317
Passenger Car	Gasoline	Off-Network	22,167	20,064	19,704			
Passenger Car	Gasoline	Rural Restricted				162,430	137,812	134,642
Passenger Car	Gasoline	Rural Unrestricted				92,233	87,599	87,039
Passenger Car	Gasoline	Urban Restricted				139,228	120,914	118,527
Passenger Car	Gasoline	Urban Unrestricted				373,003	319,975	313,062
Passenger Car	Diesel	Off-Network	149	100	97			
Passenger Car	Diesel	Rural Restricted				1,090	661	634
Passenger Car	Diesel	Rural Unrestricted				619	420	410
Passenger Car	Diesel	Urban Restricted				934	580	558
Passenger Car	Diesel	Urban Unrestricted				2,502	1,536	1,474
Passenger Car	Ethanol (E-85)	Off-Network	14	13	13			
Passenger Car	Ethanol (E-85)	Rural Restricted				111	91	87
Passenger Car	Ethanol (E-85)	Rural Unrestricted				63	58	56
Passenger Car	Ethanol (E-85)	Urban Restricted				96	80	76
Passenger Car	Ethanol (E-85)	Urban Unrestricted				256	210	201
Passenger Car	Electricity	Off-Network	24	184	185			
Passenger Car	Electricity	Rural Restricted				220	1,596	1,588
Passenger Car	Electricity	Rural Unrestricted				125	1,015	1,027
Passenger Car	Electricity	Urban Restricted				188	1,401	1,398
Passenger Car	Electricity	Urban Unrestricted				505	3,706	3,693
Passenger Truck	Gasoline	Off-Network	25,643	30,632	31,359			
Passenger Truck	Gasoline	Rural Restricted				228,181	263,650	269,032
Passenger Truck	Gasoline	Rural Unrestricted				143,327	185,382	192,383
Passenger Truck	Gasoline	Urban Restricted				143,317	169,502	173,541
Passenger Truck	Gasoline	Urban Unrestricted				409,738	478,671	489,140
Passenger Truck	Diesel	Off-Network	161	108	106			
Passenger Truck	Diesel	Rural Restricted				1,282	845	824

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA					
			Vehicle Population			Vehicle-Miles of Travel Ozone Season Weekday		
			2017	2023	2024	2017	2023	2024
Passenger Truck	Diesel	Rural Unrestricted				806	594	589
Passenger Truck	Diesel	Urban Restricted				806	543	532
Passenger Truck	Diesel	Urban Unrestricted				2,303	1,533	1,499
Passenger Truck	Ethanol (E-85)	Off-Network	64	67	65			
Passenger Truck	Ethanol (E-85)	Rural Restricted				607	554	533
Passenger Truck	Ethanol (E-85)	Rural Unrestricted				381	390	381
Passenger Truck	Ethanol (E-85)	Urban Restricted				381	356	344
Passenger Truck	Ethanol (E-85)	Urban Unrestricted				1,090	1,006	969
Passenger Truck	Electricity	Off-Network	4	187	214			
Passenger Truck	Electricity	Rural Restricted				38	1,940	2,207
Passenger Truck	Electricity	Rural Unrestricted				24	1,364	1,578
Passenger Truck	Electricity	Urban Restricted				24	1,247	1,424
Passenger Truck	Electricity	Urban Unrestricted				69	3,522	4,013
Light Commercial Truck	Gasoline	Off-Network	2,156	2,628	2,687			
Light Commercial Truck	Gasoline	Rural Restricted				17,815	21,142	21,428
Light Commercial Truck	Gasoline	Rural Unrestricted				10,470	13,908	14,336
Light Commercial Truck	Gasoline	Urban Restricted				15,028	18,255	18,564
Light Commercial Truck	Gasoline	Urban Unrestricted				38,249	45,894	46,580
Light Commercial Truck	Diesel	Off-Network	250	244	253			
Light Commercial Truck	Diesel	Rural Restricted				1,914	1,863	1,933
Light Commercial Truck	Diesel	Rural Unrestricted				1,125	1,226	1,294
Light Commercial Truck	Diesel	Urban Restricted				1,615	1,609	1,675
Light Commercial Truck	Diesel	Urban Unrestricted				4,110	4,045	4,203
Light Commercial Truck	Ethanol (E-85)	Off-Network	7	8	8			
Light Commercial Truck	Ethanol (E-85)	Rural Restricted				68	62	61
Light Commercial Truck	Ethanol (E-85)	Rural Unrestricted				40	41	41
Light Commercial Truck	Ethanol (E-85)	Urban Restricted				57	53	53
Light Commercial Truck	Ethanol (E-85)	Urban Unrestricted				146	134	132
Light Commercial Truck	Electricity	Off-Network	0	5	6			
Light Commercial Truck	Electricity	Rural Restricted				0	51	60
Light Commercial Truck	Electricity	Rural Unrestricted				0	34	40
Light Commercial Truck	Electricity	Urban Restricted				0	44	52
Light Commercial Truck	Electricity	Urban Unrestricted				1	111	130
Other Buses	Gasoline	Off-Network	41	47	48			
Other Buses	Gasoline	Rural Restricted				843	882	905
Other Buses	Gasoline	Rural Unrestricted				371	429	447
Other Buses	Gasoline	Urban Restricted				914	957	982
Other Buses	Gasoline	Urban Unrestricted				1,575	1,618	1,654
Other Buses	Diesel	Off-Network	18	15	16			

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA					
			Vehicle Population			Vehicle-Miles of Travel Ozone Season Weekday		
			2017	2023	2024	2017	2023	2024
Other Buses	Diesel	Rural Restricted				334	247	239
Other Buses	Diesel	Rural Unrestricted				147	120	118
Other Buses	Diesel	Urban Restricted				362	269	259
Other Buses	Diesel	Urban Unrestricted				625	454	437
Other Buses	CNG	Off-Network	0	1	1			
Other Buses	CNG	Rural Restricted				0	14	13
Other Buses	CNG	Rural Unrestricted				0	7	6
Other Buses	CNG	Urban Restricted				0	15	14
Other Buses	CNG	Urban Unrestricted				0	26	23
Other Buses	Electricity	Off-Network	0	0	0			
Other Buses	Electricity	Rural Restricted				0	0	0
Other Buses	Electricity	Rural Unrestricted				0	0	0
Other Buses	Electricity	Urban Restricted				0	0	0
Other Buses	Electricity	Urban Unrestricted				0	0	0
Transit Bus	Gasoline	Off-Network	7	5	8			
Transit Bus	Gasoline	Rural Restricted				162	103	124
Transit Bus	Gasoline	Rural Unrestricted				73	51	62
Transit Bus	Gasoline	Urban Restricted				221	140	169
Transit Bus	Gasoline	Urban Unrestricted				315	197	236
Transit Bus	Diesel	Off-Network	12	13	12			
Transit Bus	Diesel	Rural Restricted				244	231	212
Transit Bus	Diesel	Rural Unrestricted				109	115	107
Transit Bus	Diesel	Urban Restricted				332	316	290
Transit Bus	Diesel	Urban Unrestricted				474	442	405
Transit Bus	CNG	Off-Network	0	0	0			
Transit Bus	CNG	Rural Restricted				0	12	11
Transit Bus	CNG	Rural Unrestricted				0	6	6
Transit Bus	CNG	Urban Restricted				0	16	15
Transit Bus	CNG	Urban Unrestricted				0	23	21
Transit Bus	Electricity	Off-Network	0	0	0			
Transit Bus	Electricity	Rural Restricted				0	7	7
Transit Bus	Electricity	Rural Unrestricted				0	3	3
Transit Bus	Electricity	Urban Restricted				0	10	9
Transit Bus	Electricity	Urban Unrestricted				0	13	13
School Bus	Gasoline	Off-Network	18	28	28			
School Bus	Gasoline	Rural Restricted				129	186	183
School Bus	Gasoline	Rural Unrestricted				66	105	105
School Bus	Gasoline	Urban Restricted				126	182	178
School Bus	Gasoline	Urban Unrestricted				222	314	308

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA					
			Vehicle Population			Vehicle-Miles of Travel Ozone Season Weekday		
			2017	2023	2024	2017	2023	2024
School Bus	Diesel	Off-Network	65	57	60			
School Bus	Diesel	Rural Restricted				446	364	373
School Bus	Diesel	Rural Unrestricted				228	206	214
School Bus	Diesel	Urban Restricted				435	355	364
School Bus	Diesel	Urban Unrestricted				767	615	628
School Bus	CNG	Off-Network	1	1	1			
School Bus	CNG	Rural Restricted				7	7	7
School Bus	CNG	Rural Unrestricted				4	4	4
School Bus	CNG	Urban Restricted				7	7	7
School Bus	CNG	Urban Unrestricted				12	13	12
School Bus	Electricity	Off-Network	0	0	0			
School Bus	Electricity	Rural Restricted				0	0	2
School Bus	Electricity	Rural Unrestricted				0	0	1
School Bus	Electricity	Urban Restricted				0	0	2
School Bus	Electricity	Urban Unrestricted				0	0	3
Refuse Truck	Gasoline	Off-Network	1	1	1			
Refuse Truck	Gasoline	Rural Restricted				10	13	13
Refuse Truck	Gasoline	Rural Unrestricted				5	7	7
Refuse Truck	Gasoline	Urban Restricted				12	15	15
Refuse Truck	Gasoline	Urban Unrestricted				16	20	19
Refuse Truck	Diesel	Off-Network	11	10	11			
Refuse Truck	Diesel	Rural Restricted				163	138	138
Refuse Truck	Diesel	Rural Unrestricted				81	76	77
Refuse Truck	Diesel	Urban Restricted				192	162	162
Refuse Truck	Diesel	Urban Unrestricted				256	212	212
Refuse Truck	CNG	Off-Network	0	0	0			
Refuse Truck	CNG	Rural Restricted				0	0	1
Refuse Truck	CNG	Rural Unrestricted				0	0	0
Refuse Truck	CNG	Urban Restricted				0	0	1
Refuse Truck	CNG	Urban Unrestricted				0	0	1
Refuse Truck	Electricity	Off-Network	0	0	0			
Refuse Truck	Electricity	Rural Restricted				0	0	0
Refuse Truck	Electricity	Rural Unrestricted				0	0	0
Refuse Truck	Electricity	Urban Restricted				0	0	0
Refuse Truck	Electricity	Urban Unrestricted				0	0	0
Single Unit Short-haul Truck	Gasoline	Off-Network	423	567	597			
Single Unit Short-haul Truck	Gasoline	Rural Restricted				4,394	5,636	5,749
Single Unit Short-haul Truck	Gasoline	Rural Unrestricted				2,247	3,187	3,295
Single Unit Short-haul Truck	Gasoline	Urban Restricted				4,920	6,324	6,447

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA					
			Vehicle Population			Vehicle-Miles of Travel Ozone Season Weekday		
			2017	2023	2024	2017	2023	2024
Single Unit Short-haul Truck	Gasoline	Urban Unrestricted				6,927	8,732	8,871
Single Unit Short-haul Truck	Diesel	Off-Network	956	1,054	1,085			
Single Unit Short-haul Truck	Diesel	Rural Restricted				8,737	8,939	8,985
Single Unit Short-haul Truck	Diesel	Rural Unrestricted				4,467	5,055	5,149
Single Unit Short-haul Truck	Diesel	Urban Restricted				9,783	10,030	10,076
Single Unit Short-haul Truck	Diesel	Urban Unrestricted				13,773	13,848	13,865
Single Unit Short-haul Truck	CNG	Off-Network	0	0	0			
Single Unit Short-haul Truck	CNG	Rural Restricted				1	5	5
Single Unit Short-haul Truck	CNG	Rural Unrestricted				0	3	3
Single Unit Short-haul Truck	CNG	Urban Restricted				1	5	5
Single Unit Short-haul Truck	CNG	Urban Unrestricted				1	7	7
Single Unit Short-haul Truck	Electricity	Off-Network	0	0	0			
Single Unit Short-haul Truck	Electricity	Rural Restricted				0	1	1
Single Unit Short-haul Truck	Electricity	Rural Unrestricted				0	1	1
Single Unit Short-haul Truck	Electricity	Urban Restricted				0	1	1
Single Unit Short-haul Truck	Electricity	Urban Unrestricted				0	1	1
Single Unit Long-haul Truck	Gasoline	Off-Network	16	20	20			
Single Unit Long-haul Truck	Gasoline	Rural Restricted				217	269	272
Single Unit Long-haul Truck	Gasoline	Rural Unrestricted				118	162	166
Single Unit Long-haul Truck	Gasoline	Urban Restricted				251	312	316
Single Unit Long-haul Truck	Gasoline	Urban Unrestricted				388	472	476
Single Unit Long-haul Truck	Diesel	Off-Network	44	50	53			
Single Unit Long-haul Truck	Diesel	Rural Restricted				588	638	646
Single Unit Long-haul Truck	Diesel	Rural Unrestricted				320	385	395
Single Unit Long-haul Truck	Diesel	Urban Restricted				682	741	751
Single Unit Long-haul Truck	Diesel	Urban Unrestricted				1,052	1,122	1,132
Single Unit Long-haul Truck	CNG	Off-Network	0	0	0			
Single Unit Long-haul Truck	CNG	Rural Restricted				4	5	5
Single Unit Long-haul Truck	CNG	Rural Unrestricted				2	3	3
Single Unit Long-haul Truck	CNG	Urban Restricted				5	6	5
Single Unit Long-haul Truck	CNG	Urban Unrestricted				7	8	8
Single Unit Long-haul Truck	Electricity	Off-Network	0	0	0			
Single Unit Long-haul Truck	Electricity	Rural Restricted				0	0	1
Single Unit Long-haul Truck	Electricity	Rural Unrestricted				0	0	0
Single Unit Long-haul Truck	Electricity	Urban Restricted				0	0	1
Single Unit Long-haul Truck	Electricity	Urban Unrestricted				0	0	1
Motor Home	Gasoline	Off-Network	145	156	161			
Motor Home	Gasoline	Rural Restricted				628	621	623
Motor Home	Gasoline	Rural Unrestricted				301	329	335

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA					
			Vehicle Population			Vehicle-Miles of Travel Ozone Season Weekday		
			2017	2023	2024	2017	2023	2024
Motor Home	Gasoline	Urban Restricted				584	580	581
Motor Home	Gasoline	Urban Unrestricted				912	887	887
Motor Home	Diesel	Off-Network	55	64	68			
Motor Home	Diesel	Rural Restricted				254	266	273
Motor Home	Diesel	Rural Unrestricted				122	141	147
Motor Home	Diesel	Urban Restricted				237	248	255
Motor Home	Diesel	Urban Unrestricted				370	380	388
Motor Home	CNG	Off-Network	0	0	0			
Motor Home	CNG	Rural Restricted				0	0	0
Motor Home	CNG	Rural Unrestricted				0	0	0
Motor Home	CNG	Urban Restricted				0	0	0
Motor Home	CNG	Urban Unrestricted				0	0	0
Motor Home	Electricity	Off-Network	0	0	0			
Motor Home	Electricity	Rural Restricted				0	0	0
Motor Home	Electricity	Rural Unrestricted				0	0	0
Motor Home	Electricity	Urban Restricted				0	0	0
Motor Home	Electricity	Urban Unrestricted				0	0	0
Combination Short-haul Truck	Gasoline	Off-Network	2	1	1			
Combination Short-haul Truck	Gasoline	Rural Restricted				23	10	8
Combination Short-haul Truck	Gasoline	Rural Unrestricted				10	5	4
Combination Short-haul Truck	Gasoline	Urban Restricted				21	9	8
Combination Short-haul Truck	Gasoline	Urban Unrestricted				21	9	8
Combination Short-haul Truck	Diesel	Off-Network	301	323	329			
Combination Short-haul Truck	Diesel	Rural Restricted				11,404	11,489	11,568
Combination Short-haul Truck	Diesel	Rural Unrestricted				5,111	5,696	5,813
Combination Short-haul Truck	Diesel	Urban Restricted				10,411	10,511	10,578
Combination Short-haul Truck	Diesel	Urban Unrestricted				10,411	10,308	10,338
Combination Short-haul Truck	CNG	Off-Network	4	9	11			
Combination Short-haul Truck	CNG	Rural Restricted				334	568	705
Combination Short-haul Truck	CNG	Rural Unrestricted				150	282	354
Combination Short-haul Truck	CNG	Urban Restricted				305	520	644
Combination Short-haul Truck	CNG	Urban Unrestricted				305	510	630
Combination Short-haul Truck	Electricity	Off-Network	0	0	0			
Combination Short-haul Truck	Electricity	Rural Restricted				0	0	0
Combination Short-haul Truck	Electricity	Rural Unrestricted				0	0	0
Combination Short-haul Truck	Electricity	Urban Restricted				0	0	0
Combination Short-haul Truck	Electricity	Urban Unrestricted				0	0	0
Combination Long-haul Truck	Diesel	Off-Network	243	258	265			
Combination Long-haul Truck	Diesel	Rural Restricted				35,932	38,078	38,307

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA					
			Vehicle Population			Vehicle-Miles of Travel Ozone Season Weekday		
			2017	2023	2024	2017	2023	2024
Combination Long-haul Truck	Diesel	Rural Unrestricted				6,022	7,059	7,197
Combination Long-haul Truck	Diesel	Urban Restricted				17,520	18,606	18,707
Combination Long-haul Truck	Diesel	Urban Unrestricted				10,767	11,213	11,236
Combination Long-haul Truck	CNG	Off-Network	1	1	1			
Combination Long-haul Truck	CNG	Rural Restricted				156	205	205
Combination Long-haul Truck	CNG	Rural Unrestricted				26	38	38
Combination Long-haul Truck	CNG	Urban Restricted				76	100	100
Combination Long-haul Truck	CNG	Urban Unrestricted				47	60	60
Combination Long-haul Truck	Electricity	Off-Network	0	0	0			
Combination Long-haul Truck	Electricity	Rural Restricted				0	0	7
Combination Long-haul Truck	Electricity	Rural Unrestricted				0	0	1
Combination Long-haul Truck	Electricity	Urban Restricted				0	0	4
Combination Long-haul Truck	Electricity	Urban Unrestricted				0	0	2
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**54,752**	**58,982**	**59,545**	**1,996,247**	**2,110,899**	**2,130,011**
Motorcycle	ALL	ALL	1,748	2,058	2,070	17,998	19,323	19,497
Passenger Car	ALL	ALL	22,355	20,361	19,999	773,602	677,655	664,472
Passenger Truck	ALL	ALL	25,871	30,993	31,744	932,374	1,111,099	1,138,989
Light Commercial Truck	ALL	ALL	2,413	2,885	2,954	90,638	108,471	110,579
Other Buses	ALL	ALL	59	63	65	5,172	5,037	5,097
Transit Bus	ALL	ALL	20	19	20	1,930	1,685	1,691
School Bus	ALL	ALL	83	86	89	2,449	2,360	2,390
Refuse Truck	ALL	ALL	12	11	11	737	643	646
Single Unit Short-haul Truck	ALL	ALL	1,379	1,621	1,683	55,251	61,777	62,460
Single Unit Long-haul Truck	ALL	ALL	60	71	74	3,635	4,124	4,179
Motor Home	ALL	ALL	200	221	229	3,408	3,452	3,489
Combination Short-haul Truck	ALL	ALL	307	333	341	38,509	39,915	40,658
Combination Long-haul Truck	ALL	ALL	244	259	266	70,544	75,360	75,864
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**54,752**	**58,982**	**59,545**	**1,996,247**	**2,110,899**	**2,130,011**
ALL	Gasoline	ALL	52,367	56,208	56,683	1,818,043	1,914,790	1,931,222
ALL	Diesel	ALL	2,266	2,298	2,355	172,265	174,532	175,667
ALL	CNG	ALL	6	13	15	1,449	2,475	2,920
ALL	Ethanol (E-85)	ALL	85	88	86	3,295	3,034	2,933
ALL	Electricity	ALL	28	376	406	1,195	16,069	17,269
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**54,752**	**58,982**	**59,545**	**1,996,247**	**2,110,899**	**2,130,011**

Source Type	Fuel Type	Road Type	Sheboygan 2015 Ozone NAAQS NAA					
			Vehicle Population			Vehicle-Miles of Travel Ozone Season Weekday		
			2017	2023	2024	2017	2023	2024
ALL	ALL	Off-Network	54,752	58,982	59,545			
ALL	ALL	Rural Restricted				482,642	503,247	506,682
ALL	ALL	Rural Unrestricted				272,040	318,833	326,633
ALL	ALL	Urban Restricted				351,585	367,711	370,399
ALL	ALL	Urban Unrestricted				889,980	921,108	926,297
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**54,752**	**58,982**	**59,545**	**1,996,247**	**2,110,899**	**2,130,011**

Table A7.5. Average Speed Distributions Input into the MOVES4.0.1 Model for the Sheboygan County 2015 Ozone NAAQS Nonattainment Area (NAA).

Road Type	Average Trip Speed	Percent of Vehicle-Hours of Travel (VHT)					
		Light-Duty Classes (1)			Heavy-Duty Classes (2)		
		2017	2023	2024	2017	2023	2024
Rural Restricted Access	0.0 to 2.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Restricted Access	2.5 to 7.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Restricted Access	7.5 to 12.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Restricted Access	12.5 to 17.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Restricted Access	17.5 to 22.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Restricted Access	22.5 to 27.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Restricted Access	27.5 to 32.5 mph	5.07%	5.19%	5.21%	4.93%	5.02%	5.03%
Rural Restricted Access	32.5 to 37.5 mph	5.07%	5.19%	5.21%	4.93%	5.02%	5.03%
Rural Restricted Access	37.5 to 42.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Restricted Access	42.5 to 47.5 mph	2.13%	2.40%	2.44%	2.24%	2.57%	2.62%
Rural Restricted Access	47.5 to 52.5 mph	2.13%	2.40%	2.44%	2.24%	2.57%	2.62%
Rural Restricted Access	52.5 to 57.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Restricted Access	27.5 to 62.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Restricted Access	62.5 to 67.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Restricted Access	67.5 to 72.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Restricted Access	72.5+ mph	85.59%	84.82%	84.70%	85.65%	84.83%	84.70%
Rural Restricted Access	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Road Type	Average Trip Speed	Percent of Vehicle-Hours of Travel (VHT)					
		Light-Duty Classes (1)			Heavy-Duty Classes (2)		
		2017	2023	2024	2017	2023	2024
Rural Unrestricted Access	0.0 to 2.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Unrestricted Access	2.5 to 7.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Unrestricted Access	7.5 to 12.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Unrestricted Access	12.5 to 17.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Unrestricted Access	17.5 to 22.5 mph	5.97%	5.25%	5.15%	4.82%	4.29%	4.22%
Rural Unrestricted Access	22.5 to 27.5 mph	8.64%	8.08%	8.00%	7.76%	7.40%	7.35%
Rural Unrestricted Access	27.5 to 32.5 mph	8.09%	8.98%	9.10%	7.88%	8.83%	8.96%
Rural Unrestricted Access	32.5 to 37.5 mph	21.18%	20.90%	20.86%	19.98%	20.23%	20.27%
Rural Unrestricted Access	37.5 to 42.5 mph	31.87%	30.42%	30.22%	33.99%	32.47%	32.26%
Rural Unrestricted Access	42.5 to 47.5 mph	20.17%	21.01%	21.13%	22.25%	22.36%	22.38%
Rural Unrestricted Access	47.5 to 52.5 mph	4.07%	5.35%	5.52%	3.31%	4.41%	4.56%
Rural Unrestricted Access	52.5 to 57.5 mph	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Rural Unrestricted Access	27.5 to 62.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Unrestricted Access	62.5 to 67.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Unrestricted Access	67.5 to 72.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Unrestricted Access	72.5+ mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Unrestricted Access	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Road Type	Average Trip Speed	Percent of Vehicle-Hours of Travel (VHT)					
		Light-Duty Classes (1)			Heavy-Duty Classes (2)		
		2017	2023	2024	2017	2023	2024
Urban Restricted Access	0.0 to 2.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Urban Restricted Access	2.5 to 7.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Urban Restricted Access	7.5 to 12.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Urban Restricted Access	12.5 to 17.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Urban Restricted Access	17.5 to 22.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Urban Restricted Access	22.5 to 27.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Urban Restricted Access	27.5 to 32.5 mph	5.07%	5.19%	5.21%	4.93%	5.02%	5.03%
Urban Restricted Access	32.5 to 37.5 mph	5.07%	5.19%	5.21%	4.93%	5.02%	5.03%
Urban Restricted Access	37.5 to 42.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Urban Restricted Access	42.5 to 47.5 mph	2.13%	2.40%	2.44%	2.24%	2.57%	2.62%
Urban Restricted Access	47.5 to 52.5 mph	2.13%	2.40%	2.44%	2.24%	2.57%	2.62%
Urban Restricted Access	52.5 to 57.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Urban Restricted Access	27.5 to 62.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Urban Restricted Access	62.5 to 67.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Urban Restricted Access	67.5 to 72.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Urban Restricted Access	72.5+ mph	85.59%	84.82%	84.70%	85.65%	84.83%	84.70%
Urban Restricted Access	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Road Type	Average Trip Speed	Percent of Vehicle-Hours of Travel (VHT)					
		Light-Duty Classes (1)			Heavy-Duty Classes (2)		
		2017	2023	2024	2017	2023	2024
Urban Unrestricted Access	0.0 to 2.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Urban Unrestricted Access	2.5 to 7.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Urban Unrestricted Access	7.5 to 12.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Urban Unrestricted Access	12.5 to 17.5 mph	0.40%	0.38%	0.38%	0.45%	0.43%	0.43%
Urban Unrestricted Access	17.5 to 22.5 mph	3.05%	2.93%	2.91%	2.19%	2.07%	2.05%
Urban Unrestricted Access	22.5 to 27.5 mph	6.31%	6.29%	6.29%	5.01%	4.99%	4.99%
Urban Unrestricted Access	27.5 to 32.5 mph	13.40%	13.42%	13.42%	11.84%	11.95%	11.97%
Urban Unrestricted Access	32.5 to 37.5 mph	37.37%	37.23%	37.21%	36.32%	36.19%	36.17%
Urban Unrestricted Access	37.5 to 42.5 mph	30.38%	30.29%	30.27%	32.14%	31.83%	31.78%
Urban Unrestricted Access	42.5 to 47.5 mph	5.93%	6.10%	6.12%	8.21%	8.39%	8.42%
Urban Unrestricted Access	47.5 to 52.5 mph	3.17%	3.36%	3.39%	3.83%	4.15%	4.20%
Urban Unrestricted Access	52.5 to 57.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Urban Unrestricted Access	27.5 to 62.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Urban Unrestricted Access	62.5 to 67.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Urban Unrestricted Access	67.5 to 72.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Urban Unrestricted Access	72.5+ mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Urban Unrestricted Access	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

(1) The Light-Duty Classes are the following four MOVES Source Types:

a. Motorcycle
b. Passenger
c. Passenger Truck
d. Light Commercial Truck

(2) The Heavy-Duty Classes are the following nine MOVES Source Types:

a. Other Buses
b. Transit Bus
c. School Bus
d. Refuse Truck
e. Single Unit Short-haul Truck
f. Single Unit Long-haul Truck
g. Motor Home
h. Combination Short-haul Truck
i. Combination Long-haul Truck

APPENDIX 8

Wisconsin VOC RACT Regulations and Negative Declarations

Background

Reasonably Available Control Technology (RACT) represents the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility (44 FR 53761). Section 182(b)(2) of the Clean Air Act (CAA) requires nonattainment areas classified as moderate or higher to implement RACT for sources of volatile organic compounds (VOCs).

Section 183 of the CAA requires the EPA to issue guidance for RACT controls for reducing emissions from stationary sources. The EPA has issued such guidance in the form of Control Techniques Guidelines (CTGs), which represent "presumptive norms" for RACT for specific categories of VOC sources. States with nonattainment areas subject to section 182(b)(2) are required to implement RACT for CTGs issued between the date of the CAA Amendments of 1990 and the date of attainment (section 182(b)(2)(A)), and for CTGs issued before the date of enactment of the CAA Amendments of 1990 (section 182(b)(2)(B)).

Wisconsin's VOC RACT Rules

Generally, states meet RACT requirements by codifying the control requirements established in CTG documents. Wisconsin's VOC RACT rules are contained in chapters 420 through 423, Wisc. Admin. Code. Table A8-1 lists these RACT rules, the associated CTGs they incorporate, and applicable source categories.

Negative Declarations

To satisfy Section 182(b)(2)(A) and (B), the WDNR must certify that there are no facilities in the nonattainment area for which RACT requirements have not been codified or for which the state rules do not reflect the most recently published CTG (i.e., make a negative declaration). Wisconsin has not adopted VOC RACT requirements covered by the following CTGs:

- Shipbuilding and Ship Repair (61 FR-44050 8/27/96; 1996),
- Aerospace Manufacturing (EPA-453/R-97-004; 1997),
- Fiberglass Boat Manufacturing (EPA 453/R-08-004; 2008), and
- Oil and Natural Gas Industry (EPA-453/B-16-001; 2016).

In addition, Wisconsin previously promulgated RACT requirements for automobile and light-duty truck manufacturing (NR 422.09). However, the Wisconsin Administrative Code does not currently reflect the EPA's most recent CTG for Automobile and Light-Duty Truck Assembly Coatings (EPA 453/R-08-006; 2008).

The WDNR reviewed available source information in the nonattainment area and did not find any facilities engaging in activities subject any CTG category for which Wisconsin has not adopted or updated RACT requirements. Therefore, to satisfy Section 182(b)(2) requirements, the WDNR is submitting a negative declaration for these five CTG categories for this nonattainment area.

Table A8-1. Volatile Organic Compounds (VOC) Control Technique Guidelines Incorporated into Wisconsin Administrative Code.

Source	Title (Description)	EPA CTG Report No.	Wis. Adm. Code Ref.	Emissions Inventory Classification[1]
Petroleum and Gasoline Sources				
Bulk Gasoline Plants	Control of Volatile Organic Emissions from Bulk Gasoline Plants [bulk gasoline plant unloading, loading and storage]	EPA-450/2-77-035	NR 420.04(2)	Stationary Point Source
Refinery Equipment - Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	Control of Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	EPA-450/2-77-025	NR 420.05(1), (2) and (3)	Stationary Point Source
Refinery Equipment - Control of VOC Leaks	Control of Volatile Organic Compound Leaks from Petroleum Refinery Equipment	EPA-450/2-78-036	NR 420.05(4)	Stationary Point Source
Refinery Equipment - Control of VOC Leaks	Control of Volatile Organic Compound Equipment Leaks from Natural Gas/Gasoline Processing Plants	EPA-450/3-83-007	NR 420.05(4)	Stationary Point Source
Tanks - Fixed Roof	Control of Volatile Organic Emissions from Storage of Petroleum Liquids in Fixed-Roof Tanks	EPA-450/2-77-036	NR 420.03(5)	Stationary Point Source
Tanks - External Floating Roofs	Control of Volatile Organic Emissions from Petroleum Liquid Storage in External Floating Roof Tanks	EPA-450/2-78-047	NR 420.03(6) and (7)	Stationary Point Source
Gasoline Loading Terminals	Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals	EPA-450/2-77-026	NR 420.04(1)	Stationary Point Source
Tank Trucks	Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems	EPA-450/2-78-051	NR 420.04(4)	Stationary Area Source
Gasoline Delivery - Stage I Vapor Control Systems	Design Criteria for Stage I Vapor Control Systems – Gasoline Service Stations	EPA-450/R-75-102	NR 420.04(3)	Stationary Area Source
Surface Coating				
Adhesives	Control Techniques Guidelines for Miscellaneous Industrial Adhesives	EPA 453/R-08-005	NR 422.128	Stationary Point Source

Source	Title (Description)	EPA CTG Report No.	Wis. Adm. Code Ref.	Emissions Inventory Classification[1]
Automobile & Light-duty Truck	Control Techniques Guidelines for Automobile and Light-Duty Truck Assembly Coatings	EPA 453/R-08-006	NR 422.09	Stationary Point Source
Cans	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks	EPA-450/2-77-008	NR 422.05	Stationary Point Source
Coils	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks	EPA-450/2-77-008	NR 422.06	Stationary Point Source
Fabric & Vinyl	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks	EPA-450/2-77-008	NR 422.08	Stationary Point Source
Flat Wood Paneling	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume VII: Factory Surface Coating of Flat Wood Paneling	EPA-450/2-78-032	NR 422.13	Stationary Point Source
	Control Techniques Guidelines for Flat Wood Paneling Coatings	EPA-453/R-06-004	NR 422.131	Stationary Point Source
Large Appliances	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume V: Surface Coating of Large Appliances	EPA-450/2-77-034	NR 422.11	Stationary Point Source
	Control Techniques Guidelines for Large Appliance Coatings	EPA 453/R-07-004	NR 422.115	Stationary Point Source
Magnet Wire	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume IV: Surface Coating of Insulation of Magnet Wire	EPA-450/2-77-033	NR 422.12	Stationary Point Source
Metal Furniture	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume III: Surface Coating of Metal Furniture	EPA-450/2-77-032	NR 422.1	Stationary Point Source
	Control Techniques Guidelines for Metal Furniture Coatings	EPA 453/R-07-005	NR 422.105	Stationary Point Source

Source	Title (Description)	EPA CTG Report No.	Wis. Adm. Code Ref.	Emissions Inventory Classification[1]
Metal Parts, miscellaneous	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume VI: Surface Coating of Miscellaneous Metal Parts and Products	EPA-450/2-78-015	NR 422.15	Stationary Point Source
	Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings	EPA 453/R-08-003	NR 422.151	Stationary Point Source
	Fire Truck and Emergency Response Vehicle Manufacturing - surface coating	(covered under Misc. Metal Parts CTG)	NR 422.151	Stationary Point Source
Paper, Film and Foil	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks	EPA-450/2-77-008	NR 422.07	Stationary Point Source
	Control Techniques Guidelines for Paper, Film, and Foil Coatings	EPA 453/R-07-003	NR 422.075	Stationary Point Source
Plastic Parts - Coatings	Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings	EPA 453/R-08-003	NR 422.084	Stationary Point Source
Traffic Markings	Reduction of Volatile Organic Compound Emissions from the Application of Traffic Markings	EPA-450/3-88-007	NR 422.17	Stationary Area Source
Wood Furniture	Control of Volatile Organic Compound Emissions from Wood Furniture Manufacturing Operations	EPA-453/R-96-007	NR 422.125	Stationary Point Source
Graphic Arts				
Rotogravure & Flexography	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume VIII: Graphic Arts-Rotogravure and Flexography	EPA-450/2-78-033	NR 422.14	Stationary Point Source
Flexible Packaging	Control Techniques Guidelines for Flexible Package Printing	EPA-453/R-06-003	NR 422.141	Stationary Point Source
Letterpress	Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing	EPA-453/R-06-002	NR 422.144	Stationary Point Source

Source	Title (Description)	EPA CTG Report No.	Wis. Adm. Code Ref.	Emissions Inventory Classification[1]
Lithographic	Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing	EPA-453/R-06-002	NR 422.142 and 422.143	Stationary Point Source
Solvents				
Dry Cleaning	Control of Volatile Organic Emissions from Perchloroethylene Dry Cleaning Systems	EPA-450/2-78-050	NR 423.05	Stationary Area Source
Dry Cleaning	Control of Volatile Organic Compound Emissions from Large Petroleum Dry Cleaners	EPA-450/3-82-009	NR 423.05	Stationary Area Source
Industrial Cleaning	Control Techniques Guidelines for Industrial Cleaning Solvents	EPA-453/R-06-001	NR 423.035 and 423.037	Stationary Area Source
Metal Cleaning	Control of Volatile Organic Emissions from Solvent Metal Cleaning	EPA-450/2-77-022	NR 423.03	Stationary Area Source
Chemical				
Pharmaceutical	Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products	EPA-450/2-78-029	NR 421.03	Stationary Point Source
Polystyrene	Control of Volatile Organic Compound Emissions from Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	EPA-450/3-83-008	NR 421.05	Stationary Point Source
Rubber	Control of Volatile Organic Emissions from Manufacture of Pneumatic Rubber Tires	EPA-450/2-78-030	NR 421.04	Stationary Point Source
Synthetic Organic	Control of Volatile Organic Compound Emissions from Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry	EPA-450/3-84-015	NR 421.07	Stationary Point Source
Synthetic Organic	Control of Volatile Organic Compound Emissions from Reactor Processes and Distillation Operations in Synthetic Organic Chemical Manufacturing Industry	EPA-450/4-91-031	NR 421.07	Stationary Point Source
Synthetic Resin	Control of Volatile Organic Compound Leaks from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	EPA-450/3-83-006	NR 421.05	Stationary Point Source

Source	Title (Description)	EPA CTG Report No.	Wis. Adm. Code Ref.	Emissions Inventory Classification[1]
Manufacturing				
Asphalt	Control of Volatile Organic Emissions from Use of Cutback Asphalt	EPA-450/2-77-037	NR 422.16	Stationary Area Source

[1]For purposes of this table, an "Area" source is defined as a nonpoint or fugitive emission source